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State Water Resources Control Board

August 26, 2011

SENT VIA E-FILE

Drew Bohan, Executive Director
Commission on State Mandates
980 Ninth St., Suite 300
Sacramento, CA 95814]

Dear Mr. Bohan:

SANTA ANA REGION WATER PERMIT—RIVERSIDE COUNTY, 10-TC-07
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, SANTA ANA
REGION, ORDER NO. R8-2010-0033, EFFECTIVE JANUARY 29, 2010.
RIVERSIDE COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT,
COUNTY OF RIVERSIDE, CITIES OF BEAUMONT, CORONA, HEMET, LAKE
ELSINORE, MORENO VALLEY, PERRIS, SAN JACINTO, CO-CLAIMANTS

I. Introduction

The Santa Ana Regional Water Quality Control Board ("Santa Ana Water Board" or "Board") files this response to Test Claim 10-TC-07 ("Test Claim"). The Test Claim arises from a single permit ("Permit" or "2010 Permit") that the Santa Ana Water Board issued pursuant to the federal Clean Water Act's National Pollutant Discharge Elimination System ("NPDES") permit requirements.¹

The Santa Ana Water Board issued the Permit pursuant to legal requirements in the federal Clean Water Act ("Clean Water Act"),² its implementing regulations, and guidance from the United States Environmental Protection Agency ("U.S. EPA"). U.S. EPA is the federal agency responsible for administering the Clean Water Act. Pursuant to federal law, U.S. EPA authorized the Santa Ana Water Board to issue the Permit—which is mandated by the Clean Water Act—in lieu of issuance by U.S. EPA itself. The Permit regulates the discharge of stormwater runoff from the municipal separate storm sewer systems ("MS4s") of the Riverside County Flood Control and Water Conservation District, the County of Riverside, and the 15 cities within the County of Riverside (collectively, "Permittees" or "Claimants," and, individually, "Permittee" or "Claimant")³ to waters of the United States.

¹ California Regional Water Quality Control Board, Santa Ana Region Order No. R8-2010-0033, NPDES No. CAS 618033.

² Federal Water Pollution Control Act [FWPCA; 33 U.S.C. §§ 1251 et seq.] The federal Act is referred to herein by its popular name, the Clean Water Act and the code sections used are those for the Clean Water Act.

³ Not all of the Permittees have joined this action. The following is a list of those Permittees that have collectively filed this Test Claim: Riverside County Flood Control & Water District, County of Riverside, City
(footnote continued on next page)

CHARLES R. HOPPIN, CHAIRMAN | THOMAS HOWARD, EXECUTIVE DIRECTOR

The Clean Water Act requires local agencies that discharge pollutants from their MS4s to waters of the United States to apply for and receive permits, commonly known as MS4 permits, regulating these discharges.⁴ Local agencies generally obtain a single system-wide permit for each interconnected MS4.⁵ As required by federal statutes and regulations, the Permit contains numerous requirements for the Permittees to take actions, known as Best Management Practices ("BMPs"), to reduce the flow of pollutants into waters in the Santa Ana Region. This Test Claim seeks reimbursement by the State of California for expenses the Claimants assert have incurred or will incur in implementing numerous requirements of the Permit.

In order to obtain reimbursement, the Claimants must show that the requirements constitute a new program or higher level of service. They must prove either that: (1) the program must carry out a governmental function of providing services to the public; or (2) the requirements, to implement a state policy, impose unique requirements on local governments and do not apply generally to all residents and entities in the state. The Claimants must also prove that the costs are mandated on them by the state, rather than by federal law, and must prove that any additional costs beyond the federal mandate are substantial and not *de minimis*. Finally, they must establish that they are required to use tax monies to pay for Permit implementation. The Claimants do not meet these tests.

The Permit as a whole, including the challenged provisions, is mandated on the local governments by federal law. This federal mandate applies to all point source dischargers of stormwater,⁶ both public and private, and is not unique to local governments. As the Los Angeles Superior Court recently found, determining whether there is a federal mandate is a two-step analysis.⁷ First, did the state have "no real choice" in deciding whether to comply with the federal act? The federal mandate at issue here requires that the Permit be issued to the local governments; it is not a question of "shifting" the costs from the state to local governments. Second, did the program exceed the requirements of a compulsory federal act? Determining the federal minimum requirements necessitates consideration of the nature of the Clean Water Act's "maximum extent practicable" standard and an examination of the MS4 permit as a whole. The determination does not rest on whether federal NPDES regulations explicitly require a particular program or outcome. The specific requirements challenged here are consistent with the minimum requirements of federal law, its implementing regulations, and federal agency guidance.

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of Beaumont, City of Corona, City of Hemet, City of Lake Elsinore, City of Moreno Valley, City of Perris, City of Jacinto.

⁴ Clean Water Act § 402(p); *NRDC v. U.S. EPA* (9th Cir. 1992) 966 F.2d 1292, 1295-96.

⁵ Clean Water Act § 402(p)(3)(B)(i).

⁶ Certain very small dischargers that are not significant contributors of pollutants are exempt from permit requirements. The exemption is based on population (for MS4 dischargers) or project size (for construction dischargers) and not status as a public entity. (33 U.S.C. § 402(p); 40 C.F.R. §§ 122.26(b)(15).

⁷ *State of California Department of Finance v. Commission on State Mandates* (Sup. Ct. Los Angeles County, BS 130730), decision August 15, 2011 ("Los Angeles MS4 Ruling"), p. 3. The Santa Ana Water Board acknowledges this case is not final or precedential, but endorses the court's approach and urges the Commission to adopt it.

II. Description of the Test Claim

The Test Claim focuses on the following general requirements and associated sections of the Permit:

1. Local Implementation Plan Requirements (Sections IV, VI, VII, VIII, IX, XII, XIV, and XV)
2. Control of Bacterial Sources (Section VIII)
3. Investigation and Tracking of Illicit Connections/Illicit Discharges (Section IX)
4. Creation of Septic System Database (Section X)
5. Permittee Inspection Requirements (Section XI)
6. New Development Requirements (Section XII)
7. Employee Training Programs (Section XV)
8. Program Management Assessment (Section XVII)

The Claimants contend that some of the provisions contained in the sections listed above are subject to subvention because they are not required by federal law and because they impose new programs or higher levels of service. The Claimants also assert that none of the exemptions in Government Code section 17556 that would bar recovery of costs apply. Finally, they claim that they lack authority to assess a fee to cover the costs of these mandated activities.

III. History and Issuance of the Permit

In 1990, pursuant to the Clean Water Act amendments of 1987, the Santa Ana Water Board issued the first MS4 permit to the Permittees.⁸ The Board modified and reissued the permit in 1996,⁹ 2002 ("2002 Permit"),¹⁰ and 2010. The 2010 Permit contains requirements to implement certain pollutant control measures and other effluent limitations designed to comply with the minimum federal standards set forth in Clean Water Act section 402(p)(3)(B)(iii). The 2010 Permit is based largely on the 2002 Permit. The Santa Ana Water Board is unaware of any other legal or administrative challenge to the 2010 Permit, and no such challenge would be proper in any other administrative or judicial venue.¹¹

On April 27, 2007, the Riverside County Flood Control & Water Conservation District, on behalf of all Permittees, submitted a Report of Waste Discharge ("ROWD") containing Permittees' collective reapplication for renewal of their 2002 Permit and including their proposals for modification or continuation of permit elements. Essentially, the ROWD sets forth the Permittees' recommendations for BMPs and other provisions that should be included in the Permit.¹² It contains a discussion of issues and concepts the

⁸ Order No. 90-104, NPDES No. CA8000192, adopted by the Santa Ana Water Board on July 13, 1990.

⁹ Order No. 96-30, NPDES No. CAS618033, adopted by the Santa Ana Water Board on March 8, 1996.

¹⁰ Order No. R8-2002-0011, NPDES No. CAS618033, adopted by the Santa Ana Water Board on October 25, 2002.

¹¹ Wat. Code, § 13330, subd. (d).

¹² The ROWD, including attachments, exceeds 100 pages. Only the ROWD and the relevant attachments are attached. The entire ROWD, including all attachments, may be found at the Santa
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Permittees identified as key factors to improve their management programs, which have general applicability across multiple program elements. As will be explained more fully below in the discussion of the challenged Permit provisions, the ROWD reflects the Permittees' acknowledgment and expectation that the 2010 Permit would build and improve upon the 2002 Permit. In the ROWD, the Permittees proposed many of concepts that were incorporated into and form the basis of the provisions for which they now seek reimbursement. The permit the Santa Ana Water Board ultimately issued was based on the ROWD and the 2002 Permit, with revisions and additions necessary to meet minimum federal requirements.

IV. Federal Law Requirements for Municipal Stormwater Permits

The principal question at issue in this Test Claim is whether the Santa Ana Water Board included provisions in the Permit that are not required by federal law. In order to understand the federal mandate that required issuance of the Permit, including the specific provisions challenged by the Claimants, some background of the regulatory scheme and applicable federal law for MS4 permits is necessary.

1. Regulatory Overview

In 1972, the Clean Water Act was extensively amended to implement a permitting system for all discharges of pollutants from "point sources"¹³ to waters of the United States.¹⁴ These permits, issued pursuant to the National Pollutant Discharge Elimination System, are known as "NPDES permits." The 1972 amendments specifically allowed U.S. EPA to authorize states to administer the NPDES program in lieu of U.S. EPA, and to issue permits pursuant to this authority.¹⁵ California was the first state in the nation to obtain such authorization. In order to obtain this authorization, the California Legislature amended the California Water Code, finding that the state should implement the federal law in order to avoid direct regulation by the federal government.¹⁶ The California Legislature mandated that California's permit program must ensure consistency with federal law.¹⁷ Federal law also requires that, when a Regional Water Board issues a NPDES permit, it must meet the same federal requirements as U.S. EPA would have met in issuing the permit.¹⁸

The State Water Resources Control Board ("State Water Board") and the nine Regional Water Quality Control Boards ("Regional Water Boards") are the state agencies charged

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Ana Water Board website:

http://www.waterboards.ca.gov/santaana/water_issues/programs/stormwater/rc_rowd.shtml.

¹³ Clean Water Act § 502(14). The Permittees' MS4 is a point source. (Clean Water Act § 402(p); 40 C.F.R. § 122.26(b)(4).)

¹⁴ Clean Water Act §§ 301 and 402.

¹⁵ *Id.* § 402(b).

¹⁶ Wat. Code, § 13370 *et seq.*, adding Chapter 5.5 to the Porter-Cologne Water Quality Control Act.

¹⁷ Wat. Code, § 13372.

¹⁸ Clean Water Act § 402(b).

with implementing the federal NPDES program.¹⁹ The State Water Board's regulations incorporate U.S. EPA regulations for implementing the federal permit program,²⁰ and do not impose any additional state requirements. Therefore, both the Clean Water Act and U.S. EPA regulations apply to the permit program in California.²¹ In California, permits to allow discharges into state waters are termed "waste discharge requirements."²² When issuing permits for discharges to waters of the United States, the term "waste discharge requirements" equates to the term "permit" in the Clean Water Act.²³ Waste discharge requirements that the Water Boards issue for discharges to waters of the United States are NPDES permits under federal law.

The Clean Water Act prohibits the discharge of pollutants from point sources to waters of the United States, except in compliance with a NPDES permit.²⁴ In 1973, U.S. EPA issued regulations that exempted certain types of discharges it determined were administratively infeasible to regulate, including stormwater runoff. The reason that such regulation is difficult is that stormwater runoff has not been generally subjected to treatment prior to discharge. Instead, it simply runs off urban streets, into gutters and drainage ways, and flows directly into streams, lakes, and the ocean.²⁵ The 1973 exemption was rejected in *Natural Resources Defense Council v. Costle* (1977) 568 F.2d 1369, which held that the exemption was illegal, and ordered U.S. EPA to require NPDES permits for stormwater runoff. In *Costle*, the court suggested innovative methods for permitting, including using general permits for numerous sources and issuing permits that "proscribe industry practices that aggravate the problem of point source pollution."²⁶ Where permits require dischargers to implement actions to control discharges or meet performance standards, these requirements are commonly called "best management practices" ("BMPs").²⁷

Despite the *Costle* decision, U.S. EPA had not adopted regulations implementing a permitting program for stormwater runoff by 1987. That year, the United States Congress amended the Clean Water Act to require stormwater permits for industrial and municipal stormwater runoff.²⁸ The amendments require NPDES permits for discharges

¹⁹ Wat. Code, § 13370.

²⁰ Cal. Code Regs., tit. 23, § 2235.2.

²¹ The permits *may* also include additional state requirements. (Cal. Code Regs., tit. 23, § 2235.3; *City of Burbank v. State Water Resources Control Bd.* (2005) 35 Cal.4th 613.)

²² Wat. Code, § 13263.

²³ Wat. Code, § 13374.

²⁴ Clean Water Act § 301(a). In general, "navigable waters" or "waters of the United States," includes all surface waters, such as rivers, lakes, bays and the ocean. (Clean Water Act § 502.)

²⁵ The chief traditional categories of discharges subject to NPDES permits are industrial process wastewater and sanitary sewer effluent. Both of these discharges are typically processed in a treatment plant before they are discharges to surface waters.

²⁶ *Id.*, at p. 1380.

²⁷ 40 C.F.R. § 122.2. ["Best management practices ("BMPs") means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of "waters of the United States." BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.]

²⁸ Clean Water Act § 402(p).

from municipal separate storm sewer systems ("MS4s") serving a population of 100,000 or more.²⁹ The Clean Water Act contains three provisions specific to MS4 permits: (1) permits may be issued on a system- or jurisdiction-wide basis; (2) permits must include a requirement to effectively prohibit non-stormwater discharges into storm sewers; and (3) 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 [permit writer] determines appropriate for the control of such pollutants."³⁰

In 1990, U.S. EPA adopted regulations to implement section 402(p).³¹ The regulations define which entities need to apply for permits and also the information they must include in permit applications. The regulations define "industrial activity" to include categories of manufacturing, construction, and other typically private enterprises.³² The regulations define MS4s as storm sewer systems operated by numerous public agencies, including cities, counties, states, and the federal government.³³ While both industrial dischargers and MS4s must obtain permits, the requirements for the industrial permits are more stringent than in MS4 permits.³⁴ Large and Medium MS4s may obtain an individual or area-wide MS4 permit.³⁵ As a practical matter, most large and medium MS4s in California have chosen to be regulated as collectively under area-wide MS4 permits. Because many MS4 systems are connected, this allows geographically-adjacent dischargers to take advantage of economies of scale and achieve cost-savings over individual regulation of each city or county.

In order to obtain a NPDES permit, as required by the Clean Water Act, entities seeking coverage file an application with the permitting authority and the permitting authority holds a public hearing on contested permits.³⁶ U.S. EPA regulations specify the information that applicants for MS4 permits must include in their applications.³⁷ For large and medium MS4s, the application requirements are extensive.³⁸ Some of the

²⁹ Clean Water Act § 402(p)(2)(C). U.S. EPA defines municipal separate storm sewer systems (MS4s) that serve a population over 250,000 as "large" MS4s. U.S. EPA issued regulations in 1999 extending permit requirements to small MS4s (those serving a population of less than 100,000).

³⁰ *Id.*

³¹ Vol. 55, Federal Register (Fed.Reg.) 47990 and following.

³² 40 C.F.R. § 122.26(b)(14).

³³ 40 C.F.R. § 122.26(b)(8).

³⁴ *Defenders of Wildlife v. Browner* (9th Cir. 1999) 191 F.3rd 1159. The differences between municipal and industrial permits are complicated, but are relevant to the question whether this permit addresses a uniquely governmental program, and are therefore discussed in more detail below.

³⁵ Clean Water Act § 402(p)(3)(B)(i)

³⁶ Clean Water Act § 402(b)(3).

³⁷ 40 C.F.R. § 122.26(a)(4). The U.S. EPA regulations have varied requirements depending on the size of the population served by the MS4. A "large" MS4 serves a population of 250,000 or more. (40 C.F.R. § 122.26(b)(4).) Riverside County and the 15 cities regulated by the Permit far exceed the minimum population for a large MS4.

³⁸ 40 C.F.R. § 122.26(d).

federal application requirements relevant to the Test Claim are: management programs including procedures to control pollution resulting from construction activities;³⁹ legal authority to control the contribution of pollutants associated with industrial activity;⁴⁰ legal authority to "[c]ontrol through interagency agreements among co-applicants the contribution of pollutants from one portion of the municipal system to another portion of the municipal system";⁴¹ and a description of maintenance activities and a maintenance schedule for structural controls, as well as a description of practices for operating and maintaining public streets, roads and highways to reduce pollutants in discharges from MS4s.⁴² The management programs must address oversight of discharges into the system from the general population, and from industrial and construction activities within its jurisdiction, and also maintenance and control activities by the Permittees. Permit applications must describe programs for education and outreach to the general public, and to certain categories of municipal workers⁴³.

2. Legal Standards for MS4 Permit Provisions

The Clean Water Act does not provide a specific set of permit terms that the permitting agency must include in each MS4 permit. Rather, the NPDES regulations requires the permitting agency to exercise discretion and choose specific controls, generally BMPs, to meet a legal standard. The applicable legal standard that permitting authorities must meet when issuing MS4 permits is set forth in Clean Water Act sections 402(p)(3)(B)(ii) and (iii), and requires that MS4 permits:

(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.

Thus, federal law includes three independent requirements for MS4 permits: (1) the permit must effectively prohibit non-stormwater discharges into storm sewers, (2) the permit must include controls to reduce the pollutants to the "maximum extent practicable" ("MEP"); and (3) the permit must include such other provisions as the permit writer deems appropriate for controlling pollutants.⁴⁴ Both federal and state permit writers must comply with these legal standards.⁴⁵

³⁹ 40 C.F.R. § 122.26(d)(1)(v)

⁴⁰ 40 C.F.R. § 122.26(d)(2)(i)(A)

⁴¹ 40 C.F.R. § 122.26(d)(2)(i)(D)

⁴² 40 C.F.R. §§ 122.26(d)(2)(iv)(A)(1) and (2)

⁴³ 40 CFR §§ 122.26(v)(A)(6), (B)(6), (C)(4); see also, 40 CFR § 122.34(b)(1), establishing public education and outreach as a minimum control measure for small MS4s. The initial requirements for small MS4s were considered to be less stringent than those for Phase I MS4s, such as Permittees.

⁴⁴ See *Defenders of Wildlife v. Browner, supra*, 191 F.3d at p. 1166 (concluding that "such other provisions as the Administrator . . . determines appropriate for the control of such pollutants," and not MEP, provides a basis for strict compliance with water quality standards); See, also, *Building Industry of America of San*
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An important additional requirement, applicable to all NPDES permits, is set forth in section 303(d) of the Clean Water Act. Implementing regulations require that once U.S. EPA approves a Total Maximum Daily Load ("TMDL") for a waterbody, any NPDES permit must include effluent limits "consistent with the assumptions and requirements of any available wasteload allocations."⁴⁶ A wasteload allocation ("WLA") is the proportion of a receiving water's total maximum daily pollutant load that is allocated to one of its existing or future point sources of pollution.⁴⁷

(a) *The MEP Standard*

The MEP standard is akin to a technology-based standard and was first established in the Clean Water Act in 1987. The fundamental requirement that municipalities reduce pollutants in MS4s to the MEP remains a cornerstone of the mandate imposed upon municipalities by the federal Clean Water Act and implementing NPDES regulations. Meeting the MEP standard is generally a result of emphasizing pollution prevention and source control BMPs as the first lines of defense in combination with appropriate structural and treatment methods serving as additional lines of defense.

The MEP approach is an ever evolving, flexible, and advancing concept, which considers technical and economic feasibility. As knowledge about controlling urban runoff continues to evolve, so do the actions that must be taken to comply with the MEP standard. Successive permits issued to the stormwater dischargers thus require greater levels of specificity over time in defining what constitutes MEP. This is consistent with U.S. EPA's guidance that successive permits for the same MS4 must become more refined and detailed.

The EPA also expects stormwater permits to follow an iterative process whereby each successive permit becomes more refined, detailed, and expanded as needed, based on experience under the previous permit. See, 55 Fed. Reg. 47990, 48052 ("EPA anticipates that stormwater management programs will evolve and mature over time."); 64 Fed. Reg. 67722, 68754; Dec. 8, 1999 ("EPA envisions application of the MEP standard as an iterative process.") Interim Permitting Approach for Water Quality-Based Effluent Limitations in Stormwater Permits (Sept. 1, 1996) ("The interim permitting approach uses BMPs in first-round stormwater permits, and expanded or better-tailored BMPs in subsequent permits, where necessary, to provide for the attainment of water quality standards.")⁴⁸ (Emphasis in original.)

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Diego v. State Water Resources Control Board ("BIA of San Diego") (2004) 124 Cal.App.4th 866, 885-87 (concluding that the "and other such provisions as the Administrator or State determines appropriate" language contained in Clean Water Act section 402(p)(3)(B)(iii) is not part of the MEP standard).

⁴⁵ Clean Water Act § 402(b).

⁴⁶ 40 C.F.R. § 122.44(d)(1)(vii)(B)

⁴⁷ 40 C.F.R. § 130.2(h).

⁴⁸ See Letter from Alexis Strauss to Tam Doduc and Dorothy Rice, April 10, 2008, concerning Los Angeles County Copermittee Test Claims Nos. 03-TC-04, 03-TC-19, 03-TC-20, and 03-TC-21, attached.

In 2001, the Building Industry Association and Building Industry Legal Defense Fund (collectively, "Building Industry") challenged numerous aspects of a MS4 permit issued by the San Diego Water Board and the process by which it was issued, culminating in a Court of Appeal decision upholding the permit in its entirety.⁴⁹ The San Diego Water Board argued that the court must give special deference to its determination that the Permit did not exceed the MEP standard. The *Building Industry* court acknowledged the lower court's finding that "Building Industry failed to establish the Permit requirements were 'impracticable under federal law or unreasonable under state law,' and noted that there was evidence showing the Regional Water Board considered many practical aspects of the regulatory controls before issuing the Permit."⁵⁰ The lower court found that Building Industry failed to show infeasibility or impossibility with regard to the challenged permit requirements.⁵¹

In rejecting Building Industry's challenge, the Court of Appeal recognized that the federal MEP standard "is a highly flexible concept that depends on balancing numerous factors, including the particular control's technical feasibility, cost, public acceptance, regulatory compliance, and effectiveness. *This definition conveys that the Permit's maximum extent practicable standard is a term of art. . . .*" (Emphasis added.)⁵² Thus, the Court of Appeal's *Building Industry* decision affirms that the Santa Ana Water Board is entitled to considerable deference concerning its determination of what practices are within the federal minimum MEP standard.

(b) *Such Other Provisions as the Administrator or the State Determines Appropriate for the Control of Such Pollutants*

In addition to requiring controls to reduce the discharge of pollutants to the MEP, Clean Water Act section 402(p)(3)(B)(iii) requires that MS4 permits "shall ... contain such other provisions as the permit writer determines appropriate for the control of pollutants."⁵³ There are two important aspects of this provision that warrant discussion as the nature of this provision and its resulting requirements are critical to the issues raised in the Test Claim.

First, this provision is mandatory and binding on the Santa Ana Water Board as an authorized permitting authority. Just as Clean Water Act section 402(p)(3)(B)(iii) requires controls to reduce pollutants to the MEP, it also requires such other provisions as U.S. EPA or, in this case, the Santa Ana Water Board, determines are appropriate to control such pollutants. The word "shall" creates a mandatory duty, as opposed to a permissive act, that must be undertaken by the permitting agency. Thus, the state does not exceed federal law in using its discretion to impose permit provisions that are necessary to control pollutants. Rather, federal law mandates that the permitting agency, be it the Santa Ana Water Board or U.S. EPA, exercise its discretion in

⁴⁹ *BIA of San Diego, supra*, 124 Cal.App.4th 866.

⁵⁰ *Id.*, p. 878-879.

⁵¹ *Id.*, p. 888.

⁵² *Id.*, p. 889.

⁵³ Clean Water Act § 402(p)(3)(B)(iii). Note that the word "shall" modifies compliance with MEP as well as "such other provisions as the Administrator or the State determines appropriate for the control of such pollutants."

determining permit requirements. If the Board failed to determine appropriate provisions to control pollutants, it would violate the Clean Water Act's specific mandate to do so.

Second, this provision requires the Santa Ana Water Board, when appropriate, to include provisions that go beyond MEP. The permittees in *Building Industry Association of San Diego County v. State Water Board* argued that the Water Boards lacked authority under federal law to impose conditions more stringent than MEP.⁵⁴ In rejecting the challenge to the Water Boards' authority, the court had no occasion to consider whether, once the permitting agency determines that more stringent controls are necessary to protect water quality, federal law requires or merely allows the agency to include such provisions. As the court noted, however, EPA interprets section 402(p)(3)(B)(iii) to mandate "...controls to reduce the discharge of pollutants to the maximum extent practicable, and where necessary water quality-based controls"⁵⁵ (Emphasis in original.) Thus, even if the Commission finds that any Permit provisions go beyond MEP, the Santa Ana Water Board was bound by the federal mandate to include appropriate provisions necessary to control pollutants.

(c) *Effective Prohibition of Non-Stormwater Discharges*

Under Clean Water Act section 402(p)(3)(B)(ii), permitting agencies must ensure that permits for MS4 discharges include requirements necessary to "effectively prohibit non-stormwater discharges into the storm sewers." U.S. EPA has defined "storm water"⁵⁶ to mean "stormwater runoff, snow melt runoff and surface runoff and drainage. In general, the requirement to "effectively prohibit" non-stormwater discharges requires either prohibiting the flows from the MS4's system or ensuring that operators of such systems obtain NPDES permits for those discharges.⁵⁷ MS4 operators meet this requirement by implementing a program to detect and remove illicit discharges, or by requiring the discharger to obtain a separate NPDES permit for illicit discharges and improper disposal into the storm sewer.⁵⁸

(d) *Implementation of TMDL Requirements*

Claimants challenge certain provisions that are required, in part, to implement requirements in WLAs adopted as part of TMDLs. Federal law specifically requires the Santa Ana Water Board to implement TMDLs by including effluent limitations in NPDES permits that are "consistent with the assumptions and requirements of any available wasteload allocations."⁵⁹ Thus, aside from the federal minimum MEP standard, the Santa Ana Water Board has an independent mandate under federal law to require provisions in MS4 permits that are necessary to implement the WLAs in TMDLs.

⁵⁴ *BIA of San Diego, supra*, 124 Cal.App. 4th 866.

⁵⁵ *BIA of San Diego, supra*, 124 Cal.App.4th at p. 886, citing 55 Fed.Reg. 47990, 47994 (Nov. 16, 1990); see also, *Defenders of Wildlife v. Browner, supra*, 191 F.3d at p. 1166.

⁵⁶ Note: U.S. EPA uses a different spelling of the word than is used by the Santa Ana Water Board.

⁵⁷ 55 Fed.Reg. 47990 at 47995 (Nov. 16, 1990).

⁵⁸ 40 C.F.R. § 122.26(d)(2)(iv)(B).

⁵⁹ 40 C.F.R. § 122.44(d)(1)(vii)(B).

3. Los Angeles Superior Court Decision in *State of California Department of Finance v. Commission on State Mandates*

Recently, the Los Angeles Superior Court evaluated the Commission's decision in a prior test claim involving a MS4 permit issued by the Los Angeles Regional Water Quality Control Board ("Los Angeles Water Board") to Los Angeles County, the Los Angeles Flood Control District, and cities within Los Angeles County.⁶⁰ In the underlying test claim, the Commission found that requirements to place and maintain trash receptacles and to inspect certain industrial, commercial, and construction sites exceeded the Clean Water Act's federal mandate. In rendering its decision, the Commission found that the Los Angeles Water Board "freely chose" to impose these requirements. The Commission further concluded that the provisions were not federal mandates because federal regulations did not specifically require them.

The court disagreed and concluded that there is a two-step process for determining whether a particular program is mandated by federal law.⁶¹ First, did the state have "no real choice" in deciding whether to comply with the federal act?⁶² Second, did the program exceed the requirements of a compulsory federal law?⁶³

Regarding the first step, the court held that federal law requires the County of Los Angeles to have an NPDES permit for its MS4 discharges, whether the state or the federal government administered the NPDES program.⁶⁴ Moreover, the same federal mandate requires that the permit contain provisions reducing the discharge of pollutants to the MEP regardless of whether the Los Angeles Water Board or U.S. EPA issues the permit.⁶⁵

In applying the second step, the court found that specific regulatory requirements were not a precondition for finding a federal mandate in light of the "flexible regulatory standard inherent in the Clean Water Act."⁶⁶ Rather, the test claimant must provide evidence that the challenged requirements are impracticable under the Clean Water Act.⁶⁷

The Santa Ana Water Board endorses the court's decision in this case and, as set forth in greater detail below, respectfully requests that the Commission apply the court's analytical approach to this Test Claim.

⁶⁰ *State of California Department of Finance, supra*, (Sup. Ct. Los Angeles County, BS 130730), decision August 15, 2011.

⁶¹ *Id.*, p. 7.

⁶² *Ibid.*

⁶³ *Ibid.*

⁶⁴ *State of California Department of Finance, supra*, (Sup. Ct. Los Angeles County, BS 130730), decision August 15, 2011, pp. 7-8.

⁶⁵ *Ibid.*

⁶⁶ *State of California Department of Finance, supra*, (Sup. Ct. Los Angeles County, BS 130730), decision August 15, 2011, pp. 8-9.

⁶⁷ *Ibid.*

V. General Responses

Article XIII B, Section 6 of the California Constitution requires subvention of funds to reimburse local governments for state-mandated programs in specified situations. There are several exceptions and limitations to the subvention requirements that provide bases for the Commission to determine that the Test Claim is not subject to subvention. Article XIII B, Section 6 provides, "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." Implementing statutes clarify that no subvention of funds is required if: (1) the mandate imposes a requirement that is mandated by a federal law or regulation and results in costs mandated by the federal government, unless the statute or executive order mandates costs that exceed the mandate in that federal law or regulation;⁶⁸ or (2) the local agency proposed the mandate;⁶⁹ or (3) the local agency has the authority to levy service charges, fees, or assessments sufficient to pay.⁷⁰

Claimants contend that all of the activities for which they seek reimbursement exceed federal law requirements and that the Permit imposes many new programs and activities not required by the 2002 Permit. Claimants assert that they cannot assess a fee to recover the cost of the mandated activities. The Test Claim challenges multiple sections and subsections in the Permit. Because many of the responses apply to all of the challenged provisions, the Santa Ana Water Board has endeavored to avoid repetition by responding generally to these assertions. When necessary, individualized responses follow in the next section.

The Permit does not require subvention for seven separate reasons. First, the challenged requirements are federal mandates. Second, the Permit does not require a new program or higher level of service. Third, the Permittees requested the Board to include most of the permit provisions for which they now seek subvention. Fourth, the requirements are not unique to local entities. Fifth, the Permittees can avoid the expenditure of tax monies by raising stormwater fees to pay for the requirements. Sixth, any cost increases that result solely from state law requirements are *de minimis*. And, finally, the Permit must be evaluated as a whole to determine whether MEP has been exceeded.

The Commission has previously rendered decisions on two test claims involving challenges to MS4 permits.⁷¹ In both decisions, the Commission found that some of the challenged provisions were unfunded mandates. Both of these decisions have been appealed, and in the Los Angeles MS4 case, the Los Angeles Superior Court found that

⁶⁸ Gov't. Code, § 17556, subd. (c).

⁶⁹ *Id.*, § subd. (a)

⁷⁰ *Ibid.*

⁷¹ In Re Test Claim on Los Angeles Regional [Water] Quality Control Board Order No. 01-182, Adopted July 31, 2009 ("L.A. MS4 Permit Decision"); In Re Test Claim on San Diego Regional Water Quality Control Board Order No. 01-182, Adopted July 31, 2009 ("San Diego MS4 Permit Decision"). Clean Water Act § 402(p)(3)(B)(iii).

none of the challenged provisions were subject to subvention.⁷² To the extent that the Santa Ana Water Board's positions differ from the prior Commission decisions, the Board respectfully requests that the Commission reconsider its analytical approach in light of the arguments made in this response and the Los Angeles MS4 Ruling.

1. The NPDES Permitting Program Represents a Federal Mandate that Applies Directly to Local Governments; the State Has Not Shifted the Burden; and the Challenged Provisions Do Not Exceed Federal Law

The central issue before the Commission is whether the challenged requirements exceed the federal mandate for MS4 permits. Claimants assert that federal law does not mandate these particular requirements, and therefore they exceed federal law.

Federal law specifically requires that a local government obtain an NPDES permit before it discharges from a MS4 to waters of the United States. NPDES permits for MS4s must reduce the discharge of pollutants to the MEP.⁷³ The Santa Ana Water Board issued the Permit pursuant to this clear federal mandate. Thus, the Permit is a direct federal mandate on the local governments. Federal law requires that local government dischargers -- not the State of California -- apply for and obtain permits if the local governments discharge stormwater to waters of the United States. If U.S. EPA had not approved California's NPDES permitting program, the Clean Water Act would prohibit the MS4 discharges unless U.S. EPA itself issued a similar permit directly to the local governments.

U.S. EPA has issued regulations and guidance documents that discuss the types of management strategies and other provisions that must be included in stormwater permits in order to comply with Clean Water Act section 402(p)(3)(B)(iii). Pursuant to the Clean Water Act and federal regulations, the Permit contains numerous requirements for the Permittees to take actions (including the implementation BMPs) to reduce the flow of pollutants to waters of the United States. Federal law requires local agencies that operate MS4s to take actions that will lessen the incidence of pollutants entering storm drains, and, ultimately, the waters of the United States. Federal law also specifically mandates that the Water Boards prescribe the BMPs that the MS4 must implement.⁷⁴

⁷² *State of California Department of Finance, supra*, (Sup. Ct. Los Angeles County, BS 130730), decision August 15, 2011.

⁷³ Clean Water Act § 402(p)(3)(B)(iii).

⁷⁴ The Court of Appeal stated in *Rancho Cucamonga v. Regional Water Quality Control Bd., Santa Ana Region* (2006) 135 Cal.App.4th 1377, 1389:

In creating a permit system for dischargers from municipal storm sewers, Congress intended to implement actual programs. [Citation omitted.] The Clean Water Act authorizes the imposition of 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." [Citation omitted.] The Act authorizes states to issue permits with conditions necessary to carry out its provisions. [Citation omitted.] The permitting agency has discretion to decide what practices, techniques, methods and other provisions are appropriate and necessary to control the discharge of pollutants. [Citation omitted.]

Therefore, the Santa Ana Water Board exercised its duty under federal law and included the Permit provisions as required by federal law. The fact that the Santa Ana Water Board exercised its discretion, as required by federal law, to impose requirements that comply with the MEP standard does not support the conclusion that the provisions are unfunded state mandates. As the Ninth Circuit Court of Appeals has expressly noted, "Congress did not mandate a minimum standards approach."⁷⁵ Rather, Congress mandated that the permitting agencies, including state agencies such as the Santa Ana Water Board, exercise discretion in determining appropriate provisions designed to control pollutants.⁷⁶ Therefore, the exercise of discretion in implementing this federal program and developing specific permit provisions does not mean that the Permit exceeds federal law or that subvention is required.

In decisions on prior MS4 permits,⁷⁷ the Commission relied heavily on *Hayes v. Commission on State Mandates*⁷⁸ and *Long Beach Unified School Dist. v. State of California*⁷⁹ in determining whether specific permit provisions constitute unfunded mandates. In discussing the San Diego MS4 permit's requirement for the development of a hydromodification management plan ("HMP"), the Commission described its analytical approach together with its conclusions:

Overall, there is nothing in federal regulations that requires a municipality to adopt or implement a hydromodification plan. Thus, the HMP requirement in the permit "exceed(s) the mandate in that federal law or regulation." [Citation omitted] As in *Long Beach Unified School Dist. v. State of California*, [Citation omitted] the permit requires specific actions, i.e., required acts that go beyond the requirements of federal law. In adopting these permit provisions, the state has freely chosen [Citation to *Hayes*] to impose these requirements. Thus, the Commission finds that the [HMP requirements] of the permit is not a federal mandate.⁸⁰

The Commission did not include any analysis of the MEP standard, but rather focused on the fact that neither the Clean Water Act nor its implementing regulations specifically mention the word hydromodification. In citing to *Hayes* and *Long Beach*, the Commission interpreted these cases to support a finding that a permit provision is an unfunded state mandate unless that exact permit provision is specifically prescribed in federal law or regulations. Consistent with the Los Angeles MS4 Ruling, the Santa Ana Water Board disagrees with this approach.

In *Long Beach*, the Court of Appeal held that a State of California Executive Order requiring local school boards to expend efforts to alleviate racial and ethnic segregation in its schools created an unfunded state mandate. The Executive Order was adopted following several federal court decisions holding that school districts had a constitutional

⁷⁵ *NRDC v. U.S. EPA, supra*, 966 F.2d 1292, 1308.

⁷⁶ *Ibid.*

⁷⁷ See L.A. MS4 Permit Decision and San Diego MS4 Permit Decision.

⁷⁸ *Hayes v. Commission on State Mandates* (1992) 11 Cal.App.4th 1564.

⁷⁹ *Long Beach Unified School Dist. v. State of California* (1990) 225 Cal.App.3d 155.

⁸⁰ San Diego MS4 Permit Decision, pp. 44-45; see also L.A. MS4 Permit Decision, pp. 29-30, 45.

obligation to alleviate racial segregation.⁸¹ The Executive Order responded to this federal constitutional requirement by requiring that all school districts take specific actions to remedy this condition.⁸² In finding that the Executive Order constituted an unfunded state mandate, the Court of Appeal explained:

[A]lthough school districts are required to "take steps, insofar as reasonably feasible, to alleviate racial imbalance in schools regardless of its cause" [citations omitted], the courts have been wary of requiring specific steps in advance of a demonstrated need for intervention. [Citations omitted.]⁸³ ...

[¶]However, a review of the Executive Order and guidelines shows that a higher level of service is mandated because their requirements go beyond constitutional and case law requirements. Where courts have suggested that certain steps and approaches may be helpful, the Executive Order and guidelines require specific actions ... These requirements constitute a higher level of service.⁸⁴ (Emphasis in original.)

Thus, by turning court recommendations for alleviating segregation into mandatory acts, the Executive Order created an unfunded state mandate. In applying the narrow holding in *Long Beach* to MS4 permit requirements, the Commission should consider the significant differences between the natures of the underlying federal mandates.

In *Long Beach*, the federal requirements at issue stemmed from general constitutional obligations to alleviate racial segregation articulated in several federal court decisions. These court decisions did not impose any specific requirements on the school districts in California. *Long Beach* involved no comprehensive federal program that required specific steps and specific standards to be met by all schools and school districts. There was, in fact, no federal mandate on the school districts at all. Thus, with its Executive Order, the State of California created a state mandate where no federal mandate previously existed. Accordingly, any specific provisions would necessarily be a state mandate because the state took a vague federal constitutional obligation, along with suggestions from federal court decisions, and translated it into very specific requirements.

This Test Claim, on the other hand, involves two separate federal mandates—one for the permittee and one for the permitting agency. First, permittees are subject to the unambiguous federal mandate that they must obtain a NPDES permit that imposes requirements that control pollutants to the MEP and any other necessary water quality control requirement prior to discharging pollutants to waters of the United States.⁸⁵ As opposed to general constitutional obligations at issue in *Long Beach*, the Clean Water Act, as implemented by U.S. EPA's regulations, creates a comprehensive regulatory

⁸¹ *Long Beach Unified School Dist. v. State of California*, supra, 225 Cal.App.3d 155, 172-73.

⁸² *Ibid.*

⁸³ *Ibid.*

⁸⁴ *Ibid.*

⁸⁵ 402(p)(3)(B)(iii).

strategy including very specific permit requirements that apply directly to local agencies' storm sewer discharges. Therefore, to the extent that the Clean Water Act and the United States Constitution both mandate actions by local agencies or school districts, the Clean Water Act and implementing federal regulations require a much more specific set of actions. Second, the Clean Water Act contains a separate mandate on the permitting agency, whether federal or state, to issue permits pursuant to the same standards set forth in 402(p). In *Rancho Cucamonga v. Regional Water Quality Control Board*, the Court of Appeal held that a regional water board that issues a stormwater permit under those Clean Water Act standards "must comply with federal law requiring detailed conditions for NPDES permits."⁸⁶

The fact that the Clean Water Act contains two separate mandates marks a critical difference between *Long Beach* and the Test Claims. Even if the State of California did not administer the NPDES program, Claimants would have been required to obtain a MS4 permit for their discharges. Thus, when the Santa Ana Water Board issued the Permit, it did so pursuant to the federal mandate that applied to it as the permitting agency rather than the mandate that applied to the Permittees. Importantly, the Claimants do not challenge the federal mandate to obtain the Permit. Instead, they challenge the Santa Ana Water Board's implementation of the federal mandate as the permitting agency.

The Santa Ana Water Board contends the Commission erred in its analytical approach by applying the *Long Beach* holding to the wrong federal mandate. In *Long Beach*, the federal mandate at issue was from the United States Constitution directly to the school districts. Thus, when the State of California issued the Executive Order in *Long Beach*, it did so pursuant to absolutely no federal mandate on the state itself. Put another way, the federal court decisions required no additional state involvement in order to meet the constitutional obligations regarding racial segregation.

However, when the Water Boards establish specific provisions in the Permit, they do so pursuant to the Clean Water Act's mandate on the permitting agency. As explained above, this federal mandate expressly requires the permitting agency to establish permit provisions to control pollutants to the MEP and such other provisions as appropriate to control such pollutants. Thus, unlike *Long Beach*, where the State of California translated a general constitutional obligation into specific requirements absent any federal mandate to do so, the Santa Ana Water Board established permit provisions pursuant to Clean Water Act's direct mandate on permitting agencies. An unfunded mandate can only exist if the Santa Ana Water Board imposes provisions that go beyond federal requirements. In determining whether an unfunded mandate exists, the Commission must analyze whether the specific provision goes beyond the legal standards set forth in 402(p)(3)(B)(iii).

The Santa Ana Water Board contends that the Commission's prior decisions similarly misapplied the holding in *Hayes*. *Hayes* involved claims by two county school superintendents for reimbursement for special education requirements.⁸⁷ After concluding that the special education requirements constituted a federal mandate on the

⁸⁶ *Rancho Cucamonga v. Regional Water Quality Control Board*, *supra*, 135 Cal.App.4th at p. 1389.

⁸⁷ *Hayes v. Commission on State Mandates*, *supra*, 11 Cal.App.4th 1564, 1570.

state, the court discussed whether the state had shifted costs associated with complying with the federal mandate to the school districts and whether such a shift warranted reimbursement:

When the federal government imposes costs on local agencies those costs are not mandated by the state and thus would not require a state subvention. Instead, such costs are exempt from local agencies' taxing and spending limitations. This should be true even though the state has adopted an implementation statute or regulation pursuant to the federal mandate so long as the state had no "true choice" in the manner of implementation of the federal mandate . . . [Citations omitted.]

[T]his reasoning would not hold true where the manner of implementation of the federal program was left to the true discretion of the state. A central purpose of the principle of state subvention is to prevent the state from shifting costs of government from itself to local agencies. [Citations omitted.] Nothing in the statutory or constitutional subvention provisions would suggest that the state is free to shift state costs to local agencies without subvention merely because those costs were imposed upon the state by the federal government. In our view the determination whether certain costs were imposed upon a local agency by a federal mandate must focus on the local agency which is ultimately forced to bear the costs and how those costs came to be imposed upon that agency. If the state freely chose to impose the costs upon the local agency as a means of implementing the federal program then the costs are result of a reimbursable state mandate regardless if the costs were imposed by the state by the federal government.

Unlike the case in Hayes, the state's decision in 1972 to assume NPDES permitting authority did not shift any permit compliance costs to local agencies because the Clean Water Act already imposed those costs directly on the local agencies. The state's "choice" to administer the NPDES program in lieu of the federal government that does not alter the clear federal requirement on municipalities to obtain and comply with an NPDES permit that reduces pollutants to the MEP.

2. The Challenged Provisions Do Not Impose New Programs or Higher Levels of Existing Service

Claimants seek to distinguish the 2010 Permit from the 2002 Permit in an effort to demonstrate that the 2010 Permit imposes new programs or requirements to provide higher levels of service. As a general matter, the Claimants have not established that the challenged provisions impose a new program or higher level of service. Many of the provisions are nearly identical to those in the 2002 permit, and other activities, even if not previously required, are already being carried out by some of the Permittees.

As explained above, federal law requires permitting authorities to include in MS4 permits controls to reduce the discharge of pollutants to the MEP, and further requires that MS4 permits include other appropriate provisions.⁸⁸ This standard has not changed since first

⁸⁸ Clean Water Act § 402(p)(3)(B)(iii).

established in the Clean Water Act. What has changed is that the Permit contains additional BMPs and other appropriate provisions required to meet the MEP standard. All changed permit provisions comply with the federal mandate set forth in Clean Water Act section 402(p)(3)(B)(iii), and, as such, do not constitute new programs or higher levels of service.

In the San Diego and L.A. MS4 Permit Decisions, the Commission found that the "permit activities were not undertaken at the option or discretion of the Claimants."⁸⁹ In reaching this conclusion, the Commission relied on federal and state law requirements that an existing or prospective discharger shall submit a permit application in the form of a ROWD.⁹⁰ For legal support, the Commission cited primarily to the decision in *Department of Finance v. Commission on State Mandates* (2003) 30 Cal.4th 727. However, this decision supports the opposite conclusion: that the entire Permit itself is the result of a discretionary act by Claimants—the voluntary decision to discharge pollutants to waters of the United States.

In *Department of Finance*, the California Supreme Court addressed the question of whether two statutes requiring certain school site councils and advisory committees to provide notice of meetings and to post agendas for those meetings constituted unfunded mandates. In determining that these statutes were not unfunded mandates, the California Supreme Court held that:

[T]he statutes require that districts adopt policies or plans for school site councils—but the statutes do not require that districts adopt councils themselves unless the district first elects to participate in the underlying program.⁹¹

Similarly, federal and state law require parties to submit a permit application in the form of a ROWD when there is an existing or threatened discharge to waters of the United States—but neither federal nor state law requires that parties discharge to waters of the United States.⁹² Thus, by electing to discharge pollutants to the waters of the United States, Claimants have elected to create the condition triggering federal and state requirements to obtain a MS4 permit. Accordingly, because Claimants' discretionary acts led to the issuance of the Permit, none of the challenged provisions are unfunded state mandates subject to reimbursement.

3. The Permit Provisions Do Not Impose Requirements Unique to Local Agencies and Are Not Mandates Peculiar to Government

None of the challenged provisions is subject to reimbursement because the Permit does not involve requirements imposed uniquely upon local government. Reimbursement to

⁸⁹ San Diego MS4 Permit Decision, p. 34; L.A. MS4 Permit Decision, p. 20..

⁹⁰ Wat. Code, § 13260.

⁹¹ *Department of Finance v. Commission on State Mandates*, *supra*, 30 Cal.4th 727, 745.

⁹² The fact that the discharges in this case result from weather-induced stormwater runoff is immaterial to this conclusion. While the Permittees cannot control the weather, they do have the discretion to require on-site containment of stormwater runoff or to convey their stormwater runoff to a publicly owned treatment works.

local agencies is required only 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. Laws of general application are not entitled to subvention.⁹³ The fact that a requirement may single out local governments is not dispositive; where local agencies are required to perform the same functions as private industry, no subvention is required.⁹⁴ Compliance with NPDES permits, and specifically with stormwater permits, is required of private industry as well. In fact, the requirements for industrial and construction entities are more stringent than for government dischargers. In addition, the government requirements apply to all governmental entities that operate MS4s, including state, Tribal and federal facilities; local government is not singled out.

The NPDES permit program, and the stormwater requirements specifically, are not peculiar to local government. Industrial and construction facilities must also obtain NPDES stormwater permits. Those permits are actually more stringent than municipal permits because the federal law requires that they meet more stringent technology-based standards by including numeric effluent limitations, and that they include more stringent water quality-based effluent limitations ("WQBELs") to ensure compliance with water quality standards in receiving waters.⁹⁵ Even where construction or industrial permits impose WQBELs in the form of BMP-based requirements, the BMPs must be designed to attain water quality standards, whether attainment is "practicable" or not.⁹⁶

4. The Claimants have the Authority to Levy Service Charges, Fees, or Assessments to Pay for the Programs

Even assuming, *arguendo*, that the challenged Permit provisions are state mandates, the local agencies possess fee authority within the meaning of section 17556, subdivision (d), of the Government Code such that no reimbursement by the state is required. All of the Claimants have the ability to charge fees to businesses to cover inspection costs. Depending on the circumstances, there may be limitations concerning the percent of voters or property owners who must approve assessments under California law, but cities and counties can and do adopt fees from their residents and businesses that fund their stormwater programs. The Claimants have failed to show that they must use tax monies to pay for these requirements.

Any "additional" costs that could conceivably be considered additional to the federal mandate would be *de minimis* and would not require payment from tax monies. The Permit largely continues and refines the requirements of the 2002 Permit. Thus, the vast majority of the costs to implement the Permit are not new. Indeed, urban runoff management programs have been in place in Riverside County for over 20 years so increased costs are not expected to be substantial. In addition, previously 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 ever issued. Therefore, true program cost resulting from MS4 permit requirements is some

⁹³ *County of Los Angeles v. State of California* (1987) 43 Cal.3d 46.

⁹⁴ *City of Richmond v. Commission on State Mandates* (1998) 64 Cal.App.4th 1190.

⁹⁵ *Defenders of Wildlife v. Browner, supra*, 191 F.3d. 1159.

fraction of reported costs. The California Supreme Court has held that “[f]or ruling upon a request for reimbursement, challenged state rules or procedures that are intended to implement an applicable federal law—and whose costs are, in context de minimus—should be treated as part and parcel of the underlying federal mandate.” Those requirements by Claimants are intended to implement federal law and have costs that are in context, *de minimus*, and should, therefore, be treated as part of the underlying federal mandate of the Clean Water Act.

5. The Claimants Have Not Exhausted their Administrative Remedies and, therefore, Cannot Collaterally Attack the Validity of the Permit in this Proceeding

In order rule on Claimants’ challenges to the Permit, the Commission must determine whether various Permit provisions exceed the minimum federal requirements established under the Clean Water Act that govern the issuance of MS4 permits. The Santa Ana Water Board has already found that they do not.⁹⁷ The California Water Code provides an administrative remedy to a party challenging a Regional Water Board decision.⁹⁸ By contrast, the Commission has jurisdiction over local agency claims for reimbursement for state-mandates costs. Therefore, the question of whether Permit provisions exceed federal requirements is more properly brought before the State Water Board.

None of the Claimants petitioned the State Water Board to review the 2010 Permit. Therefore, because Claimants have failed to exhaust their administrative remedy before the State Water Board, the Test Claim constitutes as impermissible collateral attack on the Permit.

6. The Claimants Have Provided No Evidence That Any of the Challenged Provisions are Infeasible

One of the central questions before the Commission is whether the Permit exceeds the minimum federal MEP standard. As the legal standard is the “maximum extent practicable,” determining whether it has been exceeded necessarily rests on whether the Permit includes requirements which are impracticable.⁹⁹ Yet, the Test Claim presents absolutely no evidence that any of the challenged provisions are impracticable. In fact, the Claimants actually recommended many of the challenged provisions in their application for permit renewal. Accordingly, absent any evidence that any of the challenged provisions are impracticable, the Commission cannot find these provisions subject to subvention.

⁹⁷ 2010 Permit, section II.B.10.

⁹⁸ Wat. Code, §§ 13320, 13330.

⁹⁹ In the Los Angeles MS4 Ruling, the court noted that there was nothing in the administrative record to support a finding that the challenged provisions exceeded the MEP standard. (*State of California Department of Finance v. Commission on State Mandates* (Sup. Ct. Los Angeles County, BS 130730), decision August 15, 2011, pp. 8, 10.)

7. The Permit Must Be Evaluated as a Whole to Determine Whether MEP Has Been Exceeded

The federal minimum MEP standard applies to the Permit as a whole, and cannot be applied to individual provisions to invalidate the entire Permit. The trial court in the Los Angeles MS4 Ruling explained that the Commission erred in isolating specific requirements (placement and maintenance of trash receptacles) to conclude the MS4 Permit was an unfunded state mandate.¹⁰⁰ The court further determined that one permit provision cannot exceed the MEP standard imposed by the Clean Water Act when the permit as a whole does not. Accordingly, consistent with the trial court's decision, the Commission should refrain from relying on individual provisions to determine that the Permit, as a whole, exceeds federal law.

VI. Challenged Provisions

1. Local Implementation Plan Requirement (Sections IV, VI, VII, VIII, IX, XII, XIV, and XV)

(a) *Introduction*

When the Permittees submitted their permit renewal application in 2007, or ROWD, to the Santa Ana Water Board, they included as part of the application an updated version of the Drainage Area Management Plan ("DAMP") ("2007 DAMP"). The DAMP is a federally mandated programmatic document developed by the Permittees and approved by the Santa Ana Water Board.¹⁰¹ The DAMP is the principal document that translates MS4 permit requirements into implementable programs.¹⁰² Permittees use the DAMP when developing individual ordinances, plans, policies and procedures to manage stormwater runoff.¹⁰³

Based on guidance from U.S. EPA and responding to federally-sponsored audits of MS4 programs in California, the Santa Ana Water Board included provisions requiring each Permittee to create an individual stormwater management program, or "Local Implementation Plan" ("LIP"), to facilitate better implementation of the 2007 DAMP. The LIP requirements were included in the 2010 Permit to meet the minimum federal MEP standard set forth in Clean Water Act section 402(p). As previously explained, the Santa Ana Water Board essentially "steps into the shoes" of U.S. EPA when it issues a NPDES permit for municipal stormwater discharges. Accordingly, when selecting appropriate permit provisions, the Santa Ana Water Board must follow applicable federal law and regulations. The Board also gives significant weight to U.S. EPA guidance regarding how to interpret and implement the federal MEP standard.

¹⁰⁰ *State of California Department of Finance v. Commission on State Mandates* (Sup. Ct. Los Angeles County, BS 130730), decision August 15, 2011, p. 9.

¹⁰¹ A copy of the 2007 DAMP, dated April 2007, is attached. The 2007 DAMP may also be found on the Santa Ana Water Board's website:
http://www.waterboards.ca.gov/santaana/water_issues/programs/stormwater/docs/rcpermit/riv_rowd_appendix_b_damp_april_2007.pdf

¹⁰² 2007 DAMP, p. 2-1.

¹⁰³ *Ibid.*

*(b) The LIP Provisions Are Necessary to Meet the Minimum Federal
MEP Standard*

Federal regulations require the Permittees to develop stormwater management programs to reduce the discharge of pollutants to the maximum extent practicable.¹⁰⁴ The recently released U.S. EPA MS4 Permit Improvement Guide,¹⁰⁵ which was developed to assist NPDES permit writers with increasing the effectiveness of MS4 permits, contains an entire chapter devoted to establishing stormwater management programs.¹⁰⁶ When reissuing permits, the MS4 Permit Improvement Guide recommends that permit writers should review the findings of any MS4 permit audits conducted during the prior permit term in order to identify key issues that should be addressed in the reissued permit.¹⁰⁷

During prior permit terms, the DAMP served as the primary document that translated the permit requirements into programs and implementation plans. It still serves that function for area-wide programs and activities such as monitoring and overall program evaluation. However, program audits conducted by Santa Ana Water Board staff and U.S. EPA contractors indicated that most of the Permittees had difficulty implementing some of the MS4 program elements at the local agency level.

In 2004, Tetra Tech, Inc. ("Tetra Tech"), with assistance from the Santa Ana Water Board, conducted a MS4 program evaluation of three of the Permittees. Following the audit, Tetra Tech prepared a Program Evaluation Report that identified potential permit violations, program deficiencies, and positive attributes.¹⁰⁸ A significant deficiency identified by the Program Evaluation Report was that the cities had not yet developed city-specific local stormwater management plans.¹⁰⁹ More specifically, the Report noted:

Although the Permittees have developed the regional DAMP, they have not developed individual stormwater implementation plans to provide each city with specific direction on the implementation of the Program. Review of the DAMP demonstrated that it is general in nature, providing guidance for the Permittees but not specific details regarding local implementation. The Permittees should develop individual stormwater

¹⁰⁴ 40 C.F.R. § 122.26(d)(2)(iv).

¹⁰⁵ A copy of the MS4 Permit Improvement Guide, dated April 2010, is attached. A copy of the MS4 Permit Improvement Guide may also be found electronically on the U.S. EPA website: http://www.epa.gov/npdes/pubs/ms4permit_improvement_guide.pdf. Although the MS4 Permit Improvement Guide was formally released several months following the adoption of the Permit, U.S. EPA had been providing similar guidance to Santa Ana Water Board staff during the Permit development process. U.S. EPA typically provides significant comments and input on draft versions of MS4 permits, and did so in this case.

¹⁰⁶ MS4 Permit Improvement Guide, pp. 8-17.

¹⁰⁷ *Id.*, p. 5

¹⁰⁸ Program Evaluation Report, Riverside Area Stormwater Program: Cities of Corona, Moreno Valley, and Riverside (NPDES Permit No. CAS 618033), dated July 27, 2004. A copy of the Program Evaluation Report is attached. An electronic copy is also available at the U.S. EPA website: <http://www.epa.gov/region9/water/npdes/pdf/ms4/riverside-county-ms4-program-evauation-0504.pdf>.

¹⁰⁹ *Id.*, p. ii.

management plans, based on the DAMP's overall guidance and program objectives that describe specifically how the program will be implemented in each municipality. The cities would benefit from developing individual plans that identify the specific city organization(s) responsible for each activity. The local stormwater management plans should not only identify activities specific to the city but also provide the detailed direction and guidance needed to implement these activities.¹¹⁰ (Emphasis added.)

This finding was consistent with results from Tetra Tech's larger statewide audit of MS4 programs in California.¹¹¹

In response to the identified programmatic deficiencies, the LIP provisions were included to facilitate improved implementation of the DAMP by requiring the development of LIPs (individual stormwater management plans) by each Permittee. The Santa Ana Water Board provided its rationale for the LIP provisions in the 2010 Permit findings, as follows:

During the Third Term Permit, Regional Board staff conducted an evaluation of each of the Permittees' Urban Runoff programs. This evaluation indicated that most of the Permittees lacked proper documentation of procedures and policies for implementation of various elements of their Urban Runoff program. This Order requires each Permittee to develop a Local Implementation Plan (LIP) that documents its internal procedures for implementation of the various program elements described in the DAMP and this Order.¹¹²

As discussed previously, U.S. EPA expects stormwater permits to follow an iterative process whereby each successive permit becomes more refined, detailed, and expanded as needed, based on experience under the previous permit.¹¹³ Pursuant to

¹¹⁰ *Id.*, p. 4.

¹¹¹ During the 2002 Permit term, staff for the Regional Water Boards and Tetra Tech audited 36 MS4 programs within California. Following this audit, which involved three entities covered by the 2002 Permit, Tetra Tech prepared an Assessment Report on Tetra Tech's Support of California's MS4 Stormwater Program ("2006 MS4 Assessment Report" or "Report"). A copy of the Assessment Report on Tetra Tech's Support of California's MS4 Stormwater Program, dated June 12, 2006, is attached. An electronic copy is also available at the U.S. EPA website: <http://www.epa.gov/region9/water/npdes/pdf/ms4/tetra-tech-ms4-stormwater-report.pdf>. Among other things, the 2006 MS4 Assessment Report identified general problems with the MS4 programs and provided recommendations for more effective regulation. Regarding stormwater management plans, the Report concluded that "programs with more specific permit requirements generally result in more comprehensive and progressive stormwater management programs." The Report explained that:

MS4s without a document or plan describing stormwater management program components, implementation mechanisms and responsible parties are more apt to be disjointed, disorganized, and vulnerable to noncompliance, especially if staff turnover is high. (MS4) Permits should include a requirement that a single planning document or a series of component-specific documents be developed that describe implementation procedures, BMPs, schedules, responsibilities, and goals.

¹¹² 2010 Permit, section II.A.7.

¹¹³ Letter from Alexis Strauss to Tam Doduc and Dorothy Rice, April 10, 2008, concerning Los Angeles County Copermittee Test Claims Nos. 03-TC-04, 03-TC-19, 03-TC-20, and 03-TC-21.

this U.S. EPA guidance and U.S. EPA's more recent MS4 Permit Improvement Guide, and with the assistance of federally-funded technical consultants, the Santa Ana Water Board determined that a lack of individual stormwater management programs constituted a significant barrier to effective pollutant control and MS4 program implementation. The LIP provisions were included in the 2010 Permit to remedy this deficiency, and, as such, are required to meet the minimum federal MEP standard.

(c) The Claimants Recommended the LIP Provisions in Their ROWD

The Claimants' ROWD included a Proposed 2007 MS4 Permit, which consisted of the 2002 Permit with tracked changes.¹¹⁴ The Proposed 2007 MS4 Permit comprised Claimants' recommended version what the Santa Ana Water Board eventually adopted as the 2010 Permit. The Proposed 2007 MS4 Permit recommended the inclusion of the following LIP provisions:

Within 12 months of adoption of this Order, the Principal Permittee shall develop and maintain a Local Implementation Plan (LIP) that specifies how each applicable program element of the DAMP shall be implemented within its facilities. The Principal Permittee's LIP shall identify and describe the basis for those program elements that are not applicable to its facilities and activities. The LIP shall describe the plans, policies, procedures, and tools (e.g., checklists, forms, educational materials, etc.) used to execute the DAMP and comply with this Order. As the District is not a general purpose government, it does not have the authority to adopt ordinances. The LIP shall identify the organizational units responsible for implementation of each program element, shall establish internal reporting requirements to ensure and promote accountability, and shall describe an adaptive method of evaluation and assessment of program effectiveness for the purpose of identifying program improvements.¹¹⁵

Within 12 months of adoption of this Order, the Co-Permittees shall each develop and maintain a LIP that specifies how each program element of the DAMP shall be implemented within its jurisdiction. The LIP shall describe the ordinances, plans, policies, procedures, and tools (e.g., checklists, forms, educational materials, etc.) used to execute the DAMP and comply with this Order. The LIP shall identify the organizational units responsible for implementation of each program element, establish internal reporting requirements to ensure and promote accountability, and describe an adaptive method of evaluation and assessment of program effectiveness for the purpose of identifying program improvements.¹¹⁶

¹¹⁴ The Proposed 2007 MS4 Permit is attached. An electronic copy may be found on the Santa Ana Water Board's website:
http://www.waterboards.ca.gov/santaana/water_issues/programs/stormwater/docs/rcpermit/riv_app_a_proposed_2007_ms4_permit_track_changes_final.pdf

¹¹⁵ Proposed 2007 MS4 Permit, section I.A.1.e.

¹¹⁶ *Id.*, section I.B.1.h.

The LIP provisions in the 2010 Permit are substantively similar to those proposed by Claimants in their Proposed 2007 MS4 Permit. Therefore, Claimants cannot now assert that these provisions are somehow impracticable and exceed the federal minimum MEP standard.

2. Promulgation and Implementation of Ordinances to Control Pathogen or Bacterial Indicator Sources (Section VIII)

(a) Introduction

Pathogens¹¹⁷ and nutrients are the primary pollutants causing impairment in surface waters within the permit area.¹¹⁸ The Santa Ana Water Board has adopted Total Maximum Daily Loads ("TMDLs") for the Middle Santa Ana River (for both dry and wet weather seasons to address these impairments.¹¹⁹ Each one of the Claimants discharges directly to a pathogen impaired water of the United States, or a tributary thereto.¹²⁰ Controlling the flow of these pollutants through the MS4 system during dry and wet weather times is critical to correcting this impairment and bringing the impacted water bodies back into compliance with applicable water quality standards.

Section VIII of the Permit requires that within three years of the adoption of the Permit, "the Permittees shall promulgate and implement ordinances that would control known pathogen or Bacterial Indicator sources such as animal wastes, if necessary."¹²¹ Federal law provides three separate bases for including this provision: (1) the Permit must prohibit illicit discharges such as dry weather flows containing pathogens, (2) the Permit must be consistent with any TMDLs, and (3) the source control of pathogens is essential to meeting the federal minimum MEP standard.

(b) Dry Weather Discharges of Bacteria Are Illicit Discharges and Must Be Prohibited

Section 402(p) of the Clean Water Act requires MS4 permits to include provisions "to effectively prohibit non-stormwater discharges into the storm sewers."¹²² Stormwater regulations define an "illicit discharge" as "any discharge to a municipal separate storm sewer that is not composed entirely of stormwater" (except discharges resulting from fire fighting activities and a few other categories).¹²³ Dry weather discharges containing pathogens constitute illicit discharges because these are non-stormwater discharges that contain pollutants for which the receiving water is impaired, and for which no exemption allowing the discharges applies. Accordingly, as applied to dry weather

¹¹⁷ Pathogens are a general term for an infectious agent, colloquially—a germ. Pathogens may be a virus, bacterium, prion, or a fungus. Bacteria indicator sources, such as fecal coliform or E. coli, are commonly used as indicator sources to determine general levels of pathogens present in water.

¹¹⁸ 2010 Permit, section II.E.8 and II.E.14.

¹¹⁹ Santa Ana Water Board Resolution No. R8-2005-0001, attached.

¹²⁰ 2010 Permit, table 3a.

¹²¹ 2010 Permit, section VIII.C.

¹²² Clean Water Act § 402(p)(3)(B)(ii).

¹²³ C.F.R. § 122.26(b)(2) and (d)(2)(iv)(6)(B)(1).

discharges containing pathogens, the requirement to promulgate and implement ordinances controlling these sources is mandated by federal law.

(c) Promulgating and Implementing Ordinances Controlling Pathogen Sources Is Required as Part of TMDL Implementation

Federal law requires that all NPDES permits include effluent limitations "consistent with the assumptions and requirements of any available wasteload allocations" for TMDLs approved by U.S. EPA.¹²⁴ The MSAR TMDLs for dry and wet weather seasons contain wasteload allocations for those Claimants that discharge to impaired waters subject to the MSAR TMDLs. Ordinances may be necessary to control pathogens and bacterial indicator sources as part of the Comprehensive Bacteria Reduction Management Plan that Permittees are planning to develop and implement as part of their MSAR TMDLs compliance strategy.¹²⁵ Thus, the challenged provision maintains permit-wide consistency with the more specific, and federally-mandated, provisions for MSAR TMDL-implementation contained elsewhere. As such, the challenged provision does not exceed federal NPDES permit requirements.

(d) Prohibiting Pathogen Discharges is Necessary to Meet the Minimum Federal MEP Standard

Federal regulations require that MS4 permits contain controls to reduce the discharge of pollutants to the MEP. U.S. EPA expects stormwater permits to follow an iterative process whereby each successive permit becomes more refined, detailed, and expanded as needed, based on experience under the previous permit. Section II.E.12 of the Permit provides the following findings regarding results for bacterial indicator monitoring conducted during the prior permit term:

12. The Permittees' 2003-2004, 2004-2005, 2005-2006, 2006-2007 and 2007-2008 Annual Reports indicate exceedances of Water Quality Objectives for each core MS4 monitoring station discussed in a through g, below. The Permittees have identified nutrients and bacteria as priority constituents for initial corrective actions.

- a. *"Corona Storm Drain (40) - Six samples were collected and analyzed for fecal coliforms. Three samples were collected in the Dry Season and three during Wet Weather events. All samples analyzed exceeded bacteria (as fecal coliform) Water Quality Objectives with a maximum value of 160,000 MPN fecal coliforms..."This location drains to Temescal Reach 3 and ultimately drains into the Santa Ana Reach 3, a pathogen impaired water body.*
- b. *"Sunnymead Channel (316) - Three samples were collected during Wet Weather events and analyzed for fecal coliforms in this time frame. All samples were greater than 5000 MPN and*

¹²⁴ 40 C.F.R. § 122.44(d)(1)(vii)(B).

¹²⁵ 2010 Permit, section VI.D.1(c)(i)(1).

exceeded bacteria Water Quality Objectives of 200 or 400 MPN fecal coliforms..." This location drains to Perris Valley storm drain, San Jacinto River, Reach 2 and then to Canyon Lake, which is impaired for nutrient and pathogen.

- c. *"Hemet Channel (318) - All four Wet Weather samples were detected at greater than 7000 MPN and exceeded the bacteria Water Quality Objective of 200 or 400 MPN for fecal coliforms..." This location drains to Salt Creek then to Canyon Lake, which is impaired for nutrient and pathogen.*
- d. *"Magnolia Center (364) - Eleven out of thirteen samples (3-Wet Weather samples [>160000 MPN maximum concentration] and 10 dry [5000 MPN maximum]) collected exceeded the Water Quality Objective for fecal coliform (200 or 400 MPN MPN)..." This location drains to Santa Ana River, Reach 3, which is impaired for pathogen.*
- e. *"University Wash Channel (702) - All three samples were detected at greater than 5000 MPN concentration and exceeded the fecal coliform Water Quality Objectives of 200 or 400 MPN. The maximum concentration was 13,000 MPN..." This location drains to Santa Ana River, Reach 4, which is impaired for pathogen.*
- f. *"North Norco Channel (707) - Three out of four samples (>16000 MPN maximum) analyzed for fecal coliform exceeded bacteria Water Quality Objective of 200 or 400 MPN fecal coliform..." This location drains to Prado Flood Control Basin, part of Santa Ana River, Reach 3, which is impaired for pathogens.*
- g. *"Perris Line J Channel (752) - All four Wet Weather samples analyzed exceeded bacterial indicator Water Quality Objective the highest value was 13,000 MPN fecal coliform..." This location drains to Perris Valley Storm Drain, San Jacinto River, Reach 2, and then to Canyon Lake, which is impaired for pathogen and nutrient.*

Collectively, these monitoring results indicate consistent discharges of stormwater (and in some instances, nonstormwater) with excessively high levels of pathogens. Requiring the promulgation and implementation of ordinances controlling pathogen sources is a logical and practicable approach to reducing the discharge of pollutants to meet the federal minimum MEP standard.

3. Investigation and Tracking of Illicit Connections/Illicit Discharges

(a) *Introduction*

The control and elimination of illicit connections/illicit discharges is a necessary element of a successful MS4 program. Federal regulations require MS4 permit applications to include significant analysis of existing and proposed illicit discharge detection and

elimination ("IDDE") programs, including the identification of adequate legal authority to carry out such programs.¹²⁶ With few exceptions, program evaluations conducted during the 2002 Permit term showed that IDDE programs were primarily complaint driven or an incidental component of municipal inspections for a number of the Permittees. Accordingly, the 2010 Permit requires the development of a more proactive IDDE program to increase effective control of illicit discharges.

(b) The Enhanced IDDE Requirements are Necessary to Meet the Minimum Federal MEP Standard

Federal regulations require permittees to develop stormwater management programs to reduce the discharge of pollutants to the MEP.¹²⁷ Chapter 3 of U.S. EPA's MS4 Permit Improvement Guide provides the following guidance regarding the development of IDDE requirements:

An effective IDDE program is more than just a program to respond to complaints about illicit discharges or spills. Permittees must proactively seek out illicit discharges, or activities that could result in discharges, such as illegal connections to the storm sewer system, improper disposal of wastes, or dumping of used motor oil or other chemicals.

In order to trace the origin of a suspected illicit discharge or connection, the permittee must have an updated map of the storm drain system and a formal plan of how to locate illicit discharges and how to respond to them once they are located or reported. The permittee must provide a mechanism for public reporting of illicit discharges and spills, as well as an effective way for staff to be alerted to such reports. Regular field screening of outfalls for non-stormwater discharges needs to occur in areas determined to have a higher likelihood for illicit discharges and illegal connections. Proper investigation and enforcement procedures must be in place to eliminate the sources of the discharges, as well. Finally, in order for the permittee to adequately detect and eliminate sources of illicit discharges, both field and office staff must be properly trained to recognize and report the discharges to the appropriate parties.

EPA recommends that permittees refer to the Center for Watershed Protection's guide on *Illicit Discharge Detection and Elimination (IDDE): A Guidance Manual for Program Development and Technical Assistance* (IDDE Manual, available at www.cwp.org) when developing an IDDE program.¹²⁸

Consistent with this guidance, the Santa Ana Water Board included permit provisions requiring a more proactive approach to illicit discharge detection and elimination consistent with, or equivalent to, the Center for Watershed Protection's guide *Illicit Discharge Detection and Elimination (IDDE): A Guidance Manual for Program*

¹²⁶ 40 C.F.R. §§ 122.26 (d)(1)(iv)(D), 122.26 (d)(1)(v)(B), 122.26(d)(2)(i)(B), and 122.26 (d)(2)(4)(B).

¹²⁷ 40 C.F.R. § 122.26(d)(2)(iv).

¹²⁸ MS4 Permit Improvement Guide, pp. 23 et. seq.

Development and Technical Assistance ("Center for Watershed Protection's IDDE Guide"). Each of the challenged provisions is specifically recommended in the MS4 Permit Improvement Guide and/or the Center for Watershed Protection IDDE Manual. These provisions are also consistent with the U.S. EPA requirement to have quantifiable permit conditions in NPDES permits.

Additionally, as discussed above, stormwater runoff from the MS4s in the permit area contains pollutants that are causing or contributing to violations of water quality standards. A number of TMDLs have been developed that included WLA's for dry hydrological conditions.¹²⁹ Under dry weather conditions, the pollutant loads primarily result from non-stormwater discharges. During the 2002 Permit term, total dissolved solids ("TDS")/total inorganic nitrogen ("TIN") objectives for groundwater and surface waters were updated/developed within the Santa Ana Region.¹³⁰ Monitoring data in at least 2 locations within the permit area, the North Norco Channel and Perris Line J Channel, had some exceedances of receiving water objectives for TDS and TIN.¹³¹ Nitrogen is a component of nutrients that are some of the primary pollutants of concern causing waterbody impairment in the permit area. The requirement for a proactive IDDE and dry weather monitoring program is designed, in part, to evaluate the TDS/TIN levels in dry weather, mostly non-stormwater, discharges. The federal regulations provide two options for the Permittees: (1) eliminate the non-storm water discharges; or (2) identify the problems and control them. The 2010 Permit merely implements these federal requirements. The 2010 Permit requirements are a logical and practicable approach to addressing pollutants causing impairments during dry weather conditions, and, as such, are consistent with the minimum federal MEP standard.

(c) The Challenged Provisions were, in Part, Recommended by Claimants

Furthermore, most of the IDDE program elements are consistent with the storm drain investigation and cleanout activities described in the DAMP and the Permittees 2003 Consolidated Monitoring Program (CMP),¹³² except for the requirement to schedule and conduct investigations of open channels and outfalls. Prior term permits, including the 2002 Permit, required the Permittees to develop a map of their MS4s and outfalls and to keep them updated, as necessary. For example, the 2002 Permit required Permittees to "[s]ubmit up-to-date MS4 maps to the Principal Permittee. If necessary, these maps should be revised on an annual basis and the revised maps should be submitted to the Principal Permittee with the information required for preparation of the Annual Report."¹³³ The 2010 Order contains similar requirements.

¹²⁹ Santa Ana Water Board Resolution No. R8-2005-0001 and Resolution No. R8-2006-0023, attached.

¹³⁰ Table 4-1 of the Water Quality Control Plan for the Santa Ana River Basin ("Basin Plan"). The Basin Plan exceeds 100 pages and only the relevant pages are attached. The entire Basin Plan may be found on the Santa Ana Water Board's website:
http://www.waterboards.ca.gov/santaana/water_issues/programs/basin_plan/index.shtml.

¹³¹ 2010 Permit, section II.E.8.

¹³² The Permittees developed the CMP to manage the quality of Urban Runoff to prevent impacts to receiving waters. The CMP includes monitoring at selected stations throughout the permit area. Originally drafted in 1994, the Permittees updated the CMP in 2003 to address the monitoring program objectives and the requirements of the 2002 Permit.

¹³³ 2002 Permit, section I.B.2.f.

The Permittees' 2003 CMP specifies procedures for field reconnaissance and field screening, including a regular schedule for such activities. Section 4.A of the CMP specifies that "[d]uring dry weather, regular surveys of their MS4s need to be conducted by each Permittee." This commitment in the CMP is transcribed into the 2010 Permit. The mandated activities listed in the test claim are consistent with what the Permittees should be doing under their existing CMP and are similar to the 2002 Permit requirements. Therefore, Claimants cannot now assert that these provisions are impracticable and exceed the federal minimum MEP standard.

4. Creation of Septic System Database (Section X)

(a) *Introduction*

As previously stated, pathogens and nutrients are the most common pollutants causing impairment in water bodies within the permit area. Federal regulations require specific permit provisions to address pathogen and nutrient sources, starting with identifying these sources. While a Permittee with only a few septic systems within its jurisdiction should be able to use a paper system to inventory and track those systems, other Permittees may find it more efficient to use an electronic tracking system.

(b) *The Requirement to Create a Septic System Database is Necessary to Meet the Federal Minimum MEP Standard and to Implement Applicable WLAs*

Federal regulations require MS4 permits to include provisions and requirements designed to reduce the discharge of pollutants to the MEP. Federal regulations also prohibit illicit discharges, including septic system waste, to the MS4 system.¹³⁴ Furthermore, federal regulations specifically require the development and implementation of controls to limit infiltration of seepage from septic systems to the MS4 system.¹³⁵ The U.S. EPA MS4 Permit Improvement Guide recommends that, in developing permit requirement to meet these federal mandates, permit writers should consider pollutants of concern that are causing surface water impairments and any applicable TMDLs.¹³⁶ The MS4 Permit Improvement Guide further provides, "the information will help identify whether more targeted permit conditions are needed to reduce the discharge of these pollutants."¹³⁷

High levels of pathogens and nutrients are the single largest cause of surface water impairments within the permit area. Pathogens and nutrients are present in discharges from septic systems, and the discharge of septic system waste through the MS4 system to surface waters contributes to these impairments. For example, TMDLs established for Lake Elsinore and Canyon Lake include total phosphorus and total nitrogen WLAs specifically for septic system discharges. These WLAs apply to a number of the Permittees. Tables 9 and 10 of the 2010 Permit identify the WLAs for septic system

¹³⁴ 40 C.F.R. § 122.26(d)(2)(iv)(B)(1).

¹³⁵ 40 C.F.R. § 122.26(d)(2)(iv)(B)(7)

¹³⁶ MS4 Permit Improvement Guide, p. 5.

¹³⁷ *Ibid.*

discharges. Federal regulations mandate that NPDES permits contain provisions that are consistent with the assumptions of any application WLAs.¹³⁸

Due to the potentially serious water-quality impacts caused by discharges of septic sewer waste through the MS4 system to surface waters, the 2007 DAMP explained that the Permittees, in cooperation with the Riverside County Health Department, have identified procedures to control septic system failures to prevent impacts on urban runoff quality.¹³⁹ Implementation of this action would logically necessitate establishing a list of septic systems. Use of a database format to maintain and manage the list of such systems promotes efficiency and, importantly, would provide the Santa Ana Water Board with important information with which to evaluate the effectiveness of the MS4 program and for use in other pollutant-reduction efforts. The requirement to maintain an inventory of septic systems is part of a practical approach to reducing pollutant loads from septic systems.

Moreover, the 2002 Permit required jurisdictions that have 50 or more operating septic systems to identify a procedure for controlling septic system failures in order to prevent pollutant discharge through the MS4s.¹⁴⁰ The 2002 Permit also required these jurisdictions to continue following procedures established by the State Health Department to address such failures.¹⁴¹ In order to comply with this requirement, Permittees with 50 or more septic systems should already have compiled, or have access to, a list of septic systems installed within its jurisdiction. Monitoring data indicates a continuing problem with elevated levels of bacteria and nutrients and therefore, it is critical to identify and eliminate or control sources of these pollutants. Thus, this requirement has been expanded to all Permittees in order to facilitate increased reductions of nutrient and pollutant loads to surface waters from septic systems.

By requiring Permittees to maintain an inventory of septic systems within their jurisdictions, the 2010 Permit will facilitate more effective control of illicit septic system discharges within the permit area. This practicable requirement, which is a logical and reasonable extension of the 2002 Permit, is consistent with the minimum federal MEP standard.

5. Permittee Inspection Requirements (Section XI)

(a) *Introduction*

The 2010 Permit contains enhanced and additional inspection requirements when compared to the 2002 Permit. Consistent with the iterative approach to meeting the minimum federal MEP standard, these additional requirements were designed to remedy deficiencies in the existing inspection program and to increase pollutant reduction. Rationale for each specifically challenged provision is set forth below.

¹³⁸ 40 C.F.R. § 122.44(d)(1)(vii)(B).

¹³⁹ 2007 DAMP, p. 4-7.

¹⁴⁰ 2002 Permit, section VII.B.

¹⁴¹ *Ibid.*

(b) Requirement to Identify Within their Jurisdiction: (a) Facilities that Transport, Store or Transfer Pre-Production Plastic Pellets, and (b) Managed Turf Facilities, Which Can Include Golf Courses, Athletic Fields, Cemeteries and Private Parks, and Then Determine Whether Those Facilities Require Additional Inspections to Protect Water Quality.

Preliminary findings contained in the 2006 Annual Progress Report for the MS4 program ("2006 Annual Report") observed that, next to paper, plastic was the second most prevalent litter in the permit area.¹⁴² Plastic litter was found to be distributed equally among residential, commercial and industrial sources.¹⁴³ Other types of litter, including styrofoam (which is a form of plastic) were found to be predominant in industrial areas.¹⁴⁴ While the Permittees' recommendations in the 2006 Annual Report for improving effectiveness of litter management may be adequate to address larger litter such as non-deteriorated plastic bags, containers made of styrofoam, etc. that are discarded into the streets and the MS4s, the 2006 Annual Report failed to contain sufficient provisions for controlling smaller facilities that transport, store or transfer pre-production plastic pellets. The small size of the pre-production pellets makes them both difficult to control and very harmful to aquatic organisms. Requiring inspection of facilities that transport, store, or transfer pre-production plastic pellets is a reasonable and practicable requirement to reduce pollutants consistent with the federal minimum MEP standard.

The 2010 Permit also required Permittees to identify within their jurisdictions managed turf facilities such as private golf courses, athletic fields, cemeteries, and private parks. These types of facilities are not currently covered by the County's Compliance Assistance Program inspections that include the stormwater compliance survey. These facilities are potential sources of nutrients and pathogens which are primary pollutants of concern for the permit area. These facilities also typically require a significant amount of irrigation and the irrigation runoff could be a significant source of nutrients and other pollutants in dry weather runoff. These discharges and the pollutants that they carry generally enter the MS4 systems. Identification and inspection of the managed turf facilities will result in reduced pollutant discharges to surface waters, and is a reasonable and practicable approach to reducing pollutants consistent with the federal minimum MEP standard.

(c) Identify Mobile Businesses Within their Jurisdiction, Notify Those Businesses and Develop the Source Control and Pollution Prevention BMPs that These Businesses Must Implement, and Develop an Enforcement Strategy to Address Mobile Businesses

In the 2002 MS4 permit, Permittees were required to inventory various mobile commercial operations.¹⁴⁵ Some mobile operations use solvents and other chemicals as part of their operations, and then discharge these pollutants to the MS4 system. These illicit discharges are potential sources of pollutants that must be controlled.

¹⁴² Annual Progress Report, pp. 5-16, 5-17. Relevant portions of the Annual Progress Report are attached.

¹⁴³ *Ibid.*

¹⁴⁴ *Ibid.*

¹⁴⁵ 2002 Permit, section IX.C.2.

The 2010 Permit's requirement to identify mobile businesses within Permittees' jurisdictions is similar to requirements contained in the 2002 Permit. The 2002 Permit also required the Permittees to prioritize and inspect inventoried commercial facilities, including mobile businesses.¹⁴⁶ It logically follows that Permittees should have the ability to enforce violations of their ordinances found during these commercial inspections. Section 8.4 of the 2007 DAMP states that the inspection must address "[e]ducation regarding storm water pollution prevention..." To accomplish this, Permittees would need to develop appropriate and enforceable source control and pollution prevention BMPs. The challenged permit provisions are reasonable and practicable requirements designed to reduce pollutants consistent with the federal minimum MEP standard.

*(d) Requirement to Conduct an Evaluation of the Permittees'
Residential Program in their Annual Reports*

The 2002 Permit required the Permittees to record and report their visual observation information regarding materials collected from the MS4, descriptions of main source(s), and problem areas. In their 2006 Annual Report, Claimants noted that the majority of litter collected from the MS4 appears to originate from residential sources.¹⁴⁷ The ROWD also states that 58% of the urban land use acreage in the permit area constitutes residential land use.¹⁴⁸

Prior term permits focused on efforts to reduce pollutants from non-residential activities, yet water quality impairments within the permit area persist. Requiring the Permittees to prepare annual evaluations of their residential programs is a reasonable and practicable step towards controlling what remains a significant source of litter and other pollutants. Effective control of residential sources is essential to reducing pollutants within the permit area. Including residential program evaluations as part of annual reporting requirements will facilitate additional improvements in residential pollutant source control programs.

6. New Development Requirements (Section XII)

(a) Introduction

Section XII of the Permit contains requirements for new development and significant redevelopment. As with the 2002 Permit, the 2010 Permit requires the development of a revised and updated Water Quality Management Plan ("WQMP"). The WQMP is a guide for managing post-construction runoff from new urban development/significant redevelopment projects. A WQMP typically includes various BMPs and other requirements for mitigating the impacts of post-construction runoff on water quality. The Permit also requires the development of a Watershed Action Plan ("WAP"), which emphasizes addressing all stressors within a hydrologically-defined drainage basin as opposed to addressing individual pollutant sources on a discharge-by-discharge basis.

¹⁴⁶ 2002 Permit, section IX.B.

¹⁴⁷ 2006 Annual Progress Report, pp. 5-16, 5-17.

¹⁴⁸ 2007 ROWD, section 3.3.2, table 2.

Additionally, the Permit requires the inclusion of Low Impact Development ("LID")¹⁴⁹ principles and provisions regarding hydrologic conditions of concern (hydromodification) in the revised WQMP. Importantly, Claimants only challenge these requirements as applied to municipal projects. As explained below, these provisions are consistent with the minimum federal MEP standard.

(b) Requirement to Develop and Implement, and Then Maintain, BMPs to Reduce Erosion and Mitigate Hydromodification in the Design of Culverts and Bridge Crossings

The 2002 Permit recognized that increased development within Riverside County would cause increased stream erosion and/or hydromodification.¹⁵⁰ Hydraulic constrictions, such as culverts and bridges, also contribute to stream and channel erosion. Roadway approach embankments leading to bridge crossings or culverts often constrict flood flows at high stages creating high velocities within and near bridge or culvert openings. Channel erosion near bridges and culverts is a common occurrence and has been observed in the permit area.

The 2010 Permit requires the Permittees to implement LID BMPs to reduce erosion and mitigate hydromodification through proper design of these structures. Erosion and hydromodification cause pollution through sediment releases and through modification of streams and channels, thereby impacting aquatic resources. The 2010 Permit requirement to control these sources of pollutants in urban runoff is consistent with the MS4 Permit Improvement Guide, which recommends that the permit writer consider any trends which indicate success or failure of particular stormwater program element when issuing or renewing MS4 permits.¹⁵¹ This requirement is also consistent with U.S. EPA's MS4 Permit Improvement Guide's recommendation that permits should contain a performance standard for post-construction that is based on the objective of maintaining or restoring stable hydrology to protect water quality of receiving waters or another mechanism as effective.¹⁵² BMPs designed to reduce erosion and mitigate hydromodification would accomplish these objectives and, as such, are consistent the federal mandate to reduce pollutants to the MEP standard.

(c) Requirement to Develop a Watershed Action Plan

Section VII.J. of the 2010 Permit Fact Sheet articulates, in part, the rationale for requiring the development of a Watershed Action Plan ("WAP"):

¹⁴⁹ LID is an approach to land development (or redevelopment) that works with nature to manage stormwater as close to its source as possible by using structural and non-structural BMPs to reduce environmental impacts. (2010 Permit, Appendix 4, p. 9).

¹⁵⁰ Hydromodification is the alteration of the hydrologic characteristics of coastal and noncoastal waters, which in turn could cause degradation of water resources. In the case of a stream channel this is the process whereby a stream bank is eroded by flowing water.

¹⁵¹ MS4 Permit Improvement Guide, p. 4.

¹⁵² Cover Memo for MS4 Permit Improvement Guide, from Linda Y. Booznarian to NPDES Stormwater Managers, dated April 14, 2010, attached as part of the MS4 Permit Improvement Guide.

2. "The USEPA has recommended a shift to watershed-based NPDES permitting [footnote omitted] and watershed approach [footnote omitted] to CWA programs, including NPDES programs. The Permittees and the Regional Board also recognize that a watershed-based approach is expected to be effective in controlling Pollutants in Urban Runoff. Consistent with this approach, this Order requires the Permittees to develop and implement programs that integrate Hydromodification and water quality management strategies with land use planning policies, ordinances, and plans within each jurisdiction. A watershed approach considers the diverse Pollutant sources and stressors and watershed goals within a defined geographic area (i.e., watershed boundaries). A watershed approach has three basic components:
 - a. Geographic Focus: Watersheds are nature's boundaries. They are the land areas that drain to surface waterbodies, and they generally include lakes, rivers, estuaries, wetlands, streams, and the surrounding landscape. Groundwater recharge areas are also considered.
 - b. Sound Management Techniques Based on Strong Science and Data: Sound scientific data, tools, and techniques are critical to evaluate the process. Actions taken include characterizing priority watershed water quality problems and solutions, developing and implementing action plans, and evaluating their effectiveness within the watershed.
 - c. Partnerships/Stakeholder Involvement: Watersheds transcend political, social, and economic boundaries. Therefore, it is important to involve all the affected interests in designing and implementing goals for the watershed. Watershed teams may include representatives from all levels of government, public interest groups, industry, academic institutions, private landowners, concerned citizens, and others." [Footnote omitted.]

USEPA has also published several watershed planning guidance documents, including the Handbook for Developing Watershed Plans to Restore and Protect Our Waters, that articulate various elements specified in the 2010 Permit requirements for the WAP.¹⁵³

Federal regulations also require that the Permittees address new development and significant redevelopment through controls to reduce pollutants in storm water discharges after construction is completed, including the following:

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

¹⁵³ A copy of the Handbook for Developing Watershed Plans to Restore and Protect Our Waters is attached. An electronic copy may be found at U.S. EPA's website: http://water.epa.gov/polwaste/nps/upload/2008_04_18_NPS_watershed_handbook_ch07.pdf

shall address controls to reduce pollutants in discharges from municipal separate storm sewers after construction is completed.¹⁵⁴

The requirement to develop a WAP is consistent with this section and other guidance issued by the U.S. EPA for addressing water quality problems through integrated watershed action plans.¹⁵⁵

Additionally, as discussed above, the 2002 Permit required the development of a WQMP that would be used by project developers to control post-construction stormwater discharges on a per project basis. However, factors that cause or contribute to stream erosion or surface water impairment are generally cumulative. In general, addressing water quality concerns is most efficiently and economically accomplished on a regional, watershed, or sub-watershed basis rather than on an individual project basis.

Furthermore, the WQMP developed during the prior permit term contained several provisions to address hydromodification and water quality impairments of surface waterbodies on the Clean Water Act section 303(d) list of impaired waterbodies within the permit area. Mapping and identification of stream segments vulnerable to hydromodification and water quality impairment are essential components of a master planning document (the WQMP) that can be used to implement and enforce pollutant controls. The requirement to identify and delineate existing unarmored or soft-armored stream channels that are vulnerable to hydromodification impacts from new development or significant redevelopment projects and those on the section 303(d) list is a logical and practical next step to address impacts caused by hydromodification.

(d) Requirement to Review Each Permittee's General Plan and Related Documents to Eliminate Barriers to Implementation of LID Principles and Hydromodification Requirements, with any Changes in Project Approval Process or Procedures to be Reflected in the LIP

Finding G.7 of the 2010 Permit provides the rationale for this requirement as follows:

An audit of each of the Permittees' Urban Runoff management programs during the term of the 2002 MS4 Permit indicated no clear nexus between the watershed protection principles, including LID techniques specified in the WQMP and the Permittees' General Plan or related documents such as Development Standards, Zoning Codes, Conditions of Approval and Project Development Guidance. Existing procedures, ordinances, local codes, and development standards may be barriers to implementation of LID practices. This Order requires the Permittees to evaluate their General Plans, comprehensive or master plans, zoning codes, subdivision ordinances, project development standards, conditions of approval or related documents to determine whether the removal of any barriers, within their control, is feasible for implementation of LID

¹⁵⁴ 40 C.F.R. § 122.26(d)(2)(iv)(A)(2).

¹⁵⁵ See, e.g., U.S. EPA's Handbook for Developing Watershed Plans to Restore and Protect Our Waters, which may be found on U.S. EPA's website: http://water.epa.gov/polwaste/nps/handbook_index.cfm.

techniques and other requirements of this Order. Where feasible, the Permittees will make appropriate changes to remove barriers to implement LID techniques and other requirements of this Order.

Thus, the requirement to review each Permittee's General Plan and related documents to eliminate barriers to implementation of LID principles and HCOC requirements derived from perceived legal impediments to full implementation of LID requirements during the prior term. As stated previously, implementing the MEP standard requires an iterative approach, wherein each successive permit becomes more refined and effective by learning from past experiences. Due to concerns regarding legal barriers to the full implementation of the MS4 program, the 2010 Permit required an assessment and, if necessary, removal of legal barriers to effective pollutant control. Not only is this consistent with U.S. EPA guidance, but it fulfills the minimum federal mandate of reducing pollutants to the MEP.

(e) General Requirements to Update the WQMP to Include LID Principles and Hydromodification Provisions

During the prior term, the Permittees required new development and redevelopment projects to incorporate LID BMPs and to address hydromodification on an individual project basis through the use of the WQMP. In recent years, new information regarding management of post-construction storm water runoff has become available. The requirements contained in the 2010 Permit that prioritize the use of infiltration type post-construction BMPs to reduce the volume of stormwater are consistent with the recommendations contained in a recent National Research Council Report: Urban Stormwater Management in the United States.¹⁵⁶ Specifically, this report recommends that the volume retention practices of infiltration, evapotranspiration and rain water harvesting be used as primary storm water management mechanisms. U.S. EPA has indicated its support for these preferential BMPs in various fact sheets, reports and guidance manuals under the general rubric of green development and LID.¹⁵⁷ Indeed, the preferential approach for BMPs that infiltrate, harvest and use, evapotranspire and/or bio-treat the 85th percentile storm event is also consistent with U.S. EPA's guidance for site management of post-construction stormwater. The preferred BMPs serve to reduce the surface runoff volumes from a developed site and consequently reduce pollutant loads.

The Permittees have been implementing LID techniques as site design BMPs under their 2002 MS4 permit through their implementation of the approved WQMP. No performance standards for site design BMPs have been established in that document, which made implementation random and unfocused, and difficult to determine compliance. The WQMP developed during the 2002 Permit term contained design specification only for treatment BMPs aimed at treating the 85th percentile storm events. The 2010 Permit's requirement to infiltrate, harvest and use, evapotranspire and/or bio-treat the 85th percentile storm event provides a design criteria to planners and LID BMP designers that is measureable and intended to address the impact of most storm events.

¹⁵⁶ This report exceeds 500 pages. Only Chapter 5 is attached. The entire report may be found on the U.S. EPA website: http://www.epa.gov/npdes/pubs/nrc_stormwaterreport.pdf.

¹⁵⁷ See, e.g., the following U.S. EPA webpage which provides a comprehensive database of information and guidance regarding LID: http://water.epa.gov/polwaste/green/test_lid_index.cfm.

With respect to the hydromodification requirements, the MS4 Permit Improvement Guide recommends the following:

The permit writer could include a performance standard that stipulates that predevelopment hydrographs match post-development hydrographs. In order for this type of performance standard to be effective, the permit writer should make sure that the permit clearly spells out all variables of the hydrograph (volume, rate, duration, frequency) to be matched, and not just the discharge rate...¹⁵⁸

Furthermore, in its April 14, 2010 cover memorandum to the MS4 Permit Improvement Guide, U.S. EPA stressed the following key principles with respect to MS4 permit issuance:

Permit provisions should be clear, specific, measurable, and enforceable. Permits should include specific deadlines for compliance, incorporate clear performance standards, and include measurable goals of quantifiable targets for implementation.

Permits should contain a performance standard for post-construction that is based on the objective of maintaining or restoring stable hydrology to protect water quality of receiving waters or another mechanism as effective.¹⁵⁹

The 2010 Permit's hydromodification standard, and site design (LID) performance standard and preferential BMPs to infiltrate, harvest and use, evapotranspire and/or bio-treat the 85th percentile storm event is consistent with U.S. EPA's guidance and a reasonable and practical requirement for reducing pollutants at their source to meet the minimum federal MEP standard.

In addition, the restrictions on effluent flows are supported by U.S. EPA in the Preamble to the Phase II federal stormwater regulations, which states: "[i]n many cases, consideration of the increased flow rate, velocity, and energy of stormwater discharges must be taken into consideration in order to reduce the discharge of pollutants, to meet water quality standards, and to prevent the degradation of receiving streams."¹⁶⁰ Claimants have not alleged that the consideration of the physical impacts of flow have led to any requirements that go beyond those required to reduce pollutants to the maximum extent practicable.

Furthermore, in 2008, the State of Washington, Washington Pollution Control Hearings Board ("PCHB") issued a decision addressing a Phase I MS4 Permit that included

¹⁵⁸ MS4 Permit Development Guide, p. 55.

¹⁵⁹ Cover Memo for MS4 Permit Improvement Guide, from Linda Y. Booznarian to NPDES Stormwater Managers, dated April 14, 2010.

¹⁶⁰ See Vol. 64 Fed. Reg. 68761.

provisions to promote, but not require, implementation of LID.¹⁶¹ The PCHB considered LID and found that the permit failed to satisfy the federal MEP standard and Washington state law because it only included provisions to promote LID, but did not require LID at the parcel and subdivision level.¹⁶² The PCHB decision supports the Santa Ana Water Board's determination that the LID provisions are required to implement the MEP standard.

(f) Requirement to Submit a Revised WQMP to Incorporate the New Elements Required by the 2010 Permit.

Consistent with the iterative approach for implementing the MEP standard, the WQMP and the DAMP should be considered dynamic documents subject to periodic dating and revision. Since water quality concerns persist in the permit area, and the WQMP is the regional document that translates Permit provisions into implementable programs, it is entirely appropriate and reasonable to require that the Permittees update the WQMP consistent with the new provisions contained in the 2010 Permit. The importance of the WQMP in effectuating effective implementation of the 2010 Permit necessitates its revision so that the Permit can meet the minimum federal MEP standard.

(g) Requirement to Develop and Implement Standard Design and Post Development BMPs Guidance for Street, Road, Highway and Freeway Improvement Projects

Finding G.18 in the 2010 Permit explains the rationale for the focused requirements on streets, roads, and highways, and includes the Permittees' rationale regarding their request that the Permit include the development of standard designs for streets and roads as follows:

This Order incorporates new project categories and revised thresholds for several categories of new development and redevelopment projects that trigger the requirement for a WQMP. The 2008 National Research Council (NRC) report indicates that roads and parking lots constitute as much as 70% of total impervious cover in ultra-urban landscape, and as much as 80% of the directly connected impervious cover. Roads tend to capture and export more storm water Pollutants than other impervious covers. As such, roads are included as a priority development category for which WQMPs are required. Private New Development and Significant Redevelopment projects incorporating roads typically allow road runoff to be addressed as part of the overall water quality strategy for the larger common plans of development. Permittee streets, roads and highways capital projects have special limitations. For example, the footprint of street, road and highway capital projects is often limited and may have hydraulic constraints due to lack of underground storm drain systems that would otherwise be necessary to hydraulically facilitate treatment of runoff. There are also limitations specified in state and

¹⁶¹ State of Washington, Pollution Control Hearing Board ("PCHB"), Findings of Fact, Conclusions of Law and Order, Puget Soundkeeper Alliance, et al v. State of Washington, Department of Ecology, PCHB Nos. 07-21, et al., August 7, 2008, attached.

¹⁶² *Id.*, Conclusion of Law No. 17, p. 58.

federal design and code specifications that may limit or prohibit certain BMPs. Permittees may also be subject to flow diversion liability and limited road maintenance budgets and equipment. Street, road and highway projects that function as part of the MS4 also receive runoff and associated Pollutants from both existing urban areas and other external sources, including adjacent land use activities, aerial deposition, brake pad and tire wear and other sources that may be outside the Co-Permittee's authority to regulate and/or economic or technological ability to control. These offsite flows can overwhelm Treatment Control BMPs designed to address the footprint (consistent with the typical requirements for a WQMP) of street, road or highway capital projects incorporating curb and gutter as part of its storm water conveyance function. Despite these limitations, the Regional Board finds that Permittee construction of streets, roads and highway capital projects may provide an opportunity to address Pollutant loads from existing urban areas. However, due to the nature of the facilities and projects, it would be unduly burdensome for the Permittees to maintain WQMP documents for transportation projects (in addition to Facility Pollution Prevention Plans and other overlapping requirements of this Order). The Permittees are therefore not required to prepare WQMP documents for street, road and highway capital projects, but instead are required to develop functionally equivalent documents that include site specific consideration utilizing BMP guidance to address street, roads and highway capital project runoff to the MEP.

As runoff from roads and highway improvement projects continues to be a source of pollutants in urban runoff, proper control mechanisms must be implemented. During the Permit development period, the Permittees proposed the above approach which was incorporated into the Permit.

(h) The Requirement to Develop Technically Based Feasibility Criteria for Project Evaluation to Determine the Feasibility of Implementing the Preferred LID BMPs

The WQMP approved during the 2002 Permit term required explanations, on an individual project level, for site design BMPs (also referred to as LID BMPs) found to be inapplicable and an explanation why the concept could not be implemented.¹⁶³ The WQMP contained neither performance standards for LID BMPs, nor any guidance as to what constitutes acceptable justification for an inability to implement them. Consequently, Santa Ana Water Board staff found implementation of LID BMPs under the prior term WQMP random and unsystematic.

In order to correct this deficiency and to promote successful implementation of the preferred LID BMPs, the 2010 Permit required the evaluation of several factors in meeting the performance standard. Technical considerations such as groundwater/surface water interactions, soil contamination, geotechnical issues and geological hazards may make infiltration BMPs infeasible. These technical considerations, as well as other issues such as water rights and harvested water

¹⁶³ 2006 WQMP, pp. 12-18.

demand, are more efficiently and appropriately addressed on a jurisdiction or watershed/subwatershed basis instead of on an individual project basis. By addressing these considerations regionally, each jurisdiction or watershed/subwatershed will be able to form a uniform template for what would constitute acceptable criteria for finding implementation of the preferred LID BMPs infeasible. This approach is consistent with U.S. EPA's guidance that "the permittee must establish clear and stringent guidance for conditions" under which alternatives to LID BMPs, such as payment in lieu and off-site mitigation, will be used.¹⁶⁴

The 2010 Permit requirement for Permittees to develop technical feasibility criteria as part of the new development and significant redevelopment element of the 2010 is designed to facilitate improved implementation of LID BMPs and, as such, is consistent with the federal minimum MEP standard.

(i) The Requirement to Maintain a Database to Track Operation and Maintenance of Structural Post-Construction BMPs, and to Inspect Post-Construction BMPs

Federal regulations require the Permittees to provide a description of maintenance activities and a maintenance schedule for structural controls in the ROWD.¹⁶⁵ Tracking of long term operation and maintenance of post-construction BMPs, including regular inspections of such BMPs is an approach consistent with U.S. EPA guidance. For example, the MS4 Permit Improvement Guide provides:

Creating an inventory of post-construction structural stormwater control measures, including tracking of specific information, will first enable Permittees to know what control measures they are responsible for. Without this information, the permittee will not be protecting water quality to their full potential since inspections, maintenance, and follow-up changes cannot be performed. Tracking information such as latitude/longitude, maintenance and inspection requirements and follow-up will allow the permittee to be able to better allocate their resources for those activities that are immediately necessary...¹⁶⁶

U.S. EPA further recommends that:

Permit writers should clearly specify requirements for inspections. Inspecting and properly maintaining structural stormwater controls to ensure they are working as designed is just as important as installing them in the first place. By having specific requirements, Permittees will be reminded that they must allocate resources to ensure control measures are properly maintained and functioning. The permit writer may also want to add a prioritization scheme to the requirement to help

¹⁶⁴ MS4 Permit Improvement Guide, pp. 50-57.

¹⁶⁵ 40 C.F.R. § 122.26(d)(iv)(A)(1)

¹⁶⁶ MS4 Permit Improvement Guide, pp. 64-66.

the permittee determine what maintenance activities are priorities for protecting water quality and which ones are minor changes."¹⁶⁷

U.S. EPA's expectation that that the Permittees conduct routine inspections of post-construction BMPs (referred to below as stormwater management facilities) is also set forth in U.S. EPA's Model Post-Construction Stormwater Runoff Control Ordinance:

Prior to the issuance of any permit that has a stormwater management facility as one of the requirements of the permit, the applicant or owner of the site must execute a maintenance easement agreement that shall be binding on all subsequent owners of land served by the stormwater management facility. The agreement shall provide for access to the facility at reasonable times for periodic inspection by the (jurisdictional stormwater authority), or their contractor or agent...¹⁶⁸

Furthermore, U.S. EPA has clearly communicated to Santa Ana Water Board staff, in various published guidance, their recommendation for inspection and tracking of long term operation and maintenance of post-construction BMPs at private and public developments such as Permittee-owned structural post-construction BMPs. Some Permittees, with a limited number of structural treatment controls, may be able to manage such information on a paper system to inventory and track those projects, a greater number of BMPs and ownership changes would likely require a database or similar electronic tracking system to effectively manage the information.

7. Employee Training Programs (Section XV)

(a) *Introduction*

Training programs for Permittee staff are necessary for successful implementation of the MS4 program. In response to recommendations contained in the ROWD, the 2010 Permit consolidates various training elements from the 2002 Permit into one section, and includes provisions requiring formal and informal training regarding construction site inspection, WQMP review, residential/industrial/commercial site inspection, and Permittee facility maintenance.

(b) *Updated Employee Training is Necessary for Successful Permit Implementation and, Therefore, is Necessary to Meet the Federal Minimum MEP Standard*

During the first two permit terms, Permittees provided training opportunities for those staff responsible for implementing various aspects of the MS4 program, including requiring compliance with New Development Guidelines and Public Works BMPs.¹⁶⁹ These early guidelines were intended to identify post-construction pollutant sources and

¹⁶⁷ MS4 Permit Improvement Guide, pp. 63-64.

¹⁶⁸ U.S. EPA's Model Post-Construction Stormwater Runoff Control Ordinance, pp. 22-23, a copy of which is attached. An electronic copy may be found at U.S. EPA's website: <http://www.epa.gov/owow/NPS/ordinance/mol6.htm>.

¹⁶⁹ 2002 Permit Fact Sheet, section VI.8.

treatment measures that could be incorporated into development projects. The WQMP developed pursuant to the 2002 Permit replaced the New Development Guidelines for most development project categories. To facilitate successful implementation of the WQMP, the 2002 Permit included more specific and extensive training requirements including: training regarding local stormwater ordinances, the 2002 Permit, the DAMP, the General Industrial Activities Storm Water Permit and any other permit issued to a commercial facility within the Permit Area by the State or Regional Board, and implementation and maintenance of BMPs for commercial sites.

Consistent with the 2002 Permit, the 2010 Permit requires training necessary for updating and educating Permittee staff on changes to the MS4 program. Although the 2010 Permit contains a more refined level of specificity, the training requirements in the 2010 Permit are not much different than those in the 2002 Permit. Fundamentally, the 2002 and 2010 Permits require sufficient training so that Permittee staff can effectively implement the MS4 program. It makes logical sense that revisions to the MS4 program, as reflected in the 2010 Permit, would result in additional training regarding new or enhanced program elements. Therefore, as the updated training provisions are designed to facilitate improved implementation of LID BMPs, the challenged provisions are consistent with the federal minimum MEP standard.

8. Program Management Assessment (Section XVII)

(a) Introduction

Routine and rigorous assessment of the effectiveness of the MS4 program is fundamental to achieving water quality goals in the most efficient manner. The challenged Permit provisions require annual evaluation of the urban runoff management program, as set forth in the DAMP, utilizing guidance developed by the California Stormwater Quality Association ("CASQA").¹⁷⁰ Not only are these provisions consistent with the MEP standard, U.S. EPA has specifically endorsed the use of the CASQA guidance when conducting program assessments.

(b) The Program Management Assessment Provisions are Necessary to Meet the Federal Minimum MEP Standard, and are Substantively Similar to Provisions in the 2002 Permit.

As has been explained previously, the MEP standard is achieved through an iterative process whereby each successive permit becomes more refined, detailed, and expanded as needed, based on experience under the previous permit. Undoubtedly, this iterative approach must include the review and assessment of current controls, programs, and compliance mechanisms to determine effectiveness and efficiency in reducing pollutants. In the MS4 Permit Improvement Guide, U.S. EPA recommends inclusion of a provision requiring annual program assessment.¹⁷¹ Moreover, U.S. EPA specifically endorses the use of CASQA's Municipal Stormwater Program Effectiveness

¹⁷⁰ CASQA is a non-profit organization whose purpose is to assist the State Water Board and municipalities throughout the state of California in implementing the National Pollutant Discharge Elimination System (NPDES) stormwater mandates of the Clean Water Act. More information about CASQA may be found on their website: www.casqa.org.

¹⁷¹ MS4 Permit Improvement Guide, section 8.3.1.

Guidance. Therefore, the challenged Permit provisions are logical and practical means for assessing program effectiveness and, as such, are consistent with U.S. EPA guidance and the federal minimum MEP standard.

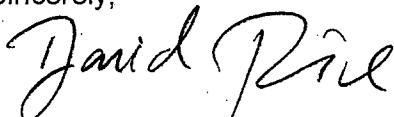
Furthermore, there is little difference between the challenged provisions and those contained in 2002 Permit.¹⁷² Both the 2010 Permit and the 2002 Permit require program assessment on both a region-wide and jurisdiction-specific basis—the 2010 Permit simply clarifies each jurisdiction's individual and collective responsibility as well as the methodology that should be used in conducting the program assessment. It is expected that the use of the CASQA guidance will provide a uniform and systematic approach for all Permittees to use.

VII. Conclusion

For all of the reasons set forth above, the Test Claim must be dismissed. The Claimants have not established that the Test Claim provisions impose new programs or higher levels of service on the Permittees. Importantly, the Permit reflects the Clean Water Act's requirements for municipal stormwater permitting. The Permit in its entirety, including the Test Claim provisions, reflects the minimum federal MEP standard. Further, the cities can pay for any costs associated with the requirements by levying service charges or fees. Finally, to the extent that any portion of the claims would otherwise qualify for subvention, they are *de minimis* and therefore do not warrant subvention.

I certify and declare under penalty of perjury under the laws of the State of California that the foregoing facts are true and complete to the best of my personal knowledge or information or belief. I further declare that all documents attached are true and correct copies of such documents as they exist in the Santa Ana Water Board's files, or were obtained from publicly available sources.

Sincerely,



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¹⁷² 2002 Permit, section XIII.

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ATTACHMENT 1

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Effective:[See Text Amendments]

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Title 33. Navigation and Navigable Waters (Refs & Annos)

▣ Chapter 26. Water Pollution Prevention and Control (Refs & Annos)

▣ Subchapter I. Research and Related Programs (Refs & Annos)

→ § 1251. Congressional declaration of goals and policy

(a) Restoration and maintenance of chemical, physical and biological integrity of Nation's waters; national goals for achievement of objective

The objective of this chapter is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. In order to achieve this objective it is hereby declared that, consistent with the provisions of this chapter--

(1) it is the national goal that the discharge of pollutants into the navigable waters be eliminated by 1985;

(2) it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by July 1, 1983;

(3) it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited;

(4) it is the national policy that Federal financial assistance be provided to construct publicly owned waste treatment works;

(5) it is the national policy that areawide waste treatment management planning processes be developed and implemented to assure adequate control of sources of pollutants in each State;

(6) it is the national policy that a major research and demonstration effort be made to develop technology necessary to eliminate the discharge of pollutants into the navigable waters, waters of the contiguous zone, and the oceans; and

(7) it is the national policy that programs for the control of nonpoint sources of pollution be developed and implemented in an expeditious manner so as to enable the goals of this chapter to be met through the control of both point and nonpoint sources of pollution.

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(b) Congressional recognition, preservation, and protection of primary responsibilities and rights of States

It is the policy of the Congress to recognize, preserve, and protect the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution, to plan the development and use (including restoration, preservation, and enhancement) of land and water resources, and to consult with the Administrator in the exercise of his authority under this chapter. It is the policy of Congress that the States manage the construction grant program under this chapter and implement the permit programs under sections 1342 and 1344 of this title. It is further the policy of the Congress to support and aid research relating to the prevention, reduction, and elimination of pollution, and to provide Federal technical services and financial aid to State and interstate agencies and municipalities in connection with the prevention, reduction, and elimination of pollution.

(c) Congressional policy toward Presidential activities with foreign countries

It is further the policy of Congress that the President, acting through the Secretary of State and such national and international organizations as he determines appropriate, shall take such action as may be necessary to insure that to the fullest extent possible all foreign countries shall take meaningful action for the prevention, reduction, and elimination of pollution in their waters and in international waters and for the achievement of goals regarding the elimination of discharge of pollutants and the improvement of water quality to at least the same extent as the United States does under its laws.

(d) Administrator of Environmental Protection Agency to administer chapter

Except as otherwise expressly provided in this chapter, the Administrator of the Environmental Protection Agency (hereinafter in this chapter called "Administrator") shall administer this chapter.

(e) Public participation in development, revision, and enforcement of any regulation, etc.

Public participation in the development, revision, and enforcement of any regulation, standard, effluent limitation, plan, or program established by the Administrator or any State under this chapter shall be provided for, encouraged, and assisted by the Administrator and the States. The Administrator, in cooperation with the States, shall develop and publish regulations specifying minimum guidelines for public participation in such processes.

(f) Procedures utilized for implementing chapter

It is the national policy that to the maximum extent possible the procedures utilized for implementing this chapter shall encourage the drastic minimization of paperwork and interagency decision procedures, and the best use of available manpower and funds, so as to prevent needless duplication and unnecessary delays at all levels of government.

(g) Authority of States over water

It is the policy of Congress that the authority of each State to allocate quantities of water within its jurisdiction shall not be superseded, abrogated or otherwise impaired by this chapter. It is the further policy of Congress that nothing in this chapter shall be construed to supersede or abrogate rights to quantities of water which have been

33 U.S.C.A. § 1251

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established by any State. Federal agencies shall co-operate with State and local agencies to develop comprehensive solutions to prevent, reduce and eliminate pollution in concert with programs for managing water resources.

CREDIT(S)

(June 30, 1948, c. 758, Title I, § 101, as added Oct. 18, 1972, Pub.L. 92-500, § 2, 86 Stat. 816, and amended Dec. 27, 1977, Pub.L. 95-217, §§ 5(a), 26(b), 91 Stat. 1567, 1575; Feb. 4, 1987, Pub.L. 100-4, Title III, § 316(b), 101 Stat. 60.)

Current through P.L. 112-24 approved 7-26-11

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ATTACHMENT 2

Westlaw

33 U.S.C.A. § 1311

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Effective:[See Text Amendments]

United States Code Annotated Currentness

Title 33. Navigation and Navigable Waters (Refs & Annos)

▣ Chapter 26. Water Pollution Prevention and Control (Refs & Annos)

▣ Subchapter III. Standards and Enforcement (Refs & Annos)

→ § 1311. Effluent limitations

(a) Illegality of pollutant discharges except in compliance with law

Except as in compliance with this section and sections 1312, 1316, 1317, 1328, 1342, and 1344 of this title, the discharge of any pollutant by any person shall be unlawful.

(b) Timetable for achievement of objectives

In order to carry out the objective of this chapter there shall be achieved--

(1)(A) not later than July 1, 1977, effluent limitations for point sources, other than publicly owned treatment works, (i) which shall require the application of the best practicable control technology currently available as defined by the Administrator pursuant to section 1314(b) of this title, or (ii) in the case of a discharge into a publicly owned treatment works which meets the requirements of subparagraph (B) of this paragraph, which shall require compliance with any applicable pretreatment requirements and any requirements under section 1317 of this title; and

(B) for publicly owned treatment works in existence on July 1, 1977, or approved pursuant to section 1283 of this title prior to June 30, 1974 (for which construction must be completed within four years of approval), effluent limitations based upon secondary treatment as defined by the Administrator pursuant to section 1314(d)(1) of this title; or,

(C) not later than July 1, 1977, any more stringent limitation, including those necessary to meet water quality standards, treatment standards, or schedules of compliance, established pursuant to any State law or regulations (under authority preserved by section 1370 of this title) or any other Federal law or regulation, or required to implement any applicable water quality standard established pursuant to this chapter.

(2)(A) for pollutants identified in subparagraphs (C), (D), and (F) of this paragraph, effluent limitations for categories and classes of point sources, other than publicly owned treatment works, which (i) shall require application of the best available technology economically achievable for such category or class, which will result in reasonable further progress toward the national goal of eliminating the discharge of all pollutants, as determined in accordance with regulations issued by the Administrator pursuant to section 1314(b)(2) of this title, which such effluent limitations shall require the elimination of discharges of all pollutants if the Administrator finds, on the basis of information available to him (including information developed pursuant to sec-

tion 1325 of this title), that such elimination is technologically and economically achievable for a category or class of point sources as determined in accordance with regulations issued by the Administrator pursuant to section 1314(b)(2) of this title, or (ii) in the case of the introduction of a pollutant into a publicly owned treatment works which meets the requirements of subparagraph (B) of this paragraph, shall require compliance with any applicable pretreatment requirements and any other requirement under section 1317 of this title;

(B) Repealed. Pub.L. 97-117, § 21(b), Dec. 29, 1981, 95 Stat. 1632.

(C) with respect to all toxic pollutants referred to in table 1 of Committee Print Numbered 95-30 of the Committee on Public Works and Transportation of the House of Representatives compliance with effluent limitations in accordance with subparagraph (A) of this paragraph as expeditiously as practicable but in no case later than three years after the date such limitations are promulgated under section 1314(b) of this title, and in no case later than March 31, 1989;

(D) for all toxic pollutants listed under paragraph (1) of subsection (a) of section 1317 of this title which are not referred to in subparagraph (C) of this paragraph compliance with effluent limitations in accordance with subparagraph (A) of this paragraph as expeditiously as practicable, but in no case later than three years after the date such limitations are promulgated under section 1314(b) of this title, and in no case later than March 31, 1989;

(E) as expeditiously as practicable but in no case later than three years after the date such limitations are promulgated under section 1314(b) of this title, and in no case later than March 31, 1989, compliance with effluent limitations for categories and classes of point sources, other than publicly owned treatment works, which in the case of pollutants identified pursuant to section 1314(a)(4) of this title shall require application of the best conventional pollutant control technology as determined in accordance with regulations issued by the Administrator pursuant to section 1314(b)(4) of this title; and

(F) for all pollutants (other than those subject to subparagraphs (C), (D), or (E) of this paragraph) compliance with effluent limitations in accordance with subparagraph (A) of this paragraph as expeditiously as practicable but in no case later than 3 years after the date such limitations are established, and in no case later than March 31, 1989.

(3)(A) for effluent limitations under paragraph (1)(A)(i) of this subsection promulgated after January 1, 1982, and requiring a level of control substantially greater or based on fundamentally different control technology than under permits for an industrial category issued before such date, compliance as expeditiously as practicable but in no case later than three years after the date such limitations are promulgated under section 1314(b) of this title, and in no case later than March 31, 1989; and

(B) for any effluent limitation in accordance with paragraph (1)(A)(i), (2)(A)(i), or (2)(E) of this subsection established only on the basis of section 1342(a)(1) of this title in a permit issued after February 4, 1987, compliance as expeditiously as practicable but in no case later than three years after the date such limitations are established, and in no case later than March 31, 1989.

(c) Modification of timetable

The Administrator may modify the requirements of subsection (b)(2)(A) of this section with respect to any point source for which a permit application is filed after July 1, 1977, upon a showing by the owner or operator of

such point source satisfactory to the Administrator that such modified requirements (1) will represent the maximum use of technology within the economic capability of the owner or operator; and (2) will result in reasonable further progress toward the elimination of the discharge of pollutants.

(d) Review and revision of effluent limitations

Any effluent limitation required by paragraph (2) of subsection (b) of this section shall be reviewed at least every five years and, if appropriate, revised pursuant to the procedure established under such paragraph.

(e) All point discharge source application of effluent limitations

Effluent limitations established pursuant to this section or section 1312 of this title shall be applied to all point sources of discharge of pollutants in accordance with the provisions of this chapter.

(f) Illegality of discharge of radiological, chemical, or biological warfare agents, high-level radioactive waste, or medical waste

Notwithstanding any other provisions of this chapter it shall be unlawful to discharge any radiological, chemical, or biological warfare agent, any high-level radioactive waste, or any medical waste, into the navigable waters.

(g) Modifications for certain nonconventional pollutants

(1) General authority

The Administrator, with the concurrence of the State, may modify the requirements of subsection (b)(2)(A) of this section with respect to the discharge from any point source of ammonia, chlorine, color, iron, and total phenols (4AAP) (when determined by the Administrator to be a pollutant covered by subsection (b)(2)(F) of this section) and any other pollutant which the Administrator lists under paragraph (4) of this subsection.

(2) Requirements for granting modifications

A modification under this subsection shall be granted only upon a showing by the owner or operator of a point source satisfactory to the Administrator that--

(A) such modified requirements will result at a minimum in compliance with the requirements of subsection (b)(1)(A) or (C) of this section, whichever is applicable;

(B) such modified requirements will not result in any additional requirements on any other point or nonpoint source; and

(C) such modification will not interfere with the attainment or maintenance of that water quality which shall assure protection of public water supplies, and the protection and propagation of a balanced population of shellfish, fish, and wildlife, and allow recreational activities, in and on the water and such modification will not result in the discharge of pollutants in quantities which may reasonably be anticipated to pose an unacceptable risk to human health or the environment because of bioaccumulation, persistency in the environ-

ment, acute toxicity, chronic toxicity (including carcinogenicity, mutagenicity or teratogenicity), or synergistic propensities.

(3) Limitation on authority to apply for subsection (c) modification

If an owner or operator of a point source applies for a modification under this subsection with respect to the discharge of any pollutant, such owner or operator shall be eligible to apply for modification under subsection (c) of this section with respect to such pollutant only during the same time period as he is eligible to apply for a modification under this subsection.

(4) Procedures for listing additional pollutants

(A) General authority

Upon petition of any person, the Administrator may add any pollutant to the list of pollutants for which modification under this section is authorized (except for pollutants identified pursuant to section 1314(a)(4) of this title, toxic pollutants subject to section 1317(a) of this title, and the thermal component of discharges) in accordance with the provisions of this paragraph.

(B) Requirements for listing

(i) Sufficient information

The person petitioning for listing of an additional pollutant under this subsection shall submit to the Administrator sufficient information to make the determinations required by this subparagraph.

(ii) Toxic criteria determination

The Administrator shall determine whether or not the pollutant meets the criteria for listing as a toxic pollutant under section 1317(a) of this title.

(iii) Listing as toxic pollutant

If the Administrator determines that the pollutant meets the criteria for listing as a toxic pollutant under section 1317(a) of this title, the Administrator shall list the pollutant as a toxic pollutant under section 1317(a) of this title.

(iv) Nonconventional criteria determination

If the Administrator determines that the pollutant does not meet the criteria for listing as a toxic pollutant under such section and determines that adequate test methods and sufficient data are available to make the determinations required by paragraph (2) of this subsection with respect to the pollutant, the Administrator shall add the pollutant to the list of pollutants specified in paragraph (1) of this subsection for which modifications are authorized under this subsection.

(C) Requirements for filing of petitions

A petition for listing of a pollutant under this paragraph--

(i) must be filed not later than 270 days after the date of promulgation of an applicable effluent guideline under section 1314 of this title;

(ii) may be filed before promulgation of such guideline; and

(iii) may be filed with an application for a modification under paragraph (1) with respect to the discharge of such pollutant.

(D) Deadline for approval of petition

A decision to add a pollutant to the list of pollutants for which modifications under this subsection are authorized must be made within 270 days after the date of promulgation of an applicable effluent guideline under section 1314 of this title.

(E) Burden of proof

The burden of proof for making the determinations under subparagraph (B) shall be on the petitioner.

(5) Removal of pollutants

The Administrator may remove any pollutant from the list of pollutants for which modifications are authorized under this subsection if the Administrator determines that adequate test methods and sufficient data are no longer available for determining whether or not modifications may be granted with respect to such pollutant under paragraph (2) of this subsection.

(h) Modification of secondary treatment requirements

The Administrator, with the concurrence of the State, may issue a permit under section 1342 of this title which modifies the requirements of subsection (b)(1)(B) of this section with respect to the discharge of any pollutant from a publicly owned treatment works into marine waters, if the applicant demonstrates to the satisfaction of the Administrator that--

(1) there is an applicable water quality standard specific to the pollutant for which the modification is requested, which has been identified under section 1314(a)(6) of this title;

(2) the discharge of pollutants in accordance with such modified requirements will not interfere, alone or in combination with pollutants from other sources, with the attainment or maintenance of that water quality which assures protection of public water supplies and the protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife, and allows recreational activities, in and on the water;

(3) the applicant has established a system for monitoring the impact of such discharge on a representative sample of aquatic biota, to the extent practicable, and the scope of such monitoring is limited to include only those scientific investigations which are necessary to study the effects of the proposed discharge;

(4) such modified requirements will not result in any additional requirements on any other point or nonpoint source;

(5) all applicable pretreatment requirements for sources introducing waste into such treatment works will be

enforced;

(6) in the case of any treatment works serving a population of 50,000 or more, with respect to any toxic pollutant introduced into such works by an industrial discharger for which pollutant there is no applicable pretreatment requirement in effect, sources introducing waste into such works are in compliance with all applicable pretreatment requirements, the applicant will enforce such requirements, and the applicant has in effect a pretreatment program which, in combination with the treatment of discharges from such works, removes the same amount of such pollutant as would be removed if such works were to apply secondary treatment to discharges and if such works had no pretreatment program with respect to such pollutant;

(7) to the extent practicable, the applicant has established a schedule of activities designed to eliminate the entrance of toxic pollutants from nonindustrial sources into such treatment works;

(8) there will be no new or substantially increased discharges from the point source of the pollutant to which the modification applies above that volume of discharge specified in the permit;

(9) the applicant at the time such modification becomes effective will be discharging effluent which has received at least primary or equivalent treatment and which meets the criteria established under section 1314(a)(1) of this title after initial mixing in the waters surrounding or adjacent to the point at which such effluent is discharged.

For the purposes of this subsection the phrase "the discharge of any pollutant into marine waters" refers to a discharge into deep waters of the territorial sea or the waters of the contiguous zone, or into saline estuarine waters where there is strong tidal movement and other hydrological and geological characteristics which the Administrator determines necessary to allow compliance with paragraph (2) of this subsection, and section 1251(a)(2) of this title. For the purposes of paragraph (9), "primary or equivalent treatment" means treatment by screening, sedimentation, and skimming adequate to remove at least 30 percent of the biological oxygen demanding material and of the suspended solids in the treatment works influent, and disinfection, where appropriate. A municipality which applies secondary treatment shall be eligible to receive a permit pursuant to this subsection which modifies the requirements of subsection (b)(1)(B) of this section with respect to the discharge of any pollutant from any treatment works owned by such municipality into marine waters. No permit issued under this subsection shall authorize the discharge of sewage sludge into marine waters. In order for a permit to be issued under this subsection for the discharge of a pollutant into marine waters, such marine waters must exhibit characteristics assuring that water providing dilution does not contain significant amounts of previously discharged effluent from such treatment works. No permit issued under this subsection shall authorize the discharge of any pollutant into saline estuarine waters which at the time of application do not support a balanced indigenous population of shellfish, fish and wildlife, or allow recreation in and on the waters or which exhibit ambient water quality below applicable water quality standards adopted for the protection of public water supplies, shellfish, fish and wildlife or recreational activities or such other standards necessary to assure support and protection of such uses. The prohibition contained in the preceding sentence shall apply without regard to the presence or absence of a causal relationship between such characteristics and the applicant's current or proposed discharge. Notwithstanding any other provisions of this subsection, no permit may be issued under this subsection for discharge of a pollutant into the New York Bight Apex consisting of the ocean waters of the Atlantic Ocean westward of 73 degrees 30 minutes west longitude and northward of 40 degrees 10 minutes north latitude.

(i) Municipal time extensions

(1) Where construction is required in order for a planned or existing publicly owned treatment works to achieve limitations under subsection (b)(1)(B) or (b)(1)(C) of this section, but (A) construction cannot be completed within the time required in such subsection, or (B) the United States has failed to make financial assistance under this chapter available in time to achieve such limitations by the time specified in such subsection, the owner or operator of such treatment works may request the Administrator (or if appropriate the State) to issue a permit pursuant to section 1342 of this title or to modify a permit issued pursuant to that section to extend such time for compliance. Any such request shall be filed with the Administrator (or if appropriate the State) within 180 days after February 4, 1987. The Administrator (or if appropriate the State) may grant such request and issue or modify such a permit, which shall contain a schedule of compliance for the publicly owned treatment works based on the earliest date by which such financial assistance will be available from the United States and construction can be completed, but in no event later than July 1, 1988, and shall contain such other terms and conditions, including those necessary to carry out subsections (b) through (g) of section 1281 of this title, section 1317 of this title, and such interim effluent limitations applicable to that treatment works as the Administrator determines are necessary to carry out the provisions of this chapter.

(2)(A) Where a point source (other than a publicly owned treatment works) will not achieve the requirements of subsections (b)(1)(A) and (b)(1)(C) of this section and--

(i) if a permit issued prior to July 1, 1977, to such point source is based upon a discharge into a publicly owned treatment works; or

(ii) if such point source (other than a publicly owned treatment works) had before July 1, 1977, a contract (enforceable against such point source) to discharge into a publicly owned treatment works; or

(iii) if either an application made before July 1, 1977, for a construction grant under this chapter for a publicly owned treatment works, or engineering or architectural plans or working drawings made before July 1, 1977, for a publicly owned treatment works, show that such point source was to discharge into such publicly owned treatment works,

and such publicly owned treatment works is presently unable to accept such discharge without construction, and in the case of a discharge to an existing publicly owned treatment works, such treatment works has an extension pursuant to paragraph (1) of this subsection, the owner or operator of such point source may request the Administrator (or if appropriate the State) to issue or modify such a permit pursuant to such section 1342 of this title to extend such time for compliance. Any such request shall be filed with the Administrator (or if appropriate the State) within 180 days after December 27, 1977, or the filing of a request by the appropriate publicly owned treatment works under paragraph (1) of this subsection, whichever is later. If the Administrator (or if appropriate the State) finds that the owner or operator of such point source has acted in good faith, he may grant such request and issue or modify such a permit, which shall contain a schedule of compliance for the point source to achieve the requirements of subsections (b)(1)(A) and (C) of this section and shall contain such other terms and conditions, including pretreatment and interim effluent limitations and water conservation requirements applicable to that point source, as the Administrator determines are necessary to carry out the provisions of this chapter.

(B) No time modification granted by the Administrator (or if appropriate the State) pursuant to paragraph (2)(A)

of this subsection shall extend beyond the earliest date practicable for compliance or beyond the date of any extension granted to the appropriate publicly owned treatment works pursuant to paragraph (1) of this subsection, but in no event shall it extend beyond July 1, 1988; and no such time modification shall be granted unless (i) the publicly owned treatment works will be in operation and available to the point source before July 1, 1988, and will meet the requirements of subsections (b)(1)(B) and (C) of this section after receiving the discharge from that point source; and (ii) the point source and the publicly owned treatment works have entered into an enforceable contract requiring the point source to discharge into the publicly owned treatment works, the owner or operator of such point source to pay the costs required under section 1284 of this title, and the publicly owned treatment works to accept the discharge from the point source; and (iii) the permit for such point source requires that point source to meet all requirements under section 1317(a) and (b) of this title during the period of such time modification.

(j) Modification procedures

(1) Any application filed under this section for a modification of the provisions of--

(A) subsection (b)(1)(B) of this section under subsection (h) of this section shall be filed not later than [FN1] the 365th day which begins after December 29, 1981, except that a publicly owned treatment works which prior to December 31, 1982, had a contractual arrangement to use a portion of the capacity of an ocean outfall operated by another publicly owned treatment works which has applied for or received modification under subsection (h) of this section, may apply for a modification of subsection (h) of this section in its own right not later than 30 days after February 4, 1987, and except as provided in paragraph (5);

(B) subsection (b)(2)(A) of this section as it applies to pollutants identified in subsection (b)(2)(F) of this section shall be filed not later than 270 days after the date of promulgation of an applicable effluent guideline under section 1314 of this title or not later than 270 days after December 27, 1977, whichever is later.

(2) Subject to paragraph (3) of this section, any application for a modification filed under subsection (g) of this section shall not operate to stay any requirement under this chapter, unless in the judgment of the Administrator such a stay or the modification sought will not result in the discharge of pollutants in quantities which may reasonably be anticipated to pose an unacceptable risk to human health or the environment because of bioaccumulation, persistency in the environment, acute toxicity, chronic toxicity (including carcinogenicity, mutagenicity, or teratogenicity), or synergistic propensities, and that there is a substantial likelihood that the applicant will succeed on the merits of such application. In the case of an application filed under subsection (g) of this section, the Administrator may condition any stay granted under this paragraph on requiring the filing of a bond or other appropriate security to assure timely compliance with the requirements from which a modification is sought.

(3) Compliance requirements under subsection (g)

(A) Effect of filing

An application for a modification under subsection (g) of this section and a petition for listing of a pollutant as a pollutant for which modifications are authorized under such subsection shall not stay the requirement that the person seeking such modification or listing comply with effluent limitations under this chapter for all pollutants not the subject of such application or petition.

(B) Effect of disapproval

Disapproval of an application for a modification under subsection (g) of this section shall not stay the requirement that the person seeking such modification comply with all applicable effluent limitations under this chapter.

(4) Deadline for subsection (g) decision

An application for a modification with respect to a pollutant filed under subsection (g) of this section must be approved or disapproved not later than 365 days after the date of such filing; except that in any case in which a petition for listing such pollutant as a pollutant for which modifications are authorized under such subsection is approved, such application must be approved or disapproved not later than 365 days after the date of approval of such petition.

(5) Extension of application deadline

(A) In general

In the 180-day period beginning on October 31, 1994, the city of San Diego, California, may apply for a modification pursuant to subsection (h) of this section of the requirements of subsection (b)(1)(B) of this section with respect to biological oxygen demand and total suspended solids in the effluent discharged into marine waters.

(B) Application

An application under this paragraph shall include a commitment by the applicant to implement a waste water reclamation program that, at a minimum, will--

(i) achieve a system capacity of 45,000,000 gallons of reclaimed waste water per day by January 1, 2010; and

(ii) result in a reduction in the quantity of suspended solids discharged by the applicant into the marine environment during the period of the modification.

(C) Additional conditions

The Administrator may not grant a modification pursuant to an application submitted under this paragraph unless the Administrator determines that such modification will result in removal of not less than 58 percent of the biological oxygen demand (on an annual average) and not less than 80 percent of total suspended solids (on a monthly average) in the discharge to which the application applies.

(D) Preliminary decision deadline

The Administrator shall announce a preliminary decision on an application submitted under this paragraph not later than 1 year after the date the application is submitted.

(k) Innovative technology

In the case of any facility subject to a permit under section 1342 of this title which proposes to comply with the requirements of subsection (b)(2)(A) or (b)(2)(E) of this section by replacing existing production capacity with an innovative production process which will result in an effluent reduction significantly greater than that required by the limitation otherwise applicable to such facility and moves toward the national goal of eliminating the discharge of all pollutants, or with the installation of an innovative control technique that has a substantial likelihood for enabling the facility to comply with the applicable effluent limitation by achieving a significantly greater effluent reduction than that required by the applicable effluent limitation and moves toward the national goal of eliminating the discharge of all pollutants, or by achieving the required reduction with an innovative system that has the potential for significantly lower costs than the systems which have been determined by the Administrator to be economically achievable, the Administrator (or the State with an approved program under section 1342 of this title, in consultation with the Administrator) may establish a date for compliance under subsection (b)(2)(A) or (b)(2)(E) of this section no later than two years after the date for compliance with such effluent limitation which would otherwise be applicable under such subsection, if it is also determined that such innovative system has the potential for industrywide application.

(l) Toxic pollutants

Other than as provided in subsection (n) of this section, the Administrator may not modify any requirement of this section as it applies to any specific pollutant which is on the toxic pollutant list under section 1317(a)(1) of this title.

(m) Modification of effluent limitation requirements for point sources

(1) The Administrator, with the concurrence of the State, may issue a permit under section 1342 of this title which modifies the requirements of subsections (b)(1)(A) and (b)(2)(E) of this section, and of section 1343 of this title, with respect to effluent limitations to the extent such limitations relate to biochemical oxygen demand and pH from discharges by an industrial discharger in such State into deep waters of the territorial seas, if the applicant demonstrates and the Administrator finds that--

(A) the facility for which modification is sought is covered at the time of the enactment of this subsection by National Pollutant Discharge Elimination System permit number CA0005894 or CA0005282;

(B) the energy and environmental costs of meeting such requirements of subsections (b)(1)(A) and (b)(2)(E) of this section and section 1343 of this title exceed by an unreasonable amount the benefits to be obtained, including the objectives of this chapter;

(C) the applicant has established a system for monitoring the impact of such discharges on a representative sample of aquatic biota;

(D) such modified requirements will not result in any additional requirements on any other point or nonpoint source;

(E) there will be no new or substantially increased discharges from the point source of the pollutant to which the modification applies above that volume of discharge specified in the permit;

(F) the discharge is into waters where there is strong tidal movement and other hydrological and geological characteristics which are necessary to allow compliance with this subsection and section 1251(a)(2) of this title;

(G) the applicant accepts as a condition to the permit a contractual [FN2] obligation to use funds in the amount required (but not less than \$250,000 per year for ten years) for research and development of water pollution control technology, including but not limited to closed cycle technology;

(H) the facts and circumstances present a unique situation which, if relief is granted, will not establish a precedent or the relaxation of the requirements of this chapter applicable to similarly situated discharges; and

(I) no owner or operator of a facility comparable to that of the applicant situated in the United States has demonstrated that it would be put at a competitive disadvantage to the applicant (or the parent company or any subsidiary thereof) as a result of the issuance of a permit under this subsection.

(2) The effluent limitations established under a permit issued under paragraph (1) shall be sufficient to implement the applicable State water quality standards, to assure the protection of public water supplies and protection and propagation of a balanced, indigenous population of shellfish, fish, fauna, wildlife, and other aquatic organisms, and to allow recreational activities in and on the water. In setting such limitations, the Administrator shall take into account any seasonal variations and the need for an adequate margin of safety, considering the lack of essential knowledge concerning the relationship between effluent limitations and water quality and the lack of essential knowledge of the effects of discharges on beneficial uses of the receiving waters.

(3) A permit under this subsection may be issued for a period not to exceed five years, and such a permit may be renewed for one additional period not to exceed five years upon a demonstration by the applicant and a finding by the Administrator at the time of application for any such renewal that the provisions of this subsection are met.

(4) The Administrator may terminate a permit issued under this subsection if the Administrator determines that there has been a decline in ambient water quality of the receiving waters during the period of the permit even if a direct cause and effect relationship cannot be shown: *Provided*, That if the effluent from a source with a permit issued under this subsection is contributing to a decline in ambient water quality of the receiving waters, the Administrator shall terminate such permit.

(n) Fundamentally different factors

(1) General rule

The Administrator, with the concurrence of the State, may establish an alternative requirement under subsection (b)(2) of this section or section 1317(b) of this title for a facility that modifies the requirements of national effluent limitation guidelines or categorical pretreatment standards that would otherwise be applicable to such facility, if the owner or operator of such facility demonstrates to the satisfaction of the Administrator that--

(A) the facility is fundamentally different with respect to the factors (other than cost) specified in section

1314(b) or 1314(g) of this title and considered by the Administrator in establishing such national effluent limitation guidelines or categorical pretreatment standards;

(B) the application--

(i) is based solely on information and supporting data submitted to the Administrator during the rulemaking for establishment of the applicable national effluent limitation guidelines or categorical pretreatment standard specifically raising the factors that are fundamentally different for such facility; or

(ii) is based on information and supporting data referred to in clause (i) and information and supporting data the applicant did not have a reasonable opportunity to submit during such rulemaking;

(C) the alternative requirement is no less stringent than justified by the fundamental difference; and

(D) the alternative requirement will not result in a non-water quality environmental impact which is markedly more adverse than the impact considered by the Administrator in establishing such national effluent limitation guideline or categorical pretreatment standard.

(2) Time limit for applications

An application for an alternative requirement which modifies the requirements of an effluent limitation or pretreatment standard under this subsection must be submitted to the Administrator within 180 days after the date on which such limitation or standard is established or revised, as the case may be.

(3) Time limit for decision

The Administrator shall approve or deny by final agency action an application submitted under this subsection within 180 days after the date such application is filed with the Administrator.

(4) Submission of information

The Administrator may allow an applicant under this subsection to submit information and supporting data until the earlier of the date the application is approved or denied or the last day that the Administrator has to approve or deny such application.

(5) Treatment of pending applications

For the purposes of this subsection, an application for an alternative requirement based on fundamentally different factors which is pending on February 4, 1987, shall be treated as having been submitted to the Administrator on the 180th day following February 4, 1987. The applicant may amend the application to take into account the provisions of this subsection.

(6) Effect of submission of application

An application for an alternative requirement under this subsection shall not stay the applicant's obligation to comply with the effluent limitation guideline or categorical pretreatment standard which is the subject of the application.

(7) Effect of denial

If an application for an alternative requirement which modifies the requirements of an effluent limitation or pretreatment standard under this subsection is denied by the Administrator, the applicant must comply with such limitation or standard as established or revised, as the case may be.

(8) Reports

By January 1, 1997, and January 1 of every odd-numbered year thereafter, the Administrator shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a report on the status of applications for alternative requirements which modify the requirements of effluent limitations under section 1311 or 1314 of this title or any national categorical pretreatment standard under section 1317(b) of this title filed before, on, or after February 4, 1987.

(o) Application fees

The Administrator shall prescribe and collect from each applicant fees reflecting the reasonable administrative costs incurred in reviewing and processing applications for modifications submitted to the Administrator pursuant to subsections (c), (g), (i), (k), (m), and (n) of this section, section 1314(d)(4) of this title, and section 1326(a) of this title. All amounts collected by the Administrator under this subsection shall be deposited into a special fund of the Treasury entitled "Water Permits and Related Services" which shall thereafter be available for appropriation to carry out activities of the Environmental Protection Agency for which such fees were collected.

(p) Modified permit for coal remining operations

(1) In general

Subject to paragraphs (2) through (4) of this subsection, the Administrator, or the State in any case which the State has an approved permit program under section 1342(b) of this title, may issue a permit under section 1342 of this title which modifies the requirements of subsection (b)(2)(A) of this section with respect to the pH level of any pre-existing discharge, and with respect to pre-existing discharges of iron and manganese from the remined area of any coal remining operation or with respect to the pH level or level of iron and manganese in any pre-existing discharge affected by the remining operation. Such modified requirements shall apply the best available technology economically achievable on a case-by-case basis, using best professional judgment, to set specific numerical effluent limitations in each permit.

(2) Limitations

The Administrator or the State may only issue a permit pursuant to paragraph (1) if the applicant demonstrates to the satisfaction of the Administrator or the State, as the case may be, that the coal remining operation will result in the potential for improved water quality from the remining operation but in no event shall such a permit allow the pH level of any discharge, and in no event shall such a permit allow the discharges of iron and manganese, to exceed the levels being discharged from the remined area before the coal remining operation begins. No discharge from, or affected by, the remining operation shall exceed State water quality standards established under section 1313 of this title.

(3) Definitions

For purposes of this subsection--

(A) Coal remining operation

The term "coal remining operation" means a coal mining operation which begins after February 4, 1987 at a site on which coal mining was conducted before August 3, 1977.

(B) Remined area

The term "remined area" means only that area of any coal remining operation on which coal mining was conducted before August 3, 1977.

(C) Pre-existing discharge

The term "pre-existing discharge" means any discharge at the time of permit application under this subsection.

(4) Applicability of strip mining laws

Nothing in this subsection shall affect the application of the Surface Mining Control and Reclamation Act of 1977 [30 U.S.C.A. § 1201 et seq.] to any coal remining operation, including the application of such Act to suspended solids.

CREDIT(S)

(June 30, 1948, c. 758, Title III, § 301, as added Oct. 18, 1972, Pub.L. 92-500, § 2, 86 Stat. 844, and amended Dec. 27, 1977, Pub.L. 95-217, §§ 42-47, 53(c), 91 Stat. 1582-1586, 1590; Dec. 29, 1981, Pub.L. 97-117, §§ 21, 22(a)-(d), 95 Stat. 1631, 1632; Jan. 8, 1983, Pub.L. 97-440, 96 Stat. 2289; Feb. 4, 1987, Pub.L. 100-4, Title III, §§ 301(a) to (e), 302(a) to (d), 303(a), (b)(1), (c) to (f), 304(a), 305, 306(a), (b), 307, 101 Stat. 29-37; Nov. 18, 1988, Pub.L. 100-688, Title III, § 3202(b), 102 Stat. 4154; Oct. 31, 1994, Pub.L. 103-431, § 2, 108 Stat. 4396; Dec. 21, 1995, Pub.L. 104-66, Title II, § 2021(b), 109 Stat. 727.)

[FN1] So in original. Probably should be "than".

[FN2] So in original. Probably should be "contractual".

Current through P.L. 112-24 approved 7-26-11

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END OF DOCUMENT

ATTACHMENT 3

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33 U.S.C.A. § 1313

Page 1



Effective: October 10, 2000

United States Code Annotated Currentness

Title 33. Navigation and Navigable Waters (Refs & Annos)

▣ Chapter 26. Water Pollution Prevention and Control (Refs & Annos)

▣ Subchapter III. Standards and Enforcement (Refs & Annos)

→ § 1313. Water quality standards and implementation plans

(a) Existing water quality standards

(1) In order to carry out the purpose of this chapter, any water quality standard applicable to interstate waters which was adopted by any State and submitted to, and approved by, or is a waiting approval by, the Administrator pursuant to this Act as in effect immediately prior to October 18, 1972, shall remain in effect unless the Administrator determined that such standard is not consistent with the applicable requirements of this Act as in effect immediately prior to October 18, 1972. If the Administrator makes such a determination he shall, within three months after October 18, 1972, notify the State and specify the changes needed to meet such requirements. If such changes are not adopted by the State within ninety days after the date of such notification, the Administrator shall promulgate such changes in accordance with subsection (b) of this section.

(2) Any State which, before October 18, 1972, has adopted, pursuant to its own law, water quality standards applicable to intrastate waters shall submit such standards to the Administrator within thirty days after October 18, 1972. Each such standard shall remain in effect, in the same manner and to the same extent as any other water quality standard established under this chapter unless the Administrator determines that such standard is inconsistent with the applicable requirements of this Act as in effect immediately prior to October 18, 1972. If the Administrator makes such a determination he shall not later than the one hundred and twentieth day after the date of submission of such standards, notify the State and specify the changes needed to meet such requirements. If such changes are not adopted by the State within ninety days after such notification, the Administrator shall promulgate such changes in accordance with subsection (b) of this section.

(3)(A) Any State which prior to October 18, 1972, has not adopted pursuant to its own laws water quality standards applicable to intrastate waters shall, not later than one hundred and eighty days after October 18, 1972, adopt and submit such standards to the Administrator.

(B) If the Administrator determines that any such standards are consistent with the applicable requirements of this Act as in effect immediately prior to October 18, 1972, he shall approve such standards.

(C) If the Administrator determines that any such standards are not consistent with the applicable requirements of this Act as in effect immediately prior to October 18, 1972, he shall, not later than the ninetieth day after the

date of submission of such standards, notify the State and specify the changes to meet such requirements. If such changes are not adopted by the State within ninety days after the date of notification, the Administrator shall promulgate such standards pursuant to subsection (b) of this section.

(b) Proposed regulations

(1) The Administrator shall promptly prepare and publish proposed regulations setting forth water quality standards for a State in accordance with the applicable requirements of this Act as in effect immediately prior to October 18, 1972, if--

(A) the State fails to submit water quality standards within the times prescribed in subsection (a) of this section.

(B) a water quality standard submitted by such State under subsection (a) of this section is determined by the Administrator not to be consistent with the applicable requirements of subsection (a) of this section.

(2) The Administrator shall promulgate any water quality standard published in a proposed regulation not later than one hundred and ninety days after the date he publishes any such proposed standard, unless prior to such promulgation, such State has adopted a water quality standard which the Administrator determines to be in accordance with subsection (a) of this section.

(c) Review; revised standards; publication

(1) The Governor of a State or the State water pollution control agency of such State shall from time to time (but at least once each three year period beginning with October 18, 1972) hold public hearings for the purpose of reviewing applicable water quality standards and, as appropriate, modifying and adopting standards. Results of such review shall be made available to the Administrator.

(2)(A) Whenever the State revises or adopts a new standard, such revised or new standard shall be submitted to the Administrator. Such revised or new water quality standard shall consist of the designated uses of the navigable waters involved and the water quality criteria for such waters based upon such uses. Such standards shall be such as to protect the public health or welfare, enhance the quality of water and serve the purposes of this chapter. Such standards shall be established taking into consideration their use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes, and also taking into consideration their use and value for navigation.

(B) Whenever a State reviews water quality standards pursuant to paragraph (1) of this subsection, or revises or adopts new standards pursuant to this paragraph, such State shall adopt criteria for all toxic pollutants listed pursuant to section 1317(a)(1) of this title for which criteria have been published under section 1314(a) of this title, the discharge or presence of which in the affected waters could reasonably be expected to interfere with those designated uses adopted by the State, as necessary to support such designated uses. Such criteria shall be specific numerical criteria for such toxic pollutants. Where such numerical criteria are not available, whenever a State

reviews water quality standards pursuant to paragraph (1), or revises or adopts new standards pursuant to this paragraph, such State shall adopt criteria based on biological monitoring or assessment methods consistent with information published pursuant to section 1314(a)(8) of this title. Nothing in this section shall be construed to limit or delay the use of effluent limitations or other permit conditions based on or involving biological monitoring or assessment methods or previously adopted numerical criteria.

(3) If the Administrator, within sixty days after the date of submission of the revised or new standard, determines that such standard meets the requirements of this chapter, such standard shall thereafter be the water quality standard for the applicable waters of that State. If the Administrator determines that any such revised or new standard is not consistent with the applicable requirements of this chapter, he shall not later than the ninetieth day after the date of submission of such standard notify the State and specify the changes to meet such requirements. If such changes are not adopted by the State within ninety days after the date of notification, the Administrator shall promulgate such standard pursuant to paragraph (4) of this subsection.

(4) The Administrator shall promptly prepare and publish proposed regulations setting forth a revised or new water quality standard for the navigable waters involved--

(A) if a revised or new water quality standard submitted by such State under paragraph (3) of this subsection for such waters is determined by the Administrator not to be consistent with the applicable requirements of this chapter, or

(B) in any case where the Administrator determines that a revised or new standard is necessary to meet the requirements of this chapter.

The Administrator shall promulgate any revised or new standard under this paragraph not later than ninety days after he publishes such proposed standards, unless prior to such promulgation, such State has adopted a revised or new water quality standard which the Administrator determines to be in accordance with this chapter.

(d) Identification of areas with insufficient controls; maximum daily load; certain effluent limitations revision

(1)(A) Each State shall identify those waters within its boundaries for which the effluent limitations required by section 1311(b)(1)(A) and section 1311(b)(1)(B) of this title are not stringent enough to implement any water quality standard applicable to such waters. The State shall establish a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of such waters.

(B) Each State shall identify those waters or parts thereof within its boundaries for which controls on thermal discharges under section 1311 of this title are not stringent enough to assure protection and propagation of a balanced indigenous population of shellfish, fish, and wildlife.

(C) Each State shall establish for the waters identified in paragraph (1)(A) of this subsection, and in accordance with the priority ranking, the total maximum daily load, for those pollutants which the Administrator identifies

under section 1314(a)(2) of this title as suitable for such calculation. Such load shall be established at a level necessary to implement the applicable water quality standards with seasonal variations and a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality.

(D) Each State shall estimate for the waters identified in paragraph (1)(B) of this subsection the total maximum daily thermal load required to assure protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife. Such estimates shall take into account the normal water temperatures, flow rates, seasonal variations, existing sources of heat input, and the dissipative capacity of the identified waters or parts thereof. Such estimates shall include a calculation of the maximum heat input that can be made into each such part and shall include a margin of safety which takes into account any lack of knowledge concerning the development of thermal water quality criteria for such protection and propagation in the identified waters or parts thereof.

(2) Each State shall submit to the Administrator from time to time, with the first such submission not later than one hundred and eighty days after the date of publication of the first identification of pollutants under section 1314(a)(2)(D) of this title, for his approval the waters identified and the loads established under paragraphs (1)(A), (1)(B), (1)(C), and (1)(D) of this subsection. The Administrator shall either approve or disapprove such identification and load not later than thirty days after the date of submission. If the Administrator approves such identification and load, such State shall incorporate them into its current plan under subsection (e) of this section. If the Administrator disapproves such identification and load, he shall not later than thirty days after the date of such disapproval identify such waters in such State and establish such loads for such waters as he determines necessary to implement the water quality standards applicable to such waters and upon such identification and establishment the State shall incorporate them into its current plan under subsection (e) of this section.

(3) For the specific purpose of developing information, each State shall identify all waters within its boundaries which it has not identified under paragraph (1)(A) and (1)(B) of this subsection and estimate for such waters the total maximum daily load with seasonal variations and margins of safety, for those pollutants which the Administrator identifies under section 1314(a)(2) of this title as suitable for such calculation and for thermal discharges, at a level that would assure protection and propagation of a balanced indigenous population of fish, shellfish, and wildlife.

(4) Limitations on revision of certain effluent limitations

(A) Standard not attained

For waters identified under paragraph (1)(A) where the applicable water quality standard has not yet been attained, any effluent limitation based on a total maximum daily load or other waste load allocation established under this section may be revised only if (i) the cumulative effect of all such revised effluent limitations based on such total maximum daily load or waste load allocation will assure the attainment of such water quality standard, or (ii) the designated use which is not being attained is removed in accordance with regulations established under this section.

(B) Standard attained

For waters identified under paragraph (1)(A) where the quality of such waters equals or exceeds levels necessary to protect the designated use for such waters or otherwise required by applicable water quality standards, any effluent limitation based on a total maximum daily load or other waste load allocation established under this section, or any water quality standard established under this section, or any other permitting standard may be revised only if such revision is subject to and consistent with the antidegradation policy established under this section.

(e) Continuing planning process

(1) Each State shall have a continuing planning process approved under paragraph (2) of this subsection which is consistent with this chapter.

(2) Each State shall submit not later than 120 days after October 18, 1972, to the Administrator for his approval a proposed continuing planning process which is consistent with this chapter. Not later than thirty days after the date of submission of such a process the Administrator shall either approve or disapprove such process. The Administrator shall from time to time review each State's approved planning process for the purpose of insuring that such planning process is at all times consistent with this chapter. The Administrator shall not approve any State permit program under subchapter IV of this chapter for any State which does not have an approved continuing planning process under this section.

(3) The Administrator shall approve any continuing planning process submitted to him under this section which will result in plans for all navigable waters within such State, which include, but are not limited to, the following:

(A) effluent limitations and schedules of compliance at least as stringent as those required by section 1311(b)(1), section 1311(b)(2), section 1316, and section 1317 of this title, and at least as stringent as any requirements contained in any applicable water quality standard in effect under authority of this section;

(B) the incorporation of all elements of any applicable area-wide waste management plans under section 1288 of this title, and applicable basin plans under section 1289 of this title;

(C) total maximum daily load for pollutants in accordance with subsection (d) of this section;

(D) procedures for revision;

(E) adequate authority for intergovernmental cooperation;

(F) adequate implementation, including schedules of compliance, for revised or new water quality standards, under subsection (c) of this section;

(G) controls over the disposition of all residual waste from any water treatment processing;

(H) an inventory and ranking, in order of priority, of needs for construction of waste treatment works required to meet the applicable requirements of sections 1311 and 1312 of this title.

(f) Earlier compliance

Nothing in this section shall be construed to affect any effluent limitation, or schedule of compliance required by any State to be implemented prior to the dates set forth in sections 1311(b)(1) and 1311(b)(2) of this title nor to preclude any State from requiring compliance with any effluent limitation or schedule of compliance at dates earlier than such dates.

(g) Heat standards

Water quality standards relating to heat shall be consistent with the requirements of section 1326 of this title.

(h) Thermal water quality standards

For the purposes of this chapter the term "water quality standards" includes thermal water quality standards.

(i) Coastal recreation water quality criteria

(1) Adoption by States

(A) Initial criteria and standards

Not later than 42 months after October 10, 2000, each State having coastal recreation waters shall adopt and submit to the Administrator water quality criteria and standards for the coastal recreation waters of the State for those pathogens and pathogen indicators for which the Administrator has published criteria under section 1314(a) of this title.

(B) New or revised criteria and standards

Not later than 36 months after the date of publication by the Administrator of new or revised water quality criteria under section 1314(a)(9) of this title, each State having coastal recreation waters shall adopt and submit to the Administrator new or revised water quality standards for the coastal recreation waters of the State for all pathogens and pathogen indicators to which the new or revised water quality criteria are applicable.

(2) Failure of States to adopt

(A) In general

If a State fails to adopt water quality criteria and standards in accordance with paragraph (1)(A) that are as

protective of human health as the criteria for pathogens and pathogen indicators for coastal recreation waters published by the Administrator, the Administrator shall promptly propose regulations for the State setting forth revised or new water quality standards for pathogens and pathogen indicators described in paragraph (1)(A) for coastal recreation waters of the State.

(B) Exception

If the Administrator proposes regulations for a State described in subparagraph (A) under subsection (c)(4)(B) of this section, the Administrator shall publish any revised or new standard under this subsection not later than 42 months after October 10, 2000.

(3) Applicability

Except as expressly provided by this subsection, the requirements and procedures of subsection (c) of this section apply to this subsection, including the requirement in subsection (c)(2)(A) of this section that the criteria protect public health and welfare.

CREDIT(S)

(June 30, 1948, c. 758, Title III, § 303, as added Oct. 18, 1972, Pub.L. 92-500, § 2, 86 Stat. 846, and amended Feb. 4, 1987, Pub.L. 100-4, Title III, § 308(d), Title IV, § 404(b), 101 Stat. 39, 68; Oct. 10, 2000, Pub.L. 106-284, § 2, 114 Stat. 870.)

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ATTACHMENT 4

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33 U.S.C.A. § 1342

Page 1



Effective: July 29, 2008

United States Code Annotated Currentness

Title 33. Navigation and Navigable Waters (Refs & Annos)

▣ Chapter 26. Water Pollution Prevention and Control (Refs & Annos)

▣ Subchapter IV. Permits and Licenses (Refs & Annos)

→ § 1342. National pollutant discharge elimination system

(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 objective 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 such 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 re-

visions 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, [FN1] and the Administrator may withdraw under paragraph (3) of this subsection approval, of--

(A) a State partial permit program approved under subsection (n)(3) of this section 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) of this section 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.

(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 stand-

ards 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) of this section.

(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) of this section.

(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) of this section if--

(A) the Administrator determines that the partial program represents a significant and identifiable part of the State program required by subsection (b) of this section; 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) of this section 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) of this section;

(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 Oct. 18, 1972, Pub.L. 92-500, § 2, 86 Stat. 880, and amended Dec. 27, 1977, Pub.L. 95-217, §§ 33(c), 50, 54(c)(1), 65, 66, 91 Stat. 1577, 1588, 1591, 1599, 1600; Feb. 4, 1987, Pub.L. 100-4, Title IV, §§ 401 to 404(a), (c), formerly (d), 405, 101 Stat. 65 to 67, 69; Oct. 31, 1992, Pub.L. 102-580, Title III, § 364, 106 Stat. 4862; Dec. 21, 1995, Pub.L. 104-66, Title II, § 2021(e)(2), 109 Stat. 727; Dec. 21, 2000, Pub.L. 106-554, § 1(a)(4) [Div. B, Title I, § 112(a)], 114 Stat. 2763, 2763A-224; July 29, 2008, Pub.L. 110-288, § 2, 122 Stat. 2650.)

[FN1] So in original.

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ATTACHMENT 5

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33 U.S.C.A. § 1362

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Effective: July 29, 2008

United States Code Annotated Currentness
Title 33. Navigation and Navigable Waters (Refs & Annos)
 ☞ Chapter 26. Water Pollution Prevention and Control (Refs & Annos)
 ☞ Subchapter V. General Provisions
 → § 1362. Definitions

Except as otherwise specifically provided, when used in this chapter:

(1) The term “State water pollution control agency” means the State agency designated by the Governor having responsibility for enforcing State laws relating to the abatement of pollution.

(2) The term “interstate agency” means an agency of two or more States established by or pursuant to an agreement or compact approved by the Congress, or any other agency of two or more States, having substantial powers or duties pertaining to the control of pollution as determined and approved by the Administrator.

(3) The term “State” means a State, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, and the Trust Territory of the Pacific Islands.

(4) The term “municipality” means a city, town, borough, county, parish, district, association, or other public body created by or pursuant to State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 1288 of this title.

(5) The term “person” means an individual, corporation, partnership, association, State, municipality, commission, or political subdivision of a State, or any interstate body.

(6) The term “pollutant” means dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. This term does not mean (A) “sewage from vessels or a discharge incidental to the normal operation of a vessel of the Armed Forces” within the meaning of section 1322 of this title; or (B) water, gas, or other material which is injected into a well to facilitate production of oil or gas, or water derived in association with oil or gas production and disposed of in a well, if the well used either to facilitate production or for disposal purposes is approved by authority of the State in which the well is located, and if such State determines that such injection or disposal will not

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result in the degradation of ground or surface water resources.

(7) The term "navigable waters" means the waters of the United States, including the territorial seas.

(8) The term "territorial seas" means the belt of the seas measured from the line of ordinary low water along that portion of the coast which is in direct contact with the open sea and the line marking the seaward limit of inland waters, and extending seaward a distance of three miles.

(9) The term "contiguous zone" means the entire zone established or to be established by the United States under article 24 of the Convention of the Territorial Sea and the Contiguous Zone.

(10) The term "ocean" means any portion of the high seas beyond the contiguous zone.

(11) The term "effluent limitation" means any restriction established by a State or the 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.

(12) The term "discharge of a pollutant" and the term "discharge of pollutants" each means (A) any addition of any pollutant to navigable waters from any point source, (B) any addition of any pollutant to the waters of the contiguous zone or the ocean from any point source other than a vessel or other floating craft.

(13) The term "toxic pollutant" means those pollutants, or combinations of pollutants, including disease-causing agents, which after discharge and upon exposure, ingestion, inhalation or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will, on the basis of information available to the Administrator, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunctions in reproduction) or physical deformations, in such organisms or their offspring.

(14) The term "point source" means 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 operation, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include agricultural stormwater discharges and return flows from irrigated agriculture.

(15) The term "biological monitoring" shall mean the determination of the effects on aquatic life, including accumulation of pollutants in tissue, in receiving waters due to the discharge of pollutants (A) by techniques and procedures, including sampling of organisms representative of appropriate levels of the food chain appropriate to the volume and the physical, chemical, and biological characteristics of the effluent, and (B) at appropriate frequencies and locations.

(16) The term "discharge" when used without qualification includes a discharge of a pollutant, and a discharge of pollutants.

(17) The term "schedule of compliance" means a schedule of remedial measures including an enforceable sequence of actions or operations leading to compliance with an effluent limitation, other limitation, prohibition, or standard.

(18) The term "industrial user" means those industries identified in the Standard Industrial Classification Manual, Bureau of the Budget, 1967, as amended and supplemented, under the category of "Division D-Manufacturing" and such other classes of significant waste producers as, by regulation, the Administrator deems appropriate.

(19) The term "pollution" means the man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water.

(20) The term "medical waste" means isolation wastes; infectious agents; human blood and blood products; pathological wastes; sharps; body parts; contaminated bedding; surgical wastes and potentially contaminated laboratory wastes; dialysis wastes; and such additional medical items as the Administrator shall prescribe by regulation.

(21) Coastal recreation waters

(A) In general

The term "coastal recreation waters" means--

(i) the Great Lakes; and

(ii) marine coastal waters (including coastal estuaries) that are designated under section 1313(c) of this title by a State for use for swimming, bathing, surfing, or similar water contact activities.

(B) Exclusions

The term "coastal recreation waters" does not include--

(i) inland waters; or

(ii) waters upstream of the mouth of a river or stream having an unimpaired natural connection with the open sea.

(22) Floatable material

(A) In general

The term "floatable material" means any foreign matter that may float or remain suspended in the water column.

(B) Inclusions

The term "floatable material" includes--

(i) plastic;

(ii) aluminum cans;

(iii) wood products;

(iv) bottles; and

(v) paper products.

(23) Pathogen indicator

The term "pathogen indicator" means a substance that indicates the potential for human infectious disease.

(24) Oil and gas exploration and production

The term "oil and gas exploration, production, processing, or treatment operations or transmission facilities" means all field activities or operations associated with exploration, production, processing, or treatment operations, or transmission facilities, including activities necessary to prepare a site for drilling and for the movement and placement of drilling equipment, whether or not such field activities or operations may be considered to be construction activities.

(25) Recreational vessel

(A) In general

The term "recreational vessel" means any vessel that is--

(i) manufactured or used primarily for pleasure; or

(ii) leased, rented, or chartered to a person for the pleasure of that person.

(B) Exclusion

The term "recreational vessel" does not include a vessel that is subject to Coast Guard inspection and that--

(i) is engaged in commercial use; or

(ii) carries paying passengers.

CREDIT(S)

(June 30, 1948, c. 758, Title V, § 502, as added Oct. 18, 1972, Pub.L. 92-500, § 2, 86 Stat. 886, and amended Dec. 27, 1977, Pub.L. 95-217, § 33(b), 91 Stat. 1577; Feb. 4, 1987, Pub.L. 100-4, Title V, §§ 502(a), 503, 101 Stat. 75; Nov. 18, 1988, Pub.L. 100-688, Title III, § 3202(a), 102 Stat. 4154; Feb. 10, 1996, Pub.L. 104-106, Div. A, Title III, § 325(c)(3), 110 Stat. 259; Oct. 10, 2000, Pub.L. 106-284, § 5, 114 Stat. 875; Aug. 8, 2005, Pub.L. 109-58, Title III, § 323, 119 Stat. 694; July 29, 2008, Pub.L. 110-288, § 3, 122 Stat. 2650.)

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ATTACHMENT 6

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40 C.F.R. § 122.2

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C

Effective:[See Text Amendments]

Code of Federal Regulations Currentness
Title 40. Protection of Environment
Chapter I. Environmental Protection Agency
(Refs & Annos)
Subchapter D. Water Programs
Part 122. EPA Administered Permit
Programs: the National Pollutant Dis-
charge Elimination System (Refs & An-
nos)
Subpart A. Definitions and General
Program Requirements
→ § 122.2 Definitions.

The following definitions apply to Parts 122, 123,
and 124. Terms not defined in this section have the
meaning given by CWA. When a defined term ap-
pears in a definition, the defined term is sometimes
placed in quotation marks as an aid to readers.

Administrator means the Administrator of the
United States Environmental Protection Agency, or
an authorized representative.

Animal feeding operation is defined at § 122.23.

Applicable standards and limitations means all
State, interstate, and federal standards and limita-
tions to which a "discharge," a "sewage sludge use
or disposal practice," or a related activity is subject
under the CWA, including "effluent limitations,"
water quality standards, standards of performance,
toxic effluent standards or prohibitions, "best man-
agement practices," pretreatment standards, and
"standards for sewage sludge use or disposal" under
sections 301, 302, 303, 304, 306, 307, 308, 403 and
405 of CWA.

Application means the EPA standard national forms
for applying for a permit, including any additions,

revisions or modifications to the forms; or forms
approved by EPA for use in "approved States," in-
cluding any approved modifications or revisions.

Approved program or approved State means a State
or interstate program which has been approved or
authorized by EPA under Part 123.

Aquaculture project is defined at § 122.25.

Average monthly discharge limitation means the
highest allowable average of "daily discharges"
over a calendar month, calculated as the sum of all
"daily discharges" measured during a calendar
month divided by the number of "daily discharges"
measured during that month.

Average weekly discharge limitation means the
highest allowable average of "daily discharges"
over a calendar week, calculated as the sum of all
"daily discharges" measured during a calendar
week divided by the number of "daily discharges"
measured during that week.

Best management practices ("BMPs") means sched-
ules of activities, prohibitions of practices, main-
tenance procedures, and other management prac-
tices to prevent or reduce the pollution of "waters
of the United States." BMPs also include treatment
requirements, operating procedures, and practices
to control plant site runoff, spillage or leaks, sludge
or waste disposal, or drainage from raw material
storage.

BMPs means "best management practices."

Bypass is defined at § 122.41(m).

Class I sludge management facility means any
POTW identified under 40 CFR 403.8(a) as being
required to have an approved pretreatment program
(including such POTWs located in a State that has
elected to assume local program responsibilities
pursuant to 40 CFR 403.10(e)) and any other treat-
ment works treating domestic sewage classified as a

Class I sludge management facility by the Regional Administrator, or, in the case of approved State programs, the Regional Administrator in conjunction with the State Director, because of the potential for its sludge use or disposal practices to adversely affect public health and the environment.

Concentrated animal feeding operation is defined at § 122.23.

Concentrated aquatic animal feeding operation is defined at § 122.24.

Contiguous zone means the entire zone established by the United States under Article 24 of the Convention on the Territorial Sea and the Contiguous Zone.

Continuous discharge means a "discharge" which occurs without interruption throughout the operating hours of the facility, except for infrequent shut-downs for maintenance, process changes, or other similar activities.

CWA means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Pub.L. 92-500, as amended by Pub.L. 95-217, Pub.L. 95-576, Pub.L. 96-483 and Pub.L. 97-117, 33 U.S.C. 1251 et seq.

CWA and regulations means the Clean Water Act (CWA) and applicable regulations promulgated thereunder. In the case of an approved State program, it includes State program requirements.

Daily discharge means the "discharge of a pollutant" measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the day.

Direct discharge means the "discharge of a pollutant."

Director means the Regional Administrator or the State Director, as the context requires, or an authorized representative. When there is no "approved State program," and there is an EPA administrative program, "Director" means the Regional Administrator. When there is an approved State program, "Director" normally means the State Director. In some circumstances, however, EPA retains the authority to take certain actions even when there is an approved State program. (For example, when EPA has issued an NPDES permit prior to the approval of a State program, EPA may retain jurisdiction over that permit after program approval, see § 123.1.) In such cases, the term "Director" means the Regional Administrator and not the State Director.

Discharge when used without qualification means the "discharge of a pollutant."

Discharge of a pollutant means:

(a) Any addition of any "pollutant" or combination of pollutants to "waters of the United States" from any "point source," or

(b) Any addition of any pollutant or combination of pollutants to the waters of the "contiguous zone" or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation.

This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channelled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. This term does not include an addition of pollutants by any "indirect discharger."

Discharge Monitoring Report ("DMR") means the

EPA uniform national form, including any subsequent additions, revisions, or modifications for the reporting of self-monitoring results by permittees. DMRs must be used by "approved States" as well as by EPA. EPA will supply DMRs to any approved State upon request. The EPA national forms may be modified to substitute the State Agency name, address, logo, and other similar information, as appropriate, in place of EPA's.

DMR means "Discharge Monitoring Report."

Draft permit means a document prepared under § 124.6 indicating the Director's tentative decision to issue or deny, modify, revoke and reissue, terminate, or reissue a "permit." A notice of intent to terminate a permit, and a notice of intent to deny a permit, as discussed in § 124.5, are types of "draft permits." A denial of a request for modification, revocation and reissuance, or termination, as discussed in § 124.5, is not a "draft permit." A "proposed permit" is not a "draft permit."

Effluent limitation means any restriction imposed by the Director on quantities, discharge rates, and concentrations of "pollutants" which are "discharged" from "point sources" into "waters of the United States," the waters of the "contiguous zone," or the ocean.

Effluent limitations guidelines means a regulation published by the Administrator under section 304 (b) of CWA to adopt or revise "effluent limitations."

Environmental Protection Agency ("EPA") means the United States Environmental Protection Agency.

EPA means the United States "Environmental Protection Agency."

Facility or activity means any NPDES "point source" or any other facility or activity (including land or appurtenances thereto) that is subject to regulation under the NPDES program.

Federal Indian reservation means all land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and including rights-of-way running through the reservation.

General permit means an NPDES "permit" issued under § 122.28 authorizing a category of discharges under the CWA within a geographical area.

Hazardous substance means any substance designated under 40 CFR Part 116 pursuant to section 311 of CWA.

Indian country means:

(1) All land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation;

(2) All dependent Indian communities with the borders of the United States whether within the originally or subsequently acquired territory thereof, and whether within or without the limits of a state; and

(3) All Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same.

Indian Tribe means any Indian Tribe, band, group, or community recognized by the Secretary of the Interior and exercising governmental authority over a Federal Indian reservation.

Indirect discharger means a nondomestic discharger introducing "pollutants" to a "publicly owned treatment works."

Individual control strategy is defined at 40 CFR 123.46(c).

Interstate agency means an agency of two or more States established by or under an agreement or compact approved by the Congress, or any other agency of two or more States having substantial

powers or duties pertaining to the control of pollution as determined and approved by the Administrator under the CWA and regulations.

Major facility means any NPDES "facility or activity" classified as such by the Regional Administrator, or, in the case of "approved State programs," the Regional Administrator in conjunction with the State Director.

Maximum daily discharge limitation means the highest allowable "daily discharge."

Municipal separate storm sewer system is defined at § 122.26 (b)(4) and (b)(7).

Municipality means a city, town, borough, county, parish, district, association, or other public body created by or under State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of CWA.

National Pollutant Discharge Elimination System (NPDES) means the 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 CWA. The term includes an "approved program."

New discharger means any building, structure, facility, or installation:

(a) From which there is or may be a "discharge of pollutants;"

(b) That did not commence the "discharge of pollutants" at a particular "site" prior to August 13, 1979;

(c) Which is not a "new source;" and

(d) Which has never received a finally effective NPDES permit for discharges at that "site."

This definition includes an "indirect discharger" which commences discharging into "waters of the United States" after August 13, 1979. It also includes any existing mobile point source (other than an offshore or coastal oil and gas exploratory drilling rig or a coastal oil and gas developmental drilling rig) such as a seafood processing rig, seafood processing vessel, or aggregate plant, that begins discharging at a "site" for which it does not have a permit; and any offshore or coastal mobile oil and gas exploratory drilling rig or coastal mobile oil and gas developmental drilling rig that commences the discharge of pollutants after August 13, 1979, at a "site" under EPA's permitting jurisdiction for which it is not covered by an individual or general permit and which is located in an area determined by the Regional Administrator in the issuance of a final permit to be an area of biological concern. In determining whether an area is an area of biological concern, the Regional Administrator shall consider the factors specified in 40 CFR 125.112(a)(1) through (10).

An offshore or coastal mobile exploratory drilling rig or coastal mobile developmental drilling rig will be considered a "new discharger" only for the duration of its discharge in an area of biological concern.

New source means any building, structure, facility, or installation from which there is or may be a "discharge of pollutants," the construction of which commenced:

(a) After promulgation of standards of performance under section 306 of CWA which are applicable to such source, or

(b) After proposal of standards of performance in accordance with section 306 of CWA which are applicable to such source, but only if the standards are promulgated in accordance with section 306 within 120 days of their proposal.

NPDES means "National Pollutant Discharge Elimination System."

Owner or operator means the owner or operator of any "facility or activity" subject to regulation under the NPDES program.

Permit means an authorization, license, or equivalent control document issued by EPA or an "approved State" to implement the requirements of this part and Parts 123 and 124. "Permit" includes an NPDES "general permit" (§ 122.28). Permit does not include any permit which has not yet been the subject of final agency action, such as a "draft permit" or a "proposed permit."

Person means an individual, association, partnership, corporation, municipality, State or Federal agency, or an agent or employee thereof.

Point source means 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 operation, landfill leachate collection system, 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 storm water runoff. (See § 122.3).

Pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 et seq.)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. It does not mean:

(a) Sewage from vessels; or

(b) Water, gas, or other material which is injected into a well to facilitate production of oil or gas, or water derived in association with oil and gas production and disposed of in a well, if the well used either to facilitate production or for disposal purposes is approved by authority of the State in which

the well is located, and if the State determines that the injection or disposal will not result in the degradation of ground or surface water resources.

NOTE: Radioactive materials covered by the Atomic Energy Act are those encompassed in its definition of source, byproduct, or special nuclear materials. Examples of materials not covered include radium and accelerator-produced isotopes. See *Train v. Colorado Public Interest Research Group, Inc.*, 426 U.S. 1 (1976).

POTW is defined at § 403.3 of this chapter.

Primary industry category means any industry category listed in the NRDC settlement agreement (*Natural Resources Defense Council et al. v. Train*, 8 E.R.C. 2120 (D.D.C. 1976), modified 12 E.R.C. 1833 (D.D.C. 1979)); also listed in Appendix A of Part 122.

Privately owned treatment works means any device or system which is (a) used to treat wastes from any facility whose operator is not the operator of the treatment works and (b) not a "POTW."

Process wastewater means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.

Proposed permit means a State NPDES "permit" prepared after the close of the public comment period (and, when applicable, any public hearing and administrative appeals) which is sent to EPA for review before final issuance by the State. A "proposed permit" is not a "draft permit."

Publicly owned treatment works is defined at 40 CFR 403.3.

Recommencing discharger means a source which recommences discharge after terminating operations.

Regional Administrator means the Regional Ad-

ministrator of the appropriate Regional Office of the Environmental Protection Agency or the authorized representative of the Regional Administrator.

Schedule of compliance means a schedule of remedial measures included in a "permit", including an enforceable sequence of interim requirements (for example, actions, operations, or milestone events) leading to compliance with the CWA and regulations.

Secondary industry category means any industry category which is not a "primary industry category."

Secretary means the Secretary of the Army, acting through the Chief of Engineers.

Septage means the liquid and solid material pumped from a septic tank, cesspool, or similar domestic sewage treatment system, or a holding tank when the system is cleaned or maintained.

Sewage from vessels means human body wastes and the wastes from toilets and other receptacles intended to receive or retain body wastes that are discharged from vessels and regulated under section 312 of CWA, except that with respect to commercial vessels on the Great Lakes this term includes graywater. For the purposes of this definition, "graywater" means galley, bath, and shower water.

Sewage Sludge means any solid, semi-solid, or liquid residue removed during the treatment of municipal waste water or domestic sewage. Sewage sludge includes, but is not limited to, solids removed during primary, secondary, or advanced waste water treatment, scum, septage, portable toilet pumpings, type III marine sanitation device pumpings (33 CFR Part 159), and sewage sludge products. Sewage sludge does not include grit or screenings, or ash generated during the incineration of sewage sludge.

Sewage sludge use or disposal practice means the collection, storage, treatment, transportation, processing, monitoring, use, or disposal of sewage

sludge.

Silvicultural point source is defined at § 122.27.

Site means the land or water area where any "facility or activity" is physically located or conducted, including adjacent land used in connection with the facility or activity.

Sludge-only facility means any "treatment works treating domestic sewage" whose methods of sewage sludge use or disposal are subject to regulations promulgated pursuant to section 405(d) of the CWA and is required to obtain a permit under § 122.1(b)(2).

Standards for sewage sludge use or disposal means the regulations promulgated pursuant to section 405(d) of the CWA which govern minimum requirements for sludge quality, management practices, and monitoring and reporting applicable to sewage sludge or the use or disposal of sewage sludge by any person.

State means any of the 50 States, the District of Columbia, Guam, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, the Commonwealth of the Northern Mariana Islands, the Trust Territory of the Pacific Islands, or an Indian Tribe as defined in these regulations which meets the requirements of § 123.31 of this chapter.

State Director means the chief administrative officer of any State or interstate agency operating an "approved program," or the delegated representative of the State Director. If responsibility is divided among two or more State or interstate agencies, "State Director" means the chief administrative officer of the State or interstate agency authorized to perform the particular procedure or function to which reference is made.

State/EPA Agreement means an agreement between the Regional Administrator and the State which coordinates EPA and State activities, responsibilities and programs including those under CWA programs.

Storm water is defined at § 122.26(b)(13).

Storm water discharge associated with industrial activity is defined at § 122.26(b)(14).

Total dissolved solids means the total dissolved (filterable) solids as determined by use of the method specified in 40 CFR Part 136.

Toxic pollutant means any pollutant listed as toxic under section 307(a)(1) or, in the case of "sludge use or disposal practices," any pollutant identified in regulations implementing section 405(d) of the CWA.

Treatment works treating domestic sewage means a POTW or any other sewage sludge or waste water treatment devices or systems, regardless of ownership (including federal facilities), used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated for the disposal of sewage sludge. This definition does not include septic tanks or similar devices. For purposes of this definition, "domestic sewage" includes waste and waste water from humans or household operations that are discharged to or otherwise enter a treatment works. In States where there is no approved State sludge management program under section 405(f) of the CWA, the Regional Administrator may designate any person subject to the standards for sewage sludge use and disposal in 40 CFR Part 503 as a "treatment works treating domestic sewage," where he or she finds that there is a potential for adverse effects on public health and the environment from poor sludge quality or poor sludge handling, use or disposal practices, or where he or she finds that such designation is necessary to ensure that such person is in compliance with 40 CFR Part 503.

TWTDS means "treatment works treating domestic sewage."

Upset is defined at § 122.41(n).

Variance means any mechanism or provision under section 301 or 316 of CWA or under 40 CFR Part

125, or in the applicable "effluent limitations guidelines" which allows modification to or waiver of the generally applicable effluent limitation requirements or time deadlines of CWA. This includes provisions which allow the establishment of alternative limitations based on fundamentally different factors or on sections 301(c), 301(g), 301(h), 301(i), or 316(a) of CWA.

Waters of the United States or waters of the U.S. means:

(a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

(b) All interstate waters, including interstate "wetlands;"

(c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, "wetlands," sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:

(1) Which are or could be used by interstate or foreign travelers for recreational or other purposes;

(2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

(3) Which are used or could be used for industrial purposes by industries in interstate commerce;

(d) All impoundments of waters otherwise defined as waters of the United States under this definition;

(e) Tributaries of waters identified in paragraphs (a) through (d) of this definition;

(f) The territorial sea; and

(g) "Wetlands" adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR § 423.11(m) which also meet the criteria of this definition) are not waters of the United States. This exclusion applies only to manmade bodies of water which neither were originally created in waters of the United States (such as disposal area in wetlands) nor resulted from the impoundment of waters of the United States. [See Note 1 of this section.] Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act jurisdiction remains with EPA.

Wetlands means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Whole effluent toxicity means the aggregate toxic effect of an effluent measured directly by a toxicity test.

Note: At 45 FR 48620, July 21, 1980, the Environmental Protection Agency suspended until further notice in § 122.2, the last sentence, beginning "This exclusion applies ___" in the definition of "Waters of the United States." This revision continues that suspension. [FN1]

[FN1] Editorial note: The words "This revision" refer to the document published at 48 FR 14153, Apr. 1, 1983.

(Authority: Clean Water Act (33 U.S.C. 1251 et seq.), Safe Drinking Water Act (42 U.S.C. 300f et seq.), Clean Air Act (42 U.S.C. 7401 et seq.), Resource Conservation and Recovery Act (42 U.S.C. 6901 et seq.))

[48 FR 39619, Sept. 1, 1983; 50 FR 6940, 6941, Feb. 19, 1985; 54 FR 254, Jan. 4, 1989; 54 FR 18781, May 2, 1989; 54 FR 23895, June 2, 1989; 58 FR 45037, Aug. 25, 1993; 58 FR 67980, Dec. 22, 1993; 64 FR 42462, Aug. 4, 1999; 64 FR 43426, Aug. 10, 1999; 65 FR 30905, May 15, 2000]

SOURCE: 45 FR 33418, May 19, 1980, as amended at 48 FR 14153, Apr. 1, 1983, unless otherwise noted.

AUTHORITY: The Clean Water Act, 33 U.S.C. 1251 et seq.

40 C. F. R. § 122.2, 40 CFR § 122.2

Current through August 19, 2011; 76 FR 52145.

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END OF DOCUMENT

ATTACHMENT 7

Westlaw

40 C.F.R. § 122.26

Page 1

Effective: June 12, 2006

Code of Federal Regulations Currentness
Title 40. Protection of Environment
Chapter I. Environmental Protection Agency (Refs
& Annos)
Subchapter D. Water Programs
Part 122. EPA Administered Permit Pro-
grams: the National Pollutant Discharge Elim-
ination System (Refs & Annos)
Subpart B. Permit Application and Special
NPDES Program Requirements
→ § 122.26 Storm water discharges
(applicable to State NPDES programs,
see § 123.25).

<For statute(s) affecting validity, see: The Clean Water
Act, 33 USCA § 1251 et seq.>

(a) Permit requirement.

(1) Prior to October 1, 1994, discharges composed
entirely of storm water shall not be required to ob-
tain a NPDES permit except:

(i) A discharge with respect to which a permit has
been issued prior to February 4, 1987;

(ii) A discharge associated with industrial activity
(see § 122.26(a)(4));

(iii) A discharge from a large municipal separate
storm sewer system;

(iv) A discharge from a medium municipal separate
storm sewer system;

(v) A discharge which the Director, or in States
with approved NPDES programs, either the Direct-
or or the EPA Regional Administrator, determines
to contribute to a violation of a water quality stand-
ard or is a significant contributor of pollutants to

waters of the United States. This designation may
include a discharge from any conveyance or system
of conveyances used for collecting and conveying
storm water runoff or a system of discharges from
municipal separate storm sewers, except for those
discharges from conveyances which do not require
a permit under paragraph (a)(2) of this section or
agricultural storm water runoff which is exempted
from the definition of point source at § 122.2.

The Director may designate discharges from muni-
cipal separate storm sewers on a system-wide or
jurisdiction-wide basis. In making this determina-
tion the Director may consider the following factors:

(A) The location of the discharge with respect
to waters of the United States as defined at 40
CFR 122.2.

(B) The size of the discharge;

(C) The quantity and nature of the pollutants
discharged to waters of the United States; and

(D) Other relevant factors.

(2) The Director may not require a permit for dis-
charges of storm water runoff from the following:

(i) Mining operations composed entirely of flows
which are from conveyances or systems of convey-
ances (including but not limited to pipes, conduits,
ditches, and channels) used for collecting and con-
veying precipitation runoff and which are not con-
taminated by contact with or that have not come in-
to contact with, any overburden, raw material, in-
termediate products, finished product, byproduct, or
waste products located on the site of such opera-
tions, except in accordance with paragraph
(c)(1)(iv) of this section.

(ii) All field activities or operations associated with
oil and gas exploration, production, processing, or
treatment operations or transmission facilities, in-

cluding activities necessary to prepare a site for drilling and for the movement and placement of drilling equipment, whether or not such field activities or operations may be considered to be construction activities, except in accordance with paragraph (c)(1)(iii) of this section. Discharges of sediment from construction activities associated with oil and gas exploration, production, processing, or treatment operations or transmission facilities are not subject to the provisions of paragraph (c)(1)(iii)(C) of this section.

Note to paragraph (a)(2)(ii): EPA encourages operators of oil and gas field activities or operations to implement and maintain Best Management Practices (BMPs) to minimize discharges of pollutants, including sediment, in storm water both during and after construction activities to help ensure protection of surface water quality during storm events. Appropriate controls would be those suitable to the site conditions and consistent with generally accepted engineering design criteria and manufacturer specifications. Selection of BMPs could also be affected by seasonal or climate conditions.

(3) Large and medium municipal separate storm sewer systems.

(i) Permits must be obtained for all discharges from large and medium municipal separate storm sewer systems.

(ii) The Director may either issue one system-wide permit covering all discharges from municipal separate storm sewers within a large or medium municipal storm sewer system or issue distinct permits for appropriate categories of discharges within a large or medium municipal separate storm sewer system including, but not limited to: all discharges owned or operated by the same municipality; located within the same jurisdiction; all discharges within a system that discharge to the same watershed; discharges within a system that are similar in nature; or for individual discharges from municipal separate storm sewers within the system.

(iii) The operator of a discharge from a municipal

separate storm sewer which is part of a large or medium municipal separate storm sewer system must either:

(A) Participate in a permit application (to be a permittee or a co-permittee) with one or more other operators of discharges from the large or medium municipal storm sewer system which covers all, or a portion of all, discharges from the municipal separate storm sewer system;

(B) Submit a distinct permit application which only covers discharges from the municipal separate storm sewers for which the operator is responsible; or

(C) A regional authority may be responsible for submitting a permit application under the following guidelines:

(1) The regional authority together with co-applicants shall have authority over a storm water management program that is in existence, or shall be in existence at the time part 1 of the application is due;

(2) The permit applicant or co-applicants shall establish their ability to make a timely submission of part 1 and part 2 of the municipal application;

(3) Each of the operators of municipal separate storm sewers within the systems described in paragraphs (b)(4)(i), (ii), and (iii) or (b)(7)(i), (ii), and (iii) of this section, that are under the purview of the designated regional authority, shall comply with the application requirements of paragraph (d) of this section.

(iv) One permit application may be submitted for all or a portion of all municipal separate storm sewers within adjacent or interconnected large or medium municipal separate storm sewer systems. The Director may issue one system-wide permit covering all, or a portion of all municipal separate storm sewers in adjacent or interconnected large or medi-

um municipal separate storm sewer systems.

(v) Permits for all or a portion of all discharges from large or medium municipal separate storm sewer systems that are issued on a system-wide, jurisdiction-wide, watershed or other basis may specify different conditions relating to different discharges covered by the permit, including different management programs for different drainage areas which contribute storm water to the system.

(vi) Co-permittees need only comply with permit conditions relating to discharges from the municipal separate storm sewers for which they are operators.

(4) Discharges through large and medium municipal separate storm sewer systems. In addition to meeting the requirements of paragraph (c) of this section, an operator of a storm water discharge associated with industrial activity which discharges through a large or medium municipal separate storm sewer system shall submit, to the operator of the municipal separate storm sewer system receiving the discharge no later than May 15, 1991, or 180 days prior to commencing such discharge: the name of the facility; a contact person and phone number; the location of the discharge; a description, including Standard Industrial Classification, which best reflects the principal products or services provided by each facility; and any existing NPDES permit number.

(5) Other municipal separate storm sewers. The Director may issue permits for municipal separate storm sewers that are designated under paragraph (a)(1)(v) of this section on a system-wide basis, jurisdiction-wide basis, watershed basis or other appropriate basis, or may issue permits for individual discharges.

(6) Non-municipal separate storm sewers. For storm water discharges associated with industrial activity from point sources which discharge through a non-municipal or non-publicly owned separate storm sewer system, the Director, in his

discretion, may issue: a single NPDES permit, with each discharger a co-permittee to a permit issued to the operator of the portion of the system that discharges into waters of the United States; or, individual permits to each discharger of storm water associated with industrial activity through the non-municipal conveyance system.

(i) All storm water discharges associated with industrial activity that discharge through a storm water discharge system that is not a municipal separate storm sewer must be covered by an individual permit, or a permit issued to the operator of the portion of the system that discharges to waters of the United States, with each discharger to the non-municipal conveyance a co-permittee to that permit.

(ii) Where there is more than one operator of a single system of such conveyances, all operators of storm water discharges associated with industrial activity must submit applications.

(iii) Any permit covering more than one operator shall identify the effluent limitations, or other permit conditions, if any, that apply to each operator.

(7) Combined sewer systems. Conveyances that discharge storm water runoff combined with municipal sewage are point sources that must obtain NPDES permits in accordance with the procedures of § 122.21 and are not subject to the provisions of this section.

(8) Whether a discharge from a municipal separate storm sewer is or is not subject to regulation under this section shall have no bearing on whether the owner or operator of the discharge is eligible for funding under title II, title III or title VI of the Clean Water Act. See 40 CFR part 35, subpart I, appendix A(b)H.2.j.

(9)(i) On and after October 1, 1994, for discharges composed entirely of storm water, that are not required by paragraph (a)(1) of this section to obtain a permit, operators shall be required to obtain a NPDES permit only if:

(A) The discharge is from a small MS4 required to be regulated pursuant to § 122.32;

(B) The discharge is a storm water discharge associated with small construction activity pursuant to paragraph (b)(15) of this section;

(C) The Director, or in States with approved NPDES programs either the Director or the EPA Regional Administrator, determines that storm water controls are needed for the discharge based on wasteload allocations that are part of "total maximum daily loads" (TMDLs) that address the pollutant(s) of concern; or

(D) The Director, or in States with approved NPDES programs either the Director or the EPA Regional Administrator, determines that the discharge, or category of discharges within a geographic area, contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States.

(ii) Operators of small MS4s designated pursuant to paragraphs (a)(9)(i)(A), (a)(9)(i)(C), and (a)(9)(i)(D) of this section shall seek coverage under an NPDES permit in accordance with §§ 122.33 through 122.35. Operators of non-municipal sources designated pursuant to paragraphs (a)(9)(i)(B), (a)(9)(i)(C), and (a)(9)(i)(D) of this section shall seek coverage under an NPDES permit in accordance with paragraph (c)(1) of this section.

(iii) Operators of storm water discharges designated pursuant to paragraphs (a)(9)(i)(C) and (a)(9)(i)(D) of this section shall apply to the Director for a permit within 180 days of receipt of notice, unless permission for a later date is granted by the Director (see § 124.52(c) of this chapter).

(b) Definitions.

(1) Co-permittee means a permittee to a NPDES permit that is only responsible for permit conditions relating to the discharge for which it is operator.

(2) 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.

(3) Incorporated place means the District of Columbia, or a city, town, township, or village that is incorporated under the laws of the State in which it is located.

(4) Large municipal separate storm sewer system means all municipal separate storm sewers that are either:

(i) Located in an incorporated place with a population of 250,000 or more as determined by the 1990 Decennial Census by the Bureau of the Census (Appendix F of this part); or

(ii) Located in the counties listed in appendix H, except municipal separate storm sewers that are located in the incorporated places, townships or towns within such counties; or

(iii) Owned or operated by a municipality other than those described in paragraph (b)(4)(i) or (ii) of this section and that are designated by the Director as part of the large or medium municipal separate storm sewer system due to the interrelationship between the discharges of the designated storm sewer and the discharges from municipal separate storm sewers described under paragraph (b)(4)(i) or (ii) of this section. In making this determination the Director may consider the following factors:

(A) Physical interconnections between the municipal separate storm sewers;

(B) The location of discharges from the designated municipal separate storm sewer relative to discharges from municipal separate storm sewers described in paragraph (b)(4)(i) of this section;

(C) The quantity and nature of pollutants discharged to waters of the United States;

(D) The nature of the receiving waters; and

(E) Other relevant factors; or

(iv) The Director may, upon petition, designate as a large municipal separate storm sewer system, municipal separate storm sewers located within the boundaries of a region defined by a storm water management regional authority based on a jurisdictional, watershed, or other appropriate basis that includes one or more of the systems described in paragraph (b)(4)(i), (ii), (iii) of this section.

(5) Major municipal separate storm sewer outfall (or "major outfall") means a municipal separate storm sewer 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 circular pipe which is associated with a drainage area of more than 50 acres); or for municipal separate storm sewers that receive storm water from lands zoned for industrial activity (based on comprehensive zoning plans or the equivalent), an outfall that discharges from a single pipe with an inside diameter of 12 inches or more or from its equivalent (discharge from other than a circular pipe associated with a drainage area of 2 acres or more).

(6) Major outfall means a major municipal separate storm sewer outfall.

(7) Medium municipal separate storm sewer system means all municipal separate storm sewers that are either:

(i) Located in an incorporated place with a population of 100,000 or more but less than 250,000, as determined by the 1990 Decennial Census by the Bureau of the Census (Appendix G of this part); or

(ii) Located in the counties listed in appendix I, except municipal separate storm sewers that are located in the incorporated places, townships or towns

within such counties; or

(iii) Owned or operated by a municipality other than those described in paragraph (b)(7)(i) or (ii) of this section and that are designated by the Director as part of the large or medium municipal separate storm sewer system due to the interrelationship between the discharges of the designated storm sewer and the discharges from municipal separate storm sewers described under paragraph (b)(7)(i) or (ii) of this section. In making this determination the Director may consider the following factors:

(A) Physical interconnections between the municipal separate storm sewers;

(B) The location of discharges from the designated municipal separate storm sewer relative to discharges from municipal separate storm sewers described in paragraph (b)(7)(i) of this section;

(C) The quantity and nature of pollutants discharged to waters of the United States;

(D) The nature of the receiving waters; or

(E) Other relevant factors; or

(iv) The Director may, upon petition, designate as a medium municipal separate storm sewer system, municipal separate storm sewers located within the boundaries of a region defined by a storm water management regional authority based on a jurisdictional, watershed, or other appropriate basis that includes one or more of the systems described in paragraphs (b)(7) (i), (ii), (iii) of this section.

(8) Municipal separate storm sewer means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

(i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law)

having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, 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 to waters of the United States;

(ii) Designed or used for collecting or conveying storm water;

(iii) Which is not a combined sewer; and

(iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

(9) Outfall means a point source as defined by 40 CFR 122.2 at the point where a municipal separate storm sewer discharges to waters of the United States and does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels or other conveyances which connect segments of the same stream or other waters of the United States and are used to convey waters of the United States.

(10) Overburden means any material of any nature, consolidated or unconsolidated, that overlies a mineral deposit, excluding topsoil or similar naturally-occurring surface materials that are not disturbed by mining operations.

(11) Runoff coefficient means the fraction of total rainfall that will appear at a conveyance as runoff.

(12) Significant materials includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under section 101(14) of CERCLA; any chemical the facility is required to report pursuant to section 313 of title III of SARA; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be

released with storm water discharges.

(13) Storm water means storm water runoff, snow melt runoff, and surface runoff and drainage.

(14) Storm water discharge associated with industrial activity means the discharge from any conveyance that is used for collecting and conveying storm water and that is directly related to manufacturing, processing or raw materials storage areas at an industrial plant. The term does not include discharges from facilities or activities excluded from the NPDES program under this part 122. For the categories of industries identified in this section, the term includes, but is not limited to, storm water discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility; material handling sites; refuse sites; sites used for the application or disposal of process waste waters (as defined at part 401 of this chapter); sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas (including tank farms) for raw materials, and intermediate and final products; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to storm water. For the purposes of this paragraph, material handling activities include storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, final product, by-product or waste product. The term excludes areas located on plant lands separate from the plant's industrial activities, such as office buildings and accompanying parking lots as long as the drainage from the excluded areas is not mixed with storm water drained from the above described areas. Industrial facilities (including industrial facilities that are federally, State, or municipally owned or operated that meet the description of the facilities listed in paragraphs (b)(14)(i) through (xi) of this section) include those facilities designated under the provisions of para-

graph (a)(1)(v) of this section. The following categories of facilities are considered to be engaging in "industrial activity" for purposes of paragraph (b)(14):

(i) Facilities subject to storm water effluent limitations guidelines, new source performance standards, or toxic pollutant effluent standards under 40 CFR subchapter N (except facilities with toxic pollutant effluent standards which are exempted under category (xi) in paragraph (b)(14) of this section);

(ii) Facilities classified as Standard Industrial Classifications 24 (except 2434), 26 (except 265 and 267), 28 (except 283), 29, 311, 32 (except 323), 33, 3441, 373;

(iii) Facilities classified as Standard Industrial Classifications 10 through 14 (mineral industry) including active or inactive mining operations (except for areas of coal mining operations no longer meeting the definition of a reclamation area under 40 CFR 434.11(1) because the performance bond issued to the facility by the appropriate SMCRA authority has been released, or except for areas of non-coal mining operations which have been released from applicable State or Federal reclamation requirements after December 17, 1990) and oil and gas exploration, production, processing, or treatment operations, or transmission facilities that discharge storm water contaminated by contact with or that has come into contact with, any overburden, raw material, intermediate products, finished products, byproducts or waste products located on the site of such operations; (inactive mining operations are mining sites that are not being actively mined, but which have an identifiable owner/operator; inactive mining sites do not include sites where mining claims are being maintained prior to disturbances associated with the extraction, beneficiation, or processing of mined materials, nor sites where minimal activities are undertaken for the sole purpose of maintaining a mining claim);

(iv) Hazardous waste treatment, storage, or disposal facilities, including those that are operating under

interim status or a permit under subtitle C of RCRA;

(v) Landfills, land application sites, and open dumps that receive or have received any industrial wastes (waste that is received from any of the facilities described under this subsection) including those that are subject to regulation under subtitle D of RCRA;

(vi) Facilities involved in the recycling of materials, including metal scrapyards, battery reclaimers, salvage yards, and automobile junkyards, including but limited to those classified as Standard Industrial Classification 5015 and 5093;

(vii) Steam electric power generating facilities, including coal handling sites;

(viii) Transportation facilities classified as Standard Industrial Classifications 40, 41, 42 (except 4221-25), 43, 44, 45, and 5171 which have vehicle maintenance shops, equipment cleaning operations, or airport deicing operations. Only those portions of the facility that are either involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication), equipment cleaning operations, airport deicing operations, or which are otherwise identified under paragraphs (b)(14) (i)-(vii) or (ix)-(xi) of this section are associated with industrial activity;

(ix) Treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of the facility, with a design flow of 1.0 mgd or more, or required to have an approved pretreatment program under 40 CFR part 403. Not included are farm lands, domestic gardens or lands used for sludge management where sludge is beneficially re-used and which are not physically located in the confines of the facility, or areas that are in compliance with section 405 of the CWA;

(x) Construction activity including clearing, grading and excavation, except operations that result in the disturbance of less than five acres of total land area. Construction activity also includes the disturbance of less than five acres of total land area that is a part of a larger common plan of development or sale if the larger common plan will ultimately disturb five acres or more;

(xi) Facilities under Standard Industrial Classifications 20, 21, 22, 23, 2434, 25, 265, 267, 27, 283, 285, 30, 31 (except 311), 323, 34 (except 3441), 35, 36, 37 (except 373), 38, 39, and 4221-25;

(15) Storm water discharge associated with small construction activity means the discharge of storm water from:

(i) Construction activities including clearing, grading, and excavating that result in land disturbance of equal to or greater than one acre and less than five acres. Small construction activity also includes the disturbance of less than one acre of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than one and less than five acres. Small construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the facility. The Director may waive the otherwise applicable requirements in a general permit for a storm water discharge from construction activities that disturb less than five acres where:

(A) The value of the rainfall erosivity factor ("R" in the Revised Universal Soil Loss Equation) is less than five during the period of construction activity. The rainfall erosivity factor is determined in accordance with Chapter 2 of Agriculture Handbook Number 703, Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE), pages 21-64, dated January 1997. The Director of the Federal Register approves this incorporation by reference

in accordance with 5 U.S.C 552(a) and 1 CFR part 51. Copies may be obtained from EPA's Water Resource Center, Mail Code RC4100, 1200 Pennsylvania Ave., NW., Washington, DC 20460. A copy is also available for inspection at the U.S. EPA Water Docket, 1200 Pennsylvania Ave., NW., Washington, DC 20460, or the Office of the Federal Register, 800 N. Capitol Street N.W. Suite 700, Washington, DC. An operator must certify to the Director that the construction activity will take place during a period when the value of the rainfall erosivity factor is less than five; or

(B) Storm water controls are not needed based on a "total maximum daily load" (TMDL) approved or established by EPA that addresses the pollutant(s) of concern or, for non-impaired waters that do not require TMDLs, an equivalent analysis that determines allocations for small construction sites for the pollutant(s) of concern or that determines that such allocations are not needed to protect water quality based on consideration of existing in-stream concentrations, expected growth in pollutant contributions from all sources, and a margin of safety. For the purpose of this paragraph, the pollutant(s) of concern include sediment or a parameter that addresses sediment (such as total suspended solids, turbidity or siltation) and any other pollutant that has been identified as a cause of impairment of any water body that will receive a discharge from the construction activity. The operator must certify to the Director that the construction activity will take place, and storm water discharges will occur, within the drainage area addressed by the TMDL or equivalent analysis.

(ii) Any other construction activity designated by the Director, or in States with approved NPDES programs either the Director or the EPA Regional Administrator, based on the potential for contribution to a violation of a water quality standard or for significant contribution of pollutants to waters of

the United States.

Exhibit 1 to § 122.26(b)(15).--Summary of Coverage of "Storm Water Discharges Associated with Small Construction Activity" Under the NPDES Storm Water Program

Automatic Designation: Required Nationwide Coverage

- Construction activities that result in a land disturbance of equal to or greater than one acre and less than five acres.
- Construction activities disturbing less than one acre if part of a larger common plan of development or sale with a planned disturbance of equal to or greater than one acre and less than five acres. (see § 122.26(b)(15)(i).)

Potential Designation: Optional Evaluation and Designation by the NPDES Permitting Authority or EPA Regional Administrator.

- Construction activities that result in a land disturbance of less than one acre based on the potential for contribution to a violation of a water quality standard or for significant contribution of pollutants. (see § 122.26(b)(15)(ii).)

Potential Waiver: Waiver from Requirements as Determined by the NPDES Permitting Authority.

Any automatically designated construction activity where the operator certifies: (1) A rainfall erosivity factor of less than five, or (2) That the activity will occur within an area where controls are not needed based on a TMDL or, for non-impaired waters that do not require a TMDL, an equivalent analysis for the pollutant(s) of concern. (see § 122.26(b)(15)(i).)

(16) Small municipal separate storm sewer system means all separate storm sewers that are:

(iii) This term includes systems similar to separate storm sewer systems in municipalities, such as systems at military bases, large hospital or prison complexes, and highways and other thoroughfares. The term does not include separate storm sewers in very discrete areas, such as individual buildings.

(i) Owned or operated by the United States, a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, 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 to waters of the United States.

(17) Small MS4 means a small municipal separate storm sewer system.

(ii) Not defined as "large" or "medium" municipal separate storm sewer systems pursuant to paragraphs (b)(4) and (b)(7) of this section, or designated under paragraph (a)(1)(v) of this section.

(18) Municipal separate storm sewer system means all separate storm sewers that are defined as "large" or "medium" or "small" municipal separate storm sewer systems pursuant to paragraphs (b)(4), (b)(7), and (b)(16) of this section, or designated under paragraph (a)(1)(v) of this section.

(19) MS4 means a municipal separate storm sewer system.

(20) Uncontrolled sanitary landfill means a landfill or open dump, whether in operation or closed, that does not meet the requirements for runoff controls established pursuant to subtitle D of the Solid Waste Disposal Act.

(c) Application requirements for storm water discharges associated with industrial activity and storm water discharges associated with small construction activity--

(1) Individual application. Dischargers of storm water associated with industrial activity and with small construction activity are required to apply for an individual permit or seek coverage under a promulgated storm water general permit. Facilities that are required to obtain an individual permit, or any discharge of storm water which the Director is evaluating for designation (see 124.52(c) of this chapter) under paragraph (a)(1)(v) of this section and is not a municipal storm sewer, shall submit an NPDES application in accordance with the requirements of § 122.21 as modified and supplemented by the provisions of this paragraph.

(i) Except as provided in § 122.26(c)(1)(ii)-(iv), the operator of a storm water discharge associated with industrial activity subject to this section shall provide:

(A) A site map showing topography (or indicating the outline of drainage areas served by the outfall(s) covered in the application if a topographic map is unavailable) of the facility including: each of its drainage and discharge structures; the drainage area of each storm water outfall; paved areas and buildings within the drainage area of each storm water outfall, each past or present area used for outdoor storage or disposal of significant materials, each existing structural control measure to reduce pollutants in storm water runoff, materials loading and access areas, areas where pesticides, herbicides, soil conditioners and fertilizers are applied,

each of its hazardous waste treatment, storage or disposal facilities (including each area not required to have a RCRA permit which is used for accumulating hazardous waste under 40 CFR 262.34); each well where fluids from the facility are injected underground; springs, and other surface water bodies which receive storm water discharges from the facility;

(B) An estimate of the area of impervious surfaces (including paved areas and building roofs) and the total area drained by each outfall (within a mile radius of the facility) and a narrative description of the following: Significant materials that in the three years prior to the submittal of this application have been treated, stored or disposed in a manner to allow exposure to storm water; method of treatment, storage or disposal of such materials; materials management practices employed, in the three years prior to the submittal of this application, to minimize contact by these materials with storm water runoff; materials loading and access areas; the location, manner and frequency in which pesticides, herbicides, soil conditioners and fertilizers are applied; the location and a description of existing structural and non-structural control measures to reduce pollutants in storm water runoff; and a description of the treatment the storm water receives, including the ultimate disposal of any solid or fluid wastes other than by discharge;

(C) A certification that all outfalls that should contain storm water discharges associated with industrial activity have been tested or evaluated for the presence of non-storm water discharges which are not covered by a NPDES permit; tests for such non-storm water discharges may include smoke tests, fluorometric dye tests, analysis of accurate schematics, as well as other appropriate tests. The certification shall include a description of the method used, the date of any testing, and the on-site drainage points

that were directly observed during a test;

(D) Existing information regarding significant leaks or spills of toxic or hazardous pollutants at the facility that have taken place within the three years prior to the submittal of this application;

(E) Quantitative data based on samples collected during storm events and collected in accordance with § 122.21 of this part from all outfalls containing a storm water discharge associated with industrial activity for the following parameters:

(1) Any pollutant limited in an effluent guideline to which the facility is subject;

(2) Any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit);

(3) Oil and grease, pH, BOD5, COD, TSS, total phosphorus, total Kjeldahl nitrogen, and nitrate plus nitrite nitrogen;

(4) Any information on the discharge required under § 122.21(g)(7)(vi) and (vii);

(5) Flow measurements or estimates of the flow rate, and the total amount of discharge for the storm event(s) sampled, and the method of flow measurement or estimation; and

(6) The date and duration (in hours) of the storm event(s) sampled, rainfall measurements or estimates of the storm event (in inches) which generated the sampled runoff and the duration between the storm

event sampled and the end of the previous measurable (greater than 0.1 inch rainfall) storm event (in hours);

(F) Operators of a discharge which is composed entirely of storm water are exempt from the requirements of § 122.21(g)(2), (g)(3), (g)(4), (g)(5), (g)(7)(iii), (g)(7)(iv), (g)(7)(v), and (g)(7)(viii); and

(G) Operators of new sources or new discharges (as defined in § 122.2 of this part) which are composed in part or entirely of storm water must include estimates for the pollutants or parameters listed in paragraph (c)(1)(i)(E) of this section instead of actual sampling data, along with the source of each estimate. Operators of new sources or new discharges composed in part or entirely of storm water must provide quantitative data for the parameters listed in paragraph (c)(1)(i)(E) of this section within two years after commencement of discharge, unless such data has already been reported under the monitoring requirements of the NPDES permit for the discharge. Operators of a new source or new discharge which is composed entirely of storm water are exempt from the requirements of § 122.21 (k)(3)(ii), (k)(3)(iii), and (k)(5).

(ii) An operator of an existing or new storm water discharge that is associated with industrial activity solely under paragraph (b)(14)(x) of this section or is associated with small construction activity solely under paragraph (b)(15) of this section, is exempt from the requirements of § 122.21(g) and paragraph (c)(1)(i) of this section. Such operator shall provide a narrative description of:

(A) The location (including a map) and the nature of the construction activity;

(B) The total area of the site and the area of the site that is expected to undergo excavation during the life of the permit;

ing in the discharge of a reportable quantity for which notification is or was required pursuant to 40 CFR 110.6 at any time since November 16, 1987; or

(C) Proposed measures, including best management practices, to control pollutants in storm water discharges during construction, including a brief description of applicable State and local erosion and sediment control requirements;

(C) Contributes to a violation of a water quality standard.

(D) Proposed measures to control pollutants in storm water discharges that will occur after construction operations have been completed, including a brief description of applicable State or local erosion and sediment control requirements;

(iv) The operator of an existing or new discharge composed entirely of storm water from a mining operation is not required to submit a permit application unless the discharge has come into contact with, any overburden, raw material, intermediate products, finished product, byproduct or waste products located on the site of such operations.

(E) An estimate of the runoff coefficient of the site and the increase in impervious area after the construction addressed in the permit application is completed, the nature of fill material and existing data describing the soil or the quality of the discharge; and

(v) Applicants shall provide such other information the Director may reasonably require under § 122.21(g)(13) of this part to determine whether to issue a permit and may require any facility subject to paragraph (c)(1)(ii) of this section to comply with paragraph (c)(1)(i) of this section.

(F) The name of the receiving water;

(2) [Reserved]

(iii) The operator of an existing or new discharge composed entirely of storm water from an oil or gas exploration, production, processing, or treatment operation, or transmission facility is not required to submit a permit application in accordance with paragraph (c)(1)(i) of this section, unless the facility:

(d) Application requirements for large and medium municipal separate storm sewer discharges. The operator of a discharge from a large or medium municipal separate storm sewer or a municipal separate storm sewer that is designated by the Director under paragraph (a)(1)(v) of this section, may submit a jurisdiction-wide or system-wide permit application. Where more than one public entity owns or operates a municipal separate storm sewer within a geographic area (including adjacent or interconnected municipal separate storm sewer systems), such operators may be a coapplicant to the same application. Permit applications for discharges from large and medium municipal storm sewers or municipal storm sewers designated under paragraph (a)(1)(v) of this section shall include;

(A) Has had a discharge of storm water resulting in the discharge of a reportable quantity for which notification is or was required pursuant to 40 CFR 117.21 or 40 CFR 302.6 at anytime since November 16, 1987; or

(B) Has had a discharge of storm water result-

(1) Part 1. Part 1 of the application shall consist of;

(i) General information. The applicants' name, address, telephone number of contact person, ownership status and status as a State or local government entity.

drainage area served by the separate storm sewer. For each land use type, an estimate of an average runoff coefficient shall be provided;

(ii) Legal authority. A description of existing legal authority to control discharges to the municipal separate storm sewer system. When existing legal authority is not sufficient to meet the criteria provided in paragraph (d)(2)(i) of this section, the description shall list additional authorities as will be necessary to meet the criteria and shall include a schedule and commitment to seek such additional authority that will be needed to meet the criteria.

(3) The location and a description of the activities of the facility of each currently operating or closed municipal landfill or other treatment, storage or disposal facility for municipal waste;

(iii) Source identification.

(4) The location and the permit number of any known discharge to the municipal storm sewer that has been issued a NPDES permit;

(A) A description of the historic use of ordinances, guidance or other controls which limited the discharge of non-storm water discharges to any Publicly Owned Treatment Works serving the same area as the municipal separate storm sewer system.

(5) The location of major structural controls for storm water discharge (retention basins, detention basins, major infiltration devices, etc.); and

(B) A USGS 7.5 minute topographic map (or equivalent topographic map with a scale between 1:10,000 and 1:24,000 if cost effective) extending one mile beyond the service boundaries of the municipal storm sewer system covered by the permit application. The following information shall be provided:

(6) The identification of publicly owned parks, recreational areas, and other open lands.

(iv) Discharge characterization.

(1) The location of known municipal storm sewer system outfalls discharging to waters of the United States;

(A) Monthly mean rain and snow fall estimates (or summary of weather bureau data) and the monthly average number of storm events.

(2) A description of the land use activities (e.g. divisions indicating undeveloped, residential, commercial, agricultural and industrial uses) accompanied with estimates of population densities and projected growth for a ten year period within the

(B) Existing quantitative data describing the volume and quality of discharges from the municipal storm sewer, including a description of the outfalls sampled, sampling procedures and analytical methods used.

(C) A list of water bodies that receive discharges from the municipal separate storm sewer system, including downstream segments, lakes and estuaries, where pollutants from the

system discharges may accumulate and cause water degradation and a brief description of known water quality impacts. At a minimum, the description of impacts shall include a description of whether the water bodies receiving such discharges have been:

(1) Assessed and reported in section 305(b) reports submitted by the State, the basis for the assessment (evaluated or monitored), a summary of designated use support and attainment of Clean Water Act (CWA) goals (fishable and swimmable waters), and causes of nonsupport of designated uses;

(2) Listed under section 304(l)(1)(A)(i), section 304(l)(1)(A)(ii), or section 304(l)(1)(B) of the CWA that is not expected to meet water quality standards or water quality goals;

(3) Listed in State Nonpoint Source Assessments required by section 319(a) of the CWA that, without additional action to control nonpoint sources of pollution, cannot reasonably be expected to attain or maintain water quality standards due to storm sewers, construction, highway maintenance and runoff from municipal landfills and municipal sludge adding significant pollution (or contributing to a violation of water quality standards);

(4) Identified and classified according to eutrophic condition of publicly owned lakes listed in State reports required under section 314(a) of the CWA (include the following: A description of those publicly owned lakes for which uses are known to be impaired; a description of procedures, processes and methods to control the discharge of pollutants from municipal separate storm sewers into such lakes; and a de-

scription of methods and procedures to restore the quality of such lakes);

(5) Areas of concern of the Great Lakes identified by the International Joint Commission;

(6) Designated estuaries under the National Estuary Program under section 320 of the CWA;

(7) Recognized by the applicant as highly valued or sensitive waters;

(8) Defined by the State or U.S. Fish and Wildlife Services's National Wetlands Inventory as wetlands; and

(9) Found to have pollutants in bottom sediments, fish tissue or biosurvey data.

(D) Field screening. Results of a field screening analysis for illicit connections and illegal dumping for either selected field screening points or major outfalls covered in the permit application. At a minimum, a screening analysis shall include a narrative description, for either each field screening point or major outfall, of visual observations made during dry weather periods. If any flow is observed, two grab samples shall be collected during a 24 hour period with a minimum period of four hours between samples. For all such samples, a narrative description of the color, odor, turbidity, the presence of an oil sheen or surface scum as well as any other relevant observations regarding the potential presence of non-storm water discharges or illegal dumping shall be provided. In addition, a narrative description of the results of a field analysis using suitable methods to estimate pH, total chlorine, total copper, total phenol, and detergents (or surfact-

ants) shall be provided along with a description of the flow rate. Where the field analysis does not involve analytical methods approved under 40 CFR part 136, the applicant shall provide a description of the method used including the name of the manufacturer of the test method along with the range and accuracy of the test. Field screening points shall be either major outfalls or other outfall points (or any other point of access such as manholes) randomly located throughout the storm sewer system by placing a grid over a drainage system map and identifying those cells of the grid which contain a segment of the storm sewer system or major outfall. The field screening points shall be established using the following guidelines and criteria:

(1) A grid system consisting of perpendicular north-south and east-west lines spaced 1/4 mile apart shall be overlaid on a map of the municipal storm sewer system, creating a series of cells;

(2) All cells that contain a segment of the storm sewer system shall be identified; one field screening point shall be selected in each cell; major outfalls may be used as field screening points;

(3) Field screening points should be located downstream of any sources of suspected illegal or illicit activity;

(4) Field screening points shall be located to the degree practicable at the farthest manhole or other accessible location downstream in the system, within each cell; however, safety of personnel and accessibility of the location should be considered in making this determination;

(5) Hydrological conditions; total drainage area of the site; population density of the site; traffic density; age of the structures or buildings in the area; history of the area; and land use types;

(6) For medium municipal separate storm sewer systems, no more than 250 cells need to have identified field screening points; in large municipal separate storm sewer systems, no more than 500 cells need to have identified field screening points; cells established by the grid that contain no storm sewer segments will be eliminated from consideration; if fewer than 250 cells in medium municipal sewers are created, and fewer than 500 in large systems are created by the overlay on the municipal sewer map, then all those cells which contain a segment of the sewer system shall be subject to field screening (unless access to the separate storm sewer system is impossible); and

(7) Large or medium municipal separate storm sewer systems which are unable to utilize the procedures described in paragraphs (d)(1)(iv)(D) (1) through (6) of this section, because a sufficiently detailed map of the separate storm sewer systems is unavailable, shall field screen no more than 500 or 250 major outfalls respectively (or all major outfalls in the system, if less); in such circumstances, the applicant shall establish a grid system consisting of north-south and east-west lines spaced 1/4 mile apart as an overlay to the boundaries of the municipal storm sewer system, thereby creating a series of cells; the applicant will then select major outfalls in as many cells as possible until at least 500 major outfalls (large municipalities) or 250 major outfalls (medium municipalities) are selected; a field screening analysis shall be under-

taken at these major outfalls.

plemented.

(E) Characterization plan. Information and a proposed program to meet the requirements of paragraph (d)(2)(iii) of this section. Such description shall include: the location of outfalls or field screening points appropriate for representative data collection under paragraph (d)(2)(iii)(A) of this section, a description of why the outfall or field screening point is representative, the seasons during which sampling is intended, a description of the sampling equipment. The proposed location of outfalls or field screening points for such sampling should reflect water quality concerns (see paragraph (d)(1)(iv)(C) of this section) to the extent practicable.

(vi) Fiscal resources.

(A) 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.

(v) Management programs.

(2) Part 2. Part 2 of the application shall consist of:

(A) A description of the existing management programs to control pollutants from the municipal separate storm sewer system. The description shall provide information on existing structural and source controls, including operation and maintenance measures for structural controls, that are currently being implemented. Such controls may include, but are not limited to: Procedures to control pollution resulting from construction activities; floodplain management controls; wetland protection measures; best management practices for new subdivisions; and emergency spill response programs. The description may address controls established under State law as well as local requirements.

(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) A description of the existing program to identify illicit connections to the municipal storm sewer system. The description should include inspection procedures and methods for detecting and preventing illicit discharges, and describe areas where this program has been im-

(A) 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 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 storm sewer of spills, dumping or disposal of materials other than storm water;

(D) Control through interagency agreements among coapplicants the contribution of pollutants from one portion of the municipal system

to another portion of the municipal system;

(E) Require compliance with conditions 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.

(ii) Source identification. The location of any major outfall that discharges to waters of the United States that was not reported under paragraph (d)(1)(iii)(B)(1) of this section. 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;

(iii) Characterization data. When "quantitative data" for a pollutant are required under paragraph (d)(2)(iii)(A)(3) of this section, the applicant must collect a sample of effluent in accordance with § 122.21(g)(7) and analyze it for the pollutant in accordance with analytical methods approved under part 136 of this chapter. When no analytical method is approved the applicant may use any suitable method but must provide a description of the method. The applicant must provide information characterizing the quality and quantity of discharges covered in the permit application, including:

(A) Quantitative data from representative outfalls designated by the Director (based on information received in part 1 of the application, the Director shall designate between five and ten outfalls or field screening points as representative of the commercial, residential and in-

dustrial land use activities of the drainage area contributing to the system or, where there are less than five outfalls covered in the application, the Director shall designate all outfalls) developed as follows:

(1) For each outfall or field screening point designated under this subparagraph, samples shall be collected of storm water discharges from three storm events occurring at least one month apart in accordance with the requirements at § 122.21(g)(7) (the Director may allow exemptions to sampling three storm events when climatic conditions create good cause for such exemptions);

(2) A narrative description shall be provided of the date and duration of the storm event(s) sampled, rainfall estimates of the storm event which generated the sampled discharge and the duration between the storm event sampled and the end of the previous measurable (greater than 0.1 inch rainfall) storm event;

(3) For samples collected and described under paragraphs (d)(2)(iii)(A)(1) and (A)(2) of this section, quantitative data shall be provided for: the organic pollutants listed in Table II; the pollutants listed in Table III (toxic metals, cyanide, and total phenols) of appendix D of 40 CFR part 122, and for the following pollutants:

Total suspended solids (TSS)

Total dissolved solids (TDS)

COD

BOD₅

Oil and grease

Fecal coliform

Fecal streptococcus

pH

Total Kjeldahl nitrogen

Nitrate plus nitrite

Dissolved phosphorus

Total ammonia plus organic nitrogen

Total phosphorus

solids, total nitrogen, total ammonia plus organic nitrogen, total phosphorus, dissolved phosphorus, cadmium, copper, lead, and zinc. Estimates shall be accompanied by a description of the procedures for estimating constituent loads and concentrations, including any modelling, data analysis, and calculation methods;

(C) A proposed schedule to provide estimates for each major outfall identified in either paragraph (d)(2)(ii) or (d)(1)(iii)(B)(1) of this section of the seasonal pollutant load and of the event mean concentration of a representative storm for any constituent detected in any sample required under paragraph (d)(2)(iii)(A) of this section; and

(D) A proposed monitoring program for representative data collection for the term of the permit that describes the location of outfalls or field screening points to be sampled (or the location of instream stations), why the location is representative, the frequency of sampling, parameters to be sampled, and a description of sampling equipment.

(4) Additional limited quantitative data required by the Director for determining permit conditions (the Director may require that quantitative data shall be provided for additional parameters, and may establish sampling conditions such as the location, season of sample collection, form of precipitation (snow melt, rainfall) and other parameters necessary to insure representativeness);

(B) Estimates of the annual pollutant load of the cumulative discharges to waters of the United States from all identified municipal outfalls and the event mean concentration of the cumulative discharges to waters of the United States from all identified municipal outfalls during a storm event (as described under § 122.21(c)(7)) for BOD₅, COD, TSS, dissolved

(iv) Proposed management program. A proposed management program covers the duration of the permit. It shall include 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. Separate proposed programs may be submitted by each coapplicant. Proposed programs may impose controls on a systemwide basis, a watershed basis, a jurisdiction basis, or on individual outfalls. Proposed programs will be con-

sidered by the Director when developing permit conditions to reduce pollutants in discharges to the maximum extent practicable. Proposed management programs shall describe priorities for implementing controls. Such programs shall be based on:

(A) A description of structural and source control measures to reduce pollutants from runoff from commercial and residential areas that are discharged from the municipal storm sewer system that are to be implemented during the life of the permit, accompanied with an estimate of the expected reduction of pollutant loads and a proposed schedule for implementing such controls. At a minimum, the description shall include:

(1) A description of maintenance activities and a maintenance schedule for structural controls to reduce pollutants (including floatables) in discharges from municipal separate storm sewers;

(2) 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. (Controls to reduce pollutants in discharges from municipal separate storm sewers containing construction site runoff are addressed in paragraph (d)(2)(iv)(D) of this section;

(3) A description of practices 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;

(4) 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;

(5) 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 (this program can be coordinated with the program developed under paragraph (d)(2)(iv)(C) of this section); and

(6) 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.

(B) A description of a program, including a schedule, 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. The proposed program shall in-

clude:

(1) A description of a program, including inspections, to implement and enforce an ordinance, orders or similar means to prevent illicit discharges to the municipal separate storm sewer system; this program description shall address all types of illicit discharges, however the following category of non-storm water discharges or flows shall be addressed where such discharges are identified by the municipality as sources of pollutants to waters of the United States: water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20)) to separate storm sewers, uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, and street wash water (program descriptions shall address discharges or flows from fire fighting only where such discharges or flows are identified as significant sources of pollutants to waters of the United States);

(2) 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;

(3) 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 appro-

priate information, indicate a reasonable potential of containing illicit discharges or other sources of non-storm water (such procedures may include: sampling procedures for constituents such as fecal coliform, fecal streptococcus, surfactants (MBAS), residual chlorine, fluorides and potassium; testing with fluorometric dyes; or conducting in storm sewer inspections where safety and other considerations allow. Such description shall include the location of storm sewers that have been identified for such evaluation);

(4) A description of procedures to prevent, contain, and respond to spills that may discharge into the municipal separate storm sewer;

(5) 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;

(6) 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; and

(7) A description of controls to limit infiltration of seepage from municipal sanitary sewers to municipal separate storm sewer systems where necessary;

(C) 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. The program shall:

(1) Identify priorities and procedures for inspections and establishing and implementing control measures for such discharges;

(2) Describe a monitoring program for storm water discharges associated with the industrial facilities identified in paragraph (d)(2)(iv)(C) of this section, to be implemented during the term of the permit, including the submission of quantitative data on the following constituents: Any pollutants limited in effluent guidelines subcategories, where applicable; any pollutant listed in an existing NPDES permit for a facility; oil and grease, COD, pH, BOD₅, TSS, total phosphorus, total Kjeldahl nitrogen, nitrate plus nitrite nitrogen, and any information on discharges required under § 122.21(g)(7)(vi) and (vii).

(D) 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, which shall include:

(1) A description of procedures for site planning which incorporate consideration of potential water quality impacts;

(2) A description of requirements for non-structural and structural best management practices;

(3) 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; and

(4) A description of appropriate educational and training measures for construction site operators.

(v) Assessment of controls. Estimated reductions in loadings of pollutants from discharges of municipal storm sewer constituents from municipal storm sewer systems expected as the result of the municipal storm water quality management program. The assessment shall also identify known impacts of storm water controls on ground water.

(vi) Fiscal analysis. 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.

(vii) Where more than one legal entity submits an application, the application shall contain a description of the roles and responsibilities of each legal entity and procedures to ensure effective coordination.

(viii) Where requirements under paragraph (d)(1)(iv)(E), (d)(2)(ii), (d)(2)(iii)(B) and (d)(2)(iv) of this section are not practicable or are not applicable, the Director may exclude any operator of a discharge from a municipal separate storm sewer which is designated under paragraph (a)(1)(v), (b)(4)(ii) or (b)(7)(ii) of this section from such re-

quirements. The Director shall not exclude the operator of a discharge from a municipal separate storm sewer identified in appendix F, G, H or I of part 122, from any of the permit application requirements under this paragraph except where authorized under this section.

(e) Application deadlines. Any operator of a point source required to obtain a permit under this section that does not have an effective NPDES permit authorizing discharges from its storm water outfalls shall submit an application in accordance with the following deadlines:

(1) Storm water discharges associated with industrial activity.

(i) Except as provided in paragraph (e)(1)(ii) of this section, for any storm water discharge associated with industrial activity identified in paragraphs (b)(14)(i) through (xi) of this section, that is not part of a group application as described in paragraph (c)(2) of this section or that is not authorized by a storm water general permit, a permit application made pursuant to paragraph (c) of this section must be submitted to the Director by October 1, 1992;

(ii) For any storm water discharge associated with industrial activity from a facility that is owned or operated by a municipality with a population of less than 100,000 that is not authorized by a general or individual permit, other than an airport, powerplant, or uncontrolled sanitary landfill, the permit application must be submitted to the Director by March 10, 2003.

(2) For any group application submitted in accordance with paragraph (c)(2) of this section:

(i) Part 1.

(A) Except as provided in paragraph (e)(2)(i)(B) of this section, part 1 of the application shall be submitted to the Director, Office of Wastewater Enforcement and Compliance by September 30, 1991;

(B) Any municipality with a population of less than 250,000 shall not be required to submit a part 1 application before May 18, 1992.

(C) For any storm water discharge associated with industrial activity from a facility that is owned or operated by a municipality with a population of less than 100,000 other than an airport, powerplant, or uncontrolled sanitary landfill, permit applications requirements are reserved.

(ii) Based on information in the part 1 application, the Director will approve or deny the members in the group application within 60 days after receiving part 1 of the group application.

(iii) Part 2.

(A) Except as provided in paragraph (e)(2)(iii)(B) of this section, part 2 of the application shall be submitted to the Director, Office of Wastewater Enforcement and Compliance by October 1, 1992;

(B) Any municipality with a population of less than 250,000 shall not be required to submit a part 1 application before May 17, 1993.

(C) For any storm water discharge associated with industrial activity from a facility that is owned or operated by a municipality with a population of less than 100,000 other than an airport, powerplant, or uncontrolled sanitary landfill, permit applications requirements are reserved.

reserved.

(iv) Rejected facilities.

(A) Except as provided in paragraph (e)(2)(iv)(B) of this section, facilities that are rejected as members of the group shall submit an individual application (or obtain coverage under an applicable general permit) no later than 12 months after the date of receipt of the notice of rejection or October 1, 1992, whichever comes first.

(B) Facilities that are owned or operated by a municipality and that are rejected as members of part 1 group application shall submit an individual application no later than 180 days after the date of receipt of the notice of rejection or October 1, 1992, whichever is later.

(v) A facility listed under paragraph (b)(14) (i)-(xi) of this section may add on to a group application submitted in accordance with paragraph (e)(2)(i) of this section at the discretion of the Office of Water Enforcement and Permits, and only upon a showing of good cause by the facility and the group applicant; the request for the addition of the facility shall be made no later than February 18, 1992; the addition of the facility shall not cause the percentage of the facilities that are required to submit quantitative data to be less than 10%, unless there are over 100 facilities in the group that are submitting quantitative data; approval to become part of group application must be obtained from the group or the trade association representing the individual facilities.

(3) For any discharge from a large municipal separate storm sewer system;

(i) Part 1 of the application shall be submitted to the Director by November 18, 1991;

(ii) Based on information received in the part 1 application the Director will approve or deny a sampling plan under paragraph (d)(1)(iv)(E) of this section within 90 days after receiving the part 1 application;

(iii) Part 2 of the application shall be submitted to the Director by November 16, 1992.

(4) For any discharge from a medium municipal separate storm sewer system;

(i) Part 1 of the application shall be submitted to the Director by May 18, 1992.

(ii) Based on information received in the part 1 application the Director will approve or deny a sampling plan under paragraph (d)(1)(iv)(E) of this section within 90 days after receiving the part 1 application.

(iii) Part 2 of the application shall be submitted to the Director by May 17, 1993.

(5) A permit application shall be submitted to the Director within 180 days of notice, unless permission for a later date is granted by the Director (see § 124.52(c) of this chapter), for:

(i) A storm water discharge that the Director, or in States with approved NPDES programs, either the Director or the EPA Regional Administrator, determines that the discharge contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States (see paragraphs (a)(1)(v) and (b)(15)(ii) of this section);

(ii) A storm water discharge subject to paragraph (c)(1)(v) of this section.

(6) Facilities with existing NPDES permits for storm water discharges associated with industrial activity shall maintain existing permits. Facilities with permits for storm water discharges associated with industrial activity which expire on or after May 18, 1992 shall submit a new application in accordance with the requirements of 40 CFR 122.21 and 40 CFR 122.26(c) (Form 1, Form 2F, and other applicable Forms) 180 days before the expiration of such permits.

(7) The Director shall issue or deny permits for discharges composed entirely of storm water under this section in accordance with the following schedule:

(i)(A) Except as provided in paragraph (e)(7)(i)(B) of this section, the Director shall issue or deny permits for storm water discharges associated with industrial activity no later than October 1, 1993, or, for new sources or existing sources which fail to submit a complete permit application by October 1, 1992, one year after receipt of a complete permit application;

(B) For any municipality with a population of less than 250,000 which submits a timely Part I group application under paragraph (e)(2)(i)(B) of this section, the Director shall issue or deny permits for storm water discharges associated with industrial activity no later than May 17, 1994, or, for any such municipality which fails to submit a complete Part II group permit application by May 17, 1993, one year after receipt of a complete permit application;

(ii) The Director shall issue or deny permits for large municipal separate storm sewer systems no later than November 16, 1993, or, for new sources or existing sources which fail to submit a complete permit application by November 16, 1992, one year after receipt of a complete permit application;

(iii) The Director shall issue or deny permits for medium municipal separate storm sewer systems no later than May 17, 1994, or, for new sources or existing sources which fail to submit a complete permit application by May 17, 1993, one year after receipt of a complete permit application.

(8) For any storm water discharge associated with small construction activities identified in paragraph (b)(15)(i) of this section, see § 122.21(c)(1). Discharges from these sources require permit authorization by March 10, 2003, unless designated for coverage before then.

(9) For any discharge from a regulated small MS4, the permit application made under § 122.33 must be submitted to the Director by:

(i) March 10, 2003 if designated under § 122.32(a)(1) unless your MS4 serves a jurisdiction with a population under 10,000 and the NPDES permitting authority has established a phasing schedule under § 123.35(d)(3) (see § 122.33(c)(1)); or

(ii) Within 180 days of notice; unless the NPDES permitting authority grants a later date, if designated under § 122.32(a)(2) (see § 122.33(c)(2)).

(f) Petitions.

(1) Any operator of a municipal separate storm sewer system may petition the Director to require a separate NPDES permit (or a permit issued under an approved NPDES State program) for any discharge into the municipal separate storm sewer system.

(2) Any person may petition the Director to require a NPDES permit for a discharge which is composed entirely of storm water which contributes to a viola-

tion of a water quality standard or is a significant contributor of pollutants to waters of the United States.

(3) The owner or operator of a municipal separate storm sewer system may petition the Director to reduce the Census estimates of the population served by such separate system to account for storm water discharged to combined sewers as defined by 40 CFR 35.2005(b)(11) that is treated in a publicly owned treatment works. In municipalities in which combined sewers are operated, the Census estimates of population may be reduced proportional to the fraction, based on estimated lengths, of the length of combined sewers over the sum of the length of combined sewers and municipal separate storm sewers where an applicant has submitted the NPDES permit number associated with each discharge point and a map indicating areas served by combined sewers and the location of any combined sewer overflow discharge point.

(4) Any person may petition the Director for the designation of a large, medium, or small municipal separate storm sewer system as defined by paragraph (b)(4)(iv), (b)(7)(iv), or (b)(16) of this section.

(5) The Director shall make a final determination on any petition received under this section within 90 days after receiving the petition with the exception of petitions to designate a small MS4 in which case the Director shall make a final determination on the petition within 180 days after its receipt.

(g) Conditional exclusion for "no exposure" of industrial activities and materials to storm water. Discharges composed entirely of storm water are not storm water discharges associated with industrial activity if there is "no exposure" of industrial materials and activities to rain, snow, snowmelt and/or runoff, and the discharger satisfies the conditions in paragraphs (g)(1) through (g)(4) of this section. "No exposure" means that all in-

dustrial materials and activities are protected by a storm resistant shelter to prevent exposure to rain, snow, snowmelt, and/or runoff. Industrial materials or activities include, but are not limited to, material handling equipment or activities, industrial machinery, raw materials, intermediate products, by-products, final products, or waste products. Material handling activities include the storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, final product or waste product.

(1) Qualification. To qualify for this exclusion, the operator of the discharge must:

(i) Provide a storm resistant shelter to protect industrial materials and activities from exposure to rain, snow, snow melt, and runoff;

(ii) Complete and sign (according to § 122.22) a certification that there are no discharges of storm water contaminated by exposure to industrial materials and activities from the entire facility, except as provided in paragraph (g)(2) of this section;

(iii) Submit the signed certification to the NPDES permitting authority once every five years;

(iv) Allow the Director to inspect the facility to determine compliance with the "no exposure" conditions;

(v) Allow the Director to make any "no exposure" inspection reports available to the public upon request; and

(vi) For facilities that discharge through an MS4, upon request, submit a copy of the certification of "no exposure" to the MS4 operator, as well as allow inspection and public reporting by the MS4 operator.

(2) Industrial materials and activities not requiring storm resistant shelter. To qualify for this exclusion, storm resistant shelter is not required for:

(i) Drums, barrels, tanks, and similar containers that are tightly sealed, provided those containers are not deteriorated and do not leak ("Sealed" means banded or otherwise secured and without operational taps or valves);

(ii) Adequately maintained vehicles used in material handling; and

(iii) Final products, other than products that would be mobilized in storm water discharge (e.g., rock salt).

(3) Limitations.

(i) Storm water discharges from construction activities identified in paragraphs (b)(14)(x) and (b)(15) are not eligible for this conditional exclusion.

(ii) This conditional exclusion from the requirement for an NPDES permit is available on a facility-wide basis only, not for individual outfalls. If a facility has some discharges of storm water that would otherwise be "no exposure" discharges, individual permit requirements should be adjusted accordingly.

(iii) If circumstances change and industrial materials or activities become exposed to rain, snow, snow melt, and/or runoff, the conditions for this exclusion no longer apply. In such cases, the discharge becomes subject to enforcement for unpermitted discharge. Any conditionally exempt discharger who anticipates changes in circumstances should apply for and obtain permit authorization prior to the change of circumstances.

(iv) Notwithstanding the provisions of this para-

graph, the NPDES permitting authority retains the authority to require permit authorization (and deny this exclusion) upon making a determination that the discharge causes, has a reasonable potential to cause, or contributes to an instream excursion above an applicable water quality standard, including designated uses.

(4) Certification. The no exposure certification must require the submission of the following information, at a minimum, to aid the NPDES permitting authority in determining if the facility qualifies for the no exposure exclusion:

(i) The legal name, address and phone number of the discharger (see § 122.21(b));

(ii) The facility name and address, the county name and the latitude and longitude where the facility is located;

(iii) The certification must indicate that none of the following materials or activities are, or will be in the foreseeable future, exposed to precipitation:

(A) Using, storing or cleaning industrial machinery or equipment, and areas where residuals from using, storing or cleaning industrial machinery or equipment remain and are exposed to storm water;

(B) Materials or residuals on the ground or in storm water inlets from spills/leaks;

(C) Materials or products from past industrial activity;

(D) Material handling equipment (except adequately maintained vehicles);

(E) Materials or products during loading/unloading or transporting activities;

(F) Materials or products stored outdoors (except final products intended for outside use, e.g., new cars, where exposure to storm water does not result in the discharge of pollutants);

(G) Materials contained in open, deteriorated or leaking storage drums, barrels, tanks, and similar containers;

(H) Materials or products handled/stored on roads or railways owned or maintained by the discharger;

(I) Waste material (except waste in covered, non-leaking containers, e.g., dumpsters);

(J) Application or disposal of process wastewater (unless otherwise permitted); and

(K) Particulate matter or visible deposits of residuals from roof stacks/vents not otherwise regulated, i.e., under an air quality control permit, and evident in the storm water outflow;

(iv) All "no exposure" certifications must include the following certification statement, and be signed in accordance with the signatory requirements of § 122.22: "I certify under penalty of law that I have read and understand the eligibility requirements for claiming a condition of "no exposure" and obtaining an exclusion from NPDES storm water permitting; and that there are no discharges of storm water contaminated by exposure to industrial activities or materials from the industrial facility identified in this document (except as allowed under paragraph (g)(2)) of this section. I understand that I am obligated to submit a no exposure certification form once every five years to the NPDES permitting au-

thority and, if requested, to the operator of the local MS4 into which this facility discharges (where applicable). I understand that I must allow the NPDES permitting authority, or MS4 operator where the discharge is into the local MS4, to perform inspections to confirm the condition of no exposure and to make such inspection reports publicly available upon request. I understand that I must obtain coverage under an NPDES permit prior to any point source discharge of storm water from the facility. 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 gathered and evaluated the information submitted. Based upon my inquiry of the person or persons who manage the system, or those persons directly involved in gathering the information, the information submitted is to the best of my knowledge and belief true, accurate and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

[54 FR 255, Jan. 4, 1989; 55 FR 48063, Nov. 16, 1990; 56 FR 12100, March 21, 1991; 56 FR 56554, Nov. 5, 1991; 57 FR 11412, April 2, 1992; 57 FR 60447, Dec. 18, 1992; 60 FR 17956, April 7, 1995; 60 FR 40235, Aug. 7, 1995; 64 FR 68838, Dec. 8, 1999; 65 FR 30907, May 15, 2000; 68 FR 11329, March 10, 2003; 70 FR 11563, March 9, 2005; 71 FR 33639, June 12, 2006]

SOURCE: 45 FR 33418, May 19, 1980, as amended at 48 FR 14153, Apr. 1, 1983, unless otherwise noted.

AUTHORITY: The Clean Water Act, 33 U.S.C. 1251 et seq.

40 C. F. R. § 122.26, 40 CFR § 122.26

Current through August 19, 2011; 76 FR 52145.

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ATTACHMENT 8

Westlaw

40 C.F.R. § 122.44

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C

Effective: April 11, 2007

Code of Federal Regulations Currentness
Title 40. Protection of Environment
Chapter I. Environmental Protection Agency
(Refs & Annos)
Subchapter D. Water Programs
Part 122. EPA Administered Permit
Programs: the National Pollutant Dis-
charge Elimination System (Refs & An-
nos)
Subpart C. Permit Conditions
→ § 122.44 Establishing limitations,
standards, and other permit condi-
tions (applicable to State NPDES
programs, see § 123.25).

In addition to the conditions established under § 122.43(a), each NPDES permit shall include conditions meeting the following requirements when applicable.

(a)(1) Technology-based effluent limitations and standards based on: effluent limitations and standards promulgated under section 301 of the CWA, or new source performance standards promulgated under section 306 of CWA, on case-by-case effluent limitations determined under section 402(a)(1) of CWA, or a combination of the three, in accordance with § 125.3 of this chapter. For new sources or new dischargers, these technology based limitations and standards are subject to the provisions of § 122.29(d) (protection period).

(2) Monitoring waivers for certain guideline-listed pollutants.

(i) The Director may authorize a discharger subject to technology-based effluent limitations

guidelines and standards in an NPDES permit to forego sampling of a pollutant found at 40 CFR Subchapter N of this chapter if the discharger has demonstrated through sampling and other technical factors that the pollutant is not present in the discharge or is present only at background levels from intake water and without any increase in the pollutant due to activities of the discharger.

(ii) This waiver is good only for the term of the permit and is not available during the term of the first permit issued to a discharger.

(iii) Any request for this waiver must be submitted when applying for a reissued permit or modification of a reissued permit. The request must demonstrate through sampling or other technical information, including information generated during an earlier permit term that the pollutant is not present in the discharge or is present only at background levels from intake water and without any increase in the pollutant due to activities of the discharger.

(iv) Any grant of the monitoring waiver must be included in the permit as an express permit condition and the reasons supporting the grant must be documented in the permit's fact sheet or statement of basis.

(v) This provision does not supersede certification processes and requirements already established in existing effluent limitations guidelines and standards.

(b)(1) Other effluent limitations and standards under sections 301, 302, 303, 307, 318, and 405 of CWA. If any applicable toxic effluent standard or prohibition (including any schedule of compliance

specified in such effluent standard or prohibition) is promulgated under section 307(a) of CWA for a toxic pollutant and that standard or prohibition is more stringent than any limitation on the pollutant in the permit, the Director shall institute proceedings under these regulations to modify or revoke and reissue the permit to conform to the toxic effluent standard or prohibition. See also § 122.41(a).

(2) Standards for sewage sludge use or disposal under section 405(d) of the CWA unless those standards have been included in a permit issued under the appropriate provisions of subtitle C of the Solid Waste Disposal Act, Part C of Safe Drinking Water Act, the Marine Protection, Research, and Sanctuaries Act of 1972, or the Clean Air Act, or under State permit programs approved by the Administrator. When there are no applicable standards for sewage sludge use or disposal, the permit may include requirements developed on a case-by-case basis to protect public health and the environment from any adverse effects which may occur from toxic pollutants in sewage sludge. If any applicable standard for sewage sludge use or disposal is promulgated under section 405(d) of the CWA and that standard is more stringent than any limitation on the pollutant or practice in the permit, the Director may initiate proceedings under these regulations to modify or revoke and reissue the permit to conform to the standard for sewage sludge use or disposal.

(3) Requirements applicable to cooling water intake structures under section 316(b) of the CWA, in accordance with part 125, subparts I, J, and N of this chapter.

(c) Reopener clause: For any permit issued to a treatment works treating domestic sewage (including "sludge-only facilities"), the Director shall include a reopener clause to incorporate any applicable standard for sewage sludge use or dis-

posal promulgated under section 405(d) of the CWA. The Director may promptly modify or revoke and reissue any permit containing the reopener clause required by this paragraph if the standard for sewage sludge use or disposal is more stringent than any requirements for sludge use or disposal in the permit, or controls a pollutant or practice not limited in the permit.

(d) Water quality standards and State requirements: any requirements in addition to or more stringent than promulgated effluent limitations guidelines or standards under sections 301, 304, 306, 307, 318, and 405 of CWA necessary to:

(1) Achieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality.

(i) Limitations must 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 the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.

(ii) When determining whether a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative or numeric criteria within a State water quality standard, the permitting authority shall use procedures which account for existing controls on point and nonpoint sources of pollution, the variability of the pollutant or pollutant parameter in the effluent, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity), and where appropriate, the dilution of the effluent in the receiving water.

(iii) When the permitting authority determines, using the procedures in paragraph (d)(1)(ii) of this section, that a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the allowable ambient concentration of a State numeric criteria within a State water quality standard for an individual pollutant, the permit must contain effluent limits for that pollutant.

(iv) When the permitting authority determines, using the procedures in paragraph (d)(1)(ii) of this section, that a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the numeric criterion for whole effluent toxicity, the permit must contain effluent limits for whole effluent toxicity.

(v) Except as provided in this subparagraph, when the permitting authority determines, using the procedures in paragraph (d)(1)(ii) of this section, toxicity testing data, or other information, that a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative criterion within an applicable State water quality standard, the permit must contain effluent limits for whole effluent toxicity. Limits on whole effluent toxicity are not necessary where the permitting authority demonstrates in the fact sheet or statement of basis of the NPDES permit, using the procedures in paragraph (d)(1)(ii) of this section, that chemical-specific limits for the effluent are sufficient to attain and maintain applicable numeric and narrative State water quality standards.

(vi) Where a State has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a

narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits using one or more of the following options:

(A) Establish effluent limits using a calculated numeric water quality criterion for the pollutant which the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria and will fully protect the designated use. Such a criterion may be derived using a proposed State criterion, or an explicit State policy or regulation interpreting its narrative water quality criterion, supplemented with other relevant information which may include: EPA's Water Quality Standards Handbook, October 1983, risk assessment data, exposure data, information about the pollutant from the Food and Drug Administration, and current EPA criteria documents; or

(B) Establish effluent limits on a case-by-case basis, using EPA's water quality criteria, published under section 304(a) of the CWA, supplemented where necessary by other relevant information; or

(C) Establish effluent limitations on an indicator parameter for the pollutant of concern, provided:

(1) The permit identifies which pollutants are intended to be controlled by the use of the effluent limitation;

(2) The fact sheet required by § 124.56 sets forth the basis for the limit, including a finding that compliance with the effluent limit on the indicator parameter will result in controls on the

pollutant of concern which are sufficient to attain and maintain applicable water quality standards;

(3) The permit requires all effluent and ambient monitoring necessary to show that during the term of the permit the limit on the indicator parameter continues to attain and maintain applicable water quality standards; and

(4) The permit contains a reopener clause allowing the permitting authority to modify or revoke and reissue the permit if the limits on the indicator parameter no longer attain and maintain applicable water quality standards.

(vii) When developing water quality-based effluent limits under this paragraph the permitting authority shall ensure that:

(A) The level of water quality to be achieved by limits on point sources established under this paragraph is derived from, and complies with all applicable water quality standards; and

(B) Effluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, are consistent with the assumptions and requirements of any available wasteload allocation for the discharge prepared by the State and approved by EPA pursuant to 40 CFR 130.7.

(2) Attain or maintain a specified water quality through water quality related effluent limits established under section 302 of CWA;

(3) Conform to the conditions to a State certi-

fication under section 401 of the CWA that meets the requirements of § 124.53 when EPA is the permitting authority. If a State certification is stayed by a court of competent jurisdiction or an appropriate State board or agency, EPA shall notify the State that the Agency will deem certification waived unless a finally effective State certification is received within sixty days from the date of the notice. If the State does not forward a finally effective certification within the sixty day period, EPA shall include conditions in the permit that may be necessary to meet EPA's obligation under section 301(b)(1)(C) of the CWA;

(4) Conform to applicable water quality requirements under section 401(a)(2) of CWA when the discharge affects a State other than the certifying State;

(5) Incorporate any more stringent limitations, treatment standards, or schedule of compliance requirements established under Federal or State law or regulations in accordance with section 301(b)(1)(C) of CWA;

(6) Ensure consistency with the requirements of a Water Quality Management plan approved by EPA under section 208(b) of CWA;

(7) Incorporate section 403(c) criteria under Part 125, Subpart M, for ocean discharges;

(8) Incorporate alternative effluent limitations or standards where warranted by "fundamentally different factors," under 40 CFR Part 125, Subpart D;

(9) Incorporate any other appropriate requirements, conditions, or limitations (other than effluent limitations) into a new source permit to the extent allowed by the National Environ-

mental Policy Act, 42 U.S.C. 4321 et seq. and section 511 of the CWA, when EPA is the permit issuing authority. (See § 122.29(c)).

quirements appropriate to the permittee under § 125.3(c).

(e) Technology-based controls for toxic pollutants. Limitations established under paragraphs (a), (b), or (d) of this section, to control pollutants meeting the criteria listed in paragraph (e)(1) of this section. Limitations will be established in accordance with paragraph (e)(2) of this section. An explanation of the development of these limitations shall be included in the fact sheet under § 124.56(b)(1)(i).

(g) Twenty-four hour reporting. Pollutants for which the permittee must report violations of maximum daily discharge limitations under § 122.41 (1)(6)(ii)(C) (24-hour reporting) shall be listed in the permit. This list shall include any toxic pollutant or hazardous substance, or any pollutant specifically identified as the method to control a toxic pollutant or hazardous substance.

(1) Limitations must control all toxic pollutants which the Director determines (based on information reported in a permit application under § 122.21(g)(7) or in a notification under § 122.42(a)(1) or on other information) are or may be discharged at a level greater than the level which can be achieved by the technology-based treatment requirements appropriate to the permittee under § 125.3(c) of this chapter; or

(h) Durations for permits, as set forth in § 122.46.

(2) The requirement that the limitations control the pollutants meeting the criteria of paragraphs (e)(1) of this section will be satisfied by:

(i) Monitoring requirements. In addition to § 122.48, the following monitoring requirements:

(i) Limitations on those pollutants; or

(1) To assure compliance with permit limitations, requirements to monitor:

(ii) Limitations on other pollutants which, in the judgment of the Director, will provide treatment of the pollutants under paragraph (e)(1) of this section to the levels required by § 125.3(c).

(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;

(f) Notification level. A "notification level" which exceeds the notification level of § 122.42(a)(1)(i), (ii), or (iii), upon a petition from the permittee or on the Director's initiative. This new notification level may not exceed the level which can be achieved by the technology-based treatment re-

(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 test procedures approved under 40 CFR Part 136 for the analyses of pollut-

ants or another method is required under 40 CFR subchapters N or O. In the case of pollutants for which there are no approved methods under 40 CFR Part 136 or otherwise required under 40 CFR subchapters N or O, monitoring must be conducted according to a test procedure specified in the permit for such pollutants.

(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. For sewage sludge use or disposal practices, requirements to monitor and report results shall be established on a case-by-case basis with a frequency dependent on the nature and effect of the sewage sludge use or disposal practice; minimally this shall be as specified in 40 CFR part 503 (where applicable), but in no case less than once a year.

(3) Requirements to report monitoring results for storm water discharges associated with industrial activity which are subject to an effluent limitation guideline 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.

(4) Requirements to report monitoring results for storm water discharges associated with industrial activity (other than those addressed in paragraph (i)(3) of this section) shall be established on a case-by-case basis with a frequency dependent on the nature and effect of the discharge. At a minimum, a permit for such a discharge must require:

(i) The discharger to conduct an annual inspection of the facility site to identify areas contributing to a storm water discharge associated

with industrial activity and evaluate whether measures to reduce pollutant loadings identified in a storm water pollution prevention plan are adequate and properly implemented in accordance with the terms of the permit or whether additional control measures are needed;

(ii) The discharger to maintain for a period of three years a record summarizing the results of the inspection and a certification that the facility is in compliance with the plan and the permit, and identifying any incidents of non-compliance;

(iii) Such report and certification be signed in accordance with § 122.22; and

(iv) Permits for storm water discharges associated with industrial activity from inactive mining operations may, where annual inspections are impracticable, require certification once every three years by a Registered Professional Engineer that the facility is in compliance with the permit, or alternative requirements.

(5) Permits which do not require the submittal of monitoring result reports at least annually shall require that the permittee report all instances of noncompliance not reported under § 122.41(l) (1), (4), (5), and (6) at least annually.

(j) Pretreatment program for POTWs. Requirements for POTWs to:

(1) Identify, in terms of character and volume of pollutants, any Significant Industrial Users discharging into the POTW subject to Pretreatment Standards under section 307(b) of CWA and 40 CFR part 403.

(2)(i) Submit a local program when required by

and in accordance with 40 CFR part 403 to assure compliance with pretreatment standards to the extent applicable under section 307(b). The local program shall be incorporated into the permit as described in 40 CFR part 403. The program must require all indirect dischargers to the POTW to comply with the reporting requirements of 40 CFR part 403.

(ii) Provide a written technical evaluation of the need to revise local limits under 40 CFR 403.5(c)(1), following permit issuance or reissuance.

(3) For POTWs which are "sludge-only facilities," a requirement to develop a pretreatment program under 40 CFR Part 403 when the Director determines that a pretreatment program is necessary to assure compliance with Section 405(d) of the CWA.

(k) Best management practices (BMPs) to control or abate the discharge of pollutants when:

(1) Authorized under section 304(e) of the CWA for the control of toxic pollutants and hazardous substances from ancillary industrial activities;

(2) Authorized under section 402(p) of the CWA for the control of storm water discharges;

(3) Numeric effluent limitations are infeasible; or

(4) The practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA.

Note to paragraph (k)(4): Additional technical information on BMPs and the elements of BMPs is

contained in the following documents: Guidance Manual for Developing Best Management Practices (BMPs), October 1993, EPA No. 833/B-93-004, NTIS No. PB 94-178324, ERIC No. W498); Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices, September 1992, EPA No. 832/R-92-005, NTIS No. PB 92-235951, ERIC No. N482); Storm Water Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices: Summary Guidance, EPA No. 833/R-92-001, NTIS No. PB 93-223550; ERIC No. W139; Storm Water Management for Industrial Activities, Developing Pollution Prevention Plans and Best Management Practices, September 1992; EPA 832/R-92-006, NTIS No. PB 92-235969, ERIC No. N477; Storm Water Management for Industrial Activities, Developing Pollution Prevention Plans and Best Management Practices: Summary Guidance, EPA 833/R-92-002, NTIS No. PB 94-133782; ERIC No. W492. Copies of those documents (or directions on how to obtain them) can be obtained by contacting either the Office of Water Resource Center (using the EPA document number as a reference) at (202) 260-7786; or the Educational Resources Information Center (ERIC) (using the ERIC number as a reference) at (800) 276-0462. Updates of these documents or additional BMP documents may also be available. A list of EPA BMP guidance documents is available on the OWM Home Page at <http://www.epa.gov/owm>. In addition, States may have BMP guidance documents.

These EPA guidance documents are listed here only for informational purposes; they are not binding and EPA does not intend that these guidance documents have any mandatory, regulatory effect by virtue of their listing in this note.

(l) Reissued permits.

(1) Except as provided in paragraph (l)(2) of

this section when a permit is renewed or reissued, interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under § 122.62.)

(2) In the case of effluent limitations established on the basis of Section 402(a)(1)(B) of the CWA, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 304(b) 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.

(i) Exceptions--A permit with respect to which paragraph (1)(2) of this section 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)(1) 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

(2) The Administrator determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under section 402(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 301(c), 301(g), 301(h), 301(i), 301(k), 301(n), or 316(a); 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).

(ii) Limitations. In no event may a permit with respect to which paragraph (1)(2) of this section 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, issued, 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 303 applicable to such waters.

(m) Privately owned treatment works. For a privately owned treatment works, any conditions expressly applicable to any user, as a limited copermitee, that may be necessary in the permit issued to the treatment works to ensure compliance with applicable requirements under this part. Alternatively, the Director may issue separate permits to the treatment works and to its users, or may require a separate permit application from any user. The Director's decision to issue a permit with no conditions applicable to any user, to impose conditions on one or more users, to issue separate permits, or to require separate applications, and the basis for that decision, shall be stated in the fact sheet for the draft permit for the treatment works.

(n) Grants. Any conditions imposed in grants made by the Administrator to POWs under sections 201 and 204 of CWA which are reasonably necessary for the achievement of effluent limitations under section 301 of CWA.

(o) Sewage sludge. Requirements under section 405 of CWA governing the disposal of sewage sludge from publicly owned treatment works or any other treatment works treating domestic sewage for any use for which regulations have been established, in accordance with any applicable regulations.

(p) Coast Guard. When a permit is issued to a facility that may operate at certain times as a means of transportation over water, a condition that the discharge shall comply with any applicable regulations promulgated by the Secretary of the department in which the Coast Guard is operating, that establish specifications for safe transportation, handling, carriage, and storage of pollutants.

(q) Navigation. Any conditions that the Secretary of the Army considers necessary to ensure that navigation and anchorage will not be substantially impaired, in accordance with § 124.59 of this chapter.

(r) Great Lakes. When a permit is issued to a facility that discharges into the Great Lakes System (as defined in 40 CFR 132.2), conditions promulgated by the State, Tribe, or EPA pursuant to 40 CFR part 132.

(s) Qualifying State, Tribal, or local programs.

(1) For storm water discharges associated with small construction activity identified in § 122.26(b)(15), the Director may include permit conditions that incorporate qualifying State, Tribal, or local erosion and sediment control program requirements by reference. Where a qualifying State, Tribal, or local program does not include one or more of the elements in this paragraph (s)(1), then the Director must include those elements as conditions in the permit. A qualifying State, Tribal, or local erosion and sediment control program is one that includes:

(i) Requirements for construction site operators to implement appropriate erosion and sediment control best management practices;

(ii) Requirements for construction site operators to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality;

(iii) Requirements for construction site operators to develop and implement a storm water pollution prevention plan. (A storm water pollution prevention plan includes site descriptions, descriptions of appropriate control measures, copies of approved State, Tribal or local requirements, maintenance procedures, inspection procedures, and identification of non-storm water discharges); and

(iv) Requirements to submit a site plan for review that incorporates consideration of potential water quality impacts.

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(2) For storm water discharges from construction activity identified in § 122.26(b)(14)(x), the Director may include permit conditions that incorporate qualifying State, Tribal, or local erosion and sediment control program requirements by reference. A qualifying State, Tribal or local erosion and sediment control program is one that includes the elements listed in paragraph (s)(1) of this section and any additional requirements necessary to achieve the applicable technology-based standards of "best available technology" and "best conventional technology" based on the best professional judgment of the permit writer.

[49 FR 31842, Aug. 8, 1984; 49 FR 38049, Sept. 26, 1984; 50 FR 6940, Feb. 19, 1985; 50 FR 7912, Feb. 27, 1985; 54 FR 256, Jan. 4, 1989; 54 FR 18783, May 2, 1989; 54 FR 23895, 23896, June 2, 1989; 57 FR 11413, April 2, 1992; 57 FR 33049, July 24, 1992; 58 FR 18016, April 7, 1993; 60 FR 15386, March 23, 1995; 64 FR 42469, Aug. 4, 1999; 64 FR 43426, Aug. 10, 1999; 64 FR 68847, Dec. 8, 1999; 65 FR 30908, May 15, 2000; 65 FR 43661, July 13, 2000; 66 FR 53048, Oct. 18, 2001; 66 FR 65337, Dec. 18, 2001; 68 FR 13608, March 19, 2003; 69 FR 41682, July 9, 2004; 70 FR 60191, Oct. 14, 2005; 71 FR 35040, June 16, 2006; 72 FR 11212, March 12, 2007]

SOURCE: 45 FR 33418, May 19, 1980, as amended at 48 FR 14153, Apr. 1, 1983, unless otherwise noted.

AUTHORITY: The Clean Water Act, 33 U.S.C. 1251 et seq.

40 C. F. R. § 122.44, 40 CFR § 122.44

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40 C.F.R. § 130.2

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Effective:[See Text Amendments]

Code of Federal Regulations Currentness
Title 40. Protection of Environment
Chapter I. Environmental Protection Agency
(Refs & Annos)
▣ Subchapter D. Water Programs
▣ Part 130. Water Quality Planning and
Management (Refs & Annos)
→ § 130.2 Definitions.

(a) The Act. The Clean Water Act, as amended, 33 U.S.C. 1251 et seq.

(b) Indian Tribe. Any Indian Tribe, band, group, or community recognized by the Secretary of the Interior and exercising governmental authority over a Federal Indian reservation.

(c) Pollution. The man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water.

(d) Water quality standards (WQS). Provisions of State or Federal law which consist of a designated use or uses for the waters of the United States and water quality criteria for such waters based upon such uses. Water quality standards are to protect the public health or welfare, enhance the quality of water and serve the purposes of the Act.

(e) Load or Loading. An amount of matter or thermal energy that is introduced into a receiving water; to introduce matter or thermal energy into a receiving water. Loading may be either man-caused (pollutant loading) or natural (natural background loading).

(f) Loading capacity. The greatest amount of loading that a water can receive without violating water quality standards.

(g) Load allocation (LA). The portion of a receiving water's loading capacity that is attributed either to one of its existing or future nonpoint sources of pollution or to natural background sources. Load allocations are best estimates of the loading, which may range from reasonably accurate estimates to gross allotments, depending on the availability of data and appropriate techniques for predicting the loading. Wherever possible, natural and nonpoint source loads should be distinguished.

(h) Wasteload allocation (WLA). The portion of a receiving water's loading capacity that is allocated to one of its existing or future point sources of pollution. WLAs constitute a type of water quality-based effluent limitation.

(i) Total maximum daily load (TMDL). The sum of the individual WLAs for point sources and LAs for nonpoint sources and natural background. If a receiving water has only one point source discharger, the TMDL is the sum of that point source WLA plus the LAs for any nonpoint sources of pollution and natural background sources, tributaries, or adjacent segments. TMDLs can be expressed in terms of either mass per time, toxicity, or other appropriate measure. If Best Management Practices (BMPs) or other nonpoint source pollution controls make more stringent load allocations practicable, then wasteload allocations can be made less stringent. Thus, the TMDL process provides for nonpoint source control tradeoffs.

(j) Water quality limited segment. Any segment where it is known that water quality does not meet applicable water quality standards, and/or is not expected to meet applicable water quality standards,

40 C.F.R. § 130.2

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even after the application of the technology-based effluent limitations required by sections 301(b) and 306 of the Act.

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(k) Water quality management (WQM) plan. A State or areawide waste treatment management plan developed and updated in accordance with the provisions of sections 205(j), 208 and 303 of the Act and this regulation.

(l) Areawide agency. An agency designated under section 208 of the Act, which has responsibilities for WQM planning within a specified area of a State.

(m) Best Management Practice (BMP). Methods, measures or practices selected by an agency to meet its nonpoint source control needs. BMPs include but are not limited to structural and nonstructural controls and operation and maintenance procedures. BMPs can be applied before, during and after pollution-producing activities to reduce or eliminate the introduction of pollutants into receiving waters.

(n) Designated management agency (DMA). An agency identified by a WQM plan and designated by the Governor to implement specific control recommendations.

[54 FR 14359, April 11, 1989; 65 FR 43662, July 13, 2000; 68 FR 13608, March 19, 2003]

SOURCE: 50 FR 1779, Jan. 11, 1985; 66 FR 53048, Oct. 18, 2001; 68 FR 13608, March 19, 2003, unless otherwise noted.

AUTHORITY: 33 U.S.C. 1251 et seq.

40 C. F. R. § 130.2, 40 CFR § 130.2

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40 C.F.R. § 130.7

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Effective: [See Text Amendments]

quired by sections 301(b), 306, 307, or other sections of the Act;

Code of Federal Regulations Currentness
Title 40. Protection of Environment
Chapter I. Environmental Protection Agency
(Refs & Annos)
 ▣ Subchapter D. Water Programs
 ▣ Part 130. Water Quality Planning and
 Management (Refs & Annos)
 → § 130.7 Total maximum daily loads
 (TMDL) and individual water quality-
 based effluent limitations.

(a) General. The process for identifying water quality limited segments still requiring wasteload allocations, load allocations and total maximum daily loads (WLAs/LAs and TMDLs), setting priorities for developing these loads; establishing these loads for segments identified, including water quality monitoring, modeling, data analysis, calculation methods, and list of pollutants to be regulated; submitting the State's list of segments identified, priority ranking, and loads established (WLAs/LAs/TMDLs) to EPA for approval; incorporating the approved loads into the State's WQM plans and NPDES permits; and involving the public, affected dischargers, designated area-wide agencies, and local governments in this process shall be clearly described in the State Continuing Planning Process (CPP).

(b) Identification and priority setting for water quality-limited segments still requiring TMDLs.

(1) Each State shall identify those water quality-limited segments still requiring TMDLs within its boundaries for which:

(i) Technology-based effluent limitations re-

(ii) More stringent effluent limitations (including prohibitions) required by either State or local authority preserved by section 510 of the Act, or Federal authority (law, regulation, or treaty); and

(iii) Other pollution control requirements (e.g., best management practices) required by local, State, or Federal authority are not stringent enough to implement any water quality standards (WQS) applicable to such waters.

(2) Each State shall also identify on the same list developed under paragraph (b)(1) of this section those water quality-limited segments still requiring TMDLs or parts thereof within its boundaries for which controls on thermal discharges under section 301 or State or local requirements are not stringent enough to assure protection and propagation of a balanced indigenous population of shellfish, fish and wild-life.

(3) For the purposes of listing waters under § 130.7(b), the term "water quality standard applicable to such waters" and "applicable water quality standards" refer to those water quality standards established under section 303 of the Act, including numeric criteria, narrative criteria, waterbody uses, and antidegradation requirements.

(4) The list required under §§ 130.7(b)(1) and 130.7(b)(2) of this section shall include a priority ranking for all listed water quality-limited segments still requiring TMDLs, taking into account the severity of the pollution and the

uses to be made of such waters and shall identify the pollutants causing or expected to cause violations of the applicable water quality standards. The priority ranking shall specifically include the identification of waters targeted for TMDL development in the next two years.

(5) Each State shall assemble and evaluate all existing and readily available water quality-related data and information to develop the list required by §§ 130.7(b)(1) and 130.7(b)(2). At a minimum "all existing and readily available water quality-related data and information" includes but is not limited to all of the existing and readily available data and information about the following categories of waters:

(i) Waters identified by the State in its most recent section 305(b) report as "partially meeting" or "not meeting" designated uses or as "threatened";

(ii) Waters for which dilution calculations or predictive models indicate nonattainment of applicable water quality standards;

(iii) Waters for which water quality problems have been reported by local, state, or federal agencies; members of the public; or academic institutions. These organizations and groups should be actively solicited for research they may be conducting or reporting. For example, university researchers, the United States Department of Agriculture, the National Oceanic and Atmospheric Administration, the United States Geological Survey, and the United States Fish and Wildlife Service are good sources of field data; and

(iv) Waters identified by the State as impaired or threatened in a nonpoint assessment submitted to EPA under section 319 of the CWA or in

any updates of the assessment.

(6) Each State shall provide documentation to the Regional Administrator to support the State's determination to list or not to list its waters as required by §§ 130.7(b)(1) and 130.7(b)(2). This documentation shall be submitted to the Regional Administrator together with the list required by §§ 130.7(b)(1) and 130.7(b)(2) and shall include at a minimum:

(i) A description of the methodology used to develop the list; and

(ii) A description of the data and information used to identify waters, including a description of the data and information used by the State as required by § 130.7(b)(5); and

(iii) A rationale for any decision to not use any existing and readily available data and information for any one of the categories of waters as described in § 130.7(b)(5); and

(iv) Any other reasonable information requested by the Regional Administrator. Upon request by the Regional Administrator, each State must demonstrate good cause for not including a water or waters on the list. Good cause includes, but is not limited to, more recent or accurate data; more sophisticated water quality modeling; flaws in the original analysis that led to the water being listed in the categories in § 130.7(b)(5); or changes in conditions, e.g., new control equipment, or elimination of discharges.

(c) Development of TMDLs and individual water quality based effluent limitations.

(1) Each State shall establish TMDLs for the

water quality limited segments identified in paragraph (b)(1) of this section, and in accordance with the priority ranking. For pollutants other than heat, TMDLs shall be established at levels necessary to attain and maintain the applicable narrative and numerical WQS with seasonal variations and a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality. Determinations of TMDLs shall take into account critical conditions for stream flow, loading, and water quality parameters.

(i) TMDLs may be established using a pollutant-by-pollutant or biomonitoring approach. In many cases both techniques may be needed. Site-specific information should be used wherever possible.

(ii) TMDLs shall be established for all pollutants preventing or expected to prevent attainment of water quality standards as identified pursuant to paragraph (b)(1) of this section. Calculations to establish TMDLs shall be subject to public review as defined in the State CPP.

(2) Each State shall estimate for the water quality limited segments still requiring TMDLs identified in paragraph (b)(2) of this section, the total maximum daily thermal load which cannot be exceeded in order to assure protection and propagation of a balanced, indigenous population of shellfish, fish and wildlife. Such estimates shall take into account the normal water temperatures, flow rates, seasonal variations, existing sources of heat input, and the dissipative capacity of the identified waters or parts thereof. Such estimates shall include a calculation of the maximum heat input that can be made into each such part and shall include a margin of safety which takes into account any

lack of knowledge concerning the development of thermal water quality criteria for protection and propagation of a balanced, indigenous population of shellfish, fish and wildlife in the identified waters or parts thereof.

(d) Submission and EPA approval.

(1) Each State shall submit biennially to the Regional Administrator beginning in 1992 the list of waters, pollutants causing impairment, and the priority ranking including waters targeted for TMDL development within the next two years as required under paragraph (b) of this section. For the 1992 biennial submission, these lists are due no later than October 22, 1992. Thereafter, each State shall submit to EPA lists required under paragraph (b) of this section on April 1 of every even-numbered year. For the year 2000 submission, a State must submit a list required under paragraph (b) of this section only if a court order or consent decree, or commitment in a settlement agreement dated prior to January 1, 2000, expressly requires EPA to take action related to that State's year 2000 list. For the year 2002 submission, a State must submit a list required under paragraph (b) of this section by October 1, 2002, unless a court order, consent decree or commitment in a settlement agreement expressly requires EPA to take an action related to that State's 2002 list prior to October 1, 2002, in which case, the State must submit a list by April 1, 2002. The list of waters may be submitted as part of the State's biennial water quality report required by § 130.8 of this part and section 305(b) of the CWA or submitted under separate cover. All TMDLs established under paragraph (c) for water quality limited segments shall continue to be submitted to EPA for review and approval. Schedules for submission of TMDLs shall be determined by the Regional Administrator and the State.

(2) The Regional Administrator shall either approve or disapprove such listing and loadings not later than 30 days after the date of submission. The Regional Administrator shall approve a list developed under § 130.7(b) that is submitted after the effective date of this rule only if it meets the requirements of § 130.7(b). If the Regional Administrator approves such listing and loadings, the State shall incorporate them into its current WQM plan. If the Regional Administrator disapproves such listing and loadings, he shall, not later than 30 days after the date of such disapproval, identify such waters in such State and establish such loads for such waters as determined necessary to implement applicable WQS. The Regional Administrator shall promptly issue a public notice seeking comment on such listing and loadings. After considering public comment and making any revisions he deems appropriate, the Regional Administrator shall transmit the listing and loads to the State, which shall incorporate them into its current WQM plan.

(e) For the specific purpose of developing information and as resources allow, each State shall identify all segments within its boundaries which it has not identified under paragraph (b) of this section and estimate for such waters the TMDLs with seasonal variations and margins of safety, for those pollutants which the Regional Administrator identifies under section 304(a)(2) as suitable for such calculation and for thermal discharges, at a level that would assure protection and propagation of a balanced indigenous population of fish, shellfish and wildlife. However, there is no requirement for such loads to be submitted to EPA for approval, and establishing TMDLs for those waters identified in paragraph (b) of this section shall be given higher priority.

[57 FR 33049, July 24, 1992; 65 FR 17170, March 31, 2000; 65 FR 43663, July 13, 2000; 66 FR 53048, Oct. 18, 2001; 68 FR 13608, March 19,

2003]

SOURCE: 50 FR 1779, Jan. 11, 1985; 66 FR 53048, Oct. 18, 2001; 68 FR 13608, March 19, 2003, unless otherwise noted.

AUTHORITY: 33 U.S.C. 1251 et seq.

40 C. F. R. § 130.7, 40 CFR § 130.7

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ATTACHMENT 11

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55 FR 47990-01, 1990 WL 348331 (F.R.)

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RULES and REGULATIONS

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 122, 123, and 124

[FRL-3834-7]

RIN 2040-AA79

National Pollutant Discharge Elimination System Permit Application Regulations for Storm Water Discharges

Friday, November 16, 1990

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: Today's final rule begins to implement section 402(p) of the Clean Water Act (CWA) (added by section 405 of the Water Quality Act of 1987 (WQA)), which requires the Environmental Protection Agency (EPA) to establish regulations setting forth National Pollutant Discharge Elimination System (NPDES) permit application requirements for: storm water discharges associated with industrial activity; discharges from a municipal separate storm sewer system serving a population of 250,000 or more; and discharges from municipal separate storm sewer systems serving a population of 100,000 or more, but less than 250,000.

Today's rule also clarifies the requirements of section 401 of the WQA, which amended CWA section 402(1)(2) to provide that NPDES permits shall not be required for discharges of storm water 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 (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 product, finished product, byproduct, or waste product located on the site of such operations. This rule sets forth NPDES permit application requirements addressing storm water discharges associated with industrial activity and storm water discharges from large and medium municipal separate storm sewer systems.

DATES: This final rule becomes effective December 17, 1990. In accordance with 40 CFR 23.2, this rule shall be considered final for purposes of judicial review on November 30, 1990, at 1 p.m. eastern daylight time. The public record is located at EPA Headquarters, EPA Public Information Reference Unit, room 2402, 401 M Street SW., Washington DC 20460. A reasonable fee may be charged for copying.

FOR FURTHER INFORMATION CONTACT: For further information on the rule contact: Thomas J. Seaton, Kevin Weiss, or Michael Mitchell Office of Water Enforcement and Permits (EN-336), United States Environmental Protection Agency, 401 M Street SW., Washington, DC 20460, (202) 475-9518.

SUPPLEMENTARY INFORMATION:

I. Background and Water Quality Concerns

55 FR 47990-01, 1990 WL 348331 (F.R.)

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I. Background and Water Quality Concerns

The 1972 amendments to the Federal Water Pollution Control Act (referred to as the Clean Water Act or CWA), prohibit the discharge of any pollutant to navigable waters from a point source unless the discharge is authorized by an NPDES permit. Efforts to improve water quality under the NPDES program traditionally and primarily focused on reducing pollutants in discharges of industrial process wastewater and municipal sewage. This program emphasis developed for a number of reasons. At the onset of the program in 1972, many sources of industrial process wastewater and municipal sewage were not adequately controlled and represented pressing environmental problems. In addition, sewage outfalls and industrial process discharges were easily identified as responsible for poor, often drastically degraded, water quality conditions. However, as pollution control measures were initially *47991 developed for these discharges, it became evident that more diffuse sources (occurring over a wide area) of water pollution, such as agricultural and urban runoff were also major causes of water quality problems. Some diffuse sources of water pollution, such as agricultural storm water discharges and irrigation return flows, are statutorily exempted from the NPDES program.

Since enactment of the 1972 amendments to the CWA, considering the rise of economic activity and population, significant progress in controlling water pollution has been made, particularly with regard to industrial process wastewater and municipal sewage. Expenditures by EPA, the States, and local governments to construct and upgrade sewage treatment facilities have substantially increased the population served by higher levels of treatment. Backlogs of expired permits for industrial process wastewater discharges have been reduced. Continued improvements are expected for these discharges as the NPDES program continues to place increasing emphasis on water quality-based pollution controls, especially for toxic pollutants.

Although assessments of water quality are difficult to perform and verify, several national assessments of water quality are available. For the purpose of these assessments, urban runoff was considered to be a diffuse source or nonpoint source pollution. From a legal standpoint, however, most urban runoff is discharged through conveyances such as separate storm sewers or other conveyances which are point sources under the CWA. These discharges are subject to the NPDES program. The "National Water Quality Inventory, 1988 Report to Congress" provides a general assessment of water quality based on biennial reports submitted by the States under section 305(b) of the CWA. In preparing the section 305(b) Reports, the States were asked to indicate the fraction of the States' waters that were assessed, as well as the fraction of the States' waters that were fully supporting, partly supporting, or not supporting designated uses. The Report indicates that of the rivers, lakes, and estuaries that were assessed by States (approximately one-fifth of stream miles, one-third of lake acres and one-half of estuarine waters), roughly 70% to 75% are supporting the uses for which they are designated. For waters with use impairments, States were asked to determine impacts due to diffuse sources (agricultural and urban runoff and other sources), municipal sewage, industrial process wastewaters, combined sewer overflows, and natural and other sources, then combine impacts to arrive at estimates of the relative percentage of State waters affected by each source. In this manner, the relative importance of the various sources of pollution that are causing use impairments was assessed and weighted national averages were calculated. Based on 37 States that provided information on sources of pollution, industrial process wastewaters were cited as the cause of nonsupport for 7.5% of rivers and streams, 10% of lakes, and 6% of estuaries. Municipal sewage was the cause of nonsupport for 13% of rivers and streams, 5% lakes, 48% estuaries, 41% of the Great Lake shoreline, and 11% of coastal waters. The Assessment concluded that pollution from diffuse sources, such as runoff from agricultural, urban areas, construction sites, land disposal and resource extraction, is cited by the States as the leading cause of water quality impairment. These sources appear to be increasingly important contributors of use impairment as discharges of industrial process wastewaters and municipal sewage plants come under increased control and as intensified data collection efforts provide additional information. Some examples of diffuse sources cited as causing use impairment are: for rivers and streams, 9% from separate storm sewers, 6% from construction and 13% from resource extraction; for lakes, 28% from separate storm sewers and 26% from land disposal; for the Great Lakes shoreline, 10% from separate storm sewers, 34% from resource extraction, and 82% from land disposal; for estuaries, 28% from separate storm sewers and 27% from land disposal; and for coastal areas, 20% from separate storm sewers and 29% from land disposal.

The States conducted a more comprehensive study of diffuse pollution sources under the sponsorship of the Association of State and Interstate Water Pollution Control Administrators (ASIWPCA) and EPA. The study resulted in the report "America's Clean Water—The States' Nonpoint Source Assessment, 1985" which indicated that 38 States reported urban runoff as a major cause of beneficial use impairment. In addition, 21 States reported construction site runoff as a major cause of use impairment.

To provide a better understanding of the nature of urban runoff from commercial and residential areas, from 1978 through 1983, EPA provided funding and guidance to the Nationwide Urban Runoff Program (NURP). The NURP included 28 projects across the Nation, conducted separately at the local level but centrally reviewed, coordinated, and guided.

One focus of the NURP was to characterize the water quality of discharges from separate storm sewers which drain residential, commercial, and light industrial (industrial parks) sites. The majority of samples collected in the study were analyzed for eight conventional pollutants and three metals. Data collected under the NURP indicated that on an annual loading basis, suspended solids in discharges from separate storm sewers draining runoff from residential, commercial and light industrial areas are around an order of magnitude greater than solids in discharges from municipal secondary sewage treatment plants. In addition, the study indicated that annual loadings of chemical oxygen demand (COD) are comparable in magnitude to effluent from secondary sewage treatment plants. When analyzing annual loadings associated with urban runoff, it is important to recognize that discharges of urban runoff are highly intermittent, and that the short-term loadings associated with individual events will be high and may have shockloading effects on receiving water, such as low dissolved oxygen levels. NURP data also showed that fecal coliform counts in urban runoff are typically in the tens to hundreds of thousands per 100 ml of runoff during warm weather conditions, although the study suggested that fecal coliform may not be the most appropriate indicator organism for identifying potential health risks in storm water runoff. Although NURP did not evaluate oil and grease, other studies have demonstrated that urban runoff is an extremely important source of oil pollution to receiving waters, with hydrocarbon levels in urban runoff typically being reported at a range of 2 to 15 mg/l. These hydrocarbons tend to accumulate in bottom sediments where they may persist for long periods of time and exert adverse impacts on benthic organisms.

A portion of the NURP study involved monitoring 120 priority pollutants in storm water discharges from lands used for residential, commercial and light industrial activities. Seventy-seven priority pollutants were detected in samples of storm water discharges from residential, commercial and light industrial lands taken during the NURP study, including 14 inorganic and 63 organic pollutants. Table A-1 shows the priority pollutants which were detected in at least ten percent of the discharge samples which were sampled for priority pollutants.

Table A-1.— Priority Pollutants Detected in at Least 10% of NURP Samples
 [In percent]

	Frequency of detection
Metals and inorganics:	
Antimony	13
Arsenic	52
Beryllium	12
Cadmium	48
Chromium	58
Copper	91
Cyanides	23
Lead	94
Nickel	43
Selenium	11
Zinc	94
Pesticides:	
Alpha-hexachlorocyclohexane	20
Alpha-endosulfan	19

Chlordane	17
Lindane	15
Halogenated aliphatics:	
Methane, dichloro-	11
Phenols and cresols:	
Phenol	14
Phenol, pentachloro-	19
Phenol, 4-nitro	10
Phthalate esters:	
Phthalate, bis(2-ethylhexyl)	22
Polycyclic aromatic hydrocarbons:	
Chrysene	10
Fluoranthene	16
Phenanthrene	12
Pyrene	15

*47992 The NURP data also showed a significant number of these samples exceeded various EPA freshwater water quality criteria.

The NURP study provides insight on what can be considered background levels of pollutants for urban runoff, as the study focused primarily on monitoring runoff from residential, commercial and light industrial areas. However, NURP concluded that the quality of urban runoff can be adversely impacted by several sources of pollutants that were not directly evaluated in the study and are generally not reflected in the NURP data, including illicit connections, construction site runoff, industrial site runoff and illegal dumping.

Other studies have shown that many storm sewers contain illicit discharges of non-storm water and that large amounts of wastes, particularly used oils, are improperly disposed in storm sewers. Removal of these discharges present opportunities for dramatic improvements in the quality of storm water discharges. Storm water discharges from industrial facilities may contain toxics and conventional pollutants when material management practices allow exposure to storm water, in addition to wastes from illicit connections and improperly disposed wastes.

In some municipalities, illicit connections of sanitary, commercial and industrial discharges to storm sewer systems have had a significant impact on the water quality of receiving waters. Although the NURP study did not emphasize the identification of illicit connections to storm sewers (other than to assure that monitoring sites used in the study were free from sanitary sewage contamination), the study concluded that illicit connections can result in high bacterial counts and dangers to public health. The study also noted that removing such discharges presented opportunities for dramatic improvements in the quality of urban storm water discharges.

Studies have shown that illicit connections to storm sewers can create severe, wide-spread contamination problems. For example, the Huron River Pollution Abatement Program inspected 660 businesses, homes and other buildings located in Washtenaw County, Michigan and identified 14% of the buildings as having improper storm drain connections. Illicit discharges were detected at a higher rate of 60% for automobile related businesses, including service stations, automobile dealerships, car washes, body shops and light industrial facilities. While some of the problems discovered in this study

were the result of improper plumbing or illegal connections, a majority were approved connections at the time they were built.

Intensive construction activities may result in severe localized impacts on water quality because of high unit loads of pollutants, primarily sediments. Construction sites can also generate other pollutants such as phosphorus and nitrogen from fertilizer, pesticides, petroleum products, construction chemicals and solid wastes. These materials can be toxic to aquatic organisms and degrade water for drinking and water-contact recreation. Sediment loadings rates from construction sites are typically 10 to 20 times that of agricultural lands, with runoff rates as high as 100 times that of agricultural lands, and typically 1,000 to 2,000 times that of forest lands. Even a small amount of construction may have a significant negative impact on water quality in localized areas. Over a short period of time, construction sites can contribute more sediment to streams than was previously deposited over several decades.

II. Water Quality Act of 1987

The WQA contains three provisions which specifically address storm water discharges. The central WQA provision governing storm water discharges is section 405, which adds section 402(p) to the CWA. Section 402(p)(1) provides that EPA or NPDES States cannot require a permit for certain storm water discharges until October 1, 1992, except: for storm water discharges listed under section 402(p)(2). Section 402(p)(2) lists five types of storm water discharges which are required to obtain a permit prior to October 1, 1992:

- (A) A discharge with respect to which a permit has been issued prior to 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; or
- (E) A discharge for which the Administrator or the State, as the case may be, determines that the storm water discharge contributes to a violation of a water quality standard or is a significant contributor of pollutants to the waters of the United States.

Section 402(p)(4)(A) requires EPA to promulgate final regulations governing storm water permit application requirements for storm water discharges associated with industrial activity and discharges from large municipal separate storm sewer systems (systems serving a population of 250,000 or more), "no later than two years" after the date of enactment (i.e., no later than February 4, 1989). Section 402(p)(4)(B) also requires EPA to promulgate final regulations governing storm water permit application requirements for discharges from medium municipal separate storm sewer systems (systems serving a population of 100,000 or more but less than 250,000) "no later than four years" after enactment (i.e., no later than February 4, 1991).

In addition, section 402(p)(4) provides that permit applications for storm water discharges associated with industrial activity and discharges from large municipal separate storm sewer systems "shall be filed no later than three years" after the date of enactment of the WQA (i.e., no later than February 4, 1990). Permit applications for discharges from medium municipal systems must be filed "no later than five years" after enactment (i.e., no later than February 4, 1992).

The WQA clarified and amended the requirements for permits for storm water discharges in the new CWA section 402(p)(3). The Act clarified that permits for discharges associated with industrial activity must meet all of the applicable

provisions of section 402 and section 301 *47993 including technology and water quality based standards. However, the new Act makes significant changes to the permit standards for discharges from municipal storm sewers. Section 402(p)(3)(B) provides that permits for such discharges:

- (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.

These changes are discussed in more detail later in today's rule.

The EPA, in consultation with the States, is required to conduct two studies on storm water discharges that are in the class of discharges for which EPA and NPDES States cannot require permits prior to October 1, 1992. The first study will identify those storm water discharges or classes of storm water discharges for which permits are not required prior to October 1, 1992, and determine, to the maximum extent practicable, the nature and extent of pollutants in such discharges. The second study is for the purpose of establishing procedures and methods to control storm water discharges to the extent necessary to mitigate impacts on water quality. Based on the two studies the EPA, in consultation with State and local officials, is required to issue regulations no later than October 1, 1992, which designate additional storm water discharges to be regulated to protect water quality and establish a comprehensive program to regulate such designated sources. This program must, at a minimum, (A) Establish priorities, (B) establish requirements for State storm water management programs, and (C) establish expeditious deadlines. The program may include performance standards, guidelines, guidance, and management practices and treatment requirements, as appropriate.

Section 401 of the WQA amends section 402(1)(2) of the CWA to provide that the EPA shall not require a permit for discharges of storm water runoff from mining operations or oil and gas exploration, production, processing, or treatment operations or transmission facilities if the storm water discharge is not contaminated by contact with, or does not come into contact with, any overburden, raw material, intermediate product, finished product, byproduct, or waste product located on the site of such operations.

Section 503 of the WQA amends section 502(14) of the CWA to exclude agricultural storm water discharges from the definition of point source.

III. Remand of 1984 Regulations

On December 4, 1987, the United States Court of Appeals for the District of Columbia Circuit vacated 40 CFR 122.26, (as promulgated on September 26, 1984, 49 FR 37998, September 26, 1984), and remanded the regulations to EPA for further rulemaking (NRDC v. EPA, No. 80-1607). EPA had requested the remand because of significant changes made by the storm water provisions of the WQA. The effect of the decision was to invalidate the storm water discharge regulations then found at § 122.26.

Storm water discharges which had been issued an NPDES permit prior to February 4, 1987, were not affected by the Court remand or the February 12, 1988, rule implementing the court order (53 FR 4157). (See section 402(p)(2)(A) of the CWA.) Similarly, the remand did not affect the authority of EPA or an NPDES State to require a permit for any storm water discharge (except an agricultural storm water discharge) designated under section 402(p)(2)(E) of the CWA. The

notice of the remand clarified that such designated discharges meet the regulatory definition of point source found at 40 CFR 122.2 and that EPA or an NPDES State can rely on the statutory authority and require the filing of an application (Form 1 and Form 2C) for an NPDES permit with respect to such discharges on a case-by-case basis.

IV. Codification Rule and Case-by-Case Designations

Codification Rule

On January 4, 1989, (54 FR 255), EPA published a final rule which codified numerous provisions of the WQA into EPA regulations. The codification rule included several provisions dealing with storm water discharges. The codification rule promulgated the language found at section 402(p) (1) and (2) of the amended Clean Water Act at 40 CFR 122.26(a)(1). In addition, the codification rule promulgated the language of Section 503 of the WQA which exempted agricultural storm water discharges from the definition of point source at 40 CFR 122.2, and section 401 of the WQA addressing un-contaminated storm water discharges from mining or oil and gas operations at 40 CFR 122.26(a)(2).

EPA also codified the statutory authority of section 402(p)(2)(E) of the CWA for the Administrator or the State Director, as the case may be, to designate storm water discharges for a permit on a case-by-case basis at 40 CFR 122.26(a)(1)(v).

Case-by-Case Designations

Section 402(p)(2)(E) of the CWA authorizes case-by-case designations of storm water discharges for immediate permitting if the Administrator or the State Director determines that the storm water discharge contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States.

In determining that a storm water discharge contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States for the purpose of a designation under section 402(p)(2)(E), the legislative history for the provision provides that "EPA or the State should use any available water quality or sampling data to determine whether the latter two criteria (contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States) are met, and should require additional sampling as necessary to determine whether or not these criteria are met." Conference Report, Cong. Rec. S16443 (daily ed. October 16, 1986). In accordance with this legislative history, today's rule promulgates permit application requirements for certain storm water discharges, including discharges designated on a case-by-case basis. EPA will consider a number of factors when determining whether a storm water discharge is a significant contributor of pollution to the waters of the United States. These factors include: the location of the discharge with respect to waters of the United States; the size of the discharge; the quantity and nature of the pollutants reaching waters of the United States; and any other relevant factors. Today's rule incorporates these factors at 40 CFR 122.26(a)(1)(v).

Under today's rule, case-by-case designations are made under regulatory procedures found at 40 CFR 124.52. The procedures at 40 CFR 124.52 require that whenever the Director decides that an individual permit is required, the Director shall notify the discharger in writing that the discharge requires a permit and the reasons for the decision. In addition, an application form is sent with the notice. Section 124.52 provides a 60 day period from the date of notice for submitting a permit application. Although this 60 day period may be appropriate for many designated storm water discharges, site specific factors may dictate that the Director provide *47994 additional time for submitting a permit application. For example, due to the complexities associated with designation of a municipal separate storm sewer system for a system- or jurisdiction-wide permit, the Director may provide the applicant with additional time to submit relevant information or may require that information be submitted in several phases.

V. Consent Decree of October 20, 1989

On April 20, 1989, EPA was served notice of intent to sue by Kathy Williams et al, because of the Agency's failure to promulgate final storm regulations on February 4, 1989, pursuant to Section 402(p)(4) of the CWA. A suit was filed by the same party on July 20, 1989, alleging the same cause of action, to wit: the Agency's failure to promulgate regulations under section 402(p)(4) of the CWA. On October 20, 1989, EPA entered into a consent decree with Kathy Williams et al, wherein the Federal District Court, District of Oregon, Southern Division, decreed that the Agency promulgate final regulations for storm water discharges identified in sections 402(p)(2) (B) and (C) of the CWA no later than July 20, 1990. Kathy Williams et al., v. William K. Reilly, Administrator, et al., No. 89-6265-E (D-Ore.) In July 1990, the consent decree was amended to provide for a promulgation date of October 31. Today's rule is promulgated in compliance with the terms of the consent decree as amended.

VI. Today's Final Rule and Response to Comments

A. Overview

Section 405 of the WQA alters the regulatory approach to control pollutants in storm water discharges by adopting a phased and tiered approach. The new provision phases in permit application requirements, permit issuance deadlines and compliance with permit conditions for different categories of storm water discharges. The approach is tiered in that storm water discharges associated with industrial activity must comply with sections 301 and 402 of the CWA (requiring control of the discharge of pollutants that utilize the Best Available Technology (BAT) and the Best Conventional Pollutant Control Technology (BCT) and where necessary, water quality-based controls), but permits for discharges from municipal separate storm sewer systems must require controls to reduce the discharge of pollutants to the maximum extent practicable, and where necessary, water quality-based controls, and must include a requirement to effectively prohibit non-storm water discharges into the storm sewers. Furthermore, EPA in consultation with State and local officials must develop a comprehensive program to designate and regulate other storm water discharges to protect water quality.

This final regulation establishes requirements for the storm water permit application process. It also sets forth the required components of municipal storm water quality management plans, as well as a preliminary permitting strategy for industrial activities. In implementing these regulations, EPA and the States will strive to achieve environmental results in a cost effective manner by placing high priority on pollution prevention activities, and by targeting activities based on reducing risk from particularly harmful pollutants and/or from discharges to high value waters. EPA and the States will also work with applicants to avoid cross-media transfers of storm water contaminants, especially through injection to shallow wells in the Class V Underground Injection Control Program.

In addition, EPA recognizes that problems associated with storm water, combined sewer overflows (CSOs) and infiltration and inflow (I&I) are all inter-related even though they are treated somewhat differently under the law. EPA believes that it is important to begin linking these programs and activities and, because of the potential cost to local governments, to investigate the use of innovative, non-traditional approaches to reducing or preventing contamination of storm water.

The application process for developing municipal storm water management plans provides an ideal opportunity between steps 1 and 2 for considering the full range of nontraditional, preventive approaches, including municipalities, public awareness/education programs, use of vegetation and/or land conservancy practices, alternative paving materials, creative ways to eliminate I&I and illegal hook-ups, and potentials for water reuse. EPA has already announced its plans to present an award for the best creative, cost effective approaches to storm water and CSOs beginning in 1991.

This rulemaking establishes permit application requirements for classes of storm water discharges that were specifically

identified in section 402(p)(2). These priority storm water discharges include storm water discharges associated with industrial activity and discharges from a municipal separate storm sewer serving a population of 100,000 or more.

This rulemaking was developed after careful consideration of 450 sets of comments, comprising over 3200 pages, that were received from a variety of industries, trade associations, municipalities, State and Federal Agencies, environmental groups, and private citizens. These comments were received during a 90-day comment period which extended from December 7, 1988, to March 7, 1989. EPA received several requests for an extension of the comment period from 30-days up to 90-days. Many arguments were advanced for an extension including: the extent and complexity of the proposal, the existence of other concurrent EPA proposals, and the need for technical evaluations of the proposal. EPA considered these comments as they were received, but declined to extend the comment period beyond 90 days. The standard comment period on proposals normally range from 30 to 60 days. In light of the statutory deadline of February 4, 1989, additional time for the comment period beyond what was already a substantially lengthened comment period would have been inappropriate. The number and extent of the comments received on this proposal indicated that interested parties had substantially adequate time to review and comment on the regulation. Furthermore, the public was invited to attend six public meetings in Washington DC, Chicago, Dallas, Oakland, Jacksonville, and Boston to present questions and comments. EPA is convinced that substantial and adequate public participation was sought and received by the Agency.

Numerous commenters have also requested that the rule be repropose due to the extent of the proposal and the number of options and issues upon which the Agency requested comments. EPA has decided against a reproposal. The December 7, 1988, notice of proposed rulemaking was extremely detailed and thoroughly identified major issues in such a manner as to allow the public clear opportunities to comment. The comments that were received were extensive, and many provided valuable information and ideas that have been incorporated into the regulation. Accordingly, the Agency is confident it has produced a workable and rational approach to the initial regulation of storm water discharges and a regulation that reflects the experience and knowledge of the public as provided in the comments, and which was developed in accordance with the *47995 procedural requirements of the Administrative Procedures Act (APA). EPA believes that while the number of issues raised by the proposal was extensive, the number of detailed comments indicates that the public was able to understand the issues in order to comment adequately. Thus, a reproposal is unnecessary.

B. Definition of Storm Water

The December 7, 1988, notice requested comment on defining storm water as storm water runoff, surface runoff, street wash waters related to street cleaning or maintenance, infiltration (other than infiltration contaminated by seepage from sanitary sewers or by other discharges) and drainage related to storm events or snow melt. This definition is consistent with the regulatory definition of "storm sewer" at 40 CFR 35.2005(b)(47) which is used in the context of grants for construction of treatment works. This definition aids in distinguishing separate storm water sewers from sanitary sewers, combined sewers, process discharge outfalls and non-storm water, non-process discharge outfalls.

The definition of "storm water" has an important bearing on the NPDES permitting scheme under the CWA. The following discusses the interrelationship of NPDES permitting requirements for storm water discharges addressed by this rule and NPDES permitting requirements for other non-storm water discharges which may be discharged via the storm sewer as a storm water discharge. Today's rule addresses permit application requirements for storm water discharges associated with industrial activity and for discharges from municipal separate storm sewer systems serving a population of 100,000 or more. Storm water discharges associated with industrial activity are to be covered by permits which contain technology-based controls based on BAT/BCT considerations or water quality-based controls, if necessary. A permit for storm water discharges from an industrial facility may also cover other non-storm water discharges from the facility. Today's rule establishes individual (Form 1 and Form 2F) and group application requirements for storm water discharges associ-

ated with industrial activity. In addition, EPA or authorized NPDES States with authorized general permit programs may issue general permits which establish alternative application or notification requirements for storm water discharges covered by the general permit(s). Where a storm water discharge associated with industrial activity is mixed with a non-storm water discharge, both discharges must be covered by an NPDES permit (this can be in the same permit or with multiple permits). Permit application requirements for these "combination" discharges are discussed later in today's notice.

Today's rule also addresses permit application requirements for discharges from municipal separate storm sewer systems serving a population of 100,000 or more. Under today's rule, appropriate municipal owners or operators of these systems must obtain NPDES permits for discharges from these systems. These permits are to establish controls to the maximum extent practicable (MEP), effectively prohibit non-storm water discharges to the municipal separate storm sewer system and, where necessary, contain applicable water quality-based controls. Where non-storm water discharges or storm water discharges associated with industrial activity discharge through a municipal separate storm sewer system (including systems serving a population of 100,000 or more as well as other systems), which ultimately discharges to a waters of the United States, such discharges through a municipal storm sewer need to be covered by an NPDES permit that is independent of the permit issued for discharges from the municipal separate storm sewer system. Today's rule defines the term "illicit discharge" to describe any discharge through a municipal separate storm sewer that is not composed entirely of storm water and that is not covered by an NPDES permit. Such illicit discharges are not authorized under the CWA. Section 402(p)(3)(B) of the CWA requires that permits for discharges from municipal separate storm sewers require the municipality to "effectively prohibit" non-storm water discharges from the municipal separate storm sewer. As discussed in more detail below, today's rule begins to implement the "effective prohibition" by requiring municipal operators of municipal separate storm sewer systems serving a population of 100,000 or more to submit a description of a program to detect and control certain non-storm water discharges to their municipal system. Ultimately, such non-storm water discharges through a municipal separate storm sewer must either be removed from the system or become subject to an NPDES permit (other than the permit for the discharge from the municipal separate storm sewer). For reasons discussed in more detail below, in general, municipalities will not be held responsible for prohibiting some specific components of discharges or flows listed below through their municipal separate storm sewer system, even though such components may be considered non-storm water discharges, unless such discharges are specifically identified on a case-by-case basis as needing to be addressed. However, operators of such non-storm water discharges need to obtain NPDES permits for these discharges under the present framework of the CWA (rather than the municipal operator of the municipal separate storm sewer system). (Note that section 516 of the Water Quality Act of 1987 requires EPA to conduct a study of de minimis discharges of pollutants to waters of the United States and to determine the most effective and appropriate methods of regulating any such discharges.)

EPA received numerous comments on the proposed regulatory definition of storm water, many of which proposed exclusions or additions to the definition. Several commenters suggested that the definition should include or not include detention and retention reservoir releases, water line flushing, fire hydrant flushing, runoff from fire fighting, swimming pool drainage and discharge, landscape irrigation, diverted stream flows, uncontaminated pumped ground water, rising ground waters, discharges from potable water sources, uncontaminated waters from cooling towers, foundation drains, non-contact cooling water (such as HVAC or heating, ventilation and air conditioning condensation water that POTWs require to be discharged to separate storm sewers rather than sanitary sewers), irrigation water, springs, roof drains, water from crawl space pumps, footing drains, lawn watering, individual car washing, flows from riparian habitats and wetlands. Most of these comments were made with regard to the concern that these were commonly occurring discharges which did not pose significant environmental problems. It was also noted that, unless these flows are classified as storm water, permits would be required for these discharges.

In response to the comments 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, even though some classes of non-storm water discharges may typically contain only minimal amounts of pollutants. Congress did not intend that the term storm water be used to describe any discharge that has a de minimis amount of pollutants, nor did it intend for section 402(p) to be used to *47996 provide a moratorium from permitting other non-storm water discharges. Consequently, the final definition of storm water has not been expanded from what was proposed. However, as discussed in more detail later in today's notice, municipal operators of municipal separate storm sewer systems will generally not be held responsible for "effectively prohibiting" limited classes of these discharges through their municipal separate storm sewer systems.

The proposed rule included infiltration in the definition of storm water. In this context one commenter suggested that the term infiltration be defined. Infiltration is defined at 40 CFR 35.2005(b)(20) as water other than wastewater that enters a sewer system (including sewer service connections and foundation drains) from the ground through such means as defective pipes, pipe joints, connections or manholes. Infiltration does not include, and is distinguished from, inflow. Another commenter urged that ground water infiltration not be classified as storm water because the chemical characteristics and contaminants of ground water will differ from surface storm water because of a longer contact period with materials in the soil and because ground water quality will not reflect current practices at the site. In today's rule, the definition of storm water excludes infiltration since pollutants in these flows will depend on a large number of factors, including interactions with soil and past land use practices at a given site. Further infiltration flows can be contaminated by sources that are not related to precipitation events, such as seepage from sanitary sewers. Accordingly the final regulatory language does not include infiltration in the definition of storm water. Such flows may be subject to appropriate permit conditions in industrial permits. As discussed in more detail below, municipal management programs must address infiltration where identified as a source of pollutants to waters of the United States.

One commenter questioned the status of discharges from detention and retention basins used to collect storm water. This regulation covers discharges of storm water associated with industrial activity and discharges from municipal separate storm sewer systems serving a population of 100,000 or more into waters of the United States. Therefore, discharges from basins that are part of a conveyance system for a storm water discharge associated with industrial activity or part of a municipal separate storm sewer system serving a population of 100,000 or more are covered by this regulation. Flows which are channeled into basins and which do not discharge into waters of the United States are not addressed by today's rule.

Several commenters requested that the term illicit connection be replaced with a term that does not connote illegal discharges or activity, because many discharges of non-storm water to municipal separate storm sewer systems occurred prior to the establishment of the NPDES program and in accordance with local or State requirements at the time of the connection. EPA disagrees that there should be a change in this terminology. The fact that these connections were at one time legal does not confer such status now. The CWA prohibits the point source discharge of non-storm water not subject to an NPDES permit through municipal separate storm sewers to waters of the United States. Thus, classifying such discharges as illicit properly identifies such discharges as being illegal.

A commenter wanted clarification of the terms "other discharges" and "drainage" that are used in the definition of "storm water." As noted above, today's rule clarifies that infiltration is not considered storm water. Thus the portion of the definition of storm water that refers to "other discharges" has also been removed. However, the term drainage has been retained. "Drainage" does not take on any meaning other than the flow of runoff into a conveyance, as the word is commonly understood.

One commenter stated that irrigation flows combined with storm water discharges should be excluded from consideration in the storm water program. The Agency would note that irrigation return flows are excluded from regulation under the NPDES program. Section 402(l)(1) states that the Administrator or the State shall not require permits for discharges composed entirely of return flows from irrigated agriculture. The legislative history of the 1977 Clean Water Act, which enacted this language, states that the word "entirely" was intended to limit the exception to only those flows which do not contain additional discharges from activities unrelated to crop production. Congressional Record Vol. 123 (1977), pg. 4360, Senate Report No. 95-370. Accordingly, a storm water discharge component, from an industrial facility for example, included in such "joint" discharges may be regulated pursuant to an NPDES permit either at the point at which the storm water flow enters or joins the irrigation flow, or where the combined flow enters waters of the United States or a municipal separate storm sewer.

Some commenters expressed concern about including street wash waters as storm water. One commenter argued including street wash waters in the definition of storm water should not be construed to eliminate the need for management practices relating to construction activities where sediment may simply wash into storm drains. EPA agrees with these points and the concerns that storm sewers may receive material that pose environmental problems if street wash waters are included in the definition. Accordingly, such discharges are no longer in the definition as proposed, and must be addressed by municipal management programs as part of the prohibition on non-storm water discharges through municipal separate storm sewer systems.

Several commenters requested that the terms discharge and point source, in the context of permits for storm water discharge, be clarified. Several commenters stated that the EPA should clarify that storm water discharge does not include "sheet flow" off of an industrial facility. EPA interprets this as request for clarification on the status of the terms "point source" and "discharge" under these regulations. In response, this rulemaking only covers storm water discharges from point sources. A point source is defined at 40 CFR 122.2 as "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 operation, landfill leachate collection system, 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 storm water runoff." EPA agrees with one commenter that this definition is adequate for defining what discharges of storm water are covered by this rulemaking. EPA notes that this definition would encompass municipal separate storm sewers. In view of this comprehensive definition of point source, EPA need clarify in this rulemaking only that a storm water discharge subject to NPDES regulation does not include storm water that enters the waters of the United States via means other than a "point source." As further discussed below, storm water from an industrial facility which enters and is subsequently discharged through a municipal separate storm sewer is a "discharge associated with industrial *47997 activity" which must be covered by an individual or general permit pursuant to today's rule.

EPA would also note that individual facilities have the burden of determining whether a permit application should be submitted to address a point source discharge. Those unsure of the classification of storm water flow from a facility, should file permit applications addressing the flow, or prior to submitting the application consult permitting authorities for clarification.

One commenter stated that "point source" for this rulemaking should be defined, for the purposes of achieving better water quality, as those areas where "discharges leave the municipal [separate storm sewer] system." EPA notes in response that "point source" as currently defined will address such discharges, while keeping the definition of discharge and point source within the framework of the NPDES program, and without adding potentially confusing and ambiguous additional definitions to the regulation. If this comment is asserting that the term point source should not include discharges from sources through the municipal system, EPA disagrees. As discussed in detail below, discharges through municipal separ-

ate storm sewer systems which are not connected to an operable treatment works are discharges subject to NPDES permit requirements at (40 CFR 122.3(c)), and may properly be deemed point sources.

One industry argued that the definition of "point source" should be modified for storm water discharges so as to exclude discharges from land that is not artificially graded and which has a propensity to form channels where precipitation runs off. EPA intends to embrace the broadest possible definition of point source consistent with the legislative intent of the CWA and court interpretations to include any identifiable conveyance from which pollutants might enter the waters of the United States. In most court cases interpreting the term "point source", the term has been interpreted broadly. For example, the holding in *Sierra Club v. Abston Construction Co., Inc.*, 620 F.2d 41 (5th Cir. 1980) indicates that changing the surface of land or establishing grading patterns on land will result in a point source where the runoff from the site is ultimately discharged to waters of the United States:

Simple erosion over the material surface, resulting in the discharge of water and other materials into navigable waters, does not constitute a point source discharge, absent some effort to change the surface, to direct the water flow or otherwise impede its progress * * * Gravity flow, resulting in a discharge into a navigable body of water, may be part of a point source discharge if the (discharger) at least initially collected or channeled the water and other materials. A point source of pollution may also be present where (dischargers) design spoil piles from discarded overburden such that, during periods of precipitation, erosion of spoil pile walls results in discharges into a navigable body of water by means of ditches, gullies and similar conveyances, even if the (dischargers) have done nothing beyond the mere collection of rock and other materials * * * Nothing in the Act relieves (dischargers) from liability simply because the operators did not actually construct those conveyances, so long as they are reasonably likely to be the means by which pollutants are ultimately deposited into a navigable body of water. Conveyances of pollution formed either as a result of natural erosion or by material means, and which constitute a component of a * * * drainage system, may fit the statutory definition and thereby subject the operators to liability under the Act." 620 F.2d at 45 (emphasis added).

Under this approach, point source discharges of storm water result from structures which increase the imperviousness of the ground which acts to collect runoff, with runoff being conveyed along the resulting drainage or grading patterns.

The entire thrust of today's regulation is to control pollutants that enter receiving water from storm water conveyances. It is these conveyances that will carry the largest volume of water and higher levels of pollutants. The storm water permit application process and permit conditions will address circumstances and discharges peculiar to individual facilities.

One industry commented that the definition of waters of the State under some State NPDES programs included municipal storm sewer systems. The commenter was concerned that certain industrial facilities discharging through municipal storm sewers in these states would be required to obtain an NPDES permit, despite EPA's proposal not to require permits from such facilities generally. In response, EPA notes that section 510 of the CWA, approved States are able to have stricter requirements in their NPDES program. In approved NPDES States, the definition of waters of the State controls with regard to what constitutes a discharge to a water body. However, EPA believes that this will have little impact, since, as discussed below, all industrial dischargers, including those discharging through municipal separate storm sewer systems, will be subject to general or individual NPDES permits, regardless of any additional State requirements.

One municipality commented that neither the term "point source" nor "discharge" should be used in conjunction with industrial releases into urban storm water systems because that gives the impression that such systems are navigable waters. EPA disagrees that any confusion should result from the use of these terms in this context. In this rulemaking, EPA always addresses such discharges as "discharges through municipal separate storm sewer systems" as opposed to "discharges to waters of the United States." Nonetheless, such industrial discharges through municipal storm sewer sys-

tems are subject to the requirements of today's rule, as discussed elsewhere.

One commenter desired clarification with regard to what constituted an outfall, and if an outfall could be a pipe that connected two storm water conveyances. This rulemaking defines outfall as a point of discharge into the waters of the United States, and not a conveyance which connects to Sections of municipal separate storm sewer. In response to another comment, this rulemaking only addresses discharges to waters of United States, consequently discharges to ground waters are not covered by this rulemaking (unless there is a hydrological connection between the ground water and a nearby surface water body. See, e.g., *Exxon Coro. v. Train*, 554 F.2d 1310, 1312 n.1 (5th Cir. 1977); *McClellan Ecological Seepage Situation v. Weinberger*, 707 F.Supp. 1182, 1195-96 (E.D. Cal. 1988)).

In the WQA and other places, the term "storm water" is presented as a single word. Numerous comments were received by EPA as to the appropriate spelling. Many of these comments recommended that two words for storm water is appropriate. EPA has decided to use an approach consistent with the Government Printing Office's approved form where storm water appears as two words.

C. Responsibility for Storm Water Discharges Associated With Industrial Activity Through Municipal Separate Storm

The December 7, 1988, notice of proposed rulemaking requested comments on the appropriate permitting scheme for storm water discharges associated with industrial activity through municipal separate storm sewers. EPA proposed a permitting scheme that would define the requirement to obtain coverage under an NPDES permit for a storm water discharge associated with industrial activity through a municipal separate storm sewer in terms of the classification of the municipal separate storm sewer. EPA proposed holding municipal operators of large or medium *47998 municipal separate storm sewer systems primarily responsible for applying for and obtaining an NPDES permit covering system discharges as well as storm water discharges (including storm water discharges associated with industrial activity) through the system. Under the proposed approach, operators of storm water discharges associated with industrial activity which discharge through a large or medium municipal separate storm sewer system would generally not be required to obtain permit coverage for their discharge (unless designated as a significant contributor of pollution pursuant to section 402(p)(2)(E)) provided the municipality was notified of: The name, location and type of facility and a certification that the discharge has been tested (if feasible) for non-storm water (including the results of any testing). The notification procedure also required the operator of the storm water discharge associated with industrial activity to determine that: The discharge is composed entirely of storm water; the discharge does not contain hazardous substances in excess of reporting quantities; and the facility is in compliance with applicable provisions of the NPDES permit issued to the municipality for storm water.

In the proposal, EPA also requested comments on whether a decision on regulatory requirements for storm water discharges associated with industrial activity through other municipal separate storm sewer systems (generally those serving a population of less than 100,000) should be postponed until completion of two studies of storm water discharges required under section 402(p)(5) of the CWA.

EPA favored these approaches because they appeared to reduce the potential administrative burden associated with preparing and processing the thousands of permit applications associated with the rulemaking and provide EPA additional flexibility in developing permitting requirements for storm water discharges associated with industrial activity. EPA also expressed its belief, based upon an analysis of ordinances controlling construction site runoff in place in certain cities, that municipalities generally possessed legal authority sufficient to control contributions of industrial storm water pollutants to their separate storm sewers to the degree necessary to implement the proposed rule. EPA commented that muni-

cipal controls on industrial sources implemented to comply with an NPDES permit issued to the municipality would likely result in a level of storm water pollution control very similar to that put directly on the industrial source through its own NPDES permit. This was to be accomplished by requiring municipal permittees, to the maximum extent practicable, to require industrial facilities in the municipality to develop and implement storm water controls based on a consideration of the same or similar factors as those used to make BAT/BCT determinations. (See 40 CFR 125.3 (d)(2) and (d)(3)).

The great majority of commenters on the December 7, 1988, notice addressed this aspect of the proposal. Based on consideration of the comments received on the notice, EPA has decided that it is appropriate to revise the approach in its proposed rule to require direct permit coverage for all storm water discharges associated with industrial activity, including those that discharge through municipal separate storm sewers. In response to this decision, EPA has continued to analyze the appropriate manner to respond to the large number of storm water discharges subject to this rulemaking. The development of EPA's policy regarding permitting these discharges is discussed in more detail in the section VI.D of today's preamble.

EPA notes that the status of discharges associated with industrial activity which pass through a municipal separate storm sewer system under section 402(p) raises difficult legal and policy questions. EPA believes that treating these discharges under permits separate from those issued to the municipality will most fully address both the legal and policy concerns raised in public comment.

Certain commenters supported EPA's proposal. Some commenters claimed that EPA lacked any authority to permit industrial discharges which were not discharged immediately to waters of the U.S. Other commenters agreed with EPA's statements in the proposal that its approach would result in a more manageable administrative burden for EPA and the NPDES states. However, numerous comments also were received which provided various arguments in support of revising the proposed approach. These comments addressed several areas including the definition of discharge under the CWA, the requirements and associated statutory time frames of section 402(p), as well as the resource and enforcement constraints of municipalities. EPA is persuaded by these comments and has modified its approach accordingly. The key comments on this issue are discussed below.

EPA disagrees with commenters who suggested that EPA lacks authority to permit separately industrial discharges through municipal sewers. The CWA prohibits the discharge of a pollutant except pursuant to an NPDES permit. Section 502(12)(A) of the CWA defines the "discharge of a pollutant" as "any addition of any pollutant to navigable waters from any point source." [FN1] There is no qualification in the statutory language regarding the source of the pollutants being discharged. Thus, pollutants from a remote location which are discharged through a point source conveyance controlled by a different entity (such as a municipal storm sewer) are nonetheless discharges for which a permit is required.

FN1 Indeed, the DC Circuit has held, in the storm water context, that EPA may not exempt any point source discharges of pollutants from the requirement to obtain an NPDES permit. *NRDC v. Costle*, 569 F.2d 1369, 1377 (DC Cir. 1977).

EPA's regulatory definition of the term "discharge" reflects this broad construction. EPA defines the term to include

additions of pollutants into waters of the United States from: surface runoff which is collected or channelled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which does not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works.

40 CFR § 122.2 (1989) (emphasis added). The only exception to this general rule is the one contemplated by section

307(b) of the CWA, i.e., the introduction of pollutants into publicly-owned treatment works. EPA treats these as "indirect discharges," subject not to NPDES requirements, but to pretreatment standards under section 307(b).

In light of its construction of the term discharge, EPA has consistently maintained that a person who sends pollutants from a remote location through a point source into a water of the U.S. may be held liable for the unpermitted discharge of that pollutant. Thus, EPA asserts the authority to require a permit either from the operator of the point source conveyance, (such as a municipal storm sewer or a privately-owned treatment works), or from any person causing pollutants to be present in that conveyance and discharged through the point source, or both. See Decision of the General Counsel (of EPA) No. 43 ("In re Friendswood Development Co.") (June 11, 1976) (operator of privately owned treatment work and dischargers to it are both subject to NPDES permit requirements). See also, 40 CFR 122.3(g), 122.44(m)*47999 (NPDES permit writer has discretion to permit contributors to a privately owned treatment works as direct dischargers). In other words, where pollutants are added by one person to a conveyance owned/operated by another person, and that conveyance discharges those pollutants through a point source, EPA may permit either person or both to ensure that the discharge is properly controlled. Pollutants from industrial sites discharged through a storm sewer to a point source are appropriately treated in this fashion.

Furthermore, EPA believes that storm water from an industrial plant which is discharged through a municipal storm sewer is a "discharge associated with industrial activity." Today's rule, as in the proposal, defines discharges associated with industrial activity solely in terms of the origin of the storm water runoff. There is no distinction for how the storm water reaches the waters of the U.S. In other words, pollutants in storm water from an industrial plant which are discharged are "associated with industrial activity," regardless of whether the industrial facility operates the conveyance discharging the storm water (or whether the storm water is ultimately discharged through a municipal storm sewer). Indeed, there is no distinction in the "industrial" nature of these two types of discharges. The pollutants of concern in an industrial storm water discharge are present when the storm water leaves the facility, either through an industrial or municipal storm water conveyance. EPA has no data to suggest that the pollutants in industrial storm water entering a municipal storm sewer are any different than those in storm water discharged immediately to a water of the U.S. Thus, industrial storm water in a municipal sewer is properly classified as "associated with industrial activity." Although EPA proposed not to cover these discharges by separate permit, the Agency believes that it is clearly not precluded from doing so.

Many comments also supported the proposed approach, noting that holding municipalities primarily responsible for obtaining a permit which covers industrial storm water discharges through municipal systems would reduce the administrative burden associated with preparing and processing thousands of permit applications—permit applications that would be submitted if each industrial discharger through a large or medium municipal separate storm sewer system had to apply individually (or as part of a group application).

EPA appreciates these concerns. Yet EPA also recognizes that there are also significant problems with putting the burden of controlling these sources on the municipalities (except for designated discharges) which must be balanced with the concerns about the permit application burden on industries. The industrial permitting strategy discussed in section VI.D below attempts to achieve this balance.

EPA also does not believe that the administrative burden will be nearly as significant as originally thought, for several reasons. First, as discussed in section VI.F.2 below and in response to significant public comment, EPA has significantly narrowed the scope of the definition of "associated with industrial activity" to focus in on those facilities which are most commonly considered "industrial" and thought to have the potential for the highest levels of pollutants in their storm water discharges. EPA believes this is a more appropriate way to ensure a manageable scope for the industrial storm water program in light of the statutory language of section 402(p), since it does not attempt to arbitrarily distinguish industrial

facilities on the basis of the ownership of the conveyance through which a facility discharges its storm water. Second, EPA's industrial permitting strategy discussed in section VI.D is designed around aggressive use of general permits to cover the vast majority of industrial sources. These general permits will require industrial facilities to develop storm water control plans and practices similar to those that would have been required by the municipality. Yet, general permits will eliminate the need for thousands of individual or group permit applications, greatly reducing the burden on both industry EPA/States. Finally, even under the proposal, EPA believes that a large number of industrial dischargers would have been appropriate for designation for individual permitting under section 402(p)(2)(E), with the attendant individual application requirements. Today's approach will actually decrease the overall burden on these facilities; rather than filing an individual permit application upon designation, these facilities will generally be covered by a general permit.

By contrast, several commenters asserted that not only does EPA have the authority to cover these discharges by separate permit, it is required to by the language of section 402(p). As discussed above, storm water from an industrial plant which passes through a municipal storm sewer to a point source and is discharged to waters of the U.S. is a "discharge associated with industrial activity." Therefore, it is subject to the appropriate requirements of section 402(p). The operator of the discharge (or the industrial facility where the storm water originates) must apply for a permit within three years of the 1987 amendments (i.e., Feb. 4, 1990); [FN2] EPA must issue a permit by one year later (Feb. 4, 1991); and the permit must require compliance within three years of permit issuance. That permit must ensure that the discharge is in compliance with all appropriate provisions of sections 301 and 402. Commenters asserted that EPA's proposal would violate these two requirements of the law. First, the statute requires all industrial storm water discharges to obtain a permit in the first round of permitting (i.e., February 4, 1990). However, Congress established a different framework to address discharges from small municipal separate storm sewer systems. Section 402(p) requires EPA to complete two studies of storm water discharges, and based on those studies, promulgate additional regulations, including requirements for state storm water management programs by October 1, 1992. EPA is prohibited from issuing permits for storm water discharges from small municipal systems until October 1, 1992 unless the discharge is designated under section 402(p)(2)(E). Thus, industrial storm water discharges from these systems would not be covered by a permit until later than contemplated by statute. Second, permits for municipal storm sewer systems require controls on storm water discharges "to the maximum extent practicable," as opposed to the BAT/BCT requirements of section 301(b)(2). Yet, all industrial storm water discharges must comply with section 301(b)(2). Thus, covering industrial storm water under a municipal storm water permit will not ensure the legally-required level of control of industrial storm water discharges.

FN2. It should be noted that EPA did not promulgate the required storm water regulations by February, 1989, as contemplated by section 402(p)(4)(A). As discussed below, today's rule generally requires industrial storm water discharges to file a permit application in one year.

In addition to comments on the requirements of section 402(p), EPA received several comments questioning whether EPA's proposal to cover industrial pollutants in municipal separate storm sewers solely in the permit issued to the municipality would ensure adequate control of these pollutants due to both inadequate resources and enforcement. Some municipalities stated that the burdens of this responsibility would be too great with regard to source identification and general administration of the program. These commenters claimed they lacked the necessary technical and regulatory expertise to regulate such sources. Commenters also noted that additional resources to control these sources would be difficult to obtain given the restrictions on local taxation in many states and the fact that EPA will not be providing funding to local governments to implement their storm water programs.

Municipalities also expressed concerns regarding enforcement of EPA's proposed approach. Some municipalities remarked that they did not have appropriate legal authority to address these discharges. Several commenters also stated that

requiring municipalities to be responsible for addressing storm water discharges associated with industrial activity through their municipal system would result in unequal treatment of industries nationwide because of different municipal requirements and enforcement procedures. Several municipal entities expressed concern with regard to their responsibility and liability for pollutants discharged to their municipal storm sewer system, and further asserted that it was unfair to require municipalities to bear the full cost of controlling such pollutants. Other municipalities suggested that overall municipal storm water control would be impaired, since municipalities would spend a disproportionate amount of resources trying to control industrial discharges through their sewers, rather than addressing other storm water problems. In a related vein, certain commenters suggested that, where industrial storm water was a significant problem in a municipal sewer, EPA's proposed approach would hamper enforcement at the federal/state level, since all enforcement measures could be directed only at the municipality, rather than at the most direct source of that problem.

In response to all of these concerns, EPA has decided to require storm water discharges associated with industrial activity which discharge through municipal separate storm sewers to obtain separate individual or general NPDES permits. EPA believes that this change will adequately address all of the key concerns raised by commenters.

The Agency was particularly influenced by concerns that many municipalities lacked the authority under state law to address industrial storm water practices. EPA had assumed that since several cities regulate construction site activities, that they could regulate other industrial operations in a similar manner. Several commenters suggested otherwise. In light of these concerns, EPA agrees with certain commenters that municipal controls on industrial facilities, in lieu of federal control, might not comply with section 402(p)(3)(A) for those facilities.[FN3] This calls into question whether EPA's proposed approach would have reasonably implemented Congressional intent to address industrial storm water early and stringently in the permitting process.

FN3 EPA notes that the legal issue raised by commenters regarding whether industrial storm water would be controlled to BAT if covered by a municipal permit at the MEP level is primarily a theoretical issue. As explained above, the proposal assumed that cities would establish controls on industry very similar to those established in an NPDES permit using best professional judgment. EPA's key concern, rather, is whether cities can, in fact, establish such controls. Thus, today's final rule should not appreciably change the requirements to be imposed on industrial sources; only how those requirements are enforced.

EPA also agrees with those commenters who argued that municipal controls on industrial storm water sources were not directly analogous to the pretreatment program under section 307(b), as EPA suggested in the preamble to the proposal. The authority of cities to control the type and volume of industrial pollutants into a POTW is generally unquestioned under the laws of most states, since sewage and industrial waste treatment is a service provided by the municipality. Thus, EPA has greater confidence that cities can and will adopt effective pretreatment programs. By contrast, many cities are limited in the types of controls they can impose on flows into storm sewers; cities are more often limited to regulations on quantity of industrial flows to prevent flooding the system. So too, the pretreatment program allows for federal enforcement of local pretreatment requirements. Enforcement against direct dischargers (including dischargers through municipal storm sewers) is possible only when the municipal requirements are contained in an NPDES permit.

Although today's rule will require industrial discharges through municipal storm sewers to be covered by separate permit, 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 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. (See section VI.H.7. of today's preamble.) The CWA provides that permits for municipal separate storm sewers shall require municipalities to reduce pollutants to the maximum extent practicable. Permits issued to municipalities for discharges from municipal separate storm sewers will reflect terms, specified controls, and programs that achieve that goal. As with all NPDES permits, responsibility and liability is determined by the discharger's compliance with the terms of the permit. A municipality's responsibility for industrial storm water discharged through their system is governed by the terms of the permit issued. If an industrial source discharges storm water through a municipal separate storm sewer in violation of requirements incorporated into a permit for the industrial facility's discharge, that industrial operator of the discharge may be subject to an enforcement action instituted by the Director of the NPDES program.

Today's rule also requires operators of storm water discharges associated with industrial activity through large and medium municipal systems to provide municipal entities of the name, location, and type of facility that is discharging to the municipal system. This information will provide municipalities with a base of information from which management plans can be devised and implemented. This requirement is in addition to any requirements contained in the industrial facility's permit. As in the proposal, the notification process will assist cities in development of their industrial control programs.

EPA intends for the NPDES program, through requirements in permits for storm water discharges associated with industrial activity, to work in concert with municipalities in the industrial component of their storm water management program efforts. EPA believes that permitting of municipal storm sewer systems and the industrial discharges through them will act in a complementary manner to fully control the pollutants in those sewer systems. This will fully implement the intent of *48001 Congress to control industrial as well as large and medium municipal storm water discharges as expeditiously and effectively as possible. This approach will also address the concerns of municipalities that they lack sufficient authority and resources to control all industrial contributions to their storm sewers and will be liable for discharges outside of their control.

The permit application requirements for large and medium municipal separate storm sewer systems, discussed in more detail later in today's preamble, address the responsibilities of the municipal operators of these systems to identify and control pollutants in storm water discharges associated with industrial activity. Permit applications for large and medium municipal separate storm sewer systems are to identify the location of facilities which discharge storm water associated with industrial activity to the municipal system (see section VI.H.7. of the preamble). In addition, municipal applicants will provide a description of a proposed management program to reduce, to the maximum extent practicable, pollutants from storm water discharges associated with industrial activity which discharge to the municipal system (see section VI.H.7.c of this preamble). EPA notes that each municipal program will be tailored to the conditions in that city. Differences in regional weather patterns, hydrology, water quality standards, and storm sewer systems themselves dictate that storm water management practices will vary to some degree in each municipality. Accordingly, similar industrial storm water discharges may be treated differently in terms of the requirements imposed by the municipality, depending on the municipal program. Nonetheless, any individual or general permit issued to the industrial facility must comply with section 402(p)(3)(A) of the CWA.

EPA intends to provide assistance and guidance to municipalities and permitting authorities for developing storm water management programs that achieve permit requirements. EPA intends to issue a guidance document addressing municipal permit applications in the near term.

Controls developed in management plans for municipal system permits may take a variety of forms. Where necessary,

municipal permittees can pursue local remedies to develop measures to reduce pollutants or halt storm water discharges with high levels of pollutants through municipal storm sewer systems. Some local entities have already implemented ordinances or laws that are designed to reduce the discharge of pollutants to municipal separate storm sewers, while other municipalities have developed a variety of techniques to control pollutants in storm water. Alternatively, where appropriate, municipal permittees may develop end-of-pipe controls to control pollutants in these discharges such as regional wet detention ponds or diverting flow to publicly owned treatment works. Finally, municipal applicants may bring individual storm water discharges, which cannot be adequately controlled by the municipal permittees or general permit coverage, to the attention of the permitting authority. Then, at the Director's discretion, appropriate additional controls can be required in the permit for the facility generating the targeted storm water discharge.

One commenter suggested that municipal operators of municipal separate storm sewers should have control over all storm water discharges from a facility that discharges both through the municipal system and to waters of the United States. In response, under this regulatory and statutory scheme, industries that discharge storm water directly into the waters of the United States, through municipal separate storm sewer systems, or both are required to obtain permit coverage for their discharges. However, municipalities are not precluded from exercising control over such facilities through their own municipal authorities.

It is important to note that EPA has established effluent guideline limitations for storm water discharges for nine subcategories of industrial dischargers (Cement Manufacturing (40 CFR part 411), Feedlots (40 CFR part 412), Fertilizer Manufacturing (40 CFR part 418), Petroleum Refining (40 CFR part 419), Phosphate Manufacturing (40 CFR part 422), Steam Electric (40 CFR part 423), Coal Mining (40 CFR part 434), Ore Mining and Dressing (40 CFR part 440) and Asphalt (40 CFR part 441)). Most of the existing facilities in these subcategories already have individual permits for their storm water discharges. Under today's rule, facilities with existing NPDES permits for storm water discharges through a municipal storm sewer will be required to maintain these permits and apply for an individual permit, under § 122.26(c), when existing permits expire. EPA received numerous comments supporting this decision because requiring facilities that have existing permits to comply with today's requirements immediately would be inefficient and not serve improved water quality.

Sections 402(p) (1) and (2) of the CWA provide that discharges from municipal separate storm sewer systems serving a population of less than 100,000 are not required to obtain a permit prior to October 1, 1992, unless designated on a case-by-case basis under section 402(p)(2)(E). However, as discussed above, storm water discharges associated with industrial activity through such municipal systems are not excluded. Thus, under today's rule, all storm water discharges associated with industrial activity that discharge through municipal separate storm sewer systems are required to obtain NPDES permit coverage, including those which discharge through systems serving populations less than 100,000. EPA believes requiring permits will address the legal concerns raised by commenters regarding these sources. In addition, it will allow for control of these significant sources of pollution while EPA continues to study under section 402(p)(6) whether to require the development of municipal storm water management plans in these municipalities. If these municipalities do ultimately obtain NPDES permits for their municipal separate storm sewer systems, early permitting of the industrial contributions may aid those cities in their storm water management efforts.

In the December 7, 1988, proposal, EPA recognized that storm water discharges associated with industrial activity from Federal facilities through municipal separate storm sewer systems may pose unique legal and administrative situations. EPA received numerous comments on this issue, with most of these comments coming from cities and counties. The comments reflected a general concern with respect to a municipality's ability to control Federal storm water discharges through municipal separate storm sewer systems. Most municipalities stated that they do not have the legal authority to adequately enforce against problem storm water discharges from Federal facilities and that these facilities should be re-

quired to obtain separate storm water permits. Some commenters stated that they have no Constitutional authority to regulate Federal facilities or establish regulation for such facilities. Some commenters indicated that Federal facilities could not be inspected, monitored, or subjected to enforcement for national security and other jurisdictional reasons. Some commenters argued that without clearly stated legal authority for the municipality, such dischargers should be required to obtain permits. One *48002 municipality pointed out that Federal facilities within city limits are exempted from their Erosion and Sediment Control Act and that permits for these facilities should be required.

Under today's rule, Federal facilities which discharge storm water associated with industrial activity through municipal separate storm sewer systems will be required to obtain NPDES permit coverage under Federal or State law. EPA believes this will cure the legal authority problems at the local level raised by the commenters. EPA notes that this requirement is consistent with section 313(a) of the CWA.

D. Preliminary Permitting Strategy for Storm Water Discharges Associated With Industrial Activity

Many of the comments received on the December 7, 1988, proposal focused on the difficulties that EPA Regions and authorized NPDES States, with their finite resources, will have in implementing an effective permitting program for the large number of storm water discharges associated with industrial activity. Many commenters noted that problems with implementing permit programs are caused not only by the large number of industrial facilities subject to the program, but by the difficulties associated with identifying appropriate technologies for controlling storm water at various sites and the differences in the nature and extent of storm water discharges from different types of industrial facilities.

EPA recognizes these concerns; and based on a consideration of comments from authorized NPDES States, municipalities, industrial facilities and environmental groups on the permitting framework and permit application requirements for storm water discharges associated with industrial activity, EPA is in the process of developing a preliminary strategy for permitting storm water discharges associated with industrial activity. In developing this strategy, EPA recognizes that the CWA provides flexibility in the manner in which NPDES permits are issued.[FN4] EPA intends to use this flexibility in designing a workable and reasonable permitting system. In accordance with these considerations, EPA intends to publish in the near future a discussion of its preliminary permitting strategy for implementing the NPDES storm water program.

FN4. The courts in *NRDC v. Train*, 396 F.Supp. 1393 (D.D.C. 1975)aff'd, *NRDC v. Costle*, 568 F.2d 1369 (DC Cir. 1977), have acknowledged the administrative burden placed on the Agency by requiring individual permits for a large number of storm water discharges. These courts have recognized EPA's discretion to use certain administrative devices, such as area permits or general permits to help manage its workload. In addition, the courts have recognized flexibility in the type of permit conditions that are established, including requirements for best management practices.

The preliminary strategy is intended to establish a framework for developing permitting priorities, and includes a four tier set of priorities for issuing permits to be implemented over time:

- Tier I—baseline permitting: One or more general permits will be developed to initially cover the majority of storm water discharges associated with industrial activity;
- Tier II—watershed permitting: Facilities within watersheds shown to be adversely impacted by storm water discharges associated with industrial activity will be targeted for permitting.
- Tier III—industry specific permitting: Specific industry categories will be targeted for individual or industry-specific

permits; and

- Tier IV—facility specific permitting: A variety of factors will be used to target specific facilities for individual permits.

Tier I—Baseline Permitting

EPA intends to issue general permits that initially cover the majority of storm water discharges associated with industrial activity in States without authorized NPDES programs. These permits will also serve as models for States with authorized NPDES programs.

The consolidation of many sources under one permit will greatly reduce the otherwise overwhelming administrative burden associated with permitting storm water discharges associated with industrial activity. This approach has a number of additional advantages, including:

- Requirements will be established for discharges covered by the permit;
- Facilities whose discharges are covered by the permit will have an opportunity for substantial compliance with the CWA;
- The public, including municipal operators of municipal separate storm sewers which may receive storm water discharges associated with industrial activity, will have access under section 308(b) of the CWA to monitoring data and certain other information developed by the permittee;
- EPA will have the opportunity to begin to collect and review data on storm water discharges from priority industries, thereby supporting the development of subsequent permitting activities;
- Applicable requirements of municipal storm water management programs established in permits for discharges from municipal separate storm sewer systems will be enforceable directly against non-complying industrial facilities that generate the discharges;
- The public will be given an opportunity to comment on permitting activities;
- The baseline permits will provide a basis for bringing selected enforcement actions by eliminating many issues which might otherwise arise in an enforcement proceeding; and
- Finally, the baseline permits will provide a focus for public comment on the development of subsequent phases of the permitting strategy for storm water discharges, including the development of priorities for State storm water management programs developed under section 402(p)(6) of the CWA.

Initially, the coverage of the baseline permits will be broad, but the coverage is intended to shrink as other permits are issued for storm water discharges associated with industrial activities pursuant to Tier II through IV activities.

2. Tier II—Watershed Permitting

Facilities within watersheds shown to be adversely impacted by storm water discharges associated with industrial activity will be targeted for individual and general permitting. This process can be initiated by identifying receiving waters (or segments of receiving waters) where storm water discharges associated with industrial activity have been identified as a source of use impairment or are suspected to be contributing to use impairment.

3. Tier III—Industry Specific Permitting

Specific industry categories will be targeted for individual or industry-specific general permits. These permits will allow permitting authorities to focus attention and resources on industry categories of particular concern and/or industry categories where tailored requirements are appropriate. EPA will work with the States to coordinate the development of model permits for selected classes of industrial storm water discharges. EPA is also working to identify priority industrial categories in the two reports to Congress required under section 402(p)(5) of the CWA. In addition, group applications that are received can be used to develop model permits for the appropriate industries.

*48003 4. Tier IV—Facility Specific Permitting

Individual permits will be appropriate for some storm water discharges in addition to those identified under Tier II and III activities. Individual permits should be issued where warranted by: the pollution potential of the discharge; the need for individual control mechanisms; and in cases where reduced administrative burdens exist. For example, individual NPDES permits for facilities with process discharges should be expanded during the normal process of permit reissuance to cover storm water discharges from the facility.

5. Relationship of Strategy to Permit Applications Requirements

The preliminary long-term permitting strategy described above identifies several permit schemes that EPA anticipates will be used in addressing storm water discharges associated with industrial activity. One issue that arises with this strategy is determining the appropriate information needed to develop and issue permits for these discharges. The NPDES regulatory scheme provides three major options for obtaining permit coverage for storm water discharges associated with industrial activity: (1) Individual permit applications; (2) group applications; and (3) case-by-case requirements developed for general permit coverage.

a. Individual permit application requirements. Today's notice establishes requirements for individual permit applications for storm water discharges associated with industrial activity. These application requirements are applicable for all storm water discharges associated with industrial activity, except where the operator of the discharge is participating in a group application or a general permit is issued to cover the discharge and the general permit provides alternative means to obtain permit coverage. Information in individual applications is intended to be used in developing the site-specific conditions generally associated with individual permits.

Individual permit applications are expected to play an important role in all tiers of the Strategy, even where general permits are used. Although general permits may provide for notification requirements that operate in lieu of the requirement to submit individual permit applications, the individual permit applications may be needed under several circumstances. Examples include: where a general permit requires the submission of a permit application as the notice of intent to be covered by the permit; where the owner or operator authorized by a general permit requests to be excluded from the coverage of the general permit by applying for a permit (see 40 CFR 122.28(b)(2)(iii) for EPA issued general permits); and where the Director requires an owner or operator authorized by a general permit to apply for an individual permit (see 40 CFR 122.28(b)(2)(ii) for EPA issued general permits).

b. Group applications. Today's rule also promulgates requirements for group applications for storm water discharges associated with industrial activity. These applications provide participants of groups with sufficiently similar storm water discharges an alternative mechanism for applying for permit coverage.

The group application requirements are primarily intended to provide information for developing industry specific gener-

al permits. (Group applications can also be used to issue individual permits in authorized NPDES States without general permit authority or where otherwise appropriate). As such, group application requirements correlate well with the Tier III permitting activities identified in the long-term permitting Strategy.

c. Case-by-case requirements. 40 CFR 122.21(a) excludes persons covered by general permits from requirements to submit individual permit applications. Further, the general permit regulations at 40 CFR 122.28 do not address the issue of how a potential permittee is to apply to be covered under a general permit. Rather, conditions for notification of intent (NOI) to be covered by the general permit are established in the permits on a case-by-case basis, and operate in lieu of permit application requirements. Requirements for submitting NOIs to be covered by a general permit can range from full applications (this would be Form 1 and Form 2F for most discharges composed entirely of storm water discharges associated with industrial activity), to no notice. EPA recommends that the NOI requirements established in a general permit for storm water discharges associated with industrial activity be commensurate with the needs of the permit writer in establishing the permit and the permit program. The baseline general permit described in Tier I is intended to support the development of controls for storm water discharges associated with industrial activity that can be supported by the limited resources of the permitting Agency. In this regard, the burdens of receiving and reviewing NOI's from the large number of facilities covered by the permit should also be considered when developing NOI requirements. In addition, NOI requirements should be developed in conjunction with permit conditions establishing reporting requirements during the term of the permit.

NOI requirements in general permits can establish a mechanism which can be used to establish a clear accounting of the number of permittees covered by the general permit, the nature of operations at the facility generating the discharge, their identity and location. The NOI can be used as an initial screening tool to determine discharges where individual permits are appropriate. Also, the NOI can be used to identify classes of discharges appropriate for more specific general permits, as well as provide information needed to notify such dischargers of the issuance of a more specific general permit. In addition, the NOI can provide for the identification of the permittee to provide a basis for enforcement and compliance monitoring strategies. EPA will further address this issue in the context of specific general permits it plans to issue in the near future.

Today's rule requires that individual permit applications for storm water discharges associated with industrial activity be submitted within one year from the date of publication of this notice. EPA is considering issuing general permits for the majority of storm water discharges associated with industrial activity in those States and territories that do not have authorized State NPDES programs (MA, ME, NH, FL, LA, TX, OK, NM, SD, AZ, AK, ID, District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, and the Trust Territory of the Pacific Islands) before that date to enable industrial dischargers of storm water to ascertain whether they are eligible for coverage under a general permit (and subject to any alternative notification requirements established by the general permit in lieu of the individual permit application requirements of today's rule) or whether they must submit an individual permit application (or participate in a group application) before the regulatory deadlines for submitting these applications passes. Storm water application deadlines are discussed in further detail below.

E. Storm Water Discharge Sampling

Storm water discharges are intermittent by their nature, and pollutant concentrations in storm water discharges will be highly variable. Not only will variability arise between given events, but the flow and pollutant concentrations of such discharges will vary with time during an event. This variability raises two technical problems: how best to characterize the discharge associated with a single storm event; and how best to characterize the variability between discharges of different events that may be caused by seasonal changes and changes in material management practices, for example.

Prior to today's rulemaking, 40 CFR 122.21(g)(7) required that applicants for NPDES permits submit quantitative data based on one grab sample taken every hour of the discharge for the first four hours of discharge. EPA has modified this requirement such that, instead of collecting and analyzing four grab samples individually, applicants for permits addressing storm water discharges associated with industrial activity will provide data as indicators of two sets of conditions: data collected during the first 30 minutes of discharge and flow-weighted average storm event concentrations. Large and medium municipalities will provide data on flow-weighted average storm event concentrations only.

Data describing pollutants in a grab sample taken during the first few minutes of the discharge can often be used as a screen for non-storm water discharges to separate storm sewers because such pollutants may be flushed out of the system during the initial portion of the discharge. In addition, data from the first few minutes of a discharge are useful because much of the traditional structural technology used to control storm water discharges, including detention and retention devices, may only provide controls for the first portion of the discharge, with relatively little or no control for the remainder of the discharge. Data from the first portion of the discharge will give an indication of the potential usefulness of these techniques to reduce pollutants in storm water discharges. Also, such discharges may be primarily responsible for pollutant shocks to the ecosystem in receiving waters.

Studies such as NURP have shown that flow-weighted average concentrations of storm water discharges are useful for estimating pollutant loads and for evaluating certain concentration-based water quality impacts. The use of flow-weighted composite samples are also consistent with comments raised by various industry representatives during previous Agency rulemakings that continuous monitoring of discharges from storm events is necessary to adequately characterize such discharges.

EPA requested comment on the feasibility of the proposed modification of sampling procedures at § 122.21(g)(7) and the ability to characterize pollutants in storm water discharges with an average concentration from the first portion of the discharge compared to collecting and separately analyzing four grab samples. It was proposed that an event composite sample be collected, as well as a grab sample collected during the first 20 minutes of runoff. Comments were solicited as to whether or not this sampling method would provide better definition of the storm load for runoff characterization than would the requirement to collect and separately analyze four grab samples.

Many commenters questioned the ability to obtain a 20 minute sample in the absence of automatic samplers. Some believed that pollutants measured by such a sample can be accounted for in the event composite sample. Others argued that this is an unwarranted sampling effort if municipal storm water management plans are to be geared to achieving annual pollutant load reductions. Many commenters advised that problems accessing sampling stations and mobilizing sampling crews, particularly after working hours, made sampling during the first 20 minutes impractical. These comments were made particularly with respect to municipalities, where the geographical areas could encompass several hundred square miles. Several alternatives were suggested including: the collection of a sample in the first hour, and representative grab sampling in the next three hours, one per hour; or perform time proportioned sampling for up to four hours.

Because of the logistical problems associated with collecting samples during the first few minutes of discharge from municipal systems, EPA will only require such sampling from industrial facilities. Municipal systems will be spread out over many square miles with sampling locations potentially several miles from public works departments or other responsible government agencies. Reaching such locations in order to obtain samples during the first few minutes of a storm event may prove impossible. For essentially the same reasons, the requirement has been modified to encompass the first 30 minutes of the discharge, instead of 20 minutes, for industrial discharges. The rule also clarifies that the sample should be taken during the first 30 minutes or as soon thereafter as practicable. Where appropriate, characterization of this portion of the discharge from selected outfalls or sampling points may be a condition to permits issued to municipal-

ities. With regard to protocols for the collection of sample aliquots for flow-weighted composite samples, § 122.21(g)(7) provides that municipal applicants may collect flow-weighted composite samples using different protocols with respect to the time duration between the collection of sample aliquots, subject to the approval of the Director or Regional Administrator. In other words, the period may be extended from 15 minutes to 20 or 25 minutes between sample aliquots, or decreased from 15 to 10 or 5 minutes.

Other comments raised issues that apply both to the impact of runoff characterization and the first discharge representation. These primarily pertained to regions that have well defined wet and dry seasons. Comments questioned whether or not it is fair to assume that the initial storm or two of a wet season, which will have very high pollutant concentrations, are actually representative of the runoff concentrations for the area.

In response, EPA believes that it is important to represent the first part of the discharge either separately or as a part of the event composite samples. This loading is made up primarily of the mass of unattached fine particulates and readily soluble surface load that accumulates between storms. This load washes off of the basin's directly connected paved surfaces when the runoff velocities reach the level required for entrainment of the particulate load into the surface flow. It should be noted that for very fine particulates and solubles, this can occur very soon after the storm begins and much sooner than the peak flow. The first few minutes of discharge represents a shock load to the receiving water, in terms of concentration of pollutants, because for many constituents the highest concentrations of the event will occur during this initial period. Due to the need to properly quantify this load, it is not necessary to represent the first discharge from the upper reaches of the outfall's tributary area. In runoff characterization basins, the assumption is that the land use in the basin is homogeneous, or nearly so, and that the first discharge from the lower reaches for all intents and purposes is representative of the entire basin. If a sample is taken during the first 30 minutes of the runoff, it will be composed primarily of first discharge. If the sample is taken at the outfall an hour into the event, it may contain *48005 discharge from the remote portions of the basin. It will not be representative of the discharge because it will also contain later washoff from the lower reaches of the basin, resulting in a low estimation of the first discharge load of most constituents. Conversely, larger suspended particulates that normally are not present in first discharge due to inadequate velocities will appear in this later sampling scenario because of the influence of higher runoff rates in the lower basin. Many commonly used management practices are designed based on their ability to treat a volume of water defined by the first discharge phenomenon. It is important to characterize the first discharge load because most management practices effectively treat only, or primarily, this load.

It should be noted that first discharge runoff is sometimes contaminated by non-storm water related pollutants. In many urban catchments, contaminants that result from illicit connections and illegal dumping may be stored in the system until "flushed" during the initial storm period. This does not negate the need for information on the characteristic first discharge load, but does indicate that the first phase field screen results for illicit connections should be used to help define those outfalls where this problem might exist.

Several methods can be used to develop an event average concentration. Either automatic or manual sampling techniques can be used that sample the entire hydrograph, or at least the first four hours of it, that will result in several discrete samples and associated flow rates that represent the various flow regimes of an event. These procedures have the potential for providing either an event average concentration, an event mean concentration, or discrete definition of the washoff process. Automatic sampling procedures are also available that collect a single composite sample, either on a time-proportioned or flow proportioned basis.

When discrete samples are collected, an event average composite sample can be produced by the manual composite of the discrete samples in equal volumes. Laboratory analysis of time proportioned composite samples will directly yield

the event average concentration. Mathematical averaging of discrete sample analysis results will yield an event average concentration.

When discrete samples are collected, a flow-weighted composite sample can be produced based on the discharge record. This is done by manually flow proportioning the volumes of the individual samples. Laboratory analysis of flow weighted composite samples will directly yield an event mean concentration. Mathematical integration of the change in concentrations and mass flux of the discharge for discrete sample data can produce an event mean concentration. This procedure was used during the NURP program.

EPA wishes to emphasize that the reason for sampling the type of storm event identified in § 122.21(g)(7) is to provide information that represents local conditions that will be used to create sound storm water management plans. Based on the method to be used to generate system-wide estimates of pollutant loads, either method, discrete or event average concentrations, may be preferable to the other. If simulation models will be used to generate loading estimates, analysis of discrete samples will be more valuable so that calibration of water quality and hydrology may be performed. On the other hand, simple estimation methods based on event average or event mean concentrations may not justify the additional cost of discrete sample analysis.

EPA believes that the first discharge loading should be represented in the permit application from industrial facilities and, if appropriate, permitting authorities may require the same in the discharge characterization component of permits issued to municipalities. The first discharge load should also be represented as part of an event composite sample. This requirement will assist industries in the development of effective storm water management plans.

EPA requested comments on the appropriateness of the proposed rules and of proposed amendments to the rules regarding discharge sampling. Comments were received which addressed the appropriateness of imposing uniform national guidelines. Several commenters are concerned that uniform national guidelines may not be appropriate due to the geographic variations in meteorology, topography, and pollutant sources. While some assert that a uniform guideline will provide consistency of the sample results, others prefer a program based on regional or State guidelines that more specifically address their situation.

Several commenters, addressing industrial permit application requirements, preferred that the owner/operator be allowed to set an individual sampling protocol with approval of the permit writer. Some commenters were concerned that one event may not be sufficient to characterize runoff from a basin as this may result in gross over-estimation or underestimation of the pollutant loads. Others indicated confusion with regard to sampling procedures, lab analysis procedures, and the purpose of the program.

In response, today's regulations establish certain minimum requirements. Municipalities and industries may vary from these requirements to the extent that their implementation is at least as stringent as outlined in today's rule. EPA views today's rule as a means to provide assurance as to the quality of the data collected; and to this end, it is important that the minimum level of sampling required be well defined.

In response to EPA's proposal that the first discharge be included in "representative" storm sampling, several commenters made their concerns known about the possible equipment necessary to meet this requirement. Several commenters are concerned that in order to get a first discharge sample, automatic sampling equipment will be required. Concerns related to the need for this equipment surfaced in the comments frequently; most advised that the equipment is expensive and that the demand on sampling equipment will be too large for suppliers and manufacturers to meet. Although equipment can be leased, some commenters maintained that not enough rental equipment is available to make this a viable option in many instances.

EPA is not promoting or requiring the use of automated equipment to satisfy the sampling requirements. A community may find that in the long run it would be more convenient to have such equipment since sampling is required not only during preparation of the application, but also may be required during the term of the permit to assure that the program goals are being met. Discharge measurement is necessary in order for the sample data to have any meaning. If unattended automatic sampling is to be performed, then unattended flow measurement will be required too.

EPA realizes that equipment availability is a legitimate concern. However, there is no practical recommendation that can be made relative to the availability of equipment. If automatic sampling equipment is not available, manual sampling is an appropriate alternative.

F. Storm Water Discharges Associated With Industrial Activity

1. Permit Applicability

a. Storm water discharges associated with industrial activity to waters of the United States. Under today's rule dischargers of storm water associated *48006 with industrial activity are required to apply for an NPDES permit. Permits are to be applied for in one of three ways depending on the type of facility: Through the individual permit application process; through the group application process; or through a notice of intent to be covered by general permit.

Storm water discharges associated with the industrial activities identified under § 122.26(b)(14) of today's rule may avail themselves of general permits that EPA intends to propose and promulgate in the near future. The general permit will be available to be promulgated in each non-NPDES State, following State certification, and as a model for use by NPDES States with general permit authority. It is envisioned that these general permits will provide baseline storm water management practices. For certain categories of industries, specific management practices will be prescribed in addition to the baseline management practices. As information on specific types of industrial activities is developed, other, more industry-specific general permits will be developed.

Today's rule requires facilities with existing NPDES permits for storm water discharges to apply for individual permits under the individual permit application requirements found at 122.26(c) 180 days before their current permit expires. Facilities not eligible for coverage under a general permit are required to file an individual or group permit application in accordance with today's rule. The general permits to be proposed and promulgated will indicate what facilities are eligible for coverage by the general permit.

b. Storm water discharges through municipal storm sewers. As discussed above, many operators of storm water discharges associated with industrial activity are not required to apply for an individual permit or participate in a group application under § 122.26(c) of today's rule if covered by a general permit. Under the December 7, 1988, proposal, dischargers through large and medium municipal separate storm sewer systems were not required, as a general rule, to apply for an individual permit or as a group applicant. Today's rule is a departure from that proposal. Today's rule requires all dischargers through municipal separate storm sewer systems to apply for an individual permit, apply as part of a group application, or seek coverage under a promulgated general permit for storm water discharges associated with industrial activity.

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 dischargers to these municipal separate storm sewer systems will require industries to comply with the terms of the permit issued to the municipality, as well other terms specific

to the permittee.

c. Storm water discharges through non-municipal storm sewers. Under today's rulemaking all operators of storm water discharges associated with industrial activity that discharge into a privately or Federally owned storm water conveyance (a storm water conveyance that is not a municipal separate storm sewer) will be required to be covered by an NPDES permit (e.g. an individual permit, general permit, or as a co-permittee to a permit issued to the operator of the portion of the system that directly discharges to waters of the United States). This is a departure from the "either/or" approach that EPA requested comments on in the December 7, 1988, notice. The "either/or" approach would have allowed either the system discharges to be covered by a permit issued to the owner/operator of the system segment that discharged to waters of the United States, or by an individual permit issued to each contributor to the non-municipal conveyance.

EPA requested comments on the advantages and disadvantages of retaining the "either/or" approach for non-municipal storm sewers. An abundance of comment was received by EPA on this particular part of the program. A number of industrial commenters and a smaller number of municipalities favored retaining the "either/or" approach as proposed, while most municipal entities, one industry, and one trade association favored requiring permits for each discharger.

Two commenters stated that private owners of conveyances may not have the legal authority to implement controls on discharges through their system and would not want to be held responsible for such controls. EPA agrees that this is a potential problem. Therefore, today's rule will require permit coverage for each storm water discharge associated with industrial activity.

One commenter supported the concept of requiring all the facilities that discharge to a non-municipal conveyance to be co-permittees. EPA agrees that this type of permitting scheme, along with other permit schemes such as area or general permits, is appropriate for discharges from non-municipal sewers, as long as each storm water discharge through the system is associated with industrial activity and thus currently subject to NPDES permit coverage.

One State agency commented that in the interest of uniformity, all industries that discharge to non-municipal conveyances should be required to conform to the application requirements. One industry stated that the rules must provide a way for the last discharger before the waters of the U.S. to require permits for facilities discharging into the upper portions of the system. EPA agrees with these comments. Today's rule provides that each discharger may be covered under individual permits, as co-permittees to a single permit, or by general permit rather than holding the last discharger to the waters of the United States solely responsible.

In response to one commenter, the term "non-municipal" has been clarified to explain that the term refers to non-publicly owned or Federally-owned storm sewer systems.

Some commenters supporting the approach as proposed, noted that industrial storm water dischargers into such systems can take advantage of the group application process. EPA agrees that in appropriate circumstances, such as when industrial facilities discharging storm water to the same system are sufficiently similar, group applications can be used for discharges to non-municipal conveyances. However, EPA believes that it would be inappropriate to approve group applications for those facilities whose only similarity is that they discharge storm water into the same private conveyance system. The efficacy of the group application procedures is predicated on the similarity of operations and other factors. The fact that several industries discharge storm water to the same non-municipal sewer system alone may not make these discharges sufficiently similar for group application approval.

One commenter suggested that EPA has not established any deadlines for submission of permit applications for storm water discharges associated with industrial activity through non-municipal separate storm sewer systems. EPA wants to

clarify that industrial storm water dischargers into privately owned or Federally owned storm water conveyances are required to apply for permits in the same time frame as individual or group applicants (or as otherwise provided for in a general permit).

*48007 One commenter stated that the operator of the conveyance that accepts discharges into its system has control and police power over those that discharge into the system by virtue of the ability to restrict discharges into the system. This commenter stated that these facilities should be the entity required to obtain the permit in all cases. Assuming that this statement is true in all respects, the larger problem is that one's theoretical ability to restrict discharges is not necessarily tied to the reality of enforcing those restrictions or even detecting problem discharges when they exist. In a similar vein one commenter urged that a private operator will not be in any worse a position than a municipal entity to determine who is the source of pollution up-stream. EPA agrees that from a hydrological standpoint this may be true. However, from the standpoint of detection resources, police powers, enforcement remedies, and other facets of municipal power that may be brought to bear upon problem dischargers, private systems are in a far more precarious position with respect to controlling discharges from other private sources.

In light of the comments received, EPA has decided that the either/or approach as proposed is inappropriate. Operators of non-municipal systems will generally be in a poorer position to gain knowledge of pollutants in storm water discharges and to impose controls on storm water discharges from other facilities than will municipal system operators. In addition, best management practices and other site-specific controls are often most appropriate for reducing pollutants in storm water discharges associated with industrial activity and can often only be effectively addressed in a regulatory scheme that holds each industrial facility operator directly responsible. The either/or approach as proposed is not conducive to establishing these types of practices unless each discharger is discharging under a permit. Also, some non-municipal operators of storm water conveyances, which receive storm water runoff from industrial facilities, may not be generating storm water discharges associated with industrial activity themselves and, therefore, they would otherwise not need to obtain a permit prior to October 1, 1992, unless specifically designated under section 402(p)(2)(E). Accordingly, EPA disagrees with comments that dischargers to non-municipal conveyances should have the flexibility to be covered by their permit or covered by the permit issued to the operator of the outfall to waters to the United States.

2. Scope of "Associated with Industrial Activity"

The September 26, 1984, final regulation divided those discharges that met the regulatory definition of storm water point source into two groups. The term Group I storm water discharges was defined in an attempt to identify those storm water discharges which had a higher potential to contribute significantly to environmental impacts. Group I included those discharges that contained storm water drained from an industrial plant or plant associated areas. Other storm water discharges (such as those from parking lots and administrative buildings) located on lands used for industrial activity were classified as Group II discharges. The regulations defined the term "plant associated areas" by listing several examples of areas that would be associated with industrial activities. However, the resulting definition led to confusion among the regulated community regarding the distinctions between the Group I and Group II classifications.

In amending the CWA in 1987, Congress did not explicitly adopt EPA's regulatory classification of Group I and Group II discharges. Rather, Congress required EPA to address "storm water discharges associated with industrial activity" in the first round of storm water permitting. In light of the adoption of the term "associated with industrial activity" in the CWA, and the ongoing confusion surrounding the previous regulatory definition, EPA has eliminated the regulatory terms "Group I storm water discharge" and "Group II storm water discharge" pursuant to the December 7, 1987, Court remand and has not revived it. In addition, today's notice promulgates a definition of the term "storm water discharge associated with industrial activity" at § 122.26(b)(14) and clarified the scope of the term.

In describing the scope of the term "associated with industrial activity", several members of Congress explained in the legislative history that the term applied if a discharge was "directly related to manufacturing, processing or raw materials storage areas at an industrial plant." (Vol. 132 Cong. Rec. H10932, H10936 (daily ed. October 15, 1986); Vol. 133 Cong. Rec. H176 (daily ed. January 8, 1987)). Several commenters cited this language in arguing for a more expansive or less expansive definition of "associated with industrial activity." EPA believes that the legislative history supports the decision to exclude from the definition of industrial activity, at § 122.26(b)(14) of today's rule, those facilities that are generally classified under the Office of Management and Budget Standard Industrial Classifications (SIC) as wholesale, retail, service, or commercial activities.

Two commenters recommended that all commercial enterprises should be required to obtain a permit under this regulation. Another commenter recommended that all the facilities listed in the December 7, 1988, proposal, including those listed in paragraphs (xi) through (xvi) on page 49432 of the December 7, 1988, proposal, should be included. EPA disagrees since the intent of Congress was to establish a phased and tiered approach to storm water permits, and that only those facilities having discharges associated with industrial activity should be included initially. The studies to be conducted pursuant to section 402(p)(5) will examine sources of pollutants associated with commercial, retail, and other light business activity. If appropriate, additional regulations addressing these sources can be developed under section 402(p)(6) of the CWA. As further discussed below, EPA believes that the facilities identified in paragraphs (xi) through (xvi) are more properly characterized as commercial or retail facilities, rather than industrial facilities.

Today's rule clarifies the regulatory definition of "associated with industrial activity" by adopting the language used in the legislative history and supplementing it with a description of various types of areas that are directly related to an industrial process (e.g., industrial plant yards, immediate access roads and rail lines, drainage ponds, material handling sites, sites used for the application or disposal of process waters, sites used for the storage and maintenance of material handling equipment, and known sites that are presently or have been used in the past for residual treatment, storage or disposal). The agency has also incorporated some of the suggestions offered by the public in comments.

Three commenters suggested that the permit application should focus only on storm water with the potential to come into contact with industrial-related pollutant sources, rather than focusing on how plant areas are utilized. These commenters suggested that facilities that are wholly enclosed or have their operations entirely protected from the elements should not be subject to permit requirements under today's rule. EPA agrees that these comments have merit with regard to certain types of facilities. Today's rule defines the term "storm water discharge associated with *48008 industrial activity" to include storm water discharges from facilities identified in today's rule at 40 CFR 122.21(b)(14)(xi) (facilities classified as Standard Industrial Classifications 20, 21, 22, 23, 2434, 25, 265, 267, 27, 283, 285, 30, 31 (except 311), 323, 34 (except 3441), 35, 36, 37 (except 373), 38, 39, 4221-25) only if:

areas where material handling equipment or activities, raw materials, intermediate products, final products, waste materials, by-products, or industrial machinery at these facilities are exposed to storm water. Such areas include: material handling sites; refuse sites; sites used for the application or disposal of process waste waters (as defined at 40 CFR 401); sites used for the storage and maintenance of material handling equipment; sites used for residual treatment; storage or disposal; shipping and receiving areas; manufacturing buildings; material storage areas for raw materials, and intermediate and finished products; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to storm water.

The critical distinction between the facilities identified at 40 CFR 122.26(b)(14)(xi) and the facilities identified at 40 CFR 122.26(b)(14)(i)-(x) is that the former are not classified as having "storm water discharges associated with industrial activity" unless certain materials or activities are exposed to storm water. Storm water discharges from the latter set of

facilities are considered to be "associated with industrial activity" regardless of the actual exposure of these same materials or activities to storm water.

EPA believes this distinction is appropriate because, when considered as a class, most of the activity at the facilities in § 122.26(b)(14)(xi) is undertaken in buildings; emissions from stacks will be minimal or non-existent; the use of unboxed manufacturing and heavy industrial equipment will be minimal; outside material storage, disposal or handling generally will not be a part of the manufacturing process; and generating significant dust or particulates would be atypical. As such, these industries are more akin or comparable to businesses, such as retail, commercial, or service industries, which Congress did not contemplate regulating before October 1, 1992, and storm water discharges from these facilities are not "associated with industrial activity." Thus, these industries will be required to obtain a permit under today's rule only when the manufacturing processes undertaken at such facilities would result in storm water contact with industrial materials associated with the facility.

Industrial categories in § 122.26(b)(14)(xi) all tend to engage in production activities in the manner described in the paragraph above. Facilities under SIC 20 process foods including meats, dairy food, fruit, and flour. Facilities classified under SIC 21 make cigarettes, cigars, chewing tobacco and related products. Under SIC 22, facilities produce yarn, etc., and/or dye and finish fabrics. Facilities under SIC 23 are in the business of producing clothing by cutting and sewing purchased woven or knitted textile products. Facilities under SIC 2434 and 25 are establishments engaged in furniture making. SIC 265 and 267 address facilities that manufacture paper board products. Facilities under SIC 27 perform services such as bookbinding, plate making, and printing. Facilities under SIC 283 manufacture pharmaceuticals and facilities under 285 manufacture paints, varnishes, lacquers, enamels, and allied products. Under SIC 30 establishments manufacture products from plastics and rubber. Those facilities under SIC 31 (except 311); 323, 34 (except 3441), 35, 36, and 37 (except 373) manufacture industrial and commercial metal products, machinery, equipment, computers, electrical equipment, and transportation equipment, and glass products made of purchased glass. Facilities under SIC 38 manufacture scientific and electrical instruments and optical equipment. Those under SIC 39 manufacture a variety of items such as jewelry, silverware, musical instruments, dolls, toys, and athletic goods. SIC 4221-25 are warehousing and storage activities.

In contrast, the facilities identified by SIC 24 (except and 2434), 26 (except 265 and 267), 28 (except 283 and 285), 29, 311, 32 (except 323), 33, 3441, 373 when taken as a group, are expected to have one or many of the following activities, processes occurring on-site: storing raw materials, intermediate products, final products, by-products, waste products, or chemicals outside; smelting; refining; producing significant emissions from stacks or air exhaust systems; loading or unloading chemical or hazardous substances; the use of unboxed manufacturing and heavy industrial equipment; and generating significant dust or particulates. Accordingly, these are classes of facilities which can be viewed as generating storm water discharges associated with industrial activity requiring a permit. Establishments identified under SIC 24 (except 2434) are engaged in operating sawmills, planing mills and other mills engaged in producing lumber and wood basic materials. SIC 26 facilities are paper mills. Under SIC 28, facilities produce basic chemical products by predominantly chemical processes. SIC 29 describes facilities that are engaged in the petroleum industry. Under SIC 311, facilities are engaged in tanning, currying, and finishing hides and skins. Such processes use chemicals such as sulfuric acid and sodium dichromate, and detergents, and a variety of raw and intermediate materials. SIC 32 manufacture glass, clay, stone and concrete products from raw materials in the form quarried and mined stone, clay, and sand. SIC 33 identifies facilities that smelt, refine ferrous and nonferrous metals from ore, pig or scrap, and manufacturing related products. SIC 3441 identifies facilities manufacturing fabricated structural metal. Facilities under SIC 373 engage in ship building and repairing. The permit application requirements for storm water discharges from facilities in these categories are unchanged from the proposal.

Today's rule clarifies that the requirement to apply for a permit applies to storm water discharges from plant areas that are no longer used for industrial activities (if significant materials remain and are exposed to storm water) as well as areas that are currently being used for industrial activities. EPA would also clarify that all discharges from these areas including those that discharge through municipal separate storm sewers are addressed by this rulemaking.

One commenter questioned the use of the word "or" instead of the word "and" to describe storm water "which is located at an industrial plant 'or' directly related to manufacturing, processing, or raw material storage areas at an industrial plant." The comment expressed the concern that discharges from areas not located at an industrial plant would be subject to permitting by this language and questioned whether this was EPA's intent. EPA agrees that this is a potential source of confusion and has modified this language to reflect the conjunctive instead of the alternative. This change has been made to provide consistency in the rule whereby some areas at industrial plants, such as administrative parking lots which do not have storm water discharges commingled with discharges from manufacturing areas, are not included under this rulemaking.

Two commenters wanted clarification of the term "or process water," in the definition of discharge associated with industrial activity at § 122.26(b)(14). This rulemaking replaces this term with the term "process waste water" which is defined at 40 CFR part 401.

***48009** One commenter took issue with the decision to include drainage ponds, refuse sites, sites for residual treatment, storage, or disposal, as areas associated with industrial activity, because it was the commenter's view that such areas are unconnected with industrial activity. EPA disagrees with this comment. If refuse and other sites are used in conjunction with manufacturing or the by-products of manufacturing they are clearly associated with industrial activity. As noted above, Congress intended to include discharges directly related to manufacturing and processing at industrial plants. EPA is convinced that wastes, refuse, and residuals are the direct result or consequence of manufacturing and processing and, when located or stored at the plant that produces them, are directly related to manufacturing and processing at that plant. Storm water drainage from such areas, especially those areas exposed to the elements (e.g. rainfall) has a high potential for containing pollutants from materials that were used in the manufacturing process at that facility. One commenter supported the inclusion of these areas since many toxins degrade very slowly and the mere passage of time will not eliminate their effects. EPA agrees and finalizes this part of the definition as proposed. One commenter requested clarification of the term "residual" as used in this context. Residual can generally be defined to include material that is remaining subsequent to completion of an industrial process. One commenter noted that the current owner of a facility may not know what areas or sites at a facility were used in this manner in the past. EPA has clarified the definition of discharge associated with industrial activity to include areas where industrial activity has taken place in the past and significant materials remain and are exposed to storm water. The Agency believes that the current owner will be in a position to establish these facts.

One commenter suggested including material shipping and receiving areas, waste storage and processing areas, manufacturing buildings, storage areas for raw materials, supplies, intermediates, and finished products, and material handling facilities as additional areas "associated with industrial activity." EPA agrees that this would add clarification to the definition, and has incorporated these areas into the definition at § 122.26(b)(14).

One commenter stated that the language "point source located at an industrial plant" would include outfalls located at the facility that are not owned or operated by the facility, but which are municipal storm sewers on easements granted to a municipality for the conveyance of storm water. EPA agrees that if the industry does not operate the point source then that facility is not required to obtain a permit for that discharge. A point source is a conveyance that discharges pollutants into the waters of the United States. If a facility does not operate that point source, then it would be the responsibility of

55 FR 47990-01, 1990 WL 348331 (F.R.)

the municipality to cover it under a permit issued to them. However, if contaminated storm water associated with industrial activity were introduced into that conveyance by that facility, the facility would be subject to permit application requirements as is all industrial storm water discharged through municipal sewers.

EPA disagrees with several comments that road drainage or railroad drainage within a facility should not be covered by the definition. Access roads and rail lines (even those not used for loading and unloading) are areas that are likely to accumulate extraneous material from raw materials, intermediate products and finished products that are used or transported within, or to and from, the facility. These areas will also be repositories for pollutants such as oil and grease from machinery or vehicles using these areas. As such they are related to the industrial activity at facilities. However, the language describing these areas of industrial activity has been clarified to include those access roads and rail lines that are "used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility." For the same reasons haul roads (roads dedicated to transportation of industrial products at facilities) and similar extensions are required to be addressed in permit applications. Two industries stated that haul roads and similar extensions should be covered by permits by rule. EPA is not considering the use of a permit by rule mechanism under this regulation, however this issue will be addressed in the section 402(p)(5) reports to Congress and in general permits to be proposed and promulgated in the near future. EPA would note however that facilities with similar operations and storm water concerns that desire to limit administrative burdens associated with permit applications and obtaining permits may want to avail themselves of the group application and/or general permits.

In response to comments, EPA would also like to clarify that it intends the language "immediate access roads" (including haul roads) to refer to roads which are exclusively or primarily dedicated for use by the industrial facility. EPA does not expect facilities to submit permit applications for discharges from public access roads such as state, county, or federal roads such as highways or BLM roads which happen to be used by the facility. Also, some access roads are used to transport bulk samples of raw materials or products (such as prospecting samples from potential mines) in small-scale prior to industrial production. EPA does not intend to require permit applications for access roads to operations which are not yet industrial activities.

EPA does agree with comments made by several industries that undeveloped areas, or areas that do not encompass those described above, should generally not be addressed in the permit application, or a storm water permit, as long as the storm water discharge from these areas is segregated from the storm water discharge associated with the industrial activity at the facility.

Numerous commenters stated that maintenance facilities, if covered, should not be included in the definition. EPA disagrees with this comment. Maintenance facilities will invariably have points of access and egress, and frequently will have outside areas where parts are stored or disposed of. Such areas are locations where oil, grease, solvents and other materials associated with maintenance activities will accumulate. In response to one commenter, such areas are only regulated in the context of those facilities enumerated in the definition at § 122.26(b)(14), and not similar areas of retail or commercial facilities.

Another commenter requested that "storage areas" be more clearly defined. EPA disagrees that this term needs further clarification in the context of this section of the rule. However, in response to one comment, tank farms at industrial facilities are included. Tank farms are in existence to store products and materials created or used by the facility. Accordingly they are directly related to manufacturing processes.

Regarding storage areas, one commenter stated that the regulations should emphasize that only facilities that are not totally enclosed are required to submit permit applications. EPA does not agree with this interpretation since use of the

generic term storage area indicates no exceptions for certain physical characteristics. Thus discharges from enclosed storage areas are also covered by today's rule (except as discussed above). EPA also disagrees with one *48010 comment asserting that small outside storage areas of finished products at industrial facilities should be excluded under the definition of associated with industrial activity. EPA believes that such areas are areas associated with industrial activity which Congress intended to be regulated under the CWA. As noted above, the legislative history refers to storage areas, without reference to whether they are covered or uncovered, or of a certain size.

The same language, in the legislative history cited above, was careful to state that the term "associated with industrial activity" does not include storm water "discharges associated with parking lots and administrative and employee buildings." To accommodate legislative intent, segregated storm water discharges from these areas will not be required to obtain a permit prior to October 1, 1992. Many commenters stated that this was an appropriate method in which to limit the scope of "associated with industrial activity." However, if a storm water discharge from a parking lot at an industrial facility is mixed with a storm water discharge "associated with industrial activity," the combined discharge is subject to permit application requirements for storm water discharges associated with industrial activity. EPA disagrees with some commenters who urged that office buildings and administrative parking lots should be covered if they are located at the plant site. EPA agrees with one commenter that inclusion of storm water discharge from these areas would be overstepping Congressional intent unless such are commingled with storm water discharges from the plant site. Several commenters requested that language be incorporated into the rule which establishes that storm water discharges from parking lots and administrative areas not be included in the definition of associated with industrial activity. EPA agrees and has retained language used in the proposal which addresses this distinction.

Storm water discharges from parking lots and administrative buildings along with other discharges from industrial lands that do not meet the regulatory definition of "associated with industrial activity" and that are segregated from such discharges may be required to obtain an NPDES permit prior to October 1, 1992, under certain conditions. For example, large parking facilities, due to their impervious nature may generate large amounts of runoff which may contain significant amounts of oil and grease and heavy metals which may have adverse impacts on receiving waters. The Administrator or NPDES State has the authority under section 402(p)(2)(E) of the amended CWA to require a permit prior to October 1, 1992, by designating storm water discharges such as those from parking lots that are significant contributors of pollutants or contribute to a water quality standard violation. EPA will address storm water discharges from lands used for industrial activity which do not meet the regulatory definition of "associated with industrial activity" in the section 402(p)(5) study to determine the appropriate manner to regulate such discharges.

Several commenters requested clarification that the definition does not include sheet flow or discharged storm water from upstream adjacent facilities that enters the land or comingles with discharge from a facility submitting a permit application. EPA wishes to clarify that operators of facilities are generally responsible for its discharge in its entirety regardless of the initial source of discharge. However, where an upstream source can be identified and permitted, the liability of a downstream facility for other storm water entering that facility may be minimized. Facilities in such circumstances may be required to develop management practices or other run-on/run-off controls, which segregates or otherwise prevents outside runoff from comingling with its storm water discharge. Some commenters expressed concern about other pollutants which may arrive on a facility's premises from rainfall. This comment was made in reference to runoff with a high or low pH. If an applicant has reason to believe that pollutants in its storm water discharge are from such sources, then that needs to be addressed in the permit application and brought to the attention of the permitting authority, which can draft appropriate permit conditions to reflect these circumstances.

EPA requested comments on clarifying the types of facilities that involve industrial activities and generate storm water. EPA preferred basing the clarification, in part, on the use of Standard Industrial Classification (SIC) codes, which have

been suggested in comments to prior storm water rulemakings because they are commonly used and accepted and would provide definitions of facilities involved in industrial activity. Several commenters supported the use by EPA of Standard Industrial Classifications for the same reasons identified by EPA as a generally used and understood form of classification. It was also noted that using such a classification would allow targeting for special notification and educational mailings. Three municipalities and three State authorities commented that SICs were appropriate and endorsed their use as a sound basis for determining which industries are covered.

One municipality questioned how SIC classifications will be assigned to particular industries. SICs have descriptions of the type of industrial activity that is engaged in by facilities. Industries will need to assess for themselves whether they are covered by a listed SIC and submit an application accordingly. Another commenter questioned if Federal facilities that do not have an SIC code identification are required to file a permit application. Federal facilities will be required to submit a permit application if they are engaged in an industrial activity that is described under § 122.26(b)(14). The definition of industrial activity incorporates language that requires Federal facilities to submit permit applications in such circumstances. The language has been further clarified to include State and municipal facilities.

EPA requested comments on the scope of the definition (types of facilities addressed) as well as the clarity of regulation. EPA identified the following types of facilities in the proposed regulation as those facilities that would be required to obtain permits for storm water discharges associated with industrial activity:

(i) Facilities subject to storm water effluent limitations guidelines, new source performance standards, or toxic pollutant effluent standards under 40 CFR subchapter N (except facilities with toxic pollutant effluent standards which are also identified under category (xi) of this paragraph). One commenter (a municipality) agreed with EPA that these industries should be addressed in this rulemaking. No other comments were received on this category. EPA agrees with this comment since these facilities are those that Congress has required EPA to examine and regulate under the CWA with respect to process water discharges. The industries in these categories have generally been identified by EPA as the most significant dischargers of process wastewaters in the country. As such, these facilities are likely to have storm water discharges associated with industrial activity for which permit applications should be required.

One commenter stated that because oil and gas producers are subject to effluent guidelines, EPA is disregarding the intent of Congress to exclude *48011 facilities pursuant to section 402(1). EPA disagrees with this comment. EPA is not prohibited from requiring permit applications from industries with storm water discharge associated with industrial activity. EPA is prohibited only from requiring a permit for oil and gas exploration, production, processing, or treatment operations, or transmission facilities that discharge storm water that is not contaminated by contact with or has not come into contact with, any overburden, raw material, intermediate products, finished products, byproducts or waste products located on the site of such operations such discharges. In keeping with this requirement, EPA is requiring permit applications from oil and gas exploration, production, processing, or treatment operations, or transmission facilities that fall into a class of dischargers as described in § 122.26(c)(iii).

(ii) Facilities classified as Standard Industrial Classifications 24 (except 2434), 26 (except 265 and 267), 28 (except 283 and 285), 29, 311, 32 (except 323), 33, 3411, 373 and (xi). Facilities classified as Standard Industrial Classifications 20, 21, 22, 23, 2434, 25, 265, 267, 27, 283, 285, 30, 31 (except 311), 323, 34 (except 3441), 35, 36, 37 (except 373), 38, 39, 4221-25. One large municipality and one industry agreed with EPA that facilities covered by these SICs should be covered by this rulemaking. Many commenters, however, took exception to including all or some of these industries. However as noted elsewhere these facilities are appropriate for permit applications.

One commenter stated that within certain SICs industries, such as textile manufacturers use few chemicals and that there

is little chance of pollutants in their storm water discharge. EPA agrees that some industries in this category are less likely than others to have storm water discharges that pose significant risks to receiving water quality. However, there are many other activities that are undertaken at these facilities that may result in polluted storm water. Further, the CWA is clear in its mandate to require permit applications for discharges associated with industrial activity. Excluding any of the facilities under these categories, except where the facility manufacturing plant more closely resembles a commercial or retail outlet would be contrary to Congressional intent.

One State questioned the inclusion of facilities identified in SIC codes 20-39 because of their temporary and transient nature or ownership. Agency disagrees that simply because a facility may transfer ownership that storm water quality concerns should be ignored. If constant ownership was a condition precedent to applying for and obtaining a permit, few if any facilities would be subject to this rulemaking.

One State estimated that the proposed definition would lead to permits for 18,000 facilities in its State. Consequently this commenter recommended that the facilities under SIC 20-39 should be limited to those facilities that have to report under section 313 of title III, Superfund Amendments and Reauthorization Act. However, as noted by another commenter, limiting permit requirements to these facilities would be contrary to Congressional intent. While use of chemicals at a facility may be a source of pollution in storm water discharges, other every day activities at an industrial site and associated pollutants such as oil and grease, also contribute to the discharge of pollutants that are to be addressed by the CWA and these regulations. While the number of permit applications may number in the thousands, EPA intends for group applications and general permits to be employed to reduce the administrative burdens as greatly as possible.

Two commenters felt the permit applications should be limited to all entities under SIC 20-39. EPA disagrees that all the industrial activities that need to be addressed fall within these SICs. Discharges from facilities under paragraphs (i) through (xi) such as POTWs, transportation facilities, and hazardous waste facilities, are of an industrial nature and clearly were intended to be addressed before October 1, 1992.

Two commenters stated that SIC 241 should be excluded in that logging is a transitory operation which may occur on a site for only 2-3 weeks once in a 20-30 year period. It was perceived that delays in obtaining permits for such operations could create problems in harvest schedule and mill demand. This commenter stated that runoff from such operations should be controlled by BMPs in effect for such industries and that such a permit would not be practical and would be cost prohibitive.

EPA agrees with the commenter that this provision needs clarification. The existing regulations at 40 CFR 122.27 currently define the scope of the NPDES program with regard to silvicultural activities. 40 CFR 122.27(b)(1) defines the term "silvicultural point source" to mean any discrete conveyance related to rock crushing, gravel washing, log sorting, or log storage facilities which are operated in connection with silvicultural activities and from which pollutants are discharged into waters of the United States. Section 122.27(b)(1) also excludes certain sources. The definition of discharge associated with industrial activity does not include activities or facilities that are currently exempt from permitting under NPDES. EPA does not intend to change the scope of 40 CFR 122.27 in this rulemaking. Accordingly, the definition of "storm water discharge associated with industrial activity" does not include sources that may be included under SIC 24, but which are excluded under 40 CFR 122.27. Further, EPA intends to examine the scope of the NPDES silvicultural regulations at 40 CFR 122.27 as it relates to storm water discharges in the course of two studies of storm water discharges required under section 402(p)(5) of the CWA.

In response to one comment, EPA intends that the list of applicable SICs will define and identify what industrial facilities are required to apply. Facilities that warehouse finished products under the same code at a different facility from the

site of manufacturing are not required to file a permit application, unless otherwise covered by this rulemaking.

(iii) Facilities classified as Standard Industrial Classifications 10 through 14 (mineral industry) including active or inactive mining operations (except for areas of coal mining operations no longer meeting the definition of a reclamation area under 40 CFR 434.11(l) because the performance bond issued to the facility by the appropriate SMCRA authority has been released, or except for areas of non-coal mining operations which have been released from applicable State or Federal reclamation requirements after December 17, 1990 and oil and gas exploration, production, processing, or treatment operations, or transmission facilities that discharge storm water contaminated by contact with or that has come into contact with, any overburden, raw material, intermediate products, finished products, byproducts or waste products located on the site of such operations. Several commenters urged that Congress intended to require permits or permit applications only for the manufacturing sector of the oil and gas industry (or those activities that designated in SIC 20 through 39). EPA disagrees with this argument. The fact that Congress used the language cited above and not the appropriate the SIC definition explicitly does not indicate that a broader definition or less exclusive definition was contemplated. According to these comments, all storm water discharges from oil and gas *48012 exploration and production facilities would be exempt from regulation. However, EPA is convinced that a facility that is engaged in finding and extracting crude oil and natural gas from subsurface formations, separating the oil and gas from formation water, and preparing that crude oil for transportation to a refinery for manufacturing and processing into refined products, will have discharges directly relating to the processing or raw material storage at an industrial plant and are therefore discharges associated with industrial activity.

For further clarification EPA is intending to focus only on those facilities that are in SIC 10-14. Furthermore, in response to several comments, this rulemaking will require permit applications for storm water discharges from currently inactive petroleum related facilities within SIC codes 10-14, if discharges from such facilities meet the requirements as described in section VI.F.7.a. and § 122.26(c)(1)(iii). Inactive facilities will have storm water associated with industrial activity irrespective of whether the activity is ongoing. Congress drew no distinction between active and inactive facilities in the statute or in the legislative history.

(iv) Hazardous waste treatment, storage, or disposal facilities that are operating under interim status or a permit under Subtitle C of the Resource, Conservation and Recovery Act. One commenter believed that all RCRA and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) facilities should be specifically identified using SIC codes for further clarification. EPA considers this to be unnecessarily redundant, since the RCRA/CERCLA identification is sufficient.

Several industries asserted that storm water discharge from landfills, dumps, and land application sites, properly closed or otherwise subject to corrective or remedial actions under RCRA, should not be included in the definition. One commenter noted that the runoff from these areas is like runoff from undeveloped areas. One commenter also concluded that landfills, dumps, and land application sites should also be excluded if they are properly maintained under RCRA.

One commenter also rejected the idea of requiring permits from all active and inactive landfills and open dumps that have received any industrial wastes, and subtitle C facilities. This commenter felt that these facilities were already adequately covered under RCRA.

Two industry commenters felt that it would be redundant to have hazardous waste facilities regulated by RCRA and the NPDES storm water program. One felt this was especially so if there are current pretreatment standards.

The Agency disagrees that all activities that may contribute to storm water discharges at RCRA subtitle C facilities are being fully controlled and that requiring NPDES permits for storm water discharges at RCRA subtitle C facilities is re-

dundant. First, the vast majority of permitted hazardous waste management facilities are industrial facilities involved in the manufacture or processing of products for distribution in commerce. Their hazardous waste management activities are incidental to the production-related activities. While RCRA subtitle C regulations impose controls in storm water runoff from hazardous waste management units and require cleanup of releases of hazardous wastes, they generally do not control non-systematic spills or process. These releases, from the process itself or the storage of raw materials or finished products are a potential source of storm water contamination. In addition, RCRA subtitle C (except via corrective action authority) does not address management of "non hazardous" industrial wastes, which nevertheless could also potentially contaminate storm water runoff.

Second, at commercial hazardous waste management facilities, the RCRA subtitle C permitting requirements and management standards do not control all releases of potentially toxic materials. For example, some permitted commercial treatment facilities may store and use chemicals in the treatment of RCRA hazardous wastes. Releases of these treatment chemicals from storage areas are a potential source of storm water contamination.

Finally, many RCRA subtitle C facilities have inactive Solid Waste Management Units (SWMU's) on the facility property. These SWMU's may contain areas on the land surface that are contaminated with hazardous constituents. RCRA requires that hazardous waste management facilities must investigate these areas of potential contamination, and then perform corrective action to remediate any SWMU's that are of concern. However, the corrective action process at these facilities will not be completed for a number of years due to the complexity of the cleanup decisions, and due to the fact that many hazardous waste management facilities do not yet have RCRA permits. Until corrective action has been completed at all such subtitle C facilities, SWMU's are a potential source of storm water contamination that should be addressed under the NPDES program. Finally, under section 1004(27) of RCRA, all point source discharges, including those at RCRA regulated facilities, are to be regulated by the NPDES program. Thus, there is no concern of regulatory overlap, and to the extent that the storm water regulations are effectively implemented, it will help address these units in a way that alleviates the need for expensive corrective action in the future.

(v) Landfills, land application sites, and open dumps that receive or have received industrial wastes and that are subject to regulation under subtitle D of RCRA. EPA received numerous comments supporting the regulation of municipal landfills which receive industrial waste and are subject to regulation under subtitle D of RCRA. EPA agrees with these comments. These industries have significant potential for storm water discharges that can adversely affect receiving water.

Two States argued that landfills should be addressed under the non-point source program. EPA disagrees that the non-point source program is sufficient for addressing these facilities. Further, addressing a class of facilities under the non-point source program does not exempt storm water discharges from these facilities from regulation under NPDES. The CWA requires EPA to promulgate regulations for controlling point source discharges of storm water from industrial facilities. Point sources from landfills consisting of storm water are such discharges requiring an NPDES permit. Several commenters argued that these discharges are adequately addressed by RCRA and that regulating them under this storm water rule would be redundant. However, as discussed above, RCRA expressly does not regulate point source discharges subject to NPDES permits. Given the nature of these facilities and of the material stored or disposed, EPA believes storm water permits are necessary. Similarly EPA rejects the comment that storm water discharges from these facilities are already adequately regulated by State authority. Congress has mandated that storm water discharges associated with industrial activity have an NPDES permit.

One commenter wanted EPA to define by size what landfills are covered. In response, it is the intent of these regulations to require permit applications from all landfills that receive industrial waste. Storm water discharges from such facilities are addressed because of the nature of the material with which the storm water comes in contact. The size of facility

*48013 will not dictate what type of waste is exposed to the elements.

One commenter requested that the definition of industrial wastes be clarified. For the purpose of this rule, industrial waste consists of materials delivered to the landfill for disposal and whose origin is any of the facilities described under § 122.26(b)(14) of this regulation.

(vi) Facilities involved in the recycling of materials, including metal scrapyards, battery reclaimers, salvage yards, and automobile junkyards, including but limited to those classified as Standard Industrial Classification 5015 and 5093. One commenter suggested that the recycling of materials such as paper, glass, plastics, etc., should not be classified as an industrial activity. EPA disagrees that such facilities should be excluded on that basis. These facilities may be considered industrial, as are facilities that manufacture such products absent recycling.

Other facilities exhibit traits that indicate industrial activity. In junkyards, the condition of materials and junked vehicles and the activities occurring on the yard frequently result in significant losses of fluids, which are sources of toxic metals, oil and grease and polychlorinated aromatic hydrocarbons. Weathering of plated and non-plated metal surfaces may result in contributions of toxic metals to storm water. Clearly such facilities cannot be classified as commercial or retail.

One municipality felt that "significant recycling" should be defined or clarified. EPA agrees that the proposed language is ambiguous. It has been clarified to require permit applications from facilities involved in the recycling of materials, including metal scrapyards, battery reclaimers, salvage yards, and automobile junkyards, including but limited to those classified as Standard Industrial Classification 5015 and 5093. These SIC codes describe facilities engaged in dismantling, breaking up, sorting, and wholesale distribution of motor vehicles and parts and a variety of other materials. The Agency believes these SIC codes clarify the term significant recycling.

One municipality stated that regulation of these facilities under NPDES would be duplicative if they are publicly owned facilities. One State expressed the view that automobile junkyards, salvage yards could not legitimately be considered industrial activity. As noted above, EPA disagrees with these comments. Facilities that are actively engaged in the storage and recycling of products including metals, oil, rubber, and synthetics are in the business of storing and recycling materials associated with or once used in industrial activity. These activities are not commercial or retail because they are engaged in the dismantling of motors for distribution in wholesale or retail, and the assembling, breaking up, sorting, and wholesale distribution of scrap and waste materials, which EPA views as industrial activity. Further, being a publicly owned facility does not confer non-industrial status.

(vii) Steam electric power generating facilities, including coal handling sites, and onsite and offsite ancillary transformer storage areas. Most of the comments were against requiring permit applications for onsite and offsite ancillary transformer facilities. One commenter stated that these transformers did not leak in storage and if there were leakage problems in handling transformers, such leaks were subject to Federal and State spill clean-up procedures. The same commenter suggested that if EPA required applications from such facilities that it exclude those that have regular inspections, management practices in place, or those that store 50 transformers at any one time.

EPA agrees that such facilities should not be covered by today's rule. As one commenter noted, the Toxic Substances Control Act (TSCA) addresses pollutants associated with transformers that may enter receiving water through storm water discharges. EPA has examined regulations under TSCA and agrees that regulation of storm water discharges from these facilities should be the subject of the studies being performed under section 402(p)(5), rather than regulations established by today's rule. Under TSCA, transformers are required to be stored in a manner that prevents rain water from reaching the stored PCBs or PCB items. 40 CFR 761.65(b)(1)(i). EPA considers transformer storage to be more akin to retail or other light commercial activities, where items are inventoried in buildings for prolonged periods for use or sale

at some point in the future, and where there is no ongoing manufacturing or other industrial activity within the structure.

One commenter stated that this category of industries should be loosened so that all steam electric facilities are addressed—oil fired and nuclear. EPA believes that the language as proposed broadly defines the type of industrial activity addressed without specifying each mode of steam electric production. One commenter noted that the EPA has no authority under the CWA (*Train v. CIPR, Inc.*, 426 U.S. 1 (1976)) to regulate the discharge of source, special nuclear and by-product materials which are regulated under the Atomic Energy Act. EPA agrees permit applications may not address those aspects of such facilities, however the facility in its entirety may not necessarily be exempt. A permit application will be appropriate for discharges from non-exempt categories.

(viii) Transportation facilities classified as Standard Industrial Classifications 40, 41, 42 (except 4221-25), 43, 44, 45, and 5171 which have vehicle maintenance shops, material handling facilities, equipment cleaning operations or airport deicing operations. Only those portions of the facility that are either involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication), equipment cleaning operations, or which are identified in another subcategory of facilities under EPA's definition of storm water discharges associated with industrial activity. One commenter requested clarification of the terms "vehicle maintenance." Vehicle maintenance refers to the rehabilitation, mechanical repairing, painting, fueling, and lubricating of instrumentalities of transportation located at the described facilities. EPA is declining to write this definition into the regulation however since "vehicle maintenance" should not cause confusion as a descriptive term. One commenter wanted railroad tracks where rail cars are set aside for minor repairs excluded from regulation. In response, if the activity involves any of the above activities then a permit application is required. Train yards where repairs are undertaken are associated with industrial activity. Train yards generally have trains which, in and of themselves, can be classified as heavy industrial equipment. Trains, concentrated in train yards, are diesel fueled, lubricated, and repaired in volumes that connote industrial activity, rather than retail or commercial activity.

One commenter argued that if gasoline stations are not considered for permitting, then all transportation facilities should be exempt. EPA disagrees with the thrust of this comment. Transportation facilities such as bus depots, train yards, taxi stations, and airports are generally larger than individual repair shops, and generally engage in heavier more expansive forms of industrial activity. In keeping with Congressional intent to cover all industrial facilities, permit applications from such facilities are appropriate. In contrast, EPA views gas stations as retail commercial facilities not covered *48014 by this regulation. It should be noted that SIC classifies gas stations as retail.

(ix) POTW lands used for land application treatment technology/sludge disposal, handling or processing areas, and chemical handling and storage areas. One commenter wanted more clarification of the term POTW lands. Another commenter requested clarification of the terms sludge disposal, sludge handling areas, and sludge processing areas. One State recommended that a broader term than POTW should be used. EPA notes that on May 2, 1989, it promulgated NPDES Sewage Sludge Permit Regulations; State Sludge Management Program Requirements at 40 CFR part 501. This regulation identified those facilities that are subject to section 405(f) of the CWA as "treatment works treating domestic sewage."

In response to the above comments, EPA has decided to use this language to define what facilities are required to apply for a storm water permit. Under this rulemaking "treatment works treating domestic sewage," or any other sewage sludge or wastewater treatment device or system used in the storage treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge, with a design flow of 1.0 mgd or more, or facilities required to have an approved pretreatment program under 40 CFR part 403, will be required to apply for a storm water permit. However, permit applications will not be required to address land where sludge is beneficially reused such

as farm lands and home gardens or lands used for sludge management that are not physically located within the confines (offsite facility) of the facility or where sludge is beneficially reused in compliance with section 405 of the Clean Water Act (proposed rules were published on February 6, 1989, at 54 FR 5746). EPA believes that such activity is not "industrial" since it is agricultural or domestic application (non-industrial) unconnected to the facility generating the material.

EPA received many comments on the necessity and appropriateness of requiring permit applications for storm water discharges from POTW lands. It was anticipated by numerous commenters that the above cited sludge regulations would adequately address storm water discharges from lands where sludge is applied. However, the sewage sludge regulations do not directly address NPDES permit requirements for storm water discharges from POTW lands and related areas to the extent required by today's rulemaking; the regulations cover only permits for use or disposal of sludge. Also, the regulations proposed on February 4, 1989, cover primarily the technical standards for the composition of sewage sludge which is to be used or disposed. They do not include detailed permitting requirements for discharges of storm water from lands where sludge has been applied to the land. To that extent, EPA is not persuaded by these commenters that POTWs and POTW lands should be excluded from these storm water permit application requirements.

Two commenters noted that some States already regulate sludge use or disposal activities substantially and that EPA should refrain from further regulation. EPA disagrees that this is a basis for excluding facilities from Federal requirements. Notwithstanding regulations in existence under State law, EPA is required by the CWA to promulgate regulations for permit application for storm water associated with industrial activity. Under the NPDES program, States are able to promulgate more rigorous requirements. However a minimum level of control is required under Federal law. One commenter also indicated that a State's sludge land application sites must follow a well defined plan to ensure there is no sludge related runoff. Notwithstanding that a State may require storm water controls for sludge land applications, as noted above, EPA is required to promulgate regulations requiring permit applications from appropriate facilities. EPA views facilities such as waste treatment plants that engage in on-site sludge composting, storage of chemicals such as ferric chloride, alum, polymers, and chlorine, and which may experience spills and bubbleovers are suitable candidates for storm water permits. Facilities using such materials are not characteristic of commercial or retail activities. Use and storage of chemicals and the production of material such as sludge, with attendant heavy metals and organics, is activity that is industrial in nature. The size and scope of activities at the facility will determine the extent to which such activities are undertaken and such materials used and produced at the facility. Accordingly, EPA believes limiting the facilities covered under this category to those of 1.0 mgd and those covered under the industrial pretreatment program is appropriate.

To the extent that permit applicants are already required to employ certain management practices regarding storm water, these may be incorporated into permits and permit conditions issued by Federal and State permitting authorities. EPA has selected facilities identified under 40 CFR part 501 (i.e. those with a design flow of 1.0 mgd or more or those required to have an approved pretreatment program) since these facilities will have largest contribution of industrial process discharges. Sludge from such facilities will contain higher concentrations of heavy metal and organic pollutants.

One commenter stated that sludge disposal is a public activity that should be addressed in a public facility's storm water management program under a municipal storm water management program. EPA disagrees. Industrial facilities, whether publicly owned or not, are required to apply for and obtain permits when they are designated as industrial activity.

Another comment stated that a permit should not be required for facilities that collect all runoff on site and treat it at the same POTW. EPA believes that a permit application should be required from such facilities. However, the above practice can be incorporated as a permit condition for such a facility. One commenter stated storm water from sludge and chemic-

al handling areas can be routed through the headworks of the POTW. The agency agrees that this may be an appropriate management practice for POTWs as long as other NPDES regulatory requirements are fulfilled with regard to POTWs.

(x) Construction activities, including clearing, grading and excavation activities except operations that result in the disturbance of less than five-acre total land area which are not part of a larger common plan of development or sale. EPA addresses whether these facilities should be covered by today's rule in section VI.F.8.

The December 7, 1988, proposal also requested comments on including the following other categories of discharges in the definition of industrial activities: (xii) Automotive repair shops classified as Standard Industrial Classification 751 or 753; (xiii) Gasoline service stations classified as Standard Industrial Code 5541; (xiv) Lands other than POTW lands (offsite facilities) used for sludge management; (xv) Lumber and building materials retail facilities classified as Standard Industrial Classification 5211; (xvi) Landfills, land application sites, and open dumps that do not receive industrial wastes and that are subject to regulation under subtitle D of RCRA; (xvii) Facilities classified as Standard Industrial Classification 46 (pipelines, except natural gas), and 492 (gas production and distribution); (xviii) Major electrical powerline corridors.

*48015 EPA received numerous comments on whether to require permit applications for these particular facilities. The December 7, 1988, proposal reflected EPA's intent not to require permits for these facilities, but rather to address these facilities in the two studies required by CWA sections 402(p) (5) and (6). After reviewing the comments on this issue, EPA believes that these facilities should be addressed under these sections of the CWA. Most of these facilities are classified as light commercial and retail business establishments, agricultural, facilities where residential or domestic waste is received, or land use activities where there is no manufacturing. It should be noted that although EPA is not requiring the facilities identified as categories (xii) to (xviii), in the December 7, 1988, proposal to apply for a permit application under this rulemaking, such facilities may be designated under section 402(p)(2)(E) of the CWA.

Three commenters recommended that EPA clarify that non-exempt Department of Energy and Department of Defense facilities should be covered by the storm water regulation. The regulation clearly states that Federal Facilities that are engaged in industrial activity (i.e. those activities in § 122.26(b)(14)(i)-(xi)) are required to submit permit applications. Those applying for permits covering Federal facilities should consult the Standard Industrial Classifications for further clarification.

One commenter questioned how EPA intended to regulate municipal facilities engaged in industrial activities. Municipal facilities that are engaged in the type of industrial activity described above and which discharge into waters of the United States or municipal separate storm sewer systems are required to apply for permits. These facilities will be covered in the same manner as other industrial facilities. The fact that they are municipally owned does not in any way exclude them from needing permit applications under this rulemaking.

One commenter suggested exempting those facilities that have total annual sales less than five million dollars or occupy less than five acres of land. Another commenter thought that all minor permittees should be exempt. EPA believes that the quality of storm water and the extent to which discharges impact receiving water is not necessarily related to the size of the facility or the dollar value of its business. What is important in this regard, is the extent to which steps are taken at facilities to curb the quantity and type of material that may pollute storm water discharges from these facilities. Therefore EPA has not excluded facilities from permitting on such a basis. This same commenter stated that the proposed rules should not address facilities with multiple functions (industrial and retail). EPA disagrees. If a facility engages in activity that is defined in paragraphs (i) through (xi) above, it is required to apply for a permit regardless of the fact that it also has a retail element. Such facilities need only submit a permit application for the industrial portion of the facility (as long

as storm water from the non-industrial portion is segregated, as discussed above). This commenter also felt that more studies needed to be undertaken to determine the best way to regulate industries. EPA agrees that storm water problems need further study and for that reason EPA has devoted substantial manpower and resources to complete comprehensive studies under section 402(p)(5), while also addressing industrial sources that need immediate attention under this rule-making.

One commenter requested that EPA give examples of storm water discharges from each of the facilities that have been designated for submitting permit applications. Agency believes that this is unnecessary and impractical since every facility, regardless of the type of industry, will have different terrain, hydrology, weather patterns, management practices and control techniques. However, EPA intends to issue guidance on filing permit applications for storm water discharges from industrial facilities which details how an industry goes about filing an industrial permit and dealing with storm water discharges.

Today's rulemaking for storm water discharges associated with industrial activity at § 122.26(c)(1)(i) includes special conditions for storm water discharges originating from mining operations, oil or gas operations (§ 122.26(c)(1)(iii)), and from the construction operations listed above (§ 122.26(c)(1)(ii)). These requirements are discussed in more detail in section VI.F.7 and section VI.F.9 of today's notice.

3. Individual Application Requirements

Today's rule establishes individual and group permit application requirements for storm water discharges associated with industrial activity. These requirements will address facilities precluded from coverage under the general permits to be proposed and promulgated by EPA in the near future. EPA considers it necessary to obtain the information required in individual permit applications from certain facilities because of the nature of their industrial activity and because of existing institutional mechanisms for issuing and tracking NPDES permits. Furthermore, some States will not have general permitting authority. Facilities located in such States will be required to submit individual applications or participate in a group application. The following response to comments received on these requirements pertains to these facilities.

Under the September 26, 1984, regulation operators of Group I storm water discharges were required to submit NPDES Form 1 and Form 2C permit applications. In response to post-regulation comments received on that rule, EPA proposed new permit application requirements (March 7, 1985, (50 FR 9362) and August 12, 1985, (50 FR 32548)) which would have decreased the analytical sampling requirements of the Form 2C and provided procedures for group applications. Passage of the WQA in 1987 gave the EPA additional time to consider the appropriate permit application requirements for storm water discharges. On December 7, 1988, application requirements were proposed and numerous comments were received. Based upon these comments, modifications and refinements have been made to the industrial storm water permit application.

Some commenters expressed the view that the permit application requirements are too burdensome, require too much paperwork, are of dubious utility, and focus too greatly on the collection of quantitative data. EPA disagrees. In comparison to prior approaches for permitting storm water discharges and other existing permitting programs, EPA has streamlined the permit application process, limited the quantitative data requirements, and required narrative information that will be used to determine permit conditions that relate to the quality of storm water discharge. To the extent that EPA needs non-quantitative information to develop appropriate permit conditions, EPA disagrees with the view of some commenters that the information required is excessive. In response to comments on earlier rulemakings and a comment received on the December 7, 1988, proposal (stressing that the emphasis should be on site management, rather than monitoring, sampling, and reporting) EPA has shifted the emphasis of the permit application requirements for storm water discharges

associated with industrial activity from the existing requirements for collection of *48016 quantitative data (sampling data) in Form 2C towards collection of less quantitative data supplemented by additional information needed for evaluation of the nature of the storm water discharges.

The permit application requirements proposed for storm water discharges reduce the amount of quantitative data required in the permit application and exempt discharges which contain entirely storm water (i.e. contain no other discharge that, without the storm water component, would require an NPDES permit), from certain reporting requirements of Form 2C. The proposed modifications also would exempt applicants for discharges which contain entirely storm water from several non-quantitative information collection provisions currently required in the Form 2C. The proposed modifications would rely more on descriptive information for assessing impacts of the storm water discharge. One commenter proposed that information that the applicant has submitted for other permits be incorporated by reference into the storm water permit application. EPA disagrees that incorporation by reference is appropriate. The permitting authority will need to have this information readily available for evaluating permit application and permit conditions. Furthermore, EPA feels that the applicant is in the best position to provide the information and verify its accuracy. However, if the applicant has such information and it accurately reflects current circumstances, then the applicant can rely on the information for meeting the information requirements of the application. Another commenter suggested that EPA should only require the information in § 122.26(c)(1)(A) and (B) (i.e., the requirement for a topographic map indicating drainage areas and estimate of impervious areas and material management practices). As explained in greater detail below, EPA is convinced that some quantitative data and the other narrative requirements are necessary for developing appropriate permit conditions.

Form 2F addressing permit applications for storm water discharges associated with industrial activity is included in today's final rule. A complete permit application for discharges composed entirely of storm water, will be comprised of Form 2F and Form 1. Operators of discharges which are composed of both storm water and non-storm water will submit, where required, a Form 1, an entire Form 2C (or Form 2D) and Form 2F when applying. In this case, the applicant will provide quantitative data describing the discharge during a storm event in Form 2F and quantitative data describing the discharge during non-storm events in Form 2C. Non-quantitative information reported in the Form 2C will not have to be reported again in the Form 2F.

Under today's rule, Form 2F for storm water discharges associated with industrial activity would not require the submittal of all of the quantitative information required in Form 2C, but would require that quantitative data be submitted for:

- Any pollutant limited in an effluent guideline for an industrial applicant's subcategory;
- Any pollutant listed in the facility's NPDES permit for its process wastewater;
- Oil and grease, TSS, COD, pH, BOD5, total phosphorus, total Kjeldahl nitrogen; nitrate plus nitrite nitrogen; and
- Any information on the discharge required under 40 CFR 122.21(g)(7) (iii) and (iv).

In order to characterize the discharge(s) sampled, applicants need to submit information regarding the storm event(s) that generated the sampled discharge, including the date(s) the sample was taken, flow measurements or estimates of the duration of the storm event(s) sampled, rainfall measurements or estimates from the storm event(s) which generated the sampled runoff, and the duration between the storm event sampled and the end of the previous storm event. Information regarding the storm event(s) sampled is necessary to evaluate whether the discharge(s) sampled was generally representative of other discharges expected to occur during storm events and to characterize the amount and nature of runoff discharges from the site.

One commenter stated that the quantitative information should be limited to those pollutants that are expected to be known to the applicant. EPA believes this would be inappropriate since there will be no way of determining initially whether these pollutants are present despite the expectations of the applicant. Once the data is provided, permits can be drafted which address specific pollutants. This rulemaking requires that the applicant test for oil and grease, COD, pH, BOD5, TSS, total Kjeldahl nitrogen, nitrate plus nitrite nitrogen and total phosphorus. Oil and grease and TSS are a common component of storm water and can have serious impacts on receiving waters. Oxygen demand (COD and BOD5) will help the permitting authority evaluate the oxygen depletion potential of the discharge. BOD5 is the most commonly used indicator of potential oxygen demand. COD is considered a more inclusive indicator of oxygen demand, especially where metals interfere with the BOD5 test. The pH will provide the permitting authority with important information on the potential availability of metals to the receiving flora, fauna and sediment. Total Kjeldahl nitrogen, nitrate plus nitrite nitrogen and total phosphorus are measures of nutrients which can impact water quality. Because this data is useful in developing appropriate permit conditions, EPA disagrees with the argument made by one commenter that quantitative data requirements should be a permit condition and not part of the application process.

In the proposed rule, the Agency used total nitrogen as a parameter. This has been changed to total Kjeldahl nitrogen and nitrate plus nitrite nitrogen for clarity.

Today's rule defines sampling at industrial sites in terms of sampling for those parameters that have effluent limits in existing NPDES permits, as well as for any other conventional or nonconventional parameter that might be expected to be found at the outfall. Comments on the appropriateness of the defined parameters were solicited by the proposal. Numerous commenters maintained that either the parameter list be made industry specific, or that pollutant categories not detected in the initial screen be exempted from further testing. Some suggested that only conventional pollutants, inorganics, and metals be sampled unless reason for others is found.

In terms of specific water quality parameters, it was recommended that surfactants not be tested for unless foam is visible. One commenter also suggested that fecal coliform sampling is inappropriate for industrial permits applications. One commenter favored testing for TOC instead of VOC. In response, VOC has been eliminated from the list of parameters because it will not yield specific usable data. VOC is not specifically required in any sampling in today's rule, except where priority pollutant scans are required.

Some recommended that procedures be modified to facilitate quicker, less expensive lab analyses. Concern was also raised that industry might be required to collect its own rainfall data if there is no nearby observation station. Some commenters stated that EPA should not allow automatic sampling for either biological or oil and grease sampling due to the potential for contamination in sampling equipment.

*48017 In response, EPA believes that the sampling requirements for industry in today's rule are reasonable and not burdensome. These requirements address parameters that have effluent limits in existing NPDES permits, as well as for any other conventional or nonconventional parameter that might be expected to be found at the applicants outfall. Under this procedure both industry-specific and site-specific contaminants are already identified in the existing permit. Whether all these parameters need to be made a part of any discharge characterization plans, under the terms of the permit, will be a case-by-case determination for the permitting authority. EPA maintains that the test for surfactants (if in effluent guidelines or in the facility's NPDES permit for process water) is justifiable even when a foam is not obvious at the outfall. The presence of detergents in storm water may be indicated by foam, but the absence of foam does not indicate that detergents are not present.

EPA requested comments on fecal coliform as a parameter. Fecal coliform was included on the list as an indicator of the

presence of sanitary sewage. In large concentrations, fecal coliform may be an effective indicator of sanitary sewage as opposed to other animal wastes. EPA believes that sanitary cross connections will also be found at industrial facilities. Furthermore, the test for fecal coliform is an inexpensive test and its inclusion or exclusion should make little impact financially on the individual application costs. Sampling for volatile organic carbon shall be accomplished when required, as it is an appropriate indicator of industrial solvents and organic wastes.

In response to comments, EPA acknowledges that there are certain pollutants that are capable of leaving residues in automatic sampling devices that will potentially contaminate subsequent samples. In these cases, such as for biological monitoring, if such a problem is perceived to exist and it is expected that the contaminant will render the subsequent samples unusable, manual grab samples may be needed. This would include grab samples for pH, temperature, cyanide, total phenols, residual chlorine, oil and grease, fecal coliform, and fecal streptococcus. EPA is not disallowing the use of automatic sampling because of possible contamination, as this type of sampling may be the best method for obtaining the necessary samples from a selected storm events.

In addition to the conventional pollutants listed above, this final rule requires applicants, when appropriate, to sample other pollutants based on a consideration of site-specific factors. These parameters account for pollutants associated with materials used for production and maintenance, finished products, waste products and non-process materials such as fertilizers and pesticides that may be present at a facility. Applicants must sample for any pollutant limited in an effluent guideline applicable to the facility or limited in the facility's NPDES permit. These pollutants will generally be associated with the facility's manufacturing process or wastes. Other process and non-process related pollutants, will be addressed by complying with the requirements of 40 CFR 122.21(g)(7)(iii) and (iv).

Section 122.21(g)(7)(iii) requires applicants to indicate whether they know or have reason to believe that any pollutant listed in Table IV (conventional and nonconventional pollutants) of appendix D to 40 CFR part 122 is discharged. If such a pollutant is either directly limited or indirectly limited by the terms of the applicant's existing NPDES permit through limitations on an indicator parameter, the applicant must report quantitative data. For pollutants that are not contained in an effluent limitations guideline, the applicant must either report quantitative data or describe the reasons the pollutant is expected to be discharged. With regard to pollutants listed in Table II (organic pollutants) or Table III (metals, cyanide and total phenol) of appendix D, the applicant must indicate whether they know or have reason to believe such pollutants are discharged from each outfall and, if they are discharged in amounts greater than 10 parts per billion (ppb), the applicant must report quantitative data. An applicant qualifying as a small business under 40 CFR 122.21(g)(8), (e.g., coal mines with a probable total annual production of less than 100,000 tons per year or, for all other applicants, gross total annual sales averaging less than \$100,000 per year (in second quarter 1980 dollars)), is not required to analyze for pollutants listed in Table II of appendix D (the organic toxic pollutants).

Section 122.21(g)(7)(iv) requires applicants to indicate whether they know or have reason to believe that any pollutant in Table V of appendix D to 40 CFR part 122 (certain hazardous substances) is discharged. For every pollutant expected to be discharged, the applicant must briefly describe the reasons the pollutant is expected to be discharged and report any existing quantitative data it has for the pollutant.

When collecting data for permit applications, applicants may make use of 40 CFR 122.21(g)(7), which provides that "when an applicant has two or more outfalls with substantially identical effluents, the Director may allow the applicant to test only one outfall and report that the quantitative data also applies to the substantially identical outfalls." Where the facility has availed itself of this provision, an explanation of why the untested outfalls are "substantially identical" to tested outfalls must be provided in the application. Where the amount of flow associated with the outfalls with substantially identical effluent differs, measurements or estimates of the total flow of each of the outfalls must be provided. Several

commenters stated that the time and expense associated with sampling and analysis would be saved if the applicant was able to pick substantially identical outfalls without prior approval of the permitting authority. EPA disagrees that this would be an appropriate devolution of authority to the permit applicant. The permitting authority needs to ensure that these outfalls have been grouped according to appropriate criteria (for example do the outfalls serve similar drainage areas at the facility). Furthermore, EPA is not requiring that the permit applicant engage in sampling to demonstrate that the outfalls are indeed substantially identical, because that would of course defeat the purpose of § 122.21(g)(7). The procedure for establishing identical outfalls is not that onerous and provides a means for industry to save substantially on time and resources for sampling.

EPA proposed and requested comment on a requirement that the facility must sample a storm event that is typical for the area in terms of duration and severity. The storm event must be greater than 0.1 inches and must be at least 96 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. In general, variance of the parameters (such as the duration of the event and the total rainfall of the event) should not exceed 50 percent from the parameters of the average rainfall event in that area. EPA also requested comments on addressing snow melt events under this definition.

Commenters stated that: median or average rainfall is not an acceptable approach; the minimum depth and duration of rainfall must be specified; the allowable 50% variation is questionable; the total depth of the storm is irrelevant; and the storm should be viewed based on the average intensity of the storm. One commenter *48018 suggested that using the median rainfall event would be a better approach than the average rainfall event.

Others insisted that "representative" or typical storms do not exist in semi-arid climates and that representative rainfall must be site-specific (regional) and seasonal. Several commenters contended that the requirement for 96 dry hours between events is not acceptable, with 48 and 72 hours identified as possible alternatives.

One commenter believed that a typical standard design storm, such as the 1-year, 24-hour, or 10-year, 1-hour, would be preferable. Another commenter felt that the storm event should be based on the rainfall required to generate a minimum discharge level. One commenter questioned whether the storm is to be sampled at all sites simultaneously.

To clarify its decision on what storm event should be sampled, EPA notes that its selection of the storm event considers both regional and seasonal variation of precipitation. This is evidenced in the rule with regard to sites in the municipal application (three events sampled), and in the requirements for industrial group applications (a minimum of two applicants, or one applicant in groups of less than 10, to be represented in each precipitation zone (see section VI.F.4 below).

The definition of a 0.1 inch minimum was determined by NURP and other studies to be the minimum rainfall depth capable of producing the rainfall/runoff characteristics necessary to generate a sufficient volume of runoff for meaningful sample analysis. EPA believes by requiring the average storm to be used as the basis for sampling that depth, duration, and therefore average rainfall intensity are being regionally defined. The Agency has also added the option of using the median rainfall event instead of the average. The potential for monitoring events that may not meet this specification should be minimized by allowing the proposed 50 percent variation in rainfall depth and/or duration from event statistics. However, the 50 percent variation need only be met when possible. Further, there is flexibility in the rule where the Director may allow or establish site specific requirements such as the minimum duration between the previous measurable storm event and the storm event sampled, the amount of precipitation from the storm event to be sampled, and the form of precipitation sampled (snowmelt or rainfall). If data is obtained from a rain event that does not meet the criteria above, the Director has the discretion to accept the data as valid.

The December 7, 1988, proposal called for a 96-hour period between events of measurable rainfall, here defined as 0.1 inch, which provided a four day minimum for the accumulation of pollutants on the surface of the outfalls' tributary

areas. The key word in the definition is "measurable", which means that the 96-hour period did not necessarily have to be dry, only that no cleansing rainfall (i.e. 0.1 inch rain event) has occurred. However, after reviewing comments on this issue EPA has decided to change the period to 72 hours. Many commenters indicated that 96 hours is too restrictive and that securing a sample under such circumstances would be unnecessarily difficult. EPA agrees that the quality or representativeness of the sample would not be adversely affected by this change.

EPA does not agree with comments that the requirement of a particular "design" storm would be appropriate. Many commenters have expressed concern that they might sample an event not meeting the requirements for industrial group applications as defined. Because there is no way to know with sufficient certainty beforehand that an upcoming event will approximate a one-year, twenty-four hour storm, many events would be unnecessarily sampled before this event is realized.

EPA does not intend that a municipality or industry be required to sample all required outfalls for a single storm. This would represent a unmanageable investment in equipment and manpower. In some areas, it may be necessary to sample multiple sites for a single event due to the irregularity of rainfall, but not all sites.

EPA described parameters for selecting storm events for sampling of municipal and industrial outfalls in the December 7, 1988, proposal. EPA has received several comments regarding the problems that rainfall measurement in general presents. A recurring comment relative to reporting rainfall, and in verifying that the storm itself is representative, deals with the spatial distribution of rainfall. The rainfall measured at an airport does not always represent rainfall at the site, particularly in summer months when thunderstorms are prevalent. One commenter stated that it would be easier to base the selected storm on either a minimum discharge, or on a discharge duration other than on the total precipitation, because these parameters are easily measured at the site and are not dependent on the airport gauges receiving the same rainfall as the site. A few commenters questioned how to determine typical storm characteristics. One commenter advised that NOAA rainfall reporting stations provide data that represent only daily rainfall totals, not storm event data. One commenter pointed out that the time frame of the sampling requirement does not consider that a particular region may be in the midst of a multi-year drought cycle, and that what little rainfall occurs may have uncharacteristically high levels of pollutants.

The type of rain event sampled is an important parameter in any attempt to characterize system-wide loads based on the sampling results. Rainfall gauges that report only event total depth will provide the information necessary to characterize most events, provided that a reasonable estimate of the event duration can be made. If simulation models are to be used in estimating system-wide loads, rainfall measurement based on time and depth of rainfall will be needed. If the recording stations are not believed to accurately reflect this distribution, then the data will need to be collected by the applicant at a location central to the tributary area of the outfall.

The rainfall data collected by NOAA are in most cases available in the form of hourly rainfall depths. This information can be analyzed to develop characteristic storm depths and durations. In some cases, this information has already been analyzed for many long term reporting stations by various municipalities, states, and universities. The results of these investigations should be available to the applicants.

EPA realizes that prolonged rainless periods occur for both semi-arid areas and areas experiencing droughts and that the first storm after a prolonged dry period may well not be representative of "normal" runoff conditions. In order for the appropriate system-wide characterization of loads to be made, data must be collected. With regard to the municipal permit application, today's rule states that runoff characterization data will be collected during three events at from five to ten sites. The rule gives the Director the flexibility of modifying these requirements.

EPA has defined the parameters for selecting the storm event to be sampled such that at the discretion of the Director, seasonal, including winter, sampling might be required. EPA has received several comments regarding the problems that snowmelt sampling may present. Several commenters are *48019 opposed to monitoring of snowmelt events. The reasons cited include equipment problems and the unreasonableness of expecting this sampling, because of temperatures and the time required for personnel to be waiting for events. A few comments addressed the issues of snow pack depth, ambient temperature, and solar radiation levels, and that the snow pack may filter suspended solids or refreeze such that final melting is uncharacteristically over-polluted relative to normal conditions. Another commenter contended that it is impossible to manage the melting process and therefore unreasonable to expect controls to be implemented relative to snowmelt. In essence, it is contended that there is no first discharge unless the snow pack depth is low and melts quickly.

A few commenters favor monitoring snowmelt, for precisely the same reason that most oppose it: that the runoff from snowmelt is the most polluted runoff generated in some areas on an annual basis. Where this is the case, sampling snowmelt should be undertaken in order to accurately assess impacts to receiving streams. EPA is confident that in areas where automated sampling cannot be relied upon, grab sampling can probably be performed because the nature of the snowmelt process tends to make the timing of samples less of a problem when compared to typical rainfall events. EPA disagrees that management practices, either at industrial facilities or with regard to municipalities, cannot address snowmelt. Some areas may need to reassess their salt application procedures. In addition retention and detention devices may address snowmelt, as well as erosion controls at construction sites. Thus, obtaining samples of snowmelt is appropriate to allow development of such permit conditions.

Today's rule also modifies the Form 2C requirements by exempting applicants from the requirements at § 122.21(g)(2) (line drawings), (g)(4) (intermittent flows), (g)(7) (i), (ii), and (v) (various sampling requirements to characterize discharges) if the discharge covered by the application is composed entirely of storm water. Permit applications for discharges containing storm water associated with industrial activity would require applicants to provide other non-quantitative information which will aid permit writers to identify which storm water discharges are associated with industrial activity and to characterize the nature of the discharge.

Numerous comments were received regarding the requirement to submit a topographic map and site drainage map. Many of these comments offered alternatives to EPA's proposal. Two commenters suggested that a simple sketch of the site would be sufficient. Two commenters stated that one or the other should be adequate. One commenter believed that the drainage map was a good idea, but that the topographic map should be optional. Several commenters submitted that a topographic map was sufficient and that only SPCC plans or SARA submittals should supplement that. Another commenter argued that information relating to the location of the nearest surface water or drinking wells would be sufficient. Other commenters believed that a drainage map alone would indicate all relevant site specific information. Numerous commenters expressed concern that the drainage area map would be too detailed and that one which depicts the general direction of flow should be sufficient. Clarification was requested on whether the final rule would require the location of any drinking water wells. One commenter stated that a U.S.G.S. 7.5 quadrangle map will not illustrate drainage systems in all cases, and that therefore the requirement should be optional.

Several commenters agreed with EPA's proposal. One commenter maintained that drainage maps should be required from developments greater than three acres and from all individual applicants. Several commenters agreed with EPA's proposal that both maps should be provided, with arrows indicating site drainage and entering and leaving points. It was advised that drainage maps are useful in locating sources of storm water contamination, and it is useful to identify areas and activities which require source controls or remedial action. One commenter recommended that the map should extend far enough offsite to demonstrate how the privately owned system connects to the publicly owned system.

After considering the merits of all the comments and the reasons supporting EPA's proposal, EPA is convinced that a topographic map and a site drainage map are necessary components of the industrial application. Existing permit application regulations at 40 CFR 122.21(f)(7) require all permit applicants to submit as part of Form 1 a topographic map extending one mile beyond the property boundaries of the source depicting: the facility and each intake and discharge structure; each hazardous waste treatment, storage, or disposal facility; each well where fluids from the facility are injected underground; and those wells, springs, other surface water bodies, and drinking water wells listed in the map area in public records or otherwise known to the applicant within one-quarter mile of the facility property boundary. (See 47 FR 15304, April 8, 1982.) However, as indicated by the comments the information provided under § 122.21(f)(7) is generally not sufficient by itself for evaluating the nature of storm water discharges associated with industrial activity.

As stated in comments, a drainage map can provide more important site specific information for evaluating the nature of the storm water discharge in comparison to existing requirements, which require a larger map with only general information. The volume of a storm water discharge and the pollutants associated with it will depend on the configuration and activities occurring at the industrial site. One commenter suggested that it would be appropriate to submit an aerial photograph of the site with all the topographic and drainage information superimposed on the photograph. EPA agrees that this may be an appropriate method of providing this information. EPA is not requiring a specific format for submitting this information.

EPA is also requiring that a narrative description be submitted to accompany the drainage map. The narrative will provide a description of on-site features including: existing structures (buildings which cover materials and other material covers; dikes; diversion ditches, etc.) and non-structural controls (employee training, visual inspections, preventive maintenance, and housekeeping measures) that are used to prevent or minimize the potential for release of toxic and hazardous pollutants; a description of significant materials that are currently or in the past have been treated, stored or disposed outside; and the method of treatment, storage or disposal used. The narrative will also include: a description of activities at materials loading and unloading areas; the location, manner and frequency in which pesticides, herbicides, soil conditioners and fertilizers are applied; a description of the soil; and a description of the areas which are predominately responsible for first flush runoff. This requirement is unchanged from the proposal.

Some commenters believed that information on pesticides, herbicides, and fertilizers and similar products is irrelevant, incidental to the facility's production activities, and should not be *48020 addressed by this rulemaking. EPA disagrees. As these materials are applied outside and hence subject to storm events, they are significant sources of pollutants in storm water discharges whether applied in residential or industrial settings. By providing this information in the permit application the permit writer will be able to determine whether such activity is associated with industrial activity and the subject of appropriate permit conditions. Nominal or incidental application of these materials at industrial facilities and non-detects in sampling of storm water discharges for the permit application will result, in most cases, in these materials not being addressed specifically in storm water permits.

Today's rule also requires that permit applicants for storm water discharges associated with industrial activity certify that all of the outfalls covered in the permit application have been tested or evaluated for non-storm water discharges which are not covered by an NPDES permit. (The applicant need not test for nonstorm water if the certification of the plant storm water discharges can be evaluated through the use of schematics or other adequate method). Section 405 of the WQA added section 402(p)(3)(B)(ii) to the CWA to require that permits for municipal separate storm sewers effectively prohibit non-storm water discharges to the storm sewer system. As discussed in part VI.F.7.b of today's preamble, untreated non-storm water discharges to storm sewers can create severe, wide-spread contamination problems and removing such discharges presents opportunities for dramatic improvements in the quality of such discharges. Although section 402(p)(3)(B)(ii) specifically addresses municipal separate storm sewers, EPA believes that illicit non-storm water dis-

charges are as likely to be mixed with storm water at a facility that discharges directly to the waters of the United States as it is at a facility that discharges to a municipal storm sewer. Accordingly, EPA feels that it is appropriate to consider potential non-storm water discharges in permit applications for storm water discharges associated with industrial activity. The certification requirement would not apply to outfalls where storm water is intentionally mixed with process waste water streams which are already identified in and covered by a permit.

This rulemaking requires applicants for individual permits to submit known information regarding the history of significant spills at the facility. Several commenters indicated that the extent to which this information is required should be modified. One commenter stated that the requirement should be limited to those spills that resulted in a complaint or enforcement action. EPA disagrees. EPA believes that significant spills at a facility should generally include releases of oil or hazardous substances in excess of reportable quantities under section 311 of the Clean Water Act (see 40 CFR 110.10 and 40 CFR 117.21) or section 102 of CERCLA (see 40 CFR 302.4). Such a requirement is consistent with these regulations and the perception that such spills are significant enough to mandate the reporting of their occurrence. Some commenters stated that industries have already submitted this information in other contexts and should not be required to have to do it again. For the same reason another commenter felt that submittal of this information represents a waste of manpower and resources. EPA disagrees that requiring this information is unduly burdensome. If this information has already been provided for another purpose it follows that it is readily available to the industrial applicant. Thus, the burden of providing this information cannot be considered undue. Furthermore, the permit authority will need to have this available in order to determine which drainage areas are likely to generate storm water discharges associated with industrial activity, evaluate pollutants of concern, and develop appropriate permit conditions. However, to keep this information requirement within reasonable limits and limited to information already available to individual facilities, EPA has declined to expand the reporting requirements to spills of other materials, such as food as one commenter has suggested. However, EPA has decided to add raw materials used in food processing or production to the list of significant materials. Materials such as these may find their way into storm water discharges in such quantities that serious water quality impacts occur. These materials may find their way into storm water from transportation vehicles carrying materials into the facility, loading docks, processing areas, storage areas, and disposal sites.

One commenter urged that any information requested should be limited to a period of three years, which is the general NPDES records retention requirement under 40 CFR 122.21(p) and 40 CFR 112.7(d)(8). EPA agrees with this comment and has limited historical information requirements to the 3 years prior to the date the application is submitted. In this manner this regulation will be consistent with records keeping practices under the NPDES and Oil Spill Prevention programs, except sludge programs.

The December 7, 1988, proposal required the applicant to submit a description of each past or present area used for outdoor storage or disposal of significant materials. One commenter felt that the definition of significant material was too imprecise. EPA disagrees that the language should be made more precise by delineating every conceivable material that may add pollutants to storm water. Rather the definition is broad, to encourage permit applicants to list those materials that have the potential to cause water quality impacts. Stating what materials are addressed in meticulous detail may result in potentially harmful materials remaining unconsidered in permits. However, EPA has decided to add "fertilizers, pesticides, and raw materials used in the production or processing of food" to the definition in response to the comment of one State authority that such materials need to be accounted for due to their potential danger to storm water discharge quality. This same commenter recommended that "hazardous chemicals" should be added. EPA agrees, and will delineate those chemicals as "hazardous substances" which are designated under section 101(14) of CERCLA. Further clarification has been added by requiring the listing of any chemical the facility is required to report pursuant to section 313 of title III of SARA.

Another commenter felt that EPA should not require information of past storage of significant materials. EPA agrees that this proposed requirement is overbroad and has limited the time frame to those materials that were stored in areas 3 years or fewer from the date of the permit application. The 3-year limit is consistent with other Agency reporting requirements as discussed above.

One commenter questioned EPA's proposal not to provide for a waiver from the requirement to submit quantitative data if the applicant can demonstrate that it is unnecessary for permit issuance. Another commenter said that a waiver is inappropriate. EPA believes relevant quantitative data are essential to the process, but in this rulemaking the number of pollutants that must be sampled and analyzed is reduced compared to previous regulations. The proposed requirements for quantitative data are limited to pollutants that are appropriate for given *48021 site-specific operations, thereby making a waiver unnecessary.

Although the concept of a waiver is attractive because of the perceived potential reduction in burdens for applicants, EPA believes that because the storm water discharge testing requirements have already been streamlined, a waiver would not in practice provide significant reductions in burden for either applicants or permit issuing authorities. Requirements to provide and verify data demonstrating that a waiver is appropriate for a storm water discharge may prove to be more of a burden to the applicant and the permitting authorities. Establishing such a waiver procedure would be administratively complex and time-consuming for both EPA and the applicants, without any justifiable benefit. Therefore, this rulemaking does not include a waiver provision.

In response to one commenter, EPA wishes to emphasize that if a facility has zero storm water discharge because it is discharging to a detention pond only, a permit application is not required. Only those discharges to the waters of the United States or municipal systems need submit notifications, individual or group permit applications, or notices of intent where applicable. However, if the detention pond overflows or the discharger anticipates that it may overflow, then a permit application should be submitted.

Two commenters agreed with EPA's proposed requirement to have a description of past and present material management practices and controls. EPA believes that this is important information directly relating to the quality of storm water that can be expected at a particular facility and this requirement is retained in today's rule. However, as with other historical information requirements, EPA is limiting past practices to those that occurred within three years of the date that the application is submitted. One commenter argued that past practices should not be considered unless there is evidence that past practices cause current storm water quality problems. EPA anticipates that the information submitted by the applicant will be used to make this determination and that appropriate permit conditions can be developed accordingly.

One commenter requested clarification on the certification requirement that the data and information in the application is true and complete to the best of the certifying officer's knowledge. This is a fundamental and integral part of all NPDES permit applications. It essentially requires the signatory to assure the permit writer, based upon his or her personal knowledge, that the information has been submitted without a negligent, reckless, or purposeful misrepresentation. EPA intends to interpret this requirement in the same manner for storm water applications as other applications.

4. Group Applications

Today's final rule provides some industries with the option of participating in a group application, in lieu of submitting individual permits. There are several reasons for the group application. First, the group application procedure provides adequate information for issuing permits for certain classes of storm water discharges associated with industrial activity. Second, numerous commenters supported the concept of the group application as a way to reduce the costs and administrative burdens associated with storm water permit applications. Third, group applications will reduce the burden on the

regulated community by requiring the submission of quantitative data from only selected members of the group. Fourth, the group application process will reduce the burden on the permit issuing authority by consolidating information for reviewing permit applications and for developing general permits suited to certain industrial groups. Where general permits are not appropriate or cannot be issued, a group application can be used to develop model individual permits, which can significantly reduce the burden of preparing individual permits.

As noted above in today's preamble, EPA intends to promulgate a general permit that will cover many types of industrial activity. Industrial dischargers eligible for such permits will generally be required to seek coverage by submittal of a notice of intent. Facilities that are ineligible for coverage under the general permit will be required to submit an individual permit application or submit a group application. The group application process promulgated today will serve as an important component to implement Tier III of EPA's industrial storm water permitting strategy discussed above. The general permit which EPA intends to promulgate in the near future shall set forth what types of facilities are eligible for coverage.

Some commenters criticized the group application procedure as an abdication of EPA's responsibility to effectively deal with pollutants in storm water discharges. One commenter stated that every facility subject to these regulations should be required to submit quantitative data. In response EPA believes, as do numerous commenters, that the group application procedure is a legitimate and effective way of dealing with a large volume of currently uncontrolled discharges. The only difference between the group application procedure and issuing individual permits based on individual applications is that the quantitative data requirements from individual facilities will be less if certain procedures are followed. EPA is convinced that marked improvements in the process of issuing permits will be achieved when these procedures are followed. Where the storm water discharge from a particular facility is identified as posing a special environmental risk, it can be required to submit individual applications and therefore separate quantitative data. It should also be noted that submittal of a group application does not exempt a facility from submitting quantitative data on its storm water discharge during the term of the permit.

The final rule refines and clarifies some of the requirements of the group application approach set forth in the December 7, 1988 proposal. Several commenters requested that EPA add a provision which would allow a facility that becomes subject to the regulations to "add on" to a group application after that group application has already been submitted. One commenter indicated that some trade associations are prohibited from engaging in an activity which would not apply to all its members; and that an "add-on" provision was needed in the event such a prohibition was invoked. Another commenter noted that where a group is particularly large, for example one that consists of several thousand members, that it would be a logistical feat to ensure that all facilities eligible as members of the group are properly identified and listed on the application within the 120 day deadline for submitting part 1A of the application.

EPA believes that a group applicant should have a limited ability to add facilities to the group after part 1A has been submitted and that a provision which allows a group or group representative an unbridled ability to "add on" is impractical for a number of reasons. First, 10% of the facilities must submit quantitative data. Adding facilities after the group has been formed and approved would change the number of facilities that have to submit quantitative data on behalf of the group. This would result in an unwarranted administrative burden on the reviewing authority, which is in the position of having to examine the quantitative data and determine the appropriateness of group members (and those that are *48022 required to submit quantitative data) within 2 months of receiving part 1 of the group application. Further, during the permit application process permitting authorities will be developing permit conditions for an identified and pre-determined group of facilities. Allowing potentially significant numbers of permit applicants to suddenly inject themselves into a group application could unnecessarily hamper or disrupt the timely development of general and model permits. In addition, if a facility were "added on" the number of facilities having to submit quantitative data may drop below 10%. Thus

the facility desiring to "add on" may be put in the position of having to submit the quantitative data themselves, which would clearly defeat the purpose of being a part of the group application.

Nevertheless, EPA has added a provision to 122.26(e) which enables facilities to add on to a group application at the discretion of the EPA's Office of Water Enforcement and Permits, and upon a showing of good cause by the group applicant. For the reasons noted above, EPA anticipates this provision will be invoked only in limited cases where good cause is shown. Facilities not properly identified in the group application, and which cannot meet the good cause test will be required to submit individual permit applications. EPA will advise such facilities within 30 days of receiving the request as to whether the facility may add on.

However, the "add on" facility must meet the following requirements: The application for the additional facility is made within 15 months of the final rule; and the addition of the facility does not reduce the percentage of the facilities that are required to submit quantitative data to below 10% unless there are over 100 facilities that are submitting quantitative data. Approval to become part of a group application is obtained from the group or the trade association and is certified by a representative of the group; approval for adding on to a group is obtained from the Office of Water Enforcement and Permits.

Several commenters stated that the application requirements for groups are so burdensome that the advantages of the process are undermined. These concerns are addressed in greater detail below. Among the requirements which commenters objected are the requirements to list every group member's company by name and address. EPA is convinced that a condition precedent to approving a group application is at least identifying the members of the group. Without such information it would be impossible to determine if all the facilities are sufficiently similar. EPA disagrees that industries will be dissuaded from using the group application process because the advantages of the process are undermined. Although commenters perceived many burdens associated with individual permit applications, by far the most significant burden identified by the comments is the requirement for obtaining and submitting quantitative data. The group application significantly reduces this burden by requiring only 10% of the facilities to submit quantitative data if the number in the group is over 100. If the number in the group is over 1000, then only 100 of the facilities need submit quantitative information. If group applicants develop cost sharing procedures to reduce the financial and administrative burdens of submitting quantitative data, it is evident that utilizing the group application could save industries as much as 90% on the most economically burdensome aspect of the application.

Several commenters perceived that the group application procedure did not offer them significant savings because under the proposal their particular industry would only be required to test for COD, BOD5, pH, TSS, oil and grease, nitrogen, and phosphorous. These commenters stated that sampling for these pollutants is not particularly expensive. EPA believes that even if a group is required only to submit minimal quantitative data on particular pollutants, substantial savings can accrue to a particular industry if the group has many members. This is particularly true when the number of outfalls to be sampled, the information on storm events, and flow measurements are factored into the cost analysis. An additional benefit for members of the group as well as for permit issuing agencies is that the process of developing a permit, including drafting and responding to public comments on the permit, is consolidated by the group application process. Accordingly, it is less resource intensive for the group to work with permit issuance authorities to develop well founded permit conditions.

One commenter raised a concern about the situation where one of the facilities that is designated for submitting quantitative data drops out of the group. If this happened, then another facility would have to submit quantitative data. In response, EPA notes that one approach would be for the group to have one or two more facilities submit quantitative data than needed to avoid problems from such a departure or to account for new additions to the group. Certainly this issue

goes directly to the facility selection process which is a critical component of the group application; the facilities need to be carefully selected and reviewed by the group to prevent such difficulties.

Several comments indicated a confusion over what facilities are eligible to take advantage of the group application procedure. Any industry or facility that is required to submit a storm water permit application under these regulations is eligible to participate in a group application. However, whether a facility can obtain a storm water permit under a group application procedure will depend upon whether that facility is a member of the same effluent guideline subcategory, or is sufficiently similar to other members of the group to be appropriate for a general permit or individual permit issued pursuant to the group application. Accordingly, group applications are not limited to national trade associations. The agency believes that the language in § 122.26(c)(2) adequately addresses these concerns. The process does not prohibit a particular company with multiple facilities from filing a group application as long as those facilities are sufficiently similar.

One commenter expressed concern that a single company would not be able to take advantage of the group application benefits unless the company had more than ten facilities. Under such circumstances the company would have to become integrated with a larger group of facilities owned by other companies in order to take advantage of the benefits afforded by the group application procedure. In response, the Agency is providing for a group application of between four and ten members, however at least half the facilities must submit data. One commenter stated that the number of facilities required to submit quantitative data should be determined on a case by case basis. EPA believes that 10 percent for groups with over ten members will be easiest to implement for both industry and EPA, and will ensure that adequate representative quantitative data are obtained so that meaningful determinations of facility similarity can be made and appropriate permit conditions in general or model permits can be developed.

Another commenter suggested that one facility with a multitude of storm water discharge points should be able to use the group permit application to reduce the amount of quantitative data *48023 that it is required to submit. This is an accurate observation but only to the extent that the facility combines with several other facilities to form a group, in which case only 10% of the facilities need submit quantitative data. The group application procedure in today's rule is designed for use by multiple facilities only. However, if an individual facility has 10 outfalls with ten substantially identical effluents, the discharger may petition the Director to sample only one of the outfalls, with that data applying to the remaining outfalls. See § 122.21(g)(7). Thus, existing authority already allows for a "group-like" process for sampling a subset of storm water outfalls at a single facility.

Concern was expressed that the spill reporting requirement from each facility in part 1B would preclude any group from demonstrating that the facilities sampled are "representative," because the incidence of past spills is very site-specific. EPA notes that since it has dropped the part 1B requirements for other reasons discussed below, this comment is now moot.

Numerous commenters noted that if a facility is part of a group application and is subsequently rejected as a group applicant, such an entity would not have a full year to submit an individual permit application. EPA agrees that this is a significant concern. Accordingly, those facilities that apply as a member of a group application will be afforded a full year from the time they are notified of their rejection as a member of the group to file an individual application. EPA notes that it intends to act on group application requests within 60 days of receipt; thus this approach will only provide facilities that are rejected from a group application a short extension of the deadline for other individual applications.

One commenter complained that the cost of defending a group's choice of representative facilities may exceed the cost of submitting an individual permit application, thereby reducing the incentive to apply as group. The agency anticipates that the selection process will be one open to negotiation between the affected parties and one that will end in a mutually sat-

isfactory group of facilities. It is the intent of EPA to reduce the costs of submitting a permit application as much as possible, while providing adequate information to support permitting activities.

Another commenter argued that the use of model permits will create a disincentive for participating in a group because model permits may be used by the permit issuing authority to issue individual permits for discharges from similar facilities that did not participate in the group application. EPA does not agree. The benefit of applying as a group applicant is to take advantage of reduced representative quantitative data requirements. This incentive will exist regardless of whether or how model permits are used. Further, technology transfer can occur during the development of permits based on individual applications as well as those based on group applications.

One commenter suggested moving some of the facility specific information requirements of part 1 of the group application to part 2 of the group application in order to provide more incentive to apply as a group. EPA has considered this and believes such a change would be inappropriate. Part 1 information will be used to make an informed decision about whether individual facilities are appropriate as group members and appropriate for submitting representative quantitative data. Furthermore, information burdens from providing site specific factors in part 1 is relatively minimal, and the information requirements in the proposed part 1B application have been eliminated.

One commenter suggested that trade associations develop model permits since they have the most knowledge about the characteristics of the industries they represent. As noted above, EPA expects that the industries and trade associations will have input, through the permit application process, as to how permit conditions for storm water discharges are developed. While the applicant can submit proposed permit conditions with any type of application, EPA however cannot delegate the drafting of model permits to the permittees. EPA is developing and publishing guidance in conjunction with this rulemaking for developing permit conditions.

One commenter suggested that new dischargers should be able to take advantage of general permits developed pursuant to group applications. As with other general permits, EPA anticipates that such discharges will be able to fall within the scope of a general permit based on a group application where appropriate.

One commenter stated that the group application does not benefit municipalities since there is no requirement for industrial discharges through municipal sewers to apply for a permit. As noted in a previous discussion, industrial discharges through municipal sewers must be covered by an NPDES permit. Such facilities may avail themselves of the group application procedure. Also, municipalities are not precluded from developing a group application procedure under their management plan for industries that discharge into their municipal system, in order to streamline developing controls for such industries.

One industry wanted clarification that facilities located within a municipality would be eligible to participate in a group application. All industrial activities required to submit an individual permit are entitled to submit as part of group application, except those with existing NPDES permits covering storm water. Those facilities that discharge through a municipal separate storm sewer systems required to submit an individual application (because they do not fall within a general permit) are not precluded from using the group application procedure if appropriate.

Other municipalities expressed confusion over the industrial group application concept. The following responds to these comments. First, municipalities are not eligible for participation in a group application because the group application process is designed for industrial activities. Sampling requirements for municipal permit applications are already limited to a small subset of the outfalls from the system, as discussed below. Furthermore, permits for municipal separate storm sewer systems will be issued on a system-wide or jurisdiction-wide basis, rather than individually for each outfall. Thus, today's regulation already incorporates a "grouplike" permit application process for municipalities. Furthermore, it is

highly unlikely that various municipal storm sewer systems would be "substantially similar" enough to justify group treatment in the same way as industrial facilities. In response to another comment, this regulation does not directly give the municipality enforcement power over members of an industrial group who may be discharging through its system. Only the permitting authority and private citizens and organizations (including the municipality acting in such a capacity) will have enforcement power over members of the group once permits are issued to those members.

One commenter believed that the States with authorized NPDES programs rather than EPA should establish permit terms for permits based on group applications. In response to this comment, EPA wishes to clarify its role in the group application process. Group applications will be submitted to EPA headquarters where they will be reviewed and summarized. The *48024 summaries of the group application will be distributed to authorized NPDES States. EPA wishes to emphasize that NPDES States are not bound by draft model permits developed by EPA. States may adopt model permits for use in their particular area, making adjustments for local water quality standards and other regional characteristics. Where general permit coverage is believed to be inappropriate, facilities may be required to apply for individual permits. One commenter objected to the group application procedure because it is not consistent with existing Federal permitting procedures, which will lead to confusion in the regulated community. The agency disagrees with this assessment. The group application is a departure from established NPDES program procedures. However, the comments, when viewed in their entirety, reflect widespread support from the regulated community for a group application procedure. Further, the comments reflect that those affected by this rulemaking understand the components of the group application and the procedures under which permits will be obtained pursuant to the group application.

One commenter expressed concern regarding how BAT limits for groups of similar industries will be developed. Technology based limits will be developed based on the information received from the group applicants. If the group applicants possess similar characteristics in terms of their discharge, BAT/BCT limitations and controls will be developed accordingly for those members of the group. If the discharge characteristics are not similar then applying industries are not appropriate for the group.

One commenter has suggested that the proposed group application is too complex with regard to the part 1A, part 1B, and part 2 group application requirements and that EPA should repropose these provisions. As discussed below, EPA has simplified the industrial group application requirements by eliminating the part 1B application. Thus, reproposal is unnecessary.

One commenter criticized the group application concept as not achieving any type of reduction in administrative burden for NPDES States. EPA disagrees with this assessment. If industries take advantage of the group application procedure, EPA will have an opportunity to review information describing a large number of dischargers in an organized manner. EPA will perform much of the initial review and analysis of the group application, and provide NPDES States with summaries of the applications thereby reducing the burden on the States. Furthermore, the procedure encourages a potentially large number of facilities to be covered by a general permit, which will clearly reduce the administrative burden of issuing individual permits.

The final rule establishes a regulatory procedure whereby a representative entity, such as a trade association, may submit a group application to the Office of Water Enforcement and Permits (OWEP) at EPA headquarters, in which quantitative data from certain representative members of a group of industrial facilities is supplied. Information received in the group application will be used by EPA headquarters to develop models for individual permits or general permits. These model permits are not issued permits, but rather they will be used by EPA Regions and the NPDES States to issue individual or general permits for participating facilities in the State. In developing such permits, the Region or NPDES State will, where necessary, adapt the model permits to take into account the hydrological conditions and receiving water quality in

their area. One commenter expressed the view that having this procedure managed by EPA headquarters would cause delays and it should be delegated to the States and Regions. EPA disagrees that delay will ensue using this procedure. Furthermore, consistency in development of model and general permits can be achieved if application review is coordinated at EPA headquarters.

a. Facilities Covered. Under this rule the group application is submitted for only the facilities specifically listed in the application and not necessarily for an entire industry. The facilities in the group application selected to do sampling must be representative of the group, not necessarily of the industry.

Facilities that are sufficiently similar to those covered in a general permit (issued pursuant to a group application) that commence discharging after the general permit has been issued, must refer to the provisions of that general permit to determine if they are eligible for coverage. Facilities that have already been issued an individual permit for storm water discharges will not be eligible for participation in a group application. Several commenters believed that this restriction is inequitable since they have experienced the administrative burden of submitting a permit application. EPA disagrees. Industries that have already obtained a permit for storm water discharges have developed a storm water management program, engaged in the collection of quantitative data, and possess familiarity and experience with submitting storm water permit applications. The Agency sees no point to instituting an entirely new permit application process for facilities that have storm water permits issued individually. It makes little sense for these industries to be involved with submitting another permit application before their current permit expires.

As noted above, once a general permit has been issued to a group of dischargers, a new facility may request that they be covered by the general permit. The permitting authority can then examine the request in light of the general permit applicability requirements and determine whether the facility is suitable or not.

b. Scope of Group Applications. Numerous comments were received on how facilities should be evaluated as members of a group application. Several commenters stated that effluent limitation guideline subcategories are not relevant to pollutants found in storm water, but rather to the facility's everyday activities, and therefore similarity should be based on each facility's discharge or the similarity of pollutants expected to be found in a facility's discharge. Other commenters felt that similarity of operations at facilities should be the criteria. Others believed that an examination of the facility's impact on storm water quality should be the applied criteria. Other commenters suggested that EPA provide more guidance as to how broadly groups can be defined and that a failure to do so would discourage facilities from going to the trouble and expense of entering into the group application process. Some commenters were concerned that facilities would be rejected as a group because of variations in processes and process wastewater characteristics.

EPA does not agree that effluent limitation guideline subcategories are inappropriate as a method for determining group applications. EPA guideline subcategories are functional classifications, breaking down facilities into groups, for purposes of setting effluent limitations guidelines. The use of EPA subcategories will save time for both applicants and permitting authorities in determining whether a particular group is appropriate for a group application. Furthermore, EPA believes that this method of grouping provides adequate guidance for determining what facilities are grouped together. Establishing groups on the extent to which a facility's discharge affects storm water quality would not provide applicants with sufficient guidance as to the appropriateness of individual industries for group applications and would not provide information needed to draft appropriate model permit conditions for potentially different types of industries, industrial processes, and material management practices.

However, EPA recognizes that the subcategory designations may not always be available or an effective methodology for grouping applicants. Also, there are situations where processes that are subject to different subcategories are combined.

EPA agrees that the group application option should be flexible enough to allow groups to be created where subcategories are too rigid or otherwise inappropriate for developing group applications or where facilities are integrated or overlap into other subcategories. For these reasons, this rulemaking does not limit the submission to EPA subcategories alone, but rather allows groups to be formed where facilities are similar enough to be appropriate for general permit coverage.

In determining whether a group is appropriate for general permit coverage, EPA intends that the group applicant use the factors set forth in 40 CFR 122.28(a)(2)(ii), the current regulations governing general permits, as a guide. If facilities all involve the same or similar types of operations, discharge the same types of wastes, have the same effluent limitation and same or similar monitoring requirements, where applicable, they would probably be appropriate for a group application. To that extent, facilities that attempt to form groups where the constituent makeup of its process wastewater is dissimilar may run the risk of not being accepted for purposes of a group application.

Some commenters expressed the view that categories formed using general permit factors are too broad or that the language is too vague. One commenter expressed the view that the standard is too subjective and that permit writers will be evaluating the similarity of discharge too subjectively, while other commenters felt that the criteria should be broad and flexible. Other commenters stated that the effluent guideline subcategory or general permit coverage factors are not related to storm water discharges, because much of the criteria are based upon what is occurring inside the plant, rather than activities outside of the plant. EPA believes that these criteria are reasonable for defining the scope of a group application. EPA disagrees that the procedure, which is adequate for the issuance of general permits, is inadequate for the development of a group application. EPA believes that the activities inside a facility will generally correspond to activities outside of the plant that are exposed to storm events, including stack emissions, material storage, and waste products. Furthermore, if facilities are able to demonstrate their storm water discharge has similar characteristics, that is one element in the analysis needed for establishing that the group is appropriate. EPA disagrees that the criteria are too vague. If facilities are concerned that general permit criteria is insufficient guidance, then subcategories under 40 CFR subchapter N should be used. EPA believes that the program will function best if flexibility for creating groups is maintained.

If a NPDES approved State feels that a tighter grouping of applicants is appropriate individual permit applications can be requested from those permit applicants. One commenter indicated that it was not clear whether the group application procedure could be used for all NPDES requirements. EPA would clarify that the group application is designed only to cover storm water discharges from the industrial facilities identified in § 122.26(b)(14).

As noted above, EPA wishes to clarify that facilities with existing individual NPDES permits for storm water are not eligible to participate in the group application process. From an administrative standpoint EPA is not prepared to create an entirely different mechanism for permitting industries which already have such permits.

c. Group Application Requirements. The group application, as proposed, included the following requirements in three separate parts. Part 1A of a group application included: (A) Identification of the participants in the group application by name and location; (B) a narrative description summarizing the industrial activities of participants; (C) a list of significant materials stored outside by participants; and (D) identification of 10 percent of the dischargers participating in the group application for submitting quantitative data. A proposed part 1B of the group application included the following information from each participant in the group application: (A) A site map showing topography (or indicating the outline of drainage areas served by the outfall(s) and related information; (B) an estimate of the area of impervious surfaces (including paved areas and building roofs) and the total area drained by each outfall and a narrative description of significant materials; (C) a certification that all outfalls that should contain storm water discharges associated with industrial activity have been tested for the presence of non-storm water discharges; (D) existing information regarding significant leaks or spills of toxic or hazardous pollutants at the facility; (E) a narrative description of industrial activities at the fa-

cility that are different from or that are in addition to the activities described under part 1A; and (F) a list of all constituents that are addressed in a NPDES permit issued to the facility for any of non-storm water discharge. Part 2 of a group application required quantitative data from 10 percent of the facilities identified.

Some commenters felt that spill histories, drainage maps, material management practices, and information on significant materials stored outside are too burdensome or meaningless for evaluating similarity of discharges among group applicants. Several commenters stated that such requirements where the group may consist of several thousand facilities were impractical and would not assist EPA in developing model permits. Many commenters insisted that the requirements imposed in part 1B would effectively discourage use of the group application procedure. EPA agrees in large part with these comments. After reevaluating the components of part 1B, and the entire rationale for instituting the group application procedure, EPA has decided to excise part 1B from the requirements, and rely on part 1A and part 2 for developing appropriate permit condition. Where appropriate, EPA may require facilities to submit the information, formerly in part 1B, during the term of the permit. In other cases, EPA will establish which facilities must submit individual permit applications where more site specific permits are appropriate.

Under the revised part 1 and part 2, EPA will receive information pertaining to the types of industrial activity engaged in by the group, materials used by the facilities, and representative quantitative data. EPA can use such information to develop management practices that address pollutants in storm water discharges from such facilities. For most facilities, general good housekeeping or management practices will eliminate pollutants in storm water. Such requirements can be further refined by determining the nature of a group's industrial activity and by obtaining information on material used at the facility and representative quantitative data from a *48026 percentage of the facilities. Thus, EPA is confident that model permits and general permits can be developed from the information to be submitted under part 1 and part 2.

One commenter felt that more guidance on what makes a facility representative for sampling as part of a group is needed. In response, the Agency believes the rule as currently drafted provides adequate notice.

Another commenter asked how much sampling needed to be done and how much monitoring will transpire over the life of the permit for members of a group. This will vary from permit to permit and will be determined in permit proceedings. This rulemaking only covers the quantitative data that is to be submitted in the context of the group permit application.

One commenter indicated that because of the amount of diversity in the operations of a particular industry, obtaining a sample that could be considered representative would be extremely difficult. EPA recognizes that obtaining representative quantitative data through the group application process will prove to be difficult; however, EPA has sought to minimize these perceived problems. Under the group application concept, industries must be sufficiently similar to qualify. Industries which have significantly different operations from the rest of the group that affects the quality of their storm water discharge may be required to obtain an individual permit. Use of the nine precipitation zones will enable the data in the permit application to be more easily analyzed and patterns observed on the basis of hydrology and other regional factors. How EPA will evaluate the representativeness of the sample is discussed below.

Several commenters asked why the precipitation zone of group members is relevant to the application. The need to identify precipitation zones arises because the amount of rainfall is likely to have a significant impact on the quality of the receiving water. According to an EPA study (Methodology for Analysis of Detention Basins for Control of Urban Runoff Quality; Office of Water, Nonpoint Source Branch, Sept. 1986) the United States can be divided into nine general precipitation zones. These zones are characterized by differences in precipitation volume, precipitation intensity, precipitation duration, and precipitation intervals. Industrial facilities that seek general permits via the group application option may show significantly different loading rates as a result of these regional precipitation differences. As an example, pre-

precipitation in Seattle, Washington, located in Zone 7, approaches the mean annual storm intensity of .024 inches/hour with a mean annual storm duration of 20 hours for that Zone. In contrast, precipitation in Atlanta, Georgia, located in Zone 3 approaches the mean annual storm intensity of .102 inches/hour and a mean storm duration of 6.2 hours for that Zone. Atlanta, receives on the average four times more precipitation per hour with storms lasting one-third as long. As a result of these differences, if identical facilities within a group application were situated in each of these areas, their storm water discharges would likely exhibit different pollutant characteristics. Accordingly, data should be submitted from facilities in each zone.

One commenter felt that the EPA should abandon or modify its rainfall zone concept, because storm water quality will depend more on what materials are used at the facility than rainfall. EPA disagrees. Because storm water loading rates may differ significantly as a result of regional precipitation differences, it is necessary that for each precipitation zone containing representatives of a group application, the group must provide samples from some of those representatives. In comments to previous rulemakings it was argued that the amount of rainfall will affect the degree of impact a storm water discharge may have on the receiving stream.

One commenter stated that the precipitation zones illustrated in appendix E of the proposed rulemaking do not adequately reflect regional differences in precipitation and that in some cases the zones cut through cities where there are concentrations of industries without differences in their precipitation patterns. The rainfall zone map is a general guide to determining what areas of the country need to be addressed when determining representative rainfall events and quantitative data. When dealing with rainfall on a national scale, it is near impossible to make generalized statements with a great deal of accuracy. In the case of rainfall zones, rainfall patterns may be similar for facilities in close proximity to each other but none the less in different rainfall zones. In response, EPA has created these zones to reflect regional rainfall patterns as accurately as possible. Because of the variable nature of rainfall such circumstances are sure to arise. However, in order to obtain a degree of representativeness EPA is convinced that the use of these rainfall zones as described is appropriate for the submittal of group applications and the quantitative data therein.

The second and third requirements of part 1 of the group application instruct the applicant to describe the industrial activity (processes) and the significant materials used by the group. For the significant materials listed, the applicant is to discuss the materials management practices employed by members of the group. For example, the applicant should identify whether such materials are commonly covered, contained, or enclosed, and whether storm water runoff from materials storage areas is collected in settling ponds prior to discharge or diverted away from such areas to minimize the likelihood of contamination. Also, the approximate percentage of facilities in the group with no practices in place to minimize materials stored outside is to be identified.

EPA considers that the processes and materials used at a particular facility may have a bearing on the quality of the storm water. Thus, if there are different processes and materials used by members of the group, the application must identify those facilities utilizing the different processes and materials, with an explanation as to why these facilities should still be considered similar.

One commenter felt that a facility should be able to describe in its permit application the possibility of individual materials entering receiving waters. EPA supports the applicant adding site specific information which will assist the permit writer making an informed decision about the nature of the facility, the quality of its storm water discharge, and appropriate permit conditions.

The fourth element of part 1 of the group application is a commitment to submit quantitative data from ten percent of the facilities listed. EPA proposed that there must be a minimum of ten and a maximum of one hundred facilities within a

group that submit data. Comments reflected some dissatisfaction with this requirement. Some commenters asserted that ten percent was too high a number and would discourage group applications, while one commenter suggested a lesser percentage would be appropriate where the group can certify that facilities are representative. One commenter suggested that EPA have the discretion to allow for a smaller percentage. Several commenters argued that EPA should be satisfied with fewer than ten percent because EPA often relies on data from less than ten percent of the plants in a subcategory when promulgating effluent guidelines and that EPA should rely on data collection goals *48027 with affected groups as was done in the 1985 storm water proposal. Other commenters pointed out that an anomalous situation could arise where the group was small and facilities were scattered throughout the precipitation zones. For example, if a group consisted of 20 members where a minimum of ten facilities had to submit samples, and two or more members were in each precipitation zone; a total of 18 facilities (90% of the group) would have to submit quantitative data. EPA believes that there must be a sufficient number of facilities submitting data for any patterns and trends to be detectable. However, in light of these comments EPA has decided to modify the language in § 122.26(c) to allow 1 discharger in each precipitation zone to submit quantitative data where 10 or fewer of the group members are located in a particular precipitation zone. EPA believes, however, that one hundred facilities would in most cases be sufficient to characterize the nature of the runoff and thus 100 should remain the maximum. If the data are insufficient, EPA has the authority to request more sampling under section 308 of the CWA.

One commenter suggested that the ten facility cutoff was unreasonable, and that instead of cutting off the group at ten, allow a smaller number in the group and allow the facilities to sample ten percent of their outfalls instead. EPA agrees, in part, and will allow groups of between four and ten to submit a group application. However, the ten percent rule would not be effective in such cases. Therefore, at least half the facilities in a group of four to ten will be required to provide quantitative data from at least one outfall, with each precipitation zone represented by at least one facility.

For any group application, in addition to selecting a sufficient number of facilities from each precipitation zone, facilities selected to do the sampling should be representative of the group as a whole in terms of those characteristics identifying the group which were described in the narrative, i.e., number and range of facilities, types of processes used, and any other relevant factors. If there is some variation in the processes used by the group (40 percent of the group of food processors are canners and 60 percent are canners and freezers, for example), the different processes are to be represented. Also, samples are to be provided from facilities utilizing the materials management practices identified, including those facilities which use no materials management practices. The representation of these different factors, to the extent feasible, is to be roughly equivalent to their proportion in the group.

EPA wishes to emphasize that the provision that ten percent of the facilities need to submit quantitative data only applies to the permit application process. The general or individual permit itself may require quantitative data from each facility.

Submittal of Part 2 of the Group Application. As with part 1, part 2 of the Group Application would be submitted to the Office of Water Enforcement and Permits, in Washington, DC. If the information is incomplete, or simply is found to be an inadequate basis for establishing model permit limits, EPA has the authority under section 308 of the Clean Water Act to require that more information be submitted, which may include sampling from facilities that were part of the group application but did not provide data with the initial submission. If the group application is used by a Region or NPDES State to issue a general permit, the general permit should specify procedures for additional coverage under the permit.

If a part 2 is unacceptable or insufficient, EPA has the option to request additional information or to require that the facilities that participated in the group application submit complete individual applications (e.g. facilities that have submitted Form 1 with the group application may be required to submit Form 2F, or facilities which have submitted complete Form 1 and Form 2F information in the group application generally would not have to submit additional information).

Once the group applications are reviewed and accepted, EPA will use the information to establish draft permit terms and conditions for models for individual and general permits. NPDES approved States and EPA regional offices will continue to be the permit-issuing authority for storm water discharges. The NPDES approved States accepting the group application approach and the EPA Regions may then take the model permits and adapt them for their particular area, making adjustments for local water quality standards and other localized characteristics, and making determinations as to the need for an individual storm water permit where general permit coverage is felt to be inappropriate. Permits would be proposed by the Region or NPDES approved State in accordance with current regulations for public comment before becoming final. In NPDES States without general permit authority, or where an individual permit is deemed appropriate, the model permit can serve as the basis for issuing an individual permit.

The group application is an NPDES permit application just like any other and, as such, would be handled through normal permitting procedures, subject to the regulatory provisions applicable to permit issuance. Incomplete or otherwise inadequate submissions would be handled in the same manner as any other inadequate permit application. The permit issuing authority would retain the right to require submission of Form 1, Form 2C and Form 2F from any individual discharger it designates.

Some commenters offered other procedures for developing a group application procedure; however, these were frequently entirely different approaches or so novel that a reproposal would be required. One commenter suggested that those industries that are identified as being likely to pollute should be required to submit quantitative data. Numerous commenters contended that a generic approach for meeting the required information requirements for group applications would allow EPA to develop adequate general permits. EPA does not view these approaches as appropriate.

5. Group Application: Applicability in NPDES States

Many commenters expressed concern about how the group application procedure will work within the framework of an NPDES approved State. The relationship between EPA and the States that are authorized to administer the NPDES program, including implementation of the storm water program, is a complicated aspect of this rulemaking. Approved States (there are 38 States and one territory so approved) must have requirements that are at least as stringent as the Federal program; they may be more stringent if they choose. Authority to issue general permits is optional with NPDES States.

EPA has determined that ten percent of the facilities must provide quantitative data in the permit application as noted above. Furthermore, these applications are submitted to EPA headquarters. Consequently States, whether NPDES approved or not, are not in a position to reject or modify this requirement. Such States may determine the amount of sampling to be done pursuant to permit conditions. If they choose to issue general permits they may include such authority in their NPDES program and, *48028 upon approval of the program by EPA, may then issue general permits. Within the context of the NPDES provisions of the CWA, if States do not have general permitting authority, then general permits are not available in those States.

In response to one comment, EPA does not have authority to issue general or individual permits to facilities in NPDES approved states. Today's rule provides a means for affected industries to be covered by general permits developed via the group application procedure as well as from general permits developed independently of the group application process. Accordingly, today's rule anticipates that most NPDES States will seek general permit issuance authority to implement the storm water program in the most efficient and economical way. Without general permit issuance authority NPDES States will be required to issue individual permits covering storm water discharges to potentially thousands of industrial facilities.

One commenter recommended that States with approved NPDES programs should be involved in determining what in-

dustries are representative for submitting quantitative data. EPA recognizes that States will have an interest in this determination and may possess insight as to the appropriateness of using some facilities. However, EPA may be managing hundreds of group applications and approving or disapproving them as expeditiously as possible. EPA believes that involving the States in this already administratively complex and time consuming undertaking would be counterproductive. In any event, NPDES approved States are not bound by the determinations of EPA as to the appropriateness of groups or the issuance of permits based on model permits or individual permits. However, States will be encouraged to use model permits that are developed by EPA. EPA will endeavor to design general and model permits that are effective while also adaptable to the concerns of different States. Again, States are able to develop more stringent standards where they deem it to be appropriate. There are currently seventeen States that have authority to issue general permits: Arkansas, Colorado, Illinois, Kentucky, Minnesota, Missouri, Montana, New Jersey, North Dakota, Oregon, Rhode Island, Utah, Washington, West Virginia and Wisconsin. As suggested in the comments, EPA is encouraging more States to develop general permit issuing authority in order to facilitate the permitting process.

One commenter advised that the rules should state that a NPDES approved State may accept a group application or require additional information. EPA has decided not to explicitly state this in the rule. However, this comment does raise some points that need to be addressed. Because the group application option is a modification of existing NPDES permit application requirements, the State is free to adopt this option, but is not required to. If the State chooses to adopt the group application and it does not have general permit authority, the group application can be used to issue individual permits. If an approved NPDES State chooses to not issue permits based on the group application, facilities that discharge storm water associated with industrial activity that are located in that State must submit individual applications to the State permitting authority. Before submitting a group application, facilities should ascertain from the State permitting authority whether that State intends to issue permits based upon a group application approved by EPA for the purpose of developing general permits. For facilities that discharge storm water associated with industrial activity which are named in a group application, the Director may require an individual facility to submit an individual application where he or she determines that general permit coverage would be inappropriate for the particular facility.

One commenter stressed that EPA should streamline the procedure for States desiring to obtain general permit coverage. EPA has, over the last year, streamlined this procedure and encourages States to take advantage of this procedure. EPA recommends that States consider obtaining general permit authority as a means to efficiently issue permits for storm water discharges. These States should contact the Office of Water Enforcement and Permits at EPA Headquarters as soon as possible.

6. Group Application: Procedural Concerns

One commenter claimed that the proposed group application process and procedures violated federal law. This commenter claimed that EPA was abrogating its responsibility by allowing a trade association to design a data collection plan in lieu of completing an NPDES application form designed by EPA, thus violating the Federal Advisory Committee Act. The commenter stated that EPA would be improperly influenced by special interests if trade associations were able to design their own storm water data gathering plans. The commenter further asserted that any decisions by EPA on the content of specific group applications would be rulemakings and thus subject to the provisions of the Administrative Procedure Act.

EPA disagrees with the comment that the group application violates the Federal Advisory Committee Act (FACA). FACA governs only those groups that are established or "utilized" by an agency for the purpose of obtaining "advice" or "recommendations." The group application option does not solicit or involve any "advice" or "recommendations." It simply allows submission of data by certain members of a group in accordance with specific regulatory criteria for de-

termining which facilities are "representative" of a group. As such, the group application is merely a submission in accordance and in compliance with specific regulatory requirements and does not contain discretionary uncircumscribed "advice" or "recommendations" as to which facilities are representative of a group.

Thus, the determination of which facilities should submit testing data in accordance with regulatory criteria is little different from many other regulatory requirements where an applicant must submit information in accordance with certain criteria. For example, under 40 CFR 122.21 all outfalls must be tested except where two or more have "substantially identical" effluents. Similarly, quantitative data for certain pollutants are to be provided where the applicant knows or "has reason to believe" such pollutants are discharged. Both of these provisions allow the applicant to exercise discretion in making certain judgments but such action is circumscribed by regulatory standards. EPA further has authority to require these facilities to submit individual applications. In none of these instances are "recommendations" or "advice" involved. EPA also notes that it is questionable whether, in providing for group applications, it is "soliciting" advice or recommendations from groups or that such groups are being "utilized" by EPA as a "preferred source" of advice. See 48 FR 19324 (April 28, 1983). Furthermore, this data collection effort may be supplemented by EPA if, after review of the data, EPA determines additional data is necessary for permit issuance. Other information gathering may act as a check on the group applications received.

EPA also does not agree with this commenter's claim that the group application scheme represents an impermissible delegation of the Administrator's function in violation of the CWA regarding data gathering. The Administrator has the broadest discretion in determining what information is needed for permit development as well as the manner in which such information will be collected. The CWA does not require every discharger required to obtain a permit to file an application. Nor does the CWA require that the Administrator obtain data on which a permit is to be based through a formal application process (see 40 CFR 122.21). For years "applications" have not been required from dischargers covered by general permits. EPA currently obtains much information beyond that provided in applications pursuant to section 308 of the CWA. This is especially true with respect to general permit and effluent limitations guidelines development. The group application option is simply another means of data gathering. The Administrator may always collect more data should he determine it necessary upon review of a groups' data submission. And, he may obtain such additional data by whatever means permissible under the Statute that he deems appropriate. Thus, it can hardly be said that by this initial data gathering effort the Administrator has delegated his data gathering responsibilities. In addition, since groups are required to select "representative" facilities, etc., in accordance with specific regulatory requirements established by the Administrator and because EPA will scrutinize part 1 of the group applications and either accept or reject the group as appropriate for a group application, no impermissible delegation has occurred. EPA will make an independent determination of the acceptability of a group application in view of the information required to be submitted by the group applicant, other information available to EPA (such as information on industrial subcategories obtained in developing effluent limitations guidelines as well as individual storm water applications received as a result of today's rule) and any further information EPA may request to supplement part 1 pursuant to section 308 of the CWA. Moreover, any concerns that a general permit may be based upon biased data can be dealt with in the public permit issuance process.

Finally, EPA also does not agree that the group application option violates the Administrative Procedures Act. Again, the group application scheme is simply a data gathering device. EPA could very well have determined to gather data informally via specific requests pursuant to section 308 of the CWA. In fact, general permit and effluent limitations guideline development proceed along these lines. It would make little sense if the latter informal data gathering process were somehow illegal simply because it is set forth in a rule that allows applicants some relief upon certain showings. In this respect, several of EPA's existing regulations similarly allow an applicant to be relieved from certain data submission requirements upon appropriate demonstrations. For example, testing for certain pollutants and or certain outfalls may be waived under certain circumstances. Most importantly, the operative action of concern that impacts on the public is indi-

vidual or general permit issuance based upon data obtained. As previously stated, ample opportunity for public participation is provided in the permit issuance proceeding.

7. Permit Applicability and Applications for Oil and Gas and Mining Operations

Oil, gas and mining facilities are among those industrial sites that are likely to discharge storm water runoff that is contaminated by process wastes, toxic pollutants, hazardous substances, or oil and grease. Such contamination can include disturbed soils and process wastes containing heavy metals or suspended or dissolved solids, salts, surfactants, or solvents used or produced in oil and gas operations. Because they have the potential for serious water quality impacts, Congress recognized, throughout the development of the storm water provisions of the Water Quality Act of 1987, the need to control storm water discharges from oil, gas, and mining operations, as well as those associated with other industrial activities.

However, Congress also recognized that there are numerous situations in the mining and oil and gas industries where storm water is channeled around plants and operations through a series of ditches and other structural devices in order to prevent pollution of the storm water by harmful contaminants. From the standpoint of resource drain on both EPA as the permitting agency and potential permit applicants, the conclusion was that operators that use good management practices and make expenditures to prevent contamination must not be burdened with the requirement to obtain a permit. Hence, section 402(1)(2) creates a statutory exemption from storm water permitting requirements for uncontaminated runoff from these facilities.

To implement section 402(1)(2), EPA intends to require permits for contaminated storm water discharges from oil, gas and mining operations. Storm water discharges that are not contaminated by contact with any overburden, raw material, intermediate products, finished product, byproduct or waste products located on the site of such operations will not be required to obtain a storm water discharge permit.

The regulated discharge associated with industrial activity is the discharge from any conveyance used for collecting and conveying storm water located at an industrial plant or directly related to manufacturing, processing or raw materials storage areas at an industrial plant. Industrial plants include facilities classified as Standard Industrial Classifications (SIC) 10 through 14 (the mining industry), including oil and gas exploration, production, processing, and treatment operations, as well as transmission facilities. See 40 CFR 122.26(b)(14)(iii). This also includes plant areas that are no longer used for such activities, as well as areas that are currently being used for industrial processes.

a. Oil and Gas Operations. In determining whether storm water discharges from oil and gas facilities are "contaminated", the legislative history reflects that the EPA should consider whether oil, grease, or hazardous materials are present in storm water runoff from the sites described above in excess of reportable quantities (RQs) under section 311 of the Clean Water Act or section 102 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). [Vol. 132 Cong. Rec. H10574 (daily ed. October 15, 1986) Conference Report].

Many of the comments received by EPA regarding this exemption focused on the concern that EPA's test for requiring a permit is and would subject an unnecessarily large number of oil and gas facilities to permit application requirements. Specific comments made in support of this concern are addressed below.

A primary issue raised by commenters centered on how to determine when a storm water discharge from an oil or gas facility is "contaminated", and therefore subject to the permitting program under section 402 of the CWA. Many of the comments received from industry representatives objected to the Agency's intent as expressed in the proposal to use past discharges as a trigger for submitting permit applications.

The proposed rule provided that the notification requirements for releases in excess of RQs established under the CWA and CERCLA would serve as a *48030 basis for triggering the submittal of permit applications for storm water discharges from oil and gas facilities. As described in the proposal, oil and gas operations that have been required to notify authorities of the release of either oil or a hazardous substance via a storm water route would be required to submit a permit application. In other words, any facility required to provide notification of the release of an RQ of oil or a hazardous substance in storm water in the past would be required to apply for a storm water permit under the current rule. In addition, any facility required to provide notification regarding a release occurring from the effective date of today's rule forward would be required to apply for a storm water permit.

Commenters maintained that the use of historical discharges to require permit applications is inconsistent with the language and intent of section 402(1)(2) of the CWA, and relevant legislative history, both of which focus on present contamination. Requiring storm water permits based solely on the occurrence of past contaminated discharges, even where no present contamination is evident, would go beyond the statutory requirement that EPA not issue a permit absent a finding present contamination. Commenters also noted that the proposal did not take into account the fact that past problems leading to such releases may have been corrected, and that requiring an NPDES permit may no longer be necessary. The result of such a requirement, commenters maintained, would be an excessive number of unnecessary permit applications being submitted, at significant cost and minimal benefit to both regulated facilities and regulating authorities.

Commenters also indicated that using the release of reportable quantities of oil, grease or hazardous substances as a permit trigger would identify discharges of an isolated nature, rather than the continuous discharges, which should be the focus of the NPDES permit program under section 402. Such an approach, commenters maintained, is inconsistent with existing regulations under section 311 of the CWA, and would result in permit applications from facilities that are more appropriately regulated under section 311.

Despite these criticisms, many commenters recognized that the Agency is left with the task of determining when discharges from oil and gas facilities are contaminated, in order to regulate them under section 402(1)(2). It was suggested by numerous commenters that the EPA adopt an approach similar to that used under section 311 of the CWA for Spill Prevention Control and Countermeasure (SPCC) Plans. Under SPCC, facilities that are likely to discharge oil into waters of the United States are required to maintain a SPCC plan. In the event the facility has a spill of 1,000 gallons or 2 or more reportable quantities of oil in a 12 month period, the facility is required to submit its SPCC plan to the Agency. The triggering events proposed by the commenters for storm water permits for oil and gas operations are six reportable sheens or discharges of hazardous substances (other than oil) in excess of section 311 or section 102 reportable quantities via a storm water point source route over any thirty-six month period. It was suggested that if this threshold is reached, an operator would then file a permit application (or join a group application) based upon the presumption that its current storm water discharges are contaminated.

In response to these comments, the Agency believes that past releases that are reportable quantities can be a valid indicator of the potential for present contamination of discharges. The legislative history as cited above supports this conclusion. EPA would note that the existence of a RQ release would serve only as a triggering mechanism for a permit application. Under the proposed rule, evidence of past contamination would merely require submission of a permit application and would not be used as conclusive evidence of current contamination. The determination as to whether a permit would be actually required due to current contaminated discharge would be made by the permitting authority after reviewing the permit application. The fact of a past RQ release does not necessarily imply a conclusive finding of contamination, only that sufficient potential for contamination exists to warrant a permit application or the collection of other further information. Today's rule does not change the proposed approach in this respect. Thus, EPA does not believe that today's rule exceeds the authority of section 402(1)(2).

EPA believes that there is no legal impediment to using past RQ discharges as a trigger for requiring a storm water permit application. EPA notes that, as mentioned above, even those commenters who objected to the proposed test on legal authority grounds merely offered an alternate test that requires more releases to have occurred within a shorter period of time before a permit application is required.

Therefore, the only disagreement that remains is over what constitutes a reasonable test that will identify facilities with the potential for storm water contamination. EPA notes that neither the statute nor the legislative history provides any guidance on this question. Furthermore, EPA disagrees with the commenters who suggested that 6 releases in the past 3 years or 2 releases in the past year are necessarily more valid measures of the potential for current contamination than EPA's proposed test. There is no statistical or other basis for preferring one test to the other. However, EPA does agree with those commenters that suggest that a single release in the distant past may not accurately reflect current conditions and the current potential for contamination.

EPA has therefore amended today's rule to provide that only oil and gas facilities which have had a release of an RQ of oil or hazardous substances in storm water in the past three years will be required to submit a permit application. EPA believes that limiting the permit trigger to events of the past three years will address commenters' concerns regarding the use of "stale history" in determining whether an application is required. EPA notes that the three year cutoff is consistent with the requirement for industrial facilities to report significant leaks or spills at the facility in their storm water permit applications. See 40 CFR 122.26(c)(1)(i)(D).

Commenters asserted that EPA and the States must have some reasonable basis for concluding that a storm water discharge is contaminated before requiring permit applications or permits. Commenters believed that § 122.26(c)(1)(iii)(B) as proposed implied that the Agency's authority in this respect is unrestricted. In response, EPA may collect such data by whatever appropriate means the statute allows, in order to obtain information that a permit is required. Usually, the most practical tool for doing so is the permit application itself. However, if necessary to supplement the information made available to the Agency, EPA has broad authority to obtain information necessary to determine whether or not a permit is required, under section 308 of the Clean Water Act. Given the plain language of the CWA and the Congressional intent as manifested in the legislative history, the Agency is convinced that the approach described above is appropriate. Yet, as further discussed below, EPA has also deleted as redundant § 122.26(c)(1)(iii)(B).

Regarding the types of facilities included in the storm water regulation, a number of commenters suggested that the Agency has misconstrued the meaning of facilities "associated with *48031 industrial activity", and has proposed an overly broad definition of such facilities in the oil and gas industry. Specifically, commenters suggested that only the manufacturing sector of the oil and gas industry should be subject to storm water permit application requirements, and that exploration and production activities, gas stations, terminals, and bulk plants should all be exempted from storm water permitting requirements. Commenters maintain that this broad interpretation would subject many oil and gas facilities to the storm water permit requirements, when these were not intended by Congress to be so regulated. As a second point related to this issue, some commenters felt that transmission facilities were not intended to be regulated under the storm water provisions, and should be exempted from permit requirements. This would be consistent, it was argued, with legislative history which concluded that transmission facilities do not significantly contribute to the contamination of water.

The Agency disagrees that these facilities do not fall under the storm water permitting requirements as envisioned by Congress. SIC 13, which is relied upon by EPA to identify these oil and gas operations, describes oil and gas extraction industries as including facilities related to crude oil and natural gas, natural gas liquids, drilling oil and gas wells, oil and gas exploration and field services. Moreover, legislative history as it applies to industrial activities, and thus to oil and gas (mining) operations, expressly includes exploration, production, processing, transmission, and treatment operations

within the purview of storm water permitting requirements and exemptions. EPA's intent is for storm water permit requirements (and the exemption at hand) to apply to the activities listed above (exploration, production, processing, treatment, and transmission) as they relate to the categories listed in SIC 13.

Commenters requested clarification from the Agency that storm water discharges from oil and gas facilities require a permit or the filing of a permit application only when they are contaminated at the point of discharge into waters of the United States. Commenters noted that large amounts of potentially contaminated stormwater may not enter waters of the United States, or may enter at a point once the discharge is no longer "contaminated". In these cases, it should be clear that no permit or permit application is required.

EPA agrees that oil and gas exploration, production, processing, or treatment operations or transmission facilities must only obtain a storm water permit when a discharge to waters of the U.S. (including those discharges through municipal separate storm sewers) is contaminated. A permit application will be required when any discharge in the past three years or henceforth meets the test discussed above.

Under the proposed rule, the Agency stated at § 122.26(c)(1)(iii)(B) that the Director may require on a case-by-case basis the operator of an existing or new storm water discharge from an oil or gas exploration, production, processing, or treatment operation, or transmission facility to submit an individual permit application. The Agency has removed this section since CWA section 402(1)(2), as codified in 122.26(c)(1)(iii)(A), adequately addresses every situation where a permit should be required for these facilities.

b. Use of Reportable Quantities to Determine if a Storm Water Discharge from an Oil or Gas Operation is Contaminated. Section 311(b)(5) of the CWA requires reporting of certain discharges of oil or a hazardous substance into waters of the United States (see 44 FR 50766 (August 29, 1979)). Section 304(b)(4) of the Act requires that notification levels for oil and hazardous substances be set at quantities which may be harmful to the public health or welfare of the United States, including but not limited to fish, shellfish, wildlife, and public or private property, shorelines and beaches. Facilities which discharge oil or a hazardous substance in quantities equal to or in excess of an RQ, with certain exceptions, are required to notify the National Response Center (NRC).

Section 102 of CERCLA extended the reporting requirement for releases equal to or exceeding an RQ of a hazardous substance by adding chemicals to the list of hazardous substances, and by extending the reporting requirement (with certain exceptions) to any releases to the environment, not just those to waters of the United States.

Pursuant to section 311 of the CWA, EPA determined reportable quantities for discharges by correlating aquatic animal toxicity ranges with 5 reporting quantities, i.e., 1-, 10-, 100-, 1000-, and 5000- pounds per 24 hour period levels. Reportable quantity adjustments made under CERCLA rely on a different methodology. The strategy for adjusting reportable quantities begins with an evaluation of the intrinsic physical, chemical, and toxicological properties of each designated hazardous substance. The intrinsic properties examined, called "primary criteria," are aquatic toxicity, mammalian toxicity (oral, dermal, and inhalation), ignitability, reactivity, and chronic toxicity. In addition, substances that were identified as potential carcinogens have been evaluated for their relative activity as potential carcinogens. Each intrinsic property is ranked on a five-tier scale, associating a specific range of values on each scale with a particular reportable quantity value. After the primary criteria reportable quantities are assigned, the hazardous substances are further evaluated for their susceptibility to certain extrinsic degradation processes (secondary criteria). Secondary criteria consider whether a substance degrades relatively rapidly to a less harmful compound, and can be used to raise the primary criteria reportable quantity one level.

Also pursuant to section 311, EPA has developed a reportable quantity for oil and associated reporting requirements at 40

CFR part 110. These requirements, known as the oil sheen regulation, define the RQ for oil to be the amount of oil that violates applicable water quality standards or causes a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or causes a sludge or emulsion to be deposited.

Reportable quantities developed under the CWA and CERCLA were not developed as effluent guideline limitations which establish allowable limits for pollutant discharges to surface waters. Rather, a major purpose of the notification requirements is to alert government officials to releases of hazardous substances that may require rapid response to protect public health, welfare, and the environment. Notification based on reportable quantities serves as a trigger for informing the government of a release so that the need for response can be evaluated and any necessary response undertaken in a timely fashion. The reportable quantities do not themselves represent any determination that releases of a particular quantity are actually harmful to public health, welfare, or the environment.

EPA requested comment on the use of RQs for determining contamination in discharges from oil and gas facilities. As noted above numerous commenters supported the concept of using reportable quantities under certain circumstances. Comments on the measurement of oil sheens for the purpose of triggering a permit application were divided. Some commented that it is much too stringent because the amount of oil creating a *48032 sheen may be a relatively small amount. Others viewed the test as a quick, easy, practical method that has been effective in the past.

In relying on the reporting requirements associated with releases in excess of RQs for oil or hazardous substances to trigger the submittal of permit applications for oil and gas operations, the Agency believes that the use of the reporting requirements for oil will be particularly useful. The Agency believes that the release of oil to a storm water discharge in amounts that cause an oil sheen is a good indicator of the potential for water quality impacts from storm water releases from oil and gas operations. In addition, given the extremely high number of such operations (the Agency estimates that there are over 750,000 oil wells alone in the United States), relying on the oil sheen test to determine if storm water discharges from such sites are "contaminated" will be a far easier test for operators to determine whether to file a storm water permit application than a test based on sampling. The detection of a sheen does not require sophisticated instrumentation since a sheen is easily perceived by visual observation. EPA agrees with those comments calling the oil sheen test an appropriate measure for triggering a storm water permit application. In adopting this approach, EPA recognizes, as pointed out by many commenters that an oil sheen can be created with a relatively small amount of oil.

One commenter suggested that contamination must be caused by contact with on-site material before being subject to permit application requirements. The Agency agrees with this comment. Those facilities that have had releases in excess of reportable quantities will generally have contamination from contact with on-site material as described in the CWA. Thus, use of the RQ test is an appropriate trigger. As discussed above, determination of whether contamination is present to warrant issuance of a permit will be made in the context of the permit proceeding.

One commenter believed that the use of RQs is inappropriate because "the statute intended to exempt only oil and gas runoff that is not contaminated at all." The Agency wishes to clarify that reportable quantities are being used to determine what facilities need to file permit applications and to describe what is meant by the term "contaminated." The Director may require a permit for any discharges of storm water runoff contaminated by contact with any overburden, raw material, intermediate product, finished product, by product or waste product at the site of such operations. The use of RQs is solely a mechanism for identifying the facilities most likely to need a storm water permit consistent with the legislative history of section 402(1)(2).

c. Mining Operations. The December 7, 1988 proposal would establish background levels as the standard used to define when a storm water discharge from a mining operation is contaminated. When a storm water discharge from a mining

site was found to contain pollutants at levels that exceed background levels, the owner or operator of the site was required to submit a permit application for that operation. The proposal was founded upon language in the legislative history stating that the determination of whether storm water is contaminated by contact with overburden, raw material, intermediate product, finished product, byproduct, or waste products "shall take into consideration whether these materials are present in such stormwater runoff . . . above natural background levels". [Vol. 132 Cong. Rec. H10574 (daily ed. Oct. 15, 1986) Conference Report].

Comments received on this component of the rule suggested that background levels of pollutants would be very difficult to calculate due to the complex topography frequently encountered in alpine mining regions. For example, if a mine is located in a mountain valley surrounded on all sides by hills, the site will have innumerable slopes feeding flow towards it. Under such circumstances, determining how the background level is set would prove impractical. Commenters indicated that it is very difficult to measure or determine background levels at sites where mining has occurred for prolonged periods. In many instances, data on original background levels may not be available due to long-term site activity. As a result, any background level established will vary based on the type and level of previous activity. In addition, mining sites typically have background levels that are naturally distinct from the surrounding areas. This is due to the geologic characteristics that makes them valuable as mining sites to begin with. This also makes it difficult to establish accurate background levels.

Because of these concerns EPA has decided to drop the use of background levels as a measure for determining whether a permit application is required. Accordingly, a permit application will be required when discharges of storm water runoff from mining operations come into contact with any overburden, raw material, intermediate product, finished product, byproduct, or waste product located on the site. Similar to the RQ test for oil and gas operations, EPA intends to use the "contact" test solely as a permit application trigger. The determination of whether a mining operation's runoff is contaminated will be made in the context of the permit issuance proceedings.

If the owner or operator determines that no storm water runoff comes into contact with overburden, raw material, intermediate product, finished product, byproduct, or waste products, then there is no obligation to file a permit application. This framework is consistent with the statutory provisions of section 402(1)(2) and is intended to encourage each mining site to adopt the best possible management controls to prevent such contact.

Several commenters stated that EPA's use of total pollutant loadings for determining permit applicability is not consistent with the general framework of the NPDES program. Their concern is that such evaluation criteria depart from how the NPDES program has been administered in the past, based on concentration limits. In addition, commenters requested that EPA clarify that information on mass loading will be used for determining the need for a permit only. Since the analysis of natural background levels as a basis for a permit application has been dropped from this rulemaking, these issues are moot.

Commenters noted that the proposed rule did not specify what impact this rulemaking has on the storm water exemptions in 40 CFR 440.131. The commenters recommended not changing any of these provisions. Some commenters indicated that mining facilities that have NPDES permits should not be subject to additional permitting under the storm water rule. EPA does not intend that today's rule have any effect on the conditional exemptions in 40 CFR 440.131. Where a facility has an overflow or excess discharge of process-related effluent due to stormwater runoff, the conditional exemptions in 40 CFR 440.131 remain available.

Several commenters note that the term overburden, as used in the context of the proposed storm water rule, is not defined and recommended that this term should be defined to delineate the scope of the regulation. EPA agrees that the term

overburden should be defined to help properly define the scope the storm water rule. In today's rule, the term *48033 overburden has been clarified to mean any material of any nature overlying a mineral deposit that is removed to gain access to that deposit, excluding topsoil or similar naturally-occurring surface materials that are not disturbed by mining operations. This definition is patterned after the overburden definition in SMCRA, and is designed to exclude undisturbed lands from permit coverage as industrial activity. However, the definition provided in this regulation may be revised at a later date, to achieve consistency with the promulgation of RCRA Subtitle D mining waste regulations in the future.

Numerous commenters raised issues pertaining to the inclusion of inactive mining areas as subject to the stormwater rule. Some commenters indicated that including inactive mine operations in the rule would create an unreasonable hardship on the industry. EPA has included inactive mining areas in today's rule because some mining sites represent a significant source of contaminated stormwater runoff. EPA has clarified that inactive mining sites are those that are no longer being actively mined, but which have an identifiable owner/operator. The rule also clarifies that active and inactive mining sites do not include sites where mining claims are being maintained prior to disturbances associated with the extraction, beneficiation, or processing of mined materials, nor sites where minimal activities required for the sole purpose of maintaining the mining claim are undertaken. The Agency would clarify that claims on land where there has been past extraction, beneficiation, or processing of mining materials, but there is currently no active mining are considered inactive sites. However, in such cases the exclusion discussed above for uncontaminated discharges will still apply.

EPA's definition of active and inactive mining operations also excludes those areas which have been reclaimed under SMCRA or, for non-coal mining operations, under similar applicable State or Federal laws. EPA believes that, as a general matter, areas which have undergone reclamation pursuant to such laws have concluded all industrial activity in such a way as to minimize contact with overburden, mine products, etc. EPA and NPDES States, of course, retain the authority to designate particular reclaimed areas for permit coverage under section 402(p)(2)(E).

The proposed rule had included an exemption for areas which have been reclaimed under SMCRA, although the language of the proposed rule inadvertently identified the wrong universe of coal mining areas. The final rule language has been revised to clarify that areas which have been reclaimed under SMCRA (and thus are no longer subject to 40 CFR part 434 subpart E) are not subject to today's rule. Today's rule thus is consistent with the coal mining effluent guideline in its treatment of areas reclaimed under SMCRA.

In response to comments, EPA has also expanded this concept to exclude from coverage as industrial activity non-coal mines which are released from similar State or Federal reclamation requirements on or after the effective date of this rule. EPA believes it is appropriate, however, to require permit coverage for contaminated runoff from inactive non-coal mines which may have been subject to reclamation regulations, but which have been released from those requirements prior to today's rule. EPA does not have sufficient evidence to suggest that each State's previous reclamation rules and/or Federal requirements, if applicable, were necessarily effective in controlling future storm water contamination.

8. Application Requirements for Construction Activities

As discussed above, EPA has included storm water discharges from activities involving construction operations that result in the disturbance of five acres total land in the regulatory definition of storm water discharges associated with industrial activity.

This is a departure from the proposed rule which required permit applications for discharges from activities involving construction operations that result in the disturbance of less than one acre total land area and (which are not part of a larger common plan of development or sale; or operations that are for single family residential projects, including duplexes,

triplexes, or quadruplexes, that result in the disturbance of less than five acre total land areas and which are not part of a larger common plan of development or sale). The reasons for this change are noted below.

Many commenters representing municipalities, States, and industry requested that clearing, grading, and excavation activities not be included in the definition of storm water discharges associated with industrial activity. It was suggested that EPA delay including construction activities until after the studies mandated in section 402(p)(5) of the CWA are completed. Other commenters felt that NPDES permits are not appropriate for construction discharges due to their short term, intermediate and seasonal nature. Another commenter felt that only the construction activities on the sites of the industrial facilities identified in the other subsections of the definition of "associated with industrial activity" should be included.

EPA believes that storm water permits are appropriate for the construction industry for several reasons. Construction activity at a high level of intensity is comparable to other activity that is traditionally viewed as industrial, such as natural resource extraction. Construction that disturbs large tracts of land will involve the use of heavy equipment such as bulldozers, cranes, and dump trucks. Construction activity frequently employs dynamite and/or other equipment to eliminate trees, bedrock, rockwork, and to fill or level land. Such activities also engage in the installation of haul roads, drainage systems, and holding ponds that are typical of the industrial activity identified in § 122.26(b)(14)(i-x). EPA cannot reasonably place such activity in the same category as light commercial or retail business.

Further, the runoff generated while construction activities are occurring has potential for serious water quality impacts and reflects an activity that is industrial in nature. Where construction activities are intensive, the localized impacts of water quality may be severe because of high unit loads of pollutants, primarily sediments. Construction sites can also generate other pollutants such as phosphorus, nitrogen and nutrients from fertilizer, pesticides, petroleum products, construction chemicals and solid wastes. These materials can be toxic to aquatic organisms and degrade water for drinking and water-contact recreation. Sediment runoff rates from construction sites are typically 10 to 20 times that of agricultural lands, with runoff rates as high as 100 times that of agricultural lands, and 1,000 to 2,000 times that of forest lands. Even small construction sites may have a significant negative impact on water quality in localized areas. Over a short period of time, construction sites can contribute more sediment to streams than was previously deposited over several decades.

EPA is convinced that because of the impacts of construction discharges that are directly to waters of the United States, such discharges should be addressed by permits issued by Federal or NPDES State permitting authorities. It is evident from numerous studies and reports submitted under section 319 of the CWA that discharges from construction sites continue to be a major source of water quality problems and water quality standard violations. *48034 Accordingly EPA is compelled to address these source under these regulations and thereby regulate these sources under a nationally consistent program with an appropriate level of enforcement and oversight.

Techniques to prevent or control pollutants in storm water discharges from construction are well developed and understood. A primary control technique is good site planning. A combination of nonstructural and structural best management practices are typically used on construction sites. Relatively inexpensive nonstructural vegetative controls, such as seeding and mulching, are effective control techniques. In some cases, more expensive structural controls may be necessary, such as detention basins or diversions. The most efficient controls result when a comprehensive storm water management system is in place. Another reason that EPA has decided to address this class of discharges is that it is part of the Agency's recent emphasis on pollution prevention. Studies such as NURP indicate that it is much more cost effective to develop measures to prevent or reduce pollutants in storm water during new development than it is to correct there problems later on. Many of these prevention and control practices, which can take the form of grading patterns as well as oth-

er controls, generally remain in place after the construction activities are completed.

a. Permit Application Requirements. In today's rulemaking, EPA has set forth distinct permit application requirements for these construction activities, at § 122.26(c)(1)(ii), to be used where general permits to be developed and promulgated by EPA are inapplicable. Such facilities will be required to provide a map indicating the site's location and the name of the receiving water and a narrative description of:

- The nature of the construction activity;
- The total area of the site and the area of the site that is expected to undergo excavation during the life of the permit;
- Proposed measures, including best management practices, to control pollutants in storm water discharges during construction, including a description of applicable Federal requirements and State or local erosion and sediment control requirements;
- Proposed measures to control pollutants in storm water discharges that will occur after construction operations have been completed, including a description of applicable State or local requirements, and
- An estimate of the runoff coefficient (fraction of total rainfall that will appear as runoff) of the site and the increase in impervious area after the construction addressed in the permit application is completed, a description of the nature of fill material and existing data describing the soil or the quality of the discharge.

Permit application requirements for construction activities do not include the submission of quantitative data. EPA believes that the changing nature of construction activities at a site to be covered by the permit application requirements generally would not be adequately described by quantitative data. The comments received by EPA support this determination. One State commented that a program they instituted has been based on quantitative data for the past 10 years and has proven to be very awkward, even unworkable.

Twenty commenters responded to the issue of appropriate construction site application deadlines including: Three towns (<100,000 population); one medium municipality; one large municipality; one agency associated with a large municipality; three agencies associated counties; three agencies associated with States; two industries; five industrial associations; and one private organization representing industry. The commenters primarily focused on actual deadlines and permitting authority response time.

Applicants for permits to discharge storm water into the waters of the United States from a construction site would normally be required to submit permits in the same time frame as new sources and new discharges. This rulemaking requires permit applications from such sources to be submitted at least 180 days prior to the date on which the discharge is to commence. Four commenters agreed with the application deadline of 180 days prior to commencement of discharge. Three commenters felt it would be difficult to apply 180 days prior to when the discharge was to begin. Three commenters recommended shortening the time period to 90 days. Numerous other commenters were concerned over delays during the permitting authority's review of the permit application. The commenters requested that a maximum response time be set in the regulation. Suggested maximum response times were 90 and 30 days.

In response to these comments, EPA has changed the application deadline for construction permits from at least 180 days prior to discharge to at least 90 days prior to the date when construction is to commence. This change reflects EPA's recognition of the nature of construction operations in that developers/builders may not be aware of projects 180 days before they are scheduled to begin.

Numerous commenters expressed concern over who should be responsible for applying for the permit. Two commenters felt the owner should be responsible so that construction bid documents can include the storm water management requirements and to avoid confusion among multiple subcontractors. One commenter thought that either the owner/developer, or general contractor should be responsible. Another commenter suggested that the designer should obtain the permit which would allow all necessary erosion controls to be part of the project plan. Several commenters requested that the responsibility simply be more clearly defined.

In response to these comments, EPA would clarify that the operator will generally be responsible for submitting the permit application. Under existing regulations at § 122.21(b), when a facility is owned by one person but operated by another, then it is the duty of the operator to apply for the permit. Due to the temporary nature of construction activities, EPA believes that the operator is the most appropriate person to be responsible for both short and long term best management practices included on the site. EPA considers the term "operator" to include a general contractor, who would generally be familiar enough with the site to prepare the application or to ensure that the site would be in compliance with the permit requirements. General contractors, in many cases, will often be on site coordinating the operation among his/her staff and any subcontractors. Furthermore, the operator/general contractor would be much more familiar with construction site operations than the owner and should be involved in the site planning from its initial stages. The application requirements in today's rule are designed to provide flexibility in developing controls to reduce pollutants in storm water discharges from construction sites. A significant aspect to this is the role of State and local authorities in control of construction storm water discharges. Sixty-three commenters addressed the question of what the role of State and local authorities should be. Most of these commenters supported local government control of construction discharges and that qualified State programs should satisfy Federal requirements.

Many commenters representing municipalities, States, and industry, felt that local government should have full control over construction storm water *48035 discharges, either under existing programs or those required by their municipal permit. EPA agrees with these comments as far as discharges through municipal storm sewers are concerned. EPA is requiring municipalities that are required to submit municipal permit applications under this regulation to describe their program for controlling storm water discharges from construction activities into their separate storm sewers. It is envisioned that municipalities will have primary responsibility over these discharges through NPDES municipal storm water permits. However, EPA also plans to cover such discharges under general permits to be promulgated in the near future.

In response to several comments that the regulation should provide flexibility for qualified State programs to satisfy Federal requirements, the application requirements recognize that many States have implemented erosion and sediment control programs. The permit application requires a brief description of these programs. This is intended to ensure consistency between NPDES permit requirements and other State controls. Permit applicants will be in the best position to pass on this site-specific information to the permitting authority. States or Federal NPDES authorities will have the ability to exercise authority over these discharges as will other State and local authorities responsible for construction. EPA envisions NPDES permitting efforts will be coordinated with any existing programs.

The proposed rule requested comments on appropriate measures to reduce pollutants in construction site runoff. Numerous commenters representing municipalities, States, and industry responded. Some commenters recommended specific best management practices (BMPs) whereas others suggested ways in which the measures should be incorporated into the program. One commenter suggested that EPA establish design and performance standards for appropriate BMPs. One State commenter recommended requiring a schedule or sequence for use of BMPs. A municipality suggested developing guidance on erosion control at construction sites and disseminating the guidance to educate contractors and construction workers in proper erosion control techniques. The Agency is continuing to review these recommendations for the purposes of permit development and issuance.

Another commenter suggested that further research be done to determine the effectiveness of particular BMPs in reducing pollutants in construction site runoff. EPA agrees that more research and studies can be undertaken to develop methodologies for more effective storm water controls and will continue to look at these concerns pursuant to section 402(p)(5) studies. However, EPA is convinced that enough information, technology, and proven BMP's are available to address these discharges in this regulation.

Specific BMPs suggested by the commenters include: wheel washing; locked exit roadways, street cleaning methods which exclude sheet washing; clearing and grading codes; construction standards; riparian corridors; solids retention basins; soil erosion barriers; selected excavation; adequate collection systems; vegetate disturbed areas; proper application of fertilizers; proper equipment storage; use of straw bales and filter fabrics; and use of diversions to reduce effective length of slopes. EPA is continuing to evaluate these suggestions for developing appropriate permit conditions for construction activity.

b. Administrative Burdens. Many commenters representing municipalities, States, and industry commented on the administrative burdens of individually permitting each construction site discharging to waters of the United States. The extensive use of general permits for storm water discharges from construction activities that are subject to NPDES requirements is anticipated to minimize administrative delays associated with permit issuance. Many commenters strongly endorsed extensive use of general permits. In addition the Agency will provide as much assistance as possible for developing appropriate permit conditions.

Many commenters responded to the use of acreage limits in determining which construction sites are required to submit a permit application, including several cities, counties and States. Some commenters generally supported the use of an acre limit. Many commenters suggested increasing the acreage limit. Several suggested using a five acre limit for both residential and nonresidential development. Others suggested greater acreage as the cutoff. Two commenters concurred with the proposed limit of one acre/five acres and one commenter suggested lowering the residential limit to one acre.

Other factors were suggested as a means to create a cutoff for requiring permit applications. Several commenters suggested exempting construction that would be completed with a certain time frame, such as construction of less than 12 months. EPA believes that this is inappropriate because some construction can be intensive and expansive, but nonetheless take place over a short period of time, such as a parking lot. One commenter suggested basing the limit on the quantity of soil moved, i.e., cubic yards. In response, this approach would not be particularly helpful since removal of soil will not necessarily relate to the amount of land surface disturbed and exposed to the elements. Another commenter suggested that where there is single family detached housing construction that should trigger applications as well as the proposed acreage limit. This would not be appropriate since EPA is attempting to focus only on those construction activities that resemble industrial activity. After considering these and similar comments EPA has limited the definition of "storm water discharge associated with industrial activity" by exempting from the definition those construction operations that result in the disturbance of less than five acres of total land area which are not part of a larger common plan of development or sale. In considering the appropriate scope of the definition of storm water discharge associated with industrial activity as it relates to construction activities, EPA recognized that a wide variety of factors can affect the water quality impacts associated with construction site runoff, including the quality of receiving waters, the size of the area disturbed, soil conditions, seasonal rainfall patterns, the slope of area disturbed, and the intensity of construction activities. These factors will be considered by the permit writer when issuing the permit. However, as noted above, EPA views such site-specific factors to be too difficult to define in a regulatory framework that is national in scope. For example, attempting to adjust permit application triggers based upon a myriad of regional rainfall patterns is not a practical solution. However, permit conditions adjusted for specific geographical areas may be appropriate.

Under the December 7, 1988, proposal the definition of industrial activity exempted: construction operations that resulted in the disturbance of less than one acre total land area which was not part of a larger common plan of development or sale; or operations for single family residential projects, including duplexes, triplexes, or quadruplexes, that result in the disturbance of less than five acre total land areas which were not part of a larger common plan of development or sale. EPA distinguished between single-family residential development and *48036 other commercial development because other commercial development is more likely to occur in more densely developed areas. Also, it was reasoned that other commercial development provides a more complete opportunity to develop controls that remain in place after the construction activity is completed, since continued maintenance after the permit has expired, is more feasible.

However, EPA has decided to depart from the proposal and use an unqualified five acre area in today's final rule. This limit has been selected, in part, because of administrative concerns. EPA recognizes that State and local sediment and erosion controls may address construction activities disturbing less five acres for residential development; the five acre limit in today's rule is not intended to supersede more stringent State or local sediment and erosion controls. In light of the comments, EPA is convinced that the acreage limit is appropriate for identifying sites that are amount to industrial activity. Several comments suggested higher acreage limits without giving a supporting rationale except administrative concerns. Several commenters agreed that the five acre limit is suitable, but again without specifying why they agreed. EPA is convinced, however, that the acreage limits as finalized in today's rule reflect an earth disturbance and/or removal effort that is industrial in magnitude. Disturbances on large tracts of land will employ more heavy machinery and industrial equipment for removing vegetation and bedrock.

For construction facilities that are not included in the definition of storm water discharge associated with industrial activity, EPA will consider the appropriate procedures and methods to reduce pollutants in construction site runoff under the studies authorized by section 402(p)(5) of the CWA. EPA will also consider under section 402(p)(5) appropriate procedures and methods during post-construction for maintaining structural controls developed pursuant to NPDES permits issued for storm water discharges associated with industrial activity from construction sites.

Numerous commenters requested clarification as to whether permits for storm water discharges from construction activities at an industrial facility are required. EPA is requiring permits for all storm water discharges from construction activities where the land disturbed meets the requirements established in § 122.26(b)(14)(x) and which discharge into waters of the United States. The location of the construction activity or the ultimate land use at the site does not factor into the analysis.

G. Municipal Separate Storm Sewer Systems

1. Municipal Separate Storm Sewers

Today's rule defines "municipal separate storm sewer" at § 122.26(b)(8) to include any conveyance or system of conveyances that is owned or operated by a State or local government entity and is designed for collecting and conveying storm water which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2. It is important to note that today's permit application requirements for discharges from municipal separate storm sewer systems serving a population of 100,000 or more do not apply to discharges from combined sewers (systems designed as both a sanitary sewer and a storm sewer). For purposes of calculating whether a municipal separate storm sewer system meets the large or medium population criteria, a municipality may petition to have the population served by a combined sewer deducted from the total population. Section 122.26(f) of today's rule describes this procedure.

EPA requested comments on whether different language for the definition of municipal separate storm sewer would clarify responsibility under the NPDES permit system. Comments were also requested on whether the definition needed to be

clarified by explicitly stating that municipal streets and roads with drainage systems (curb and gutter, ditches, etc.) are part of the municipal storm sewer system, and that the owners or operators of such roads are responsible for such discharges. Numerous comments were received by EPA on this issue. Some commenters questioned whether road culverts and road ditches were municipal separate storm sewers, while others specifically recommended that further clarifying language should be added so that owners and operators of roads and streets understand that they are covered by this regulation. In light of these comments, EPA has clarified that municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains that discharge into the waters of the United States are municipal separate storm sewers. One commenter asked if "other wastes" in the proposed definition of municipal separate storm sewer (40 CFR 122.26 (b)(8)(i)) included storm water. In response, EPA has added "storm water" to this definition in order to clarify that the rule addresses such systems.

EPA requested comments on whether legal classifications such as "storm sewers that are not private (e.g. public, district or joint district sewers)" would provide a clearer definition of municipal separate storm sewer than an owner or operator criterion, especially for the purpose of determining responsibility under the NPDES program. Most commenters agreed that the owner/operator concept, and the additional language noted above, is sufficient for this purpose. EPA also requested comments on to what extent the owner/operator concept should apply to municipal governments with land-use authority over lands which contribute storm water runoff to the municipal storm sewer system, and how the responsibility should be clarified. In response to comments on this point, EPA has addressed these concerns in the context of clarifying what municipal entities are responsible for applying for a permit covering storm water discharges from municipal systems in section VI.H. below.

One commenter expressed a desire for clarification as to whether conveyances that were once used for the conveyance of storm water, but are no longer used in that manner, are covered by the definition. EPA emphasizes that this rulemaking only addresses conveyances that are part of a separate storm sewer system that discharges storm water into waters of the United States.

One commenter stated that if EPA intends to regulate roadside collection systems then EPA must repropose since these were not considered by the public. EPA disagrees with this comment since one of the options specifically addressed the inclusion of roadside drainage systems and roads in the definition of municipal separate storm sewer system. In addition, the public recognized the issue in comments on the proposal. EPA would note that several commenters specifically endorsed EPA's inclusion of these conveyances.

2. Effective Prohibition on Non-Storm Water Discharges

Section 402(p)(3)(B)(ii) of the amended CWA requires that permits for discharges from municipal storm sewers shall include a requirement to effectively prohibit non-storm water discharges into the storm sewers. Based on the legislative history of section 405 of the WQA, EPA does not interpret the effective prohibition on non-storm water discharges to municipal separate storm sewers to apply to discharges that are not composed entirely of storm water, as long as such discharge has been issued a separate NPDES permit. Rather, *48037 an "effective prohibition" would require separate NPDES permits for non-storm water discharges to municipal storm sewers. In many cases in the past, applicants for NPDES permits for process wastewaters and other non-storm water discharges have been granted approval to discharge into municipal separate storm sewers, provided that the permit conditions for the discharge are met at the point where the discharge enters into the separate storm sewer. Permits for such discharges must meet applicable technology-based and water-quality based requirements of Sections 402 and 301 of the CWA. If the permit for a non-storm water discharge to a municipal separate storm sewer contains water-quality based limitations, then such limitations should generally be based on meeting applicable water quality standards at the boundary of a State established mixing zone (for States with mixing

zones) located in the receiving waters of the United States.

All options will be considered when an applicant applies for a NPDES permit for a non-storm water discharge to a municipal separate storm sewer. In some cases, permits will be denied for discharges to storm sewers that are causing water quality problems in receiving waters. However, not all discharges present such problems, and in these cases EPA or State permit writers may allow such discharges to municipal separate storm sewers within appropriate permit limits.

Today's rule has two permit application requirements that are designed to begin implementation of the effective prohibition. The first requirement discussed in VI.H.6.a., below, addresses a screening analysis which is intended to provide sufficient information to develop priorities for a program to detect and remove illicit discharges. The second provision, discussed in VI.H.7.b., requires municipal applicants to develop a recommended site-specific management plan to detect and remove illicit discharges (or ensure they are covered by an NPDES permit) and to control improper disposal to municipal separate storm sewer systems.

Several commenters suggested that either the definition of "storm water" should include some additional classes of non-precipitation sources, or that municipalities should not be held responsible for "effectively prohibiting" some classes of nonstorm water discharges into their municipal storm sewers. The various types of discharges addressed by these comments include detention and retention reservoir releases, water line flushing, fire hydrant flushing, runoff from fire fighting, swimming pool drainage and discharge, landscape irrigation, diverted stream flows, uncontaminated pumped ground water, rising ground water, discharges from potable water sources, uncontaminated waters from cooling towers, foundation drains, non-contact cooling water (such as heating, ventilation, air conditioning (HVAC) water that POTWs require to be discharged to separate storm sewers rather than sanitary sewers), irrigation water, springs, roofdrains, water from crawl space pumps, footing drains, lawn watering, individual car washing, flows from riparian habitats and wetlands. Most of these comments were made with regard to the concern that these were commonly occurring discharges which did not pose significant environmental problems.

EPA disagrees that the above described flows will not pose, in every case, significant environmental problems. At the same time, it is unlikely Congress intended to require municipalities to effectively prohibit individual car washing or discharges resulting from efforts to extinguish a building fire and other seemingly innocent flows that are characteristic of human existence in urban environments and which discharge to municipal separate storm sewers. It should be noted that the legislative history is essentially silent on this point. Accordingly, EPA is clarifying that section 402(p)(3)(B) of the CWA (which requires permits for municipal separate storm sewers to 'effectively' prohibit non-storm water discharges) does not require permits for municipalities to prohibit certain discharges or flows of nonstorm water to waters of the United States through municipal separate storm sewers in all cases. Accordingly, § 122.26(d)(2)(iv)(B)(1) states that the proposed management program shall include: "A description of a program, including inspections, to implement and enforce an ordinance, orders or similar means to prevent illicit discharges to the municipal separate storm sewer system; the program description shall address the following categories of non-storm water discharges or flows only where such discharges are identified by the municipality as sources of pollutants to waters of the United States: Water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20)) to separate storm sewers, uncontaminated pumped ground water discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, and street wash waters. Program descriptions shall address discharges from fire fighting only where such discharges or flows are identified as significant sources of pollutants to waters of the United States."

However, the Director may include permit conditions that either require municipalities to prohibit or otherwise control

any of these types of discharges where appropriate. In the case of fire fighting it is not the intention of these rules to prohibit in any circumstances the protection of life and public or private property through the use of water or other fire retardants that flow into separate storm sewers. However, there may be instances where specified management practices are appropriate where these flows do occur (controlled blazes are one example).

Conveyances which continue to accept other "non-storm water" discharges (e.g. discharges without an NPDES permit) with the exceptions noted above do not meet the definition of municipal separate storm sewer and are not subject to section 402(p)(3)(B) of the CWA unless the non-storm water discharges are issued separate NPDES permits. Instead, conveyances which continue to accept non-storm water discharges which have not been issued separate NPDES permits are subject to sections 301 and 402 of the CWA. For example, combined sewers which convey storm water and sanitary sewage are not separate storm sewers and must comply with permit application requirements at 40 CFR 122.21 as well as other regulatory criteria for combined sewers.

3. Site-Specific Storm Water Quality Management Programs for Municipal Systems

Section 402(p)(3)(iii) of the CWA mandates that permits for discharges from municipal separate storm sewers shall require controls to reduce the discharge of pollutants to the maximum extent practicable (MEP), including management practices, control techniques and systems, design and engineering methods, and such other provisions as the Director determines appropriate for the control of such pollutants.

When enacting this provision, Congress was aware of the difficulties in regulating discharges from municipal *48038 separate storm sewers solely through traditional end-of-pipe treatment and intended for EPA and NPDES States to develop permit requirements that were much broader in nature than requirements which are traditionally found in NPDES permits for industrial process discharges or POTWs. The legislative history indicates, municipal storm sewer system "permits will not necessarily be like industrial discharge permits. Often, an end-of-the-pipe treatment technology is not appropriate for this type of discharge." [Vol. 132 Cong. Rec. S16425 (daily ed. Oct. 16, 1986)].

A shift towards comprehensive storm water quality management programs to reduce the discharge of pollutants from municipal separate storm sewer systems is appropriate for a number of reasons. First, discharges from municipal storm sewers are highly intermittent, and are usually characterized by very high flows occurring over relatively short time intervals. For this reason, municipal storm sewer systems are usually designed with an extremely high number of outfalls within a given municipality to reduce potential flooding. Traditional end-of-pipe controls are limited by the materials management problems that arise with high volume, intermittent flows occurring at a large number of outfalls. Second, the nature and extent of pollutants in discharges from municipal systems will depend on the activities occurring on the lands which contribute runoff to the system. Municipal separate storm sewers tend to discharge runoff drained from lands used for a wide variety of activities. Given the material management problems associated with end-of-pipe controls, management programs that are directed at pollutant sources are often more practical than relying solely on end-of-pipe controls.

In past rulemakings, much of the criticism of the concept of subjecting discharges from municipal separate storm sewers to the NPDES permit program focused on the perception that the rigid regulatory program applied to industrial process waters and effluents from publicly owned treatment works was not appropriate for the site-specific nature of the sources which are responsible for the discharge of pollutants from municipal storm sewers.

The water quality impacts of discharges from municipal separate storm sewer systems depend on a wide range of factors including: The magnitude and duration of rainfall events, the time period between events, soil conditions, the fraction of land that is impervious to rainfall, land use activities, the presence of illicit connections, and the ratio of the storm water discharge to receiving water flow. In enacting section 405 of the WQA, Congress recognized that permit requirements

for municipal separate storm sewer systems should be developed in a flexible manner to allow site-specific permit conditions to reflect the wide range of impacts that can be associated with these discharges. The legislative history accompanying the provision explained that "[p]ermits for discharges from municipal separate stormwater systems * * * must include a requirement to effectively prohibit non-stormwater discharges into storm sewers and controls to reduce the discharge of pollutants to the maximum extent practicable, * * * These controls may be different in different permits. All types of controls listed in subsection [(p)(3)(C)] are not required to be incorporated into each permit" [Vol. 132 Cong. Rec. H10576 (daily ed. October 15, 1986) Conference Report]. Consistent with the intent of Congress, this rule sets out permit application requirements that are sufficiently flexible to allow the development of site-specific permit conditions.

Several commenters agreed with this approach. One municipality recommended that there be as much flexibility as possible so that the permitting authority can work with each municipality in developing meaningful long-term goals with plans for improving storm water quality. This commenter noted that too many specific regulations that apply nationwide do not take into consideration the climatic and governmental differences within the States. EPA agrees that as much flexibility as possible should be incorporated into the program. However, flexibility should not be built into the program to such an extent that all municipalities do not face essentially the same responsibilities and commitment for achieving the goals of the CWA. EPA believes that these final regulations build in substantial flexibility in designing programs that meet particular needs, without abandoning a nationally consistent structure designed to create storm water control programs.

4. Large and Medium Municipal Storm Sewer Systems

During the 1987 reauthorization of the CWA, Congress established a framework for EPA to implement a permit program for municipal separate storm sewers and establishing phased deadlines for its implementation. The amended CWA establishes priorities for EPA to develop permit application requirements and issue permits for discharges from three classes of municipal separate storm sewer systems. The CWA requires that NPDES permits be issued for discharges from large municipal separate storm sewer systems (systems serving a population of more than 250,000) by no later than February 4, 1991. Permits for discharges from medium municipal separate storm sewer systems (systems serving a population of more than 100,000, but less than 250,000) must be issued by February 4, 1992. After October 1, 1992, the requirements of sections 301 and 402 of the CWA are restored for all other discharges from municipal separate storm sewers.

The priorities established in the Act are based on the size of the population served by the system. Municipal operators of these systems are generally thought to be more capable of initiating storm water programs and discharges from municipal separate storm sewers serving larger populations are thought to present a higher potential for contributing to adverse water quality impacts. NURP and other studies have verified that the event mean concentration of pollutants in urban runoff from residential and commercial areas remains relatively constant from one area to another, indicating that pollutant loads from urban runoff strongly depend on the total area and imperviousness of developed land, which in turn is related to population.

The term "municipal separate storm sewer system" is not defined by the Act. By not defining the term, Congress intended to provide EPA discretion to define the scope of municipal systems consistent with the objectives of developing site-specific management programs in NPDES permits. EPA considered two key issues in defining the scope of municipal separate storm sewer system: (1) What is a reasonable definition of the term "system," and (2) how to determine the number of people "served" by a storm sewer system. EPA found these two issues to be intertwined. Different approaches to defining the scope of a system allowed for greater or lesser certainty in determining the population served by the system.

In the December 7, 1988, proposal, EPA described seven options for defining "municipal separate storm sewer system."

In developing these options the EPA considered:

- The inter-jurisdiction complexities associated with municipal governments;
- The fact that many municipal storm water management programs have traditionally focused on water quantity *48039 concerns, and have not evaluated water quality impacts of system discharges or developed measures to reduce pollutants in such discharges;
- The advantages of developing system-wide storm water management programs for municipal systems;
- The geographic basis necessary for planning of comprehensive management programs to reduce pollutants in discharges from municipal separate storm sewers to the maximum extent practicable;
- The geographic basis necessary to provide flexibility to target controls on areas where water quality impacts associated with discharges from municipal systems are the greatest and to provide an opportunity to develop cost effective controls;
- The need to establish a reasonable number of permits for municipal systems during the initial phases of program development that will provide an adequate basis for a storm water quality management program for over 13,000 municipalities after the October 1, 1992 general prohibition on storm water permits expires; and
- Congressional intent to allow the development of jurisdiction-wide, comprehensive storm water management programs with priorities given to the most heavily populated areas of the country.

a. Overview of Proposed Options and Comments. The December 7, 1988, proposal requested comment on seven options for defining large and medium municipal separate storm sewer system. With the addition of a watershed-based approach suggested by certain commenters, eight options or approaches were addressed by the over 200 commenters on this issue: Option 1—systems owned or operated by incorporated places augmented by integrated discharges; Option 2—systems owned or operated by incorporated places augmented with significant other municipal discharges; Option 3—systems owned or operated by counties; Option 4—systems owned and operated by States or State departments of transportation; Option 5—systems within the boundaries of an incorporated place; Option 6—systems within the boundaries of counties; Option 7—systems in census designated urbanized areas; and Option 8—systems defined by watershed boundaries.

Generally, these options can be classified into two categories. The first category of options, Options 1, 2 and 3, define municipal systems in terms of the municipal entity which owns or operates storm sewers within municipal boundaries of the requisite population. The second category of options would define municipal systems on a geographic basis. Under Options 4, 5, 6, 7 and 8 all municipal separate storm sewers within the specified geographic area would be part of the municipal system, regardless of which municipal entity owns or operates the storm sewer. EPA did not propose to define the scope of a municipal separate storm sewer system in engineering terms because of practical problems determining the boundaries of and the populations served by "systems" defined in such a manner. In addition an engineering approach based on physical interconnections of storm sewer pipes by itself does not provide a rational basis for developing a storm water program to improve water quality where a large number of individual storm water catchments are found within a municipality.

In the December 7, 1988, proposal, EPA favored those options that relied primarily on the municipal entity which owns or operates or otherwise has jurisdiction over storm sewers. These options were preferred because it was anticipated that the administrative complexities of developing the permit programs would be reduced by decreasing the number of affected municipal entities. However, most commenters were not satisfied that such an approach would reduce administrat-

ive burdens or complexities.

The diversity of arguments and rationales offered in comments justifying the selection of particular option, or combinations thereof, were generally a function of geographic, climatic, and institutional differences around the country. As such, there was little substantive agreement with how this program should be implemented as far as defining large and medium municipal separate storm sewer systems. Of all the options, Option 1 generally received the most favorable comment. However, the overwhelming majority of comments suggested different options or other alternatives. Having reviewed the comments at length, EPA is convinced that the definition of municipal separate storm sewers should possess elements of several of the options enumerated above and a mechanism that enables States or EPA Regions to define a system that best suits their various political and geographical conditions.

The following comments were the most pervasive, and represent those issues and concerns of greatest importance to the public: (1) The approach chosen initially must be realistic and achievable administratively; (2) the definition must be flexible enough to accommodate development of the program on a watershed basis, and incorporate elements of existing programs and frameworks and regional differences in climate, geography, and political institutions; (3) permittees must have legal authority and control over land use; (4) discharges from State highways, identified as a significant source of runoff and pollutants, should be included in the program and combined in some manner with one or more of the other options; (5) the definition should address how the inclusion of interrelated discharges into the municipal separate storm sewer system are timed, decided upon, dealt with, etc.; (6) any approach must address the major sources of pollutants; (7) development of co-permittee management plans must be coordinated or developed on a regional basis and in the same time frame—fragmented or balkanized programs must be avoided; (8) municipalities should be regulated as equitably as possible; (9) flood control districts should be addressed as a system or part of a system; (10) the definition must conform to the legal requirements of the Clean Water Act; and (11) the definition should limit the number of co-permittees as much as possible.

b. Definition of large and medium municipal separate storm sewer system. A combination of the options outlined in the 1988 proposal would address most of these concerns, while achieving a realistic and environmentally beneficial storm water program. Accordingly, EPA has adopted the following definition of large and medium municipal separate storm sewer systems. Large and medium separate storm sewer systems are municipal separate storm sewers that:

(i) Are located in an incorporated place with a population of 100,000 or more or 250,000 or more as determined by the latest Decennial Census by the Bureau of Census (see appendices F and G of part 122 for a list of these places based on the 1980 Census);

(ii) Are located within counties having areas that are designated as urbanized areas by latest decennial Bureau of Census estimates and where the population of such areas exceeds 100,000, after the population in the incorporated places, townships or towns within such counties is excluded (see appendices H and I for a listing of these counties based on the 1980 census) (incorporated places, towns, and townships within these counties are excluded from permit application requirements unless they fall under paragraph (i) or are designated under paragraph (iii)); or (iii) are owned or *48040 operated by a municipality other than those described in paragraph (i) or (ii) that are designated by the Director as part of the large or medium municipal separate storm sewer system due to the interrelationship between the discharges of the designated storm sewer and the discharges from municipal separate storm sewers described under paragraphs (i) or (ii). In making this determination the Director may consider the following factors:

(A) Physical interconnections between the municipal separate storm sewers;

(B) The location of discharges from the designated municipal separate storm sewer relative to discharges from municipal

separate storm sewers described in subparagraph (i);

(C) The quantity and nature of pollutants discharged to waters of the United States;

(D) The nature of the receiving waters; or

(E) Other relevant factors.

(iv) The Director may, upon petition, designate as a system, any municipal separate storm sewers located within the boundaries of a region defined by a storm water management regional authority based on a jurisdictional, watershed, or other appropriate basis that includes one or more of the systems described in paragraphs (i), (ii), and (iii).

Under today's rule at § 122.26(a)(3)(iii) the regional authority shall be responsible for submitting a permit application under the following guidelines: The regional authority together with co-applicants shall have authority over a storm water management program that is in existence, or shall be in existence at the time part 1 of the application is due; the permit applicant or co-applicants shall establish their ability to make a timely submission of part 1 and part 2 of the municipal application; each of the operators of municipal separate storm systems described in paragraphs 122.26(b)(4) (i), (ii), and (iii) and (7)(i), (ii), and (iii), that are under the purview of the designated regional authority, shall comply with the application requirements of § 122.26(d).

As noted above, the finalized definition of large and medium municipal separate storm sewer system is combination of the approaches as proposed. (In the following discussion "paragraph (i)" refers to §§ 122.26 (b)(4)(i) and (b)(7)(i); "paragraph (ii)" refers to §§ 122.26(b)(4)(ii) and (b)(7)(ii); "paragraph (iii)" refers to §§ 122.26 (b)(4)(iii) and (b)(7)(iii); and "paragraph (iv)" refers to §§ 122.26 (b)(4)(iv) and (b)(7)(iv)). Paragraph (i) originates from proposed Option 5 (boundaries of incorporated places); paragraph (ii) originates from Option 6 (boundaries of counties) and Option 7 (urbanized areas); paragraph (iii) originates from Options 1 and 5; and paragraph (iv) is an outgrowth of comments on all options, especially Option 4 (State owned systems/State highways) and Option 8 (watersheds).

This definition creates a system by virtue of the fact that storm sewers within defined geographical and political areas, and the owner/operators of separate storm sewers in those areas, are addressed or required to obtain permits. Although within these systems, different segments and discharges of storm water conveyances may be owned or operated by different public entities, EPA is convinced by comments that discharges from such conveyances are interrelated to such an extent that all of these conveyances may be properly considered a "system." These comments are identified and discussed in greater detail below.

c. Response to comments. Many commenters urged that the approach taken must be administratively achievable. Option 5 of the proposal (boundaries of incorporated places), which can be equated to paragraphs (i) and (iii) above, was identified by several commenters as the most workable of all the options. Many commenters stated that Option 1 (systems owned or operated by incorporated places) was inappropriate because of special districts and other owners of systems within the incorporated area; and although EPA proposed a designation provision for interrelated discharges in Option 1, commenters advised that it would be impossible to identify these systems, account for their discharges, and exclude or include them in a timely manner if Option 1 was selected (Option 1 only addresses those systems owned or operated by the incorporated place). The final rule would obviate these concerns, since all the publicly owned sewers within the boundaries of the municipality will be required to be covered by a permit.

Other commenters noted that cities sometimes have storm water conveyances owned or operated by numerous entities. One municipality commented that these problems could be more easily resolved using a unified permit/district wide ap-

proach, which the final approach outlined above can accomplish. One county stated that Option 1 of the proposal would result in a permanent balkanization of stormwater programs and that a regional approach focusing on the entire system should be established. Another municipality recommended that all the systems of conveyances within the incorporated city boundaries be issued a permit. In rejecting Option 1 of the proposal, one municipality stated that program inefficiencies would result from implementing a piecemeal program in a contiguous urban environment with different owners and operators. One State conveyed similar concerns. Using a geographical approach, as described in paragraph (i) of the final definition, will best address all of these concerns.

One commenter criticized proposed Option 1 as being contrary to the legal requirements of the WQA, and a further example of EPA's continuing attempt to minimize the scope of a national storm water program. It was noted that the legislative history regarding requirements for large and medium municipal separate storm sewer systems in section 402(p) of the CWA generally does not reference incorporated cities or towns. As a result, the commenter recommended that the term "municipal" in municipal separate storm sewer system refer to separate storm sewers operated by municipal entities meeting the definition of "municipality" in section 502 of the CWA and that the scope of the term "municipal separate storm sewer system" be defined as broadly as possible. This approach would result in defining large and medium municipal separate storm sewer systems to include all municipal separate storm sewers within the 410 counties with a population of 100,000 or more. EPA has adopted the commenter's recommendation to extend the scope of the program to the extent that today's rule covers all municipal separate storm sewers within certain areas rather than only those operated by an incorporated place. EPA disagrees however that it must define the term "system" to include sewers within any municipal boundary of sufficient population with reference to section 502(4). By not providing explicit definitions, section 402(p)(3)(B) of the CWA gives EPA discretion to define how municipal separate storm sewer systems are defined. There is no indication in the language of the CWA or the legislative history that Congress intended that the scope of "municipality" and the scope of "municipal separate storm sewer system" to be identical, particularly since the latter term is not defined in the statute. Furthermore, for the reasons discussed elsewhere in this section, EPA believes that today's definition is a reasonable accommodation of the many conflicting concerns surrounding the proper way to delineate the extent of a *48041 municipal separate storm sewer system serving over 100,000 people.

Several commenters concluded that EPA should be flexible enough to allow the permitting authority broad discretion to establish system-wide permits, with flood control districts and/or counties acting as co-permittees with the various incorporated cities within the district boundaries. Commenters expressed concern that Option 1 would not allow for such flexibility.

Arguments that were advanced by commenters in support of proposed Option 1 are equally applicable to paragraph (i), above. Like proposed Option 1, the approach outlined above targets major cities. However, it also has the advantage of addressing municipal separate storm sewer systems which may be interrelated to those owned by the city, a benefit recognized by one municipality that endorsed the selection of proposed Option 5. This will also give the permitting authority more discretion to establish co-permittee relationships.

Paragraph (ii) of the final definition also uses a geographical approach to the definition of municipal storm sewer systems to include municipal storm sewers within urbanized counties. Thus, it closely resembles Option 7 of the proposal. The counties identified in paragraph (ii) have, based on the 1980 Census, a population of 100,000 or more in urbanized, [FN5] unincorporated portions of the county. In the unincorporated areas of these counties (or in the 20 States where the Census recognizes minor civil divisions, unincorporated county areas outside of towns or townships), the county is the primary local government entity. In these cases, the county performs many of the same functions as incorporated cities with a population of 100,000, and is generally expected to have the necessary legal and land use authority in these areas to begin to implement storm water management programs. Due to the urbanized nature of their population, discharges from

the municipal separate storm sewers in these counties will have many similarities to discharges from municipal systems in incorporated cities with a population of 100,000 or more. Addressing these counties in this fashion will not adversely affect small municipalities (incorporated places, towns and townships) within the county, as municipal separate storm sewers that are located in the small incorporated places, townships or towns within these counties are not automatically included as part of the system.

FN5 The Bureau of Census defines urbanized areas to provide a description of high-density development. Urbanized areas are comprised of a central city (or cities) with a surrounding closely settled area. The population of the entire urbanized area must be greater than 50,000 persons, and the closely settled area outside of the city, the urban fringe, must generally have a population density greater than 1,000 persons per square mile (just over 1.5 persons per acre) to be included.

EPA has focused on the unincorporated areas because permit applications cannot be required from systems that serve a population less than 100,000, unless designated. EPA received the comment that if the sewers in incorporated places within such counties were included as part of the system for that county, there would be the potential for systems serving a population less than 100,000 to be improperly subject to permit requirements. EPA agrees with the comment, except that EPA reserves the authority to designate sewers in small incorporated places as part of the system subject to permitting, pursuant to paragraph (iii) of the final definition. Incorporated areas within the identified counties will be required to file permit applications if the population served by the municipal separate storm sewer system is 100,000 or more.

As one commenter noted, the counties addressed by the definition will generally be areas of high growth with a growing tax base that can finance a storm water management program. Numerous counties affected by paragraph (ii) commented on the proposal. Several of these indicated a preference for the county government as the permittee. Others indicated that their county had the ability to perform the functions of the permit applicant and permittee. One county brought to EPA's attention that the county had laid plans for a storm water utility scheduled to be in operation in 1989. Several of the counties supported the use of watersheds, or flexible regional approaches, as the basis for the definition of municipal separate storm sewer systems. The modified definition should satisfy these concerns.

EPA recognizes that some of the counties addressed by today's rule have, in addition to areas with high unincorporated urbanized populations, areas that are essentially rural or uninhabited and may not be the subject of planned development. While permits issued for these municipal systems will cover municipal system discharges in unincorporated portions of the county, it is the intent of EPA that management plans and other components of the programs focus on the urbanized and developing areas of the county. Undeveloped lands of the county are not expected to have many, if any, municipal separate storm sewers.

Paragraphs (i) and (ii) above will help resolve the problems associated with permittees not having adequate land use controls, the legal authority to implement controls, and the ownership of the conveyances. This factor was mentioned by numerous commenters on the proposed options, especially county governments. Under paragraphs (i) and (ii), all publicly owned separate storm sewers within the appropriate municipal boundaries will be defined as part of the municipal system. In many cases, a number of municipal operators of these storm sewers will be responsible for discharges from these systems. Since a number of co-permittees may be addressed in the permits for these discharges, problems associated with the ability to control pollutants that are contributed from interrelated discharges will be minimized. State highways or flood control districts, which may have no land use authority in incorporated cities, will be co-permittees with the city which does possess land use authority. EPA envisions that permit conditions for these systems will be written to establish duties that are commensurate with the legal authorities of a co-permittee. For example, under a permit, a flood control

district may be responsible for the maintenance of drainage channels that they have jurisdiction over, while a city is responsible for implementing a sediment and erosion ordinance for construction sites which relates to discharges to the drainage channel. Confusion over ownership of conveyances or systems, at least for the purposes of determining whether they require a permit, will be minimized since all conveyances will be covered. Similarly, under paragraph (ii), the affected counties are expected to have the necessary legal and land use authority to implement programs and controls in unincorporated, urbanized areas because the county government is the primary political or governing entity in these geographical areas.

Many commenters from all levels of State and local government expressed concern about controlling pollutants from State highways. Paragraphs (i) and (ii) will result in discharges from separate storm sewers serving State highways and other highways through storm sewers that are located within incorporated places with the appropriate population or highways in unincorporated portions of specified counties being included as part of the large or medium municipal separate storm sewer system, since all municipal separate storm sewers within the boundaries of these political entities are included. Paragraph (iv) can facilitate *48042 the submission of a permit application for storm sewers operated as part of an entire State highway system. Paragraph (iv) would allow an entire system in a geographical region under the purview of a State agency (such as a State Department of Transportation) to be designated, where all the permit application requirements and requirements established under § 122.26(a)(iii)(C) can be met.

Paragraphs (i) and (ii) can effectively deal with many of the major sources of pollutants. One municipality noted that Option 5 (paragraph (i)) would require all systems in the incorporated boundaries to obtain permits and institute control measures, rather than just the few owned or operated by incorporated cities. Another municipality noted that this approach could deal with many of the regional variations in sources of pollution. Many commenters, including environmental groups, believed that proposed Option 3 (systems owned or operated by counties), Option 6 (systems within the boundaries of counties), and Option 7 (system in urbanized areas) were good approaches because more sources of pollution would be addressed. It was also maintained that Options 3, 6 and 7 could incorporate watershed planning which, in the view of some commenters, is the only effective way to address pollutants in storm water.

Commenters noted that addressing counties and urbanized areas would focus attention on developing areas which would otherwise be left out in the initial phases of permitting. One commenter noted that most new development in large urbanized areas occurs outside of core cities (incorporated cities with a population of 100,000 or more). Newly developing areas provide opportunities for installing pollutant controls cost effectively. EPA agrees with these comments and notes that paragraph (ii) addresses a significant number of counties with highly developed or developing areas.

However, EPA is convinced that addressing all counties or urbanized areas in the initial phases of the storm water program is ill-advised. Commenters noted that some counties have inappropriate or nonexistent governmental structures, and that a program that addressed all counties in the country with a population of 100,000 or more would be unmanageable, because too many municipal entities nationwide would be involved in the program initially. Commenters advised that defining municipal storm sewer systems solely in terms of the boundaries of census urbanized areas (Option 7) would result in systems which did not correspond to jurisdictions that are in a position to implement a storm water programs. Thus, EPA has modified Option 7 and combined it with Option 6 to create paragraph (ii) above.

Paragraph (iii) incorporates a designation authority such that municipalities that own or operate discharges from separate storm sewers systems other than those described in paragraph (i) or (ii) may be designated by the Director as part of the large or medium municipal separate storm sewer system due to the interrelationship between the other discharges of the designated storm sewer and the discharges from the large or medium municipal separate storm sewers. In making this determination the physical interconnections between the municipal separate storm sewers, the location of discharges from

the designated municipal separate storm sewer relative to discharges from large or medium municipal separate storm sewers, the quantity and nature of pollutants discharged to waters of the United States, the nature of the receiving waters, or other relevant factors may be considered.

Comments indicated that the designation authority as proposed and described above should be retained. One State noted that this approach gives the most flexibility in making the case-by-case designations, while also delineating in sufficient detail what criteria are used to make the determination. This commenter was concerned about being able to regulate many of the interrelated discharges from counties surrounding incorporated cities.

Paragraph (iv) of the final definition allows the permitting authority, upon petition, to designate as a medium or large municipal separate storm sewer system, municipal separate storm sewers located within the boundaries of a region defined by a storm water management regional authority based on a jurisdictional, watershed, or other appropriate basis that includes one or more of the systems described in paragraphs (i), (ii), (iii).

Paragraph (iv) was added to the final definitions to respond to a variety of concerns of commenters. One of the prime concerns of commenters was that the definition of large and medium municipal separate storm sewer systems must be flexible enough to accommodate: Programs on a watershed basis, existing storm water programs and frameworks and regional differences in climate, geography, and political institutions. Some States were particularly expressive regarding this concern. One State maintained that an inflexible program could totally disrupt ongoing State efforts. Other commenters urged that the regulation encourage the establishment of regional storm water authorities or other mechanisms that can deal with storm water quality on a watershed basis. One State proposed defining the municipal separate storm sewer system to include all municipal separate storm sewers within a core incorporated place of 100,000 or more, and all surrounding incorporated places within the State defined watershed. One of the State water districts advised that the regulations should be flexible enough to allow regional water quality boards to apply the regulations geographically. One national association expressed concern that existing institutional arrangements for flood control and drainage would be ignored, while another warned against fostering a proliferation of inconsistent patchwork programs based on arbitrary definitions and jurisdictions which bear no relationship to water quality.

EPA is convinced that the mechanism described in paragraph (iv) provides a means whereby the mechanisms and concepts identified above can be utilized or created in appropriate circumstances. In addition, § 122.26(f)(4) provides a means for State or local government agencies to petition the Director for the designation of regional authorities responsible for a portion of the storm water program. For example, some States or counties may currently or in the near future have regional storm water management authorities that have the ability to apply for permits under today's rule and carry out the terms of the permit. Some of these authorities may encompass within their jurisdiction large or medium municipal separate storm sewer systems as defined in today's rule. EPA wishes to encourage such entities to assume the role as permittee under today's rule. That is the purpose of paragraph (iv). Such authorities may petition the Director to assume such a role.

Many commenters expressed the view that municipal management plans must be coordinated or developed among permittees on a regional basis and in the same timeframe. Paragraphs (i), (iii) and (iv) would bring in all appropriate municipal entities with jurisdiction over a specified geographical area in the same timeframe. Several commenters, including one State, noted proposed Option 1 would lead to fragmented, ill-coordinated programs. Paragraphs (i), (iii), and (iv) do not suffer this drawback *48043 to the same extent since all the municipal separate storm sewers are addressed within the incorporated place, instead of only those owned or operated by the incorporated place.

Equal treatment of municipalities within a watershed or other specified area was a major subject of comment. Many com-

menters urged that a degree of fairness could be achieved by requiring permit applications, and the concomitant expenditure of municipal dollars and resources, from all municipalities within an entire urban area that contributes to storm water pollution, rather than from a discrete system within an arbitrary political boundary. Paragraph (i), especially when coupled with paragraphs (ii), (iii), and (iv), can best accomplish a more equitable approach, because all owners and operators of municipal separate storm sewers within a system have responsibilities. In addition, some of the areas outside the incorporated city limits which are engaged in expansive urban or suburban development will be brought into the program. Paragraph (iv) will provide a means for State or regional authorities to use existing or emerging mechanisms to set up storm water management programs, and would require multiple agencies either to become regional co-permittees or to be subject to a regional permit.

Paragraphs (i), (ii), (iii), and (iv) could also require flood control districts to be co-permittees, which was a major concern of counties and numerous cities. One municipality stated that the inclusion of flood control districts would greatly reduce the administrative burden required to prepare a single inter-city discharge agreement and would establish a common legal authority to implement the program. Numerous county agencies believed it imperative that flood control districts be brought into a system-wide permit strategy.

Paragraphs (i) and (iii) may not accommodate the concern of several commenters that the number of co-permittees be kept to a minimum. The fact that all the municipal separate storm sewers within the boundaries of the appropriate incorporated places will be addressed dictates that some permits will have several co-permittees. This is a major concern since it goes directly to achieving an effective initial storm water program. There is concern about being able to bring all the co-permittees together under intra-municipal agreements or contracts within regulatory deadlines. This problem would be resolved in the short term by selecting Option 1. However, Option 1 may still require inter-municipal agreements because of the designation authority under § 122.26 (b)(4)(ii) and (b)(7)(ii) of the proposal. In addition, such inter-jurisdictional problems will arise after October 1, 1992 when the moratorium on requiring NPDES permits for discharges from other municipal separate storm sewers ends. Under the permitting goals established by the CWA, multi-jurisdictional storm water programs and agreements cannot be avoided. Despite interest in limiting the number of co-permittees, EPA decided not to adopt Option 1 for the reasons already stated.

Section 402(p)(3)(B)(i) of the amended CWA provides that permits for municipal discharges from municipal storm sewers may be issued on a system-wide or jurisdiction-wide basis. This provision is an important mechanism for developing the comprehensive storm water management programs envisioned by the Act.

Under the permit application requirements of today's rule, if the appropriate co-applicants are identified, one permit application may be submitted for a large or medium municipal separate storm sewer system (see section VI.G.4 above). System-wide permit applications can in turn be used to issue system-wide permits which could cover all discharges in the system.

Where several municipal entities are responsible for obtaining a permit for various discharges within a single system, EPA will encourage system-wide permit applications involving the several municipal entities for a number of reasons. The system-wide approach not only provides an appropriate basis for planning activities and coordinating development, but also provides municipal entities participating in a system-wide application the means to spread the resource burden of monitoring, evaluating water quality impacts, and developing and implementing controls.

The system-wide approach provided in today's rule recognizes differences between individual municipalities with responsibilities for discharges from the municipal system. Today's application rule requires information to be submitted that enables the permit issuing authorities to develop tailored programs for each permittee with responsibility for certain

components, segments, or portions of the municipal separate storm sewer system. The permit application requirements allow individual municipal entities, participating in system-wide applications, to submit site specific information regarding storm water quality management programs to reduce pollutants in system discharges as a whole, or from specific points within the system.

In some cases, it may be undesirable for all municipal entities with storm water responsibility within a municipal system to be co-permittees under one system-wide permit. The permit application requirements in today's rule allow individual municipal entities within the system to submit permit applications and obtain a permit for that portion of the storm sewer system for which they are responsible. Thus, several permits may be issued to cover various subdivisions of a single municipal system.

In summary, EPA believes that the definition of municipal storm sewer system adopted in today's rule has several distinct advantages that were identified in comments:

- The definition adopts features of several options;
- The definition targets areas that have the necessary police powers and land use authority to implement the program;
- The definition can utilize watersheds or accommodate existing administrative frameworks and storm water programs;
- The definition provides that all systems within a geographical area including highways and flood control districts will be covered, thereby avoiding fragmented and ill-coordinated programs;
- The definition has flexible designation authority; and
- The definition addresses major sources of pollutants without being overly broad.

H. Permit Application Requirements for Large and Medium Municipal Systems

1. Implementing the Permit Program

Given the differing nature of discharges from municipal separate storm sewer systems in different parts of the country and the varying water quality impacts of municipal storm sewer discharges on receiving waters, today's permit application requirements are designed to lead to the development of site-specific storm water management programs. In order to effectively implement this goal, EPA intends to retain the overall structure of the municipal permit application as proposed in the December 7, 1988, proposal.

2. Structure of the Permit Application

EPA proposed a two-part permit application designed to meet the goal of *48044 developing site-specific storm water quality management programs in NPDES permits. In response to a request for comments on this aspect of the proposal, numerous comments were received. After reviewing these comments, EPA has decided to retain the two-part permit application. Many commenters agreed that the approach as proposed is appropriate for phasing in and developing site specific storm water management programs. One large municipality strongly endorsed the two-part application, stating that it would facilitate the identification of water quality problem areas and the development of priorities for control measures, thereby allowing for more cost-effective program development. Two State agencies expressed the same view, and noted that the two-part approach is reasonable and well structured for efficient development of programs. One large municipality noted it would allow the permit authority and the permit applicant the time needed to gain the knowledge and

data to develop site-specific permits. A medium municipality expressed similar views.

Numerous commenters submitted endorsements of a proposal offered by one of the national municipal associations. This approach responded to EPA's request for comments on alternatives to a two-part application process. These comments recommended having permit applicants submit information regarding their existing legal authority, prepare source identification information, describe existing management plans, provide discharge characterization information based on existing data, and prepare a monitoring, characterization and illicit discharge and removal plan in a one-part application. The remaining requirements such as: implementing plans to remove illicit connections, obtaining legal authority, monitoring and characterization, plans for structural controls, preparation of control assessments, preparation of fiscal analysis, and management plan implementation would be part of the permit and take place during the compliance period of the permit. It was argued that this would result in a more orderly development of stormwater management programs while allowing for quick implementation of efforts to eliminate illicit discharges and initiate some BMPs.

After careful review and consideration of these comments, EPA is convinced that this approach would not meet the goals and requirements of section 402 of the Clean Water Act. Section 402(p)(3)(B) of the CWA requires that permits effectively prohibit non-storm water discharges into storm sewers and incorporate controls that reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques, and system design and engineering methods. The above comments suggesting an alternative for achieving this goal are not entirely compatible with these requirements. In light of the language in the statute, permit conditions should do more than plan for controls during the term of the permit. A strong effort to have the necessary police powers and controls based on pollutant data should be undertaken before permits are issued. In short, the one-part application described by these comments would result in permits that would focus too much on preparation and not enough on implementing controls for pollutants.

In comparison, EPA's approach requires municipalities to submit a two-part application over a two year period. Part one of the application would require information regarding existing programs and the means available to the municipality to control pollutants in its storm water discharges. In addition, part one would require field screening of major outfalls to detect illicit connections. Part two of the permit application would require a limited amount of representative quantitative data and a description of proposed storm water management plans. The purpose of the two-part application process is to develop information, in a reasonable time frame, that would build successful municipal storm water management programs and allow the permit writer to make informed decisions with regard to developing permit conditions. This will include initiating efforts to effectively prohibit non-storm water discharges into storm sewers, and initially implementing controls that reduce the discharge of pollutants to the maximum extent practicable, including management practices and control techniques during the term of the permit. Such an approach clearly meets the statutory mandate of section 402(p)(3)(B).

a. Part 1 Application. Part 1 of the permit application is intended to provide an adequate basis for identifying sources of pollutants to the municipal storm sewer system, to preliminarily identify discharges of storm water that are appropriate for individual permits, and to formulate a strategy for characterizing the discharges from municipal separate storm sewer systems. Several commenters supported retaining these components of the application process. The components of part 1 of the permit application include:

- General information regarding the permit applicant or co-applicants (§ 122.26(d)(1)(i));
- A description of the existing legal authority of the applicant(s) to control pollutants in storm water discharges and a plan to augment legal authority where necessary (§ 122.26(d)(1)(ii));
- Source identification information including: a topographic map, description of the historic use of ordinances or other

controls which limited the discharge of non-storm water discharges to municipal separate storm sewer systems, the location of known municipal separate storm sewer outfalls, projected growth, location of structural controls, and location of waste disposal facilities (§ 122.26(d)(1)(iii));

- Information characterizing the nature of system discharges including existing quantitative data, the results of a field screening analysis to detect illicit discharges and illegal dumping to the municipal system, an identification of receiving waters with known water quality impacts associated with storm water discharges, a proposed plan to characterize discharges from the municipal storm sewer system by estimating pollutant loads and the concentration of representative discharges, and a plan to obtain representative data (§ 122.26(d)(1)(iv)); and

- A description of existing structural and non-structural controls to reduce the discharge of pollutants from the municipal storm sewer (§ 122.26(d)(1)(v)).

One commenter disagreed that source identification should be made part of the permit application process beyond the identification of major municipal storm sewer outfalls. In reply, EPA is convinced that the other elements of the source identification are critical for identifying sources of pollutants and creating a base of knowledge from which informed decisions about permit conditions and further data requirements can be determined. One county stated that it already had engaged in extensive monitoring and modeling of watersheds and that its programs should be substituted for EPA's. In response, EPA anticipates that information collected under various State, county or city programs that matches the information requirements in this rulemaking may be used by the applicants in submissions under this rulemaking where the requirements of the rule are met. However, because of the divergence in data collection techniques and information collected by *48045 these programs, EPA disagrees that it would be appropriate to accept a substitution in its entirety without tailoring such a program to today's specific information requirements. One municipality noted that municipal systems are not well documented and responsibility for them is in question. In response, EPA notes that the source identification procedure is designed, in part, to address such shortcomings.

Several municipalities suggested that legal authority could be demonstrated by providing EPA with copies of appropriate local ordinances to demonstrate their legal authority and a statement from the city attorney. EPA agrees that these methods are appropriate for making this demonstration.

Several commenters noted that there was adequate existing municipal legal authority to carry out the program requirements or such authority could be obtained by the municipality. Other commenters stated that municipalities possess some authority over certain activities but may not have authority over discharges from roads and construction. Numerous commenters, however, claimed that certain municipalities had no existing legal authority to carry out the permit requirements and that obtaining all the necessary legal authority could take several years due to cumbersome legislative and political processes. In response, part 1 of the permit application will establish a schedule for the development of legal authority that will be needed to accomplish the goals of the permit application and permits. Some municipalities will have more advanced storm water programs with appropriate legal authority or the ability to establish necessary ordinances. Providing an appropriate schedule will not present difficulties in these circumstances. EPA also notes that the definitions of large and medium municipal separate storm sewer systems finalized in today's rule will in many cases result in a number of co-applicants participating in a system wide application. It is anticipated that the development of adequate inter-jurisdictional agreements specifying the various responsibilities of the co-permittees may in some cases be very complex, thereby justifying the development of a schedule to complete the task. For example, clarifying the authority over discharges from roads may present difficulties where a number of municipal entities operate different roads in a given jurisdiction. In other limited cases, the MEP standard for municipal permits may translate into permit conditions that extend the schedule for obtaining necessary legal authority into the term of the permit. These situations will be evaluated on a

case-by-case basis by permit issuing authorities.

Numerous commenters supported the field screening analysis as proposed. Comments from three municipalities noted that it would be a cost-effective means of identifying problem areas. One municipality noted that illicit connections can be reliably detected by the screening method proposed. In view of these comments EPA has decided to retain this portion of the regulation. However many commenters expressed concern over how the proposed approach would work given the particular circumstances under which some municipal storm water systems are arranged. Several commenters questioned the effectiveness of dry weather monitoring for several reasons, including the shallow depth of some cities' water tables. Accordingly, an alternative approach may be utilized by the municipal permittee, and this is discussed later in section VI.H.3.

Some comments suggested that if any field screening is required that it be done during the term of the permit. EPA believes that field screening should not be done during the term of the permit exclusively. Unless a field screening is accomplished during the permit application phase there will be scant knowledge, if any, upon which illicit connection programs can be established for the term of the permits. EPA views field screening during the application process as an appropriate means of beginning to meet the CWA's requirement of effectively prohibiting non-storm water discharges into municipal separate storm sewers.

The submittal of part 1 of the permit application will allow EPA, or approved NPDES States, to adjust part 2 permit application requirements to assure flexibility for submitting information under part 2, given the site specific characteristics of each municipal storm sewer system.

EPA agrees with the concerns of commenters regarding the estimate of the reduction of pollutant loads from existing management programs. EPA agrees that sufficient data may not be available to establish meaningful estimates. Therefore this component of the proposed part 1 is not a requirement of today's rule.

b. Part 2 Application. Part 2 of the proposed permit application is designed to supplement information found in part 1 and to provide municipalities with the opportunity of proposing a comprehensive program of structural and non-structural control measures that will control the discharge of pollutants, to the maximum extent practicable, from municipal storm sewers. The components of the proposed part 2 of the permit application included:

- A demonstration that the legal authority of the permit applicant satisfies regulatory criteria (§ 122.26(d)(2)(i));
- Supplementation of the source identification information submitted in part 1 of the application to assure the identification of all major outfalls and land use activities (§ 122.26(d)(2)(ii));
- Information to characterize discharges from the municipal system;
- A proposed management program to control the discharge of pollutants to the maximum extent practicable, from municipal storm sewers (§ 122.26(d)(2)(iv));
- Assessment of the performance of proposed controls (§ 122.26(d)(2)(v));
- A financial analysis estimating the cost of implementing the proposed management programs along with identifying sources of revenue § 122.26(d)(2)(vi);
- A description of the roles and responsibilities of co-applicants (§ 122.26(d)(2)(vii)).

One municipality agreed that the assessment of the performance of controls was a critical component of establishing a viable program and one that could be accomplished within the time frame of the permit application deadlines. One commenter suggested that the applicant describe what financial resources are currently available. In response, EPA will require applicants to describe the municipality's existing budget for storm water programs in part 1 of the permit application requirements. This information will be useful to evaluate the municipality's ability to prepare and implement management plans. In response to other comments, this information will also include an overview of the municipality's financial resources and a description of the municipality's budget, including overall indebtedness and assets.

EPA has retained the financial analysis in this portion of the rule on the advice of two municipal commenters, who agreed that this was an important component of establishing a viable program and one that could be accomplished within the time frame of the permit application deadlines. Another commenter noted that this requirement is appropriate to justify a municipality's proposed management plan.

*48046 3. Major Outfalls

In past rulemakings, a controversial issue has been the appropriate sampling requirements for municipal separate storm sewer systems. Earlier storm water rulemakings have been based primarily on the principle that all discharges to waters of the United States from municipal separate storm sewers located in urban areas must be covered by an individual permit. This approach requires that individual permit applications contain quantitative data to be submitted for all such discharges. This approach was criticized because of a potentially unmanageable number of outfalls in some municipal separate storm sewer systems. Most incorporated cities with a population of 100,000 or more do not know the exact number of outfalls from their municipal systems; but based on the comments, the number ranges from 500 to 8,000 or more.

In light of the increased flexibility provided by the WQA and the development of EPA's system-wide approach for regulating municipal separate storm sewer discharges, today's rule will not require submittal of individual permit applications with quantitative data for each outfall of a municipal system. Rather today's rule will encourage system-wide permit applications to provide information suitable for developing effective storm water management programs. Under this approach, not all outfalls of the municipal system will be sampled, but rather more specific and accurate models for estimating pollutant loads and discharge concentrations will be used. The use of these models will require the identification of sources which are responsible for discharging pollutants into municipal separate storm sewers and will not require as much data to calibrate due to the source-specific nature of the model. A number of standard and localized models have been developed for estimating pollutant loads from storm water discharges.

Several commenters support the use of models for developing management plans and estimating pollutant loadings and concentrations. EPA encourages their use where applicable to particular systems.

By adopting an approach that incorporates source identification measures, the amount of quantitative data required to characterize discharges from the municipal system will be reduced because of the increased accuracy of the site-specific models which can be used. Consistent with a system-wide permit application approach, EPA proposed to focus source identification measures on "major outfalls." The proposed definition of major outfalls includes any municipal separate storm sewer outfall that discharges from a pipe with a diameter of more than 36 inches or its equivalent (discharges from a drainage area of more than 50 acres), or for municipal separate storm sewers that receive storm water from lands zoned for industrial activities, an outfall that discharges from a pipe with a diameter of more than 12 inches or its equivalent (discharges from a drainage area of 2 acres or more).

Numerous entities offered comments on this definition. Several commenters concurred with this proposed definition. One commenter maintained that the data collected at such outfalls would be sufficient to estimate pollutant loads as well as

concentrations using well calibrated models. Another municipality stated that 50 acres was an excellent approximation for the average drainage area served by a 36-inch storm sewer. Two States and one county supported the definition as proposed. One large municipal entity supported the definition, stating that screening major outfalls could be accomplished with available staff over a three month period. In light of these comments, EPA has decided to retain, in part, the definition-as-proposed.

Numerous commenters suggested alternative definitions or otherwise disagreed with the proposed definition. Most of these comments expressed concern about the number of outfalls that would have to be tested or screened if the definition was retained. For this reason EPA has decided to limit the total number of major outfalls or equivalent sampling points that have to be tested to 250 or 500 for medium or large systems respectively. This change is discussed in further detail below.

The following are examples of comments that opposed the definition of a "major outfall" as proposed. Several commenters stated that, in the southwest, 6 to 12 foot outfalls are the norm, and that smaller outfalls should not be addressed unless there is a compelling reason to suspect illicit connections. One commenter suggested a size of 54 inches and 50 acres, while another commenter suggested that 48 inches would be appropriate. One commenter suggested that the diameter for industrial pipes should be 18 inches, while another commenter suggested that 50 acres should be the only criterion.

One commenter noted that pipe size will vary according to rainfall patterns and that a single approach would not work universally. This comment, and other similar points of view as noted herein, convinces that Agency that a more flexible approach is needed to identify field screening and sampling locations. However, EPA is also convinced that a universal standard is necessary for purposes of identifying drainage areas within the municipal system and discrete areas of land use that are drained by certain sized outfalls. This information is critical since these conveyances, and lands they drain, are sources of pollutants to waters of the United States from municipal systems and are properly the subject of appropriate permit conditions.

Many commenters suggested placing a limit on the number of major outfalls addressed during the field screening phase of the permit application. Two municipalities stated that the proposed definition of major outfalls in terms to the pipe diameter was too small and that too many outfalls would be covered. One municipality stated that under the proposed definition, it would have over 4700 "major outfalls," a number viewed as being unacceptably large. Several municipalities argued that they would be penalized for over-design of their storm drain system. One municipality stated field screening of outfalls should be limited to 200 for medium cities and 500 for large cities. Some commenters suggested EPA set a percentage of major outfalls for screening, because all pipes in some municipalities meet the definition of major outfall. One commenter suggested that a sliding scale be used to determine the number of outfalls tested: those with 50 test all, those with 100-200 test 50%, etc. Other commenters suggested a flat percentage of outfalls or flat number such as 100.

4. Field Screening Program

EPA also received several comments in response to the proposed field screening methodology. Among the major concerns were: End of pipe sampling may not be practical and the more appropriate and accessible location is likely to be the nearest upstream manhole; the type of discharge should be the criterion for selecting sampling points as opposed to pipe size; a system wide evaluation is more appropriate than checking each outfall; within some systems, major outfalls or pipe size will not reflect discharges from suspect or old land use areas; efforts should be focused on locations where illicit connections are expected; sites should be determined by looking at sites within drainage basin areas based on land use within those basins; land use and hydrology of the watershed should be the criteria for selecting points; *48047

screening should be performed at locations that will allow for the location of upstream discharges; the focus should be exclusively on drainage areas rather than pipe size, since pipe size will vary with slope; a prescribed percentage of total flow may be more appropriate; state water quality standards should be utilized along with focusing on actual quality in the reaches of a stream.

EPA is convinced by these comments that today's rule should allow applicants to either field screen all major outfalls as proposed (first procedure) or use a second procedure to provide for the strategic location of sampling points to pinpoint illicit connections. EPA agrees with comments that the size of the outfall will not always reflect the chance of uncovering illicit connections or discharges, and that field screening points should be easily accessible.

This second procedure is as follows: field screening points and/or outfalls are randomly located throughout the storm sewer system by placing a grid over a drainage system map and identifying those cells of the grid which contain a major outfall or segment of the storm sewer system. The grid shall be established using the following guidelines and criteria:

- (1) A grid system consisting of perpendicular north-south and east-west lines spaced 1/4 mile apart shall be overlaid on a map of the municipal storm sewer system, creating a series of cells;
- (2) All cells that contain a segment of the storm sewer system shall be identified; one field screening point shall be selected in each cell; major outfalls may be used as field screening points;
- (3) Field screening points or major outfalls should be located downstream of any sources of suspected illegal or illicit activity;
- (4) Field screening points shall be located to the degree practicable at the farthest manhole or other accessible location downstream in the system, within each cell; however, safety of personnel and accessibility of the location should be considered in making this determination;
- (5) The assessment and selection of cells shall use the following criteria: Hydrological conditions; total drainage area of the site; population density of the site; traffic density; age of the structures or buildings in the area; history of the area; land use types;
- (6) For medium municipal separate storm sewer systems, no more than 250 cells need have identified field screening points; in large municipal separate storm sewer systems, no more than 500 cells need to have identified field screening points for detecting illicit connections; cells established by the grid that contain no storm sewer segments will be eliminated from consideration; if fewer than 250 cells in medium municipal sewers are created, and fewer than 500 in large systems are created by the overlay on the municipal sewer map, then all those cells which contain a segment of the sewer system shall be subject to field screening (unless access to the separate storm sewer system is impossible);
- (7) Large or medium municipal separate storm sewer systems which are unable to utilize the procedures described in paragraphs (1) through (6) above, because a sufficiently detailed map of the separate storm sewer systems is unavailable, shall field screen at least 250 or 500 major outfalls respectively using the following method: the applicant shall establish a grid system consisting of north-south and east-west lines spaced 1/4 mile apart overlaid on a map of the boundaries of a large or medium municipal entity described at § 122.26(b), thereby creating a series of cells; major outfalls in as many different cells as possible shall be selected until 500 major outfalls (large municipalities) or 250 major outfalls (medium municipalities) are selected; a field screening analysis shall be undertaken at these major outfalls.

The methodology outlined above is in response to public comments which indicated that the field screening and sampling

of major outfalls as proposed would lead to insurmountable logistical problems in some municipal systems. EPA believes that the above is an effective approach to pinpointing suspected problem points along a given trunkline or segment of separate storm sewer system. Jurisdictions with no extensive or previous history of monitoring, or lack of an intensive monitoring program can utilize the methods described in establishing a program. Furthermore, the approach will allow for the prioritization of outfalls, sampling points, or areas within the municipality where there are suspected illicit connections or discharges, or other circumstances creating higher concentrations and loadings of pollutants.

Paragraph (7) enables municipalities to select major outfalls without regard to the municipal sewer system map that is required for using the procedure described in paragraphs (1) through (6). However, the applicant must still select outfalls within the cells created by overlaying a 1/4 mile grid over a map of the boundaries of the large or medium municipal entity defined under § 122.26(b), and select major outfalls within as many of those cells as possible, up to 500 (large municipal systems) or 250 (medium municipal systems). In this manner, as many different areas and land uses within the municipal system will be covered by the field screening component of the municipal application.

In order to keep the costs of the program within the anticipated limits of the proposed regulation, the number of outfalls or sampling locations using the grid system is to be limited to 500 for large municipal separate storm sewer systems and 250 for medium municipal separate storm sewer systems.

In response to several comments, EPA has clarified the definition of major outfalls with regard to the words, "pipe with an inside diameter of 36 inches or more or its equivalent" and "a pipe with an inside diameter of 12 inches or more or its equivalent." This definition has been modified to specify that single pipes or single conveyances with the appropriate diameter or equivalent are covered.

EPA's proposal required municipal permit applicants to submit a fiscal analysis of expenditures that will be required in order to implement the proposed management plans required in part 2 of the application. The description of fiscal resources should include a description of the source of the funds. Some commenters felt that a fiscal analysis should only be required during the term of the permit. In response, EPA believes that during the two years of permit application development, the permit applicant should be in a position to submit information on the ability and means for financing storm water management programs during the term of the permit. EPA views this information as an important means of evaluating the scope of program and whether the permittee will be devoting adequate resources to implementing the program before that program is mapped out in the permit itself.

5. Source Identification

The identification of sources which contribute pollutants to municipal separate storm sewers is a critical step in characterizing the nature and extent of pollutants in discharges and in developing appropriate control measures. Source identification can be useful for providing an analysis of pollutant source contribution and for identifying the relationship between pollutant sources and receiving water quality problems. In cases where end-of-pipe controls alone are not practicable, it is essential to identify the source of pollutants into the municipal storm ***48048** sewer systems to support a targeted approach to control pollutant sources.

The relative contribution of pollutants from various sources will be highly site-specific. The first step in developing a targeted approach for controlling pollutants in discharges from municipal storm sewer systems is identifying the various sources in each drainage basin that will contribute pollutants to the municipal storm sewer system.

This rulemaking phases in the source identification requirements of the permit program by establishing minimum objectives in part 1 of the application and by requiring applicants to submit a source identification plan in part 2 of the applica-

tion to provide additional information during the term of the permit. The minimum source identification requirements of part 1 of the application have been designed to provide sufficient information to provide an initial characterization of pollutants in the discharges from the municipal storm sewer system. EPA realizes that with many large, complex municipal storm sewer systems, it may be difficult to identify all outfalls during the permit application process. Accordingly, EPA is requiring that known outfalls be reported in part 1 of the application. Part 1 of the application will also include: A description of procedures and a proposed program to identify additional major outfalls; the identification of the drainage area associated with known outfalls; a description of major land use classifications in each drainage area, descriptions of soils, the location of industrial facilities, open dumps, landfills or RCRA hazardous waste facilities which discharge storm water to the municipal storm sewer system; and ten year projections of population growth and development activities (population data and development projections will be useful for future predictions of loadings to receiving waters from municipal storm sewer systems, and capacities required for treatment systems). In general, population projections should reflect various scenarios of development (high, medium, low relative to recent trends).

Part 2 of the application will supplement the information reported in part 1 of the application so that, at a minimum, all major outfalls are identified.

Under today's rule, municipal or public entities responsible for applying for and obtaining an NPDES permit will be required to identify the location of an open dump, sanitary landfill, municipal incinerator or hazardous waste treatment, storage, and disposal facility under RCRA which may discharge storm water to the system as well as all facilities which discharge storm water associated with industrial activity into a large or medium municipal separate storm sewer system.

Requiring these source identification measures is supported by the legislative history of section 405 of the WQA, which instructs that "[i]n writing any permit for a municipal separate storm sewer, EPA or the State should pay particular attention to the nature and uses of the drainage area and the location of any industrial facility, open dump, landfill, or hazardous waste treatment, storage, or disposal facility which may contribute pollutants to the discharge." (emphasis added) [Vol 133 Cong. Rec. S752 (daily ed. Jan. 14, 1987)].

One municipality questioned the purpose of the topographic map and commented that the scale of the topographic map is too large to indicate any of the required outfall, drainage, industrial or structural control information. In response, the purpose of the topographic map is to identify receiving waters, major storm water sewer lines that contribute discharges to these waters, and potential sources of storm water pollution. EPA disagrees that a USGS 7.5 scale map is inappropriate for identifying these features within a municipal system. The scale afforded by such a map provides sufficient detail to allow specified delineation of outfalls, while not requiring an overly burdensome map in terms of size. Numerous commenters noted the value of source identification information and generally supported submitting this information in the permit application.

Many commenters questioned the value of the source identification information for the purpose of characterizing pollutant loads and concentrations. Conversely, one commenter opined that the requirement would provide sufficient information to estimate pollutant loadings from each outfall using loading models to estimate loadings by watershed. In response, the source identification information serves several purposes. It is the first step for identifying potential sources of pollutants from which more in depth analysis can be accomplished, under the discharge characterization component of the application. Also, where appropriate, it may be used in conjunction with models to estimate loadings and concentrations. EPA has also taken note of the many comments that question or dismiss the concept of determining pollutant loads and concentrations solely from source identification. Accordingly, EPA is convinced that at least some of the sampling requirements as proposed are necessary to facilitate more accurate system specific estimates of pollutant concentrations and loadings. These are discussed below, in the discharge characterization section.

One commenter suggested that aerial photos be submitted in lieu of topographic maps. EPA agrees that an aerial photograph of the appropriate scale that communicates the same information as a topographic map may be substituted. Today's final rule reflects this flexibility.

The source identification component of the municipal application also requires that municipal applicants identify the industrial activity within the drainage area associated with each major outfall. One commenter stated that where multiple storm sewers outfalls discharge to a stream reach, municipalities should be allowed to delineate a single sewer-shed for identifying sources of industrial activity. In response, the rule does not delimit an applicant's ability to identify industries in groups according to a common series of storm sewer outfalls, if that is an easier or more appropriate methodology for that particular applicant. However, EPA would view this as appropriate only where the land use is of one type, such as industrial. Where land use is mixed within the drainage area associated with each major outfall, such differences need to be identified.

In response to comments, to the extent that EPA is requesting that applicants identify the types of industrial facilities operating within the municipality, the municipality is free to use Standard Industrial Classification (SIC) or other systems which identify the principal products or services of the facility. One commenter disagreed with EPA's decision to require a list of water bodies that are listed under CWA sections 304(1), 319(a), 314(a), and 320, because the States already have this information and that requesting it from permittees could result in "omissions, misunderstandings, and mistakes." EPA believes that these waters should be identified in the application so that appropriate permit conditions can be developed that address storm water discharges that are adversely effecting such waters. EPA believes that having this information immediately at the disposal of the municipality and the permit writer will speed the process and alert the municipality of storm water discharges to listed water bodies and potentially polluted storm water discharges to those waters.

*48049 6. Characterization of Discharges

The characterization plan and data collection required in today's rule as elements of Part-one and Part-two of the municipal permit application is comprised of several major components:

- A screening analysis to provide information to develop a program for detecting and controlling illicit connections and illegal dumping to the municipal separate storm sewer system;
- Initial quantitative data to allow the development of a representative sampling program to be incorporated as a permit condition;
- System-wide estimates of annual pollutant loadings and the mean concentration of pollutants in storm water discharges, and a schedule to provide estimates during the term of the permit for each major outfall of the seasonal pollutant loadings and the event mean concentration of pollutants in storm water discharges; and
- An identification of receiving waters with known water quality impacts associated with storm water discharges.

Several commenters noted the importance of developing and targeting management programs based on discharge characterization data and monitoring. Numerous other commenters stressed the importance of a program to identify and eliminate illicit connections and improper disposal. EPA agrees that discharge characterization is an important component of developing management programs. Most of the discharge characterization components of the municipal application procedure have been retained as proposed. However some changes and clarifications have been made, and these are noted below.

a. Screening analysis for illicit discharges (part 1 of application). Illicit discharges (non-storm water discharges without a NPDES permit), and illegal dumping to municipal separate storm sewer systems occur in a relatively haphazard manner. Due to the unpredictability of such discharges, today's permit applications require a field analysis for the development of priorities for detecting and controlling such discharges. A field screening approach will provide a means of detecting high levels of pollutants in dry weather flows, which is one indicator of illicit connections. Results of a field test of such discharges will provide further information about the nature of the discharge to determine if further investigation is warranted. Visual observation of dry weather flows has been shown to be one the most effective means for tracking down illicit connections and improper disposal.

As discussed in greater detail in section VI.H.7.b of today's preamble, EPA is proposing to require that municipal applicants submit a comprehensive plan to develop a program to detect and control illicit connections and illegal dumping. In order to develop appropriate priorities for these programs, applicants shall submit the results of a screening analysis to be performed on major outfalls or "field screening points" in the systems to detect the presence of illicit hookups and illegal dumping. The results of the screening analysis, referred to as the field screen, would be reported in part 1 of the permit application.

Under the requirements for a field screen, the applicant or co-applicants will submit a description of observations of dry weather discharges from major outfalls or "field screening points" identified in part 1 of the application. At a minimum, the field screen would include a description of visual observations made during a dry weather period. If any flow is observed during a dry weather period, two grab samples will be collected during a 24 hour period with a minimum period of four hours between samples. For all such samples, a description of the color, odor, turbidity, the presence of an oil sheen or surface scum as well as any other relevant observation regarding the potential presence of non-storm water discharges or illegal dumping would be provided. In addition, the applicant should provide the results of a field screen which includes on-site estimates of pH, total chlorine, total copper, total phenol, detergents (or surfacants) along with a description of the flow. EPA is not requiring analytical methods approved under 40 CFR part 136 be used exclusively in the field screen. Rather, the use of inexpensive field sampling techniques such as the use of colorimetric detection methods is anticipated. Where the field screen does not involve analytical methods approved under 40 CFR part 136, the applicant is required to provide a description of the method used which includes the name of the manufacturer of the test method, including the range and accuracy of the test. Appropriate field techniques for a field screen of dry weather discharges are discussed in EPA guidance for municipal storm water discharge permit applications.

It should be clarified that data from the field screen is generally not appropriate for comprehensive evaluation of water quality impacts, or estimating pollutant loadings. Rather, the information from the field screen in part 1 of the application will be used along with other information, such as the age of development and degree of industrial activity in the drainage basin, to identify areas or outfalls which are appropriate targets for management programs and for investigations directed at identifying and controlling non-storm water discharges to separate storm sewers during the term of the permit.

In the December 7, 1988, proposal, EPA proposed a second phase of the screening analysis requiring that wet-weather and dry-weather samples be collected and analyzed in accordance with analytical methods approved under 40 CFR part 136 from designated major outfalls for a larger set of pollutants identified with illicit connections. Comments essentially viewed this proposal as too ambitious for the permit application. One commenter recommended that this procedure could best be accomplished during the term of the permit. Some comments maintained that the collection of analytical samples as a follow up to an initial field screen analysis was not the most cost-effective, practicable or efficient method for pinpointing illicit connections. EPA recognizes that several municipal programs to detect and control illicit connections and other non-storm water discharges have been successfully developed and implemented without the use of extensive analytical sampling (for example, programs in Fort Worth, TX and Washtenaw County, MI). After identifying and analyzing

the comments on this aspect of the proposal EPA has withdrawn this element of the proposal from today's rule. EPA believes that a follow-up phase to the initial field screening is more appropriate during the term of the permit. Thus, EPA has dropped the field screening requirement proposed for Part 2 of the application.

b. Representative data (Part 2 of application). The NURP study showed that pollutant concentrations in urban runoff can exhibit significant variation. Pollutant concentrations in such discharges vary during storm events and from storm event to storm event. Given the complex, variable nature of storm water discharges from municipal systems, EPA favors a permit scheme where the collection of representative data is primarily a task that will be accomplished through monitoring programs during the term of the permit. Permit writers have the necessary flexibility to develop monitoring requirements that more accurately reflect the true nature of highly variable and complex discharges.

*48050 Today's rule provides for an initial assessment of the quality of discharges from municipal separate storm sewers based primarily on source identification measures and existing information received in the permit application. This information will be used to begin to characterize system discharges. The analysis developed under this approach will not rely solely on sampling data collected during the application process, but will also incorporate existing data bases such as the one developed under the NURP study. Today's rule requires that some quantitative data will be collected to ensure the system discharges can be appropriately represented by the various existing data bases and to provide a basis for developing a monitoring plan to be implemented as a permit condition.

Today's rule requires that quantitative data be submitted for discharges from selected storm events at between 5 and 10 outfalls or field screening points. The municipality will recommend and the Director will then designate the outfalls or field screening points as representative of the commercial, residential and industrial land use activities of the drainage area contributing to the system, on the basis of information received in part 1 of the application. The applicant will be required to collect samples of a storm discharge from three storm events occurring one month apart for each designated outfall or field screening point. This is a modification to the December 7, 1988, proposal wherein only one of the 5 to 10 outfalls was to be sampled during three storm events, and the remaining sampled only once. This requirement may be modified by the Director if the type and frequency of storm events require different sampling. The Director may require samples of discharges to be collected during snow melts or during specified seasons. The Director may also require additional testing during a single event if it is unlikely that there will be three storm events suitable for sampling during the year. Furthermore, the Director may allow exemptions to the three storm event requirement when climatic conditions create good cause for such exemptions; for example, arid regions or areas experiencing drought conditions during the period when applications are developed could be exempted.

EPA has added requirements to sample more storm events in response to comments that the sampling procedure proposed would not necessarily yield representative data. Commenters indicated that: rain events of different intensity may yield different levels and types of pollutants; a rain event after a dry spell of several months will not be representative when compared to rain events occurring closer together, due to the build up of constituents; one sample may reflect short term effects such as improper disposal rather than long term effects; and that rain events are generally too variable to rely on the limited sampling as proposed. Clearly the data collected from sampling storm water discharges has a tendency to vary greatly. The more sampling that is accomplished, the greater extent to which this variability may be accounted for and appropriate management programs developed.

In selecting the amount of data to be collected during the permit application process, EPA has attempted to balance the usefulness of this data against the economic and logistical constraints in actually obtaining it. In some cases the data obtained will support initial loading and concentration estimates obtained using various modeling techniques, from which appropriate permit conditions can be developed. Data obtained may be supplemented with further data collection during

the term of the permit.

EPA believes that the requirement that selected major municipal outfalls or "field screening points" be sampled for more than one event will provide verification that the characterization of discharge is valid. Where an ongoing sampling program is defined for the term of the permit, samples taken during the first few years of this period can be used to verify the application results. If a municipality or an industry questions the conclusions drawn from the characterization sampling, it may at its discretion choose to perform additional sampling to either confirm or dispel these concerns.

All samples collected will be analyzed for all pollutants listed in Table II, (organic pollutants), and Table III, (toxic metals, cyanide and total phenol) of appendix D of 40 CFR part 122, and for the pollutants listed in Table M-1 below:

Table M-1

Total suspended solids (TSS)	Total dissolved solids.
COD	BOD[FN5].
Oil and grease	Fecal coliform.
Fecal streptococcus	pH.
Dissolved phosphorus	
Total ammonia plus organic nitrogen	Total phosphorus.
Total Kjeldahl nitrogen	Nitrate plus nitrite.

A portion of the NURP program involved monitoring 120 priority pollutants in storm water discharges from lands used for residential, commercial and light industrial activities. The NURP program excluded testing for asbestos and dioxin. Results for seven other organic priority pollutants were not considered valid due to changes in, or constraints on test methods. Seventy-seven priority pollutants were detected in samples of storm water discharges from lands used for residential, commercial and light industries taken during the NURP study, including 14 inorganic and 63 organic pollutants. Table M-2 shows the priority pollutants which were detected in at least ten percent of the discharge samples which were sampled for priority pollutants.

Table M-2.—Priority Pollutants Detected in at Least 10% of NURP Samples
 [In percent]

Metals and inorganics	Frequency of detection
Antimony	13
Arsenic	52
Beryllium	12
Cadmium	48
Chromium	58
Copper	91
Cyanides	23
Lead	94
Nickel	43
Selenium	11

Zinc	94
Pesticides:	
Alpha-hexachlorocyclohexane	20
Alpha-endosulfan	19
Chlordane	17
Lindane	15
Halogenated aliphatics:	
Methane, dichloro-	11
Phenols and cresols:	
Phenol	14
Phenol, pentachloro-	19
Phenol, 4-nitro	10
Phthalate esters:	
Phthalate, bis(2-ethylhexyl)	22
Polycyclic aromatic hydrocarbons:	
Chrysene	10
Fluoranthene	16
Phenanthrene	12
Pyrene	15

The NURP data also showed a significant number of these samples exceeded various freshwater water quality criteria. The exceedence of water quality criteria does not necessarily imply that an actual violation of standards will exist in the receiving water body in question. Rather, the enumeration of exceedences serves as a screening function to identify those constituents whose presence in urban storm water runoff may warrant high priority for further evaluation.

Members of this group represent all of the major organic chemical fractions *48051 found in Table II of appendix D of 40 CFR part 122 (volatiles, acid compounds, base/neutrals, pesticides). Today's rule requires testing for all organic constituents in Table II rather than limiting the sampling requirements to the 24 toxic constituents found in the NURP study because they will provide a better description of the discharge at essentially the same cost. (The cost of analyzing samples for organic chemicals strongly depends on the number of major organic chemical fractions tested). The NURP study focused on characterizing storm water discharges from lands used for residential, commercial and light industrial activities. In general, the NURP study did not focus on other sources of pollutants to municipal separate storm sewer systems and, therefore, does not reflect all potential pollutants that may be present in discharges from municipal separate storm sewer systems.

The sampling requirements for the permit application address a limited number of sampling locations but require analysis for a wide range of pollutants. Sampling for a wide range of pollutants as a permit application requirement should provide permit writers with appropriate data to target more specific pollutants when developing requirements for a monitoring program during the term of the permit.

Numerous commenters stated that monitoring for all priority pollutants seemed excessive. However, EPA is convinced that it is more appropriate for permit conditions to focus on and prioritize particular pollutant problems after data cover-

ing a broad spectrum of pollutants are developed. As noted above, NURP identified 77 priority pollutants in urban runoff, but only from residential, commercial, and light industrial (e.g. industrial parks) areas. One municipal entity stated that this approach is a reasonable and realistic means of providing some useful baseline data, while others recommended sampling a variety of parameters that are included in Tables M-1 and M-2. Another municipal entity stated that characterization of outfall discharge quality during storm events is necessary as a means of targeting source control activities.

EPA is working with the United States Geological Survey (USGS) to evaluate the availability of USGS technical assistance to municipalities through cooperative funding programs to aid in collecting representative quantitative data of storm water discharges from municipal systems.

USGS data collection programs with municipalities typically include storm water discharge samples obtained at various times during a storm hydrograph event. Various USGS field procedures can be used to obtain discharge data for pipes, culverts, etc., typically found in urban areas. Pollutant models can be calibrated with data and long-term rainfall records to simulate the quality of system discharges and compared to other storm water models.

In addition, EPA recognizes that many municipalities have participated in studies, such as NURP, that involve sampling of urban runoff as well as other components of discharges from municipal separate storm sewer systems. All existing storm water sampling data along with relevant water quality data, sediment data, fish tissue data or biosurvey data taken over the last ten years is considered relevant and, under today's rule, must be submitted with part 1 of the application. Sampling data that is submitted must be accompanied with a narrative description of the drainage area served by the outfall monitored, a description of the sampling and quality control program, and the location of receiving water monitoring.

EPA requested comments on the use of existing data, such as that generated under the NURP study, to satisfy the requirement of providing representative sampling data. Commenters did not agree on the value of NURP results as an indicator of representative data. Several commenters expressed the view that existing data could be used to satisfy in whole or in part the representative sampling requirements of the storm water permit application. However, commenters generally did not offer suggested criteria that could be used to verify the validity of existing data. One commenter believed that intensive sampling over a period of ten years in 12 basins, when combined with NURP data, would be adequate.

One commenter supported the use of data, such as that obtained from the NURP study, to target sampling programs. EPA supports such a methodology and has retained this portion of the proposed discharge characterization component. EPA received strong support from an environmental group for retaining this information requirement in part 1 of the application.

In light of these comments EPA believes it is appropriate to retain the representative sampling requirements without resorting to the use of existing data exclusively. Because of the inherent variability in reliability and applicability of existing data, EPA is convinced that a nationally consistent methodology for collecting data is appropriate. This data can then be used in conjunction with other existing data and models to develop appropriate site specific management programs and more generalized management program strategies. Where existing data and data collected under today's rule varies or does not match, further sampling under the term of the permit will be accomplished to more accurately assess the discharge of pollutants.

c. Loading and Concentration Estimates (part 2 of application). The assessment of the water quality impacts of discharges from municipal separate storm sewer systems on receiving waters requires the analysis of both pollutant loadings and concentrations of pollutants in discharges.

The loading and concentration estimates in today's rule will be used to evaluate two types of water quality impacts: (1)

Short-term impacts; and (2) long-term impacts. Specifically, the regulation requires estimates of the annual pollutant load of the cumulative discharges to waters of the United States from municipal outfalls and the event mean concentration of the cumulative discharges to waters of the United States municipal outfalls during a storm event for BOD₅, COD, TSS, dissolved solids, total nitrogen, total ammonia-plus-organic nitrogen, total phosphorus, dissolved phosphorus, cadmium, copper, lead, and zinc. Estimates shall be accompanied by a description of the procedures for estimating constituent loads and concentrations, including any modelling, data analysis, and calculation methods. Municipalities have options in the use of methodologies, including those presented in NURP for calculating loads.

Short term impacts from discharges from municipal separate storm sewers involve changes in water quality that occur during and shortly after storm events. Examples of short-term impacts that can lead to impairments include periodic dissolved oxygen depression due to the oxidation of contaminants, high bacteria levels, fish kills, acute effects of toxic pollutants, contact recreation impairments and loss of submerged macrophytes. Characterization of instream pollutant concentrations based on estimated pollutant concentrations in system discharges are important for evaluating these types of impacts.

Long-term water quality impacts from discharges from municipal separate storm sewers may be caused by contaminants associated with suspended solids that settle in receiving water sediments and by nutrients which enter receiving water systems with long *48052 retention times. Pollutant loading data are important for evaluation of impairments such as loss of storage capacity in streams, estuaries, reservoirs, lakes and bays, lake eutrophication caused by high nutrient loadings, and destruction of benthic habitat. Other examples of the long-term water quality impacts include depressed dissolved oxygen caused by the oxidation of organics in bottom sediments and biological accumulation of toxics as a result of uptake by organisms in the food chain. An estimate of annual pollutant loading associated with discharges from municipal storm water sewer systems is necessary to evaluate the magnitude and severity of the environmental impacts of such discharges and to evaluate the effectiveness of controls which are imposed at a later time.

Municipal storm water sewer systems generally handle runoff from large drainage areas and the sources of pollution are usually very diffuse. The concentrations of many pollutants in discharges from these systems are often low relative to many industrial process and POTW discharges. The water quality impacts of low concentration pollution discharges tend to be cumulative and need to be evaluated in terms of aggregate loadings as well as pollutant concentrations. A site-specific loading analysis can be used to evaluate the relative contribution of various pollutant sources.

7. Storm Water Quality Management Plans

Today's rule facilitates the development of site-specific permit conditions by requiring large and medium municipal permit applicants to submit, along with other information, a description of existing structural and non-structural prevention and control measures on discharges of pollutants from municipal storm sewers in part I of the permit application. Section 122.26(d)(2)(iv) requires the applicant to identify in part 2 of the application, to the degree necessary to meet the MEP standard, additional prevention or control measures which will be implemented during the life of the permit. Although, in many cases, it will not be possible to identify all prevention and control measures that are appropriate as permit conditions, EPA believes that the process of identifying components of a comprehensive prevention and/or control program should begin early and that applicants should be given the opportunity to identify and propose the components of the program that they believe are appropriate for first preventing or controlling discharges of pollutants.

As noted earlier, EPA recognizes that problems associated with storm water, combined sewer overflows (CSOs) and infiltration and inflow (I&I) are all inter-related even though they are treated somewhat differently under the law. EPA believes that it is important to begin linking these programs and activities and, because of the potential cost to local govern-

ments, to investigate the use of innovative, nontraditional approaches to reducing or preventing contamination of storm water. The application process for developing municipal storm water management plans provides an ideal opportunity between steps 1 and 2 for considering the full range of nontraditional, preventive approaches.

The permit application requirements in today's rule require the applicant or co-applicants to develop management programs for four types of pollutant sources which discharge to large and medium municipal storm sewer systems. Discharges from large and medium municipal storm sewer systems are usually expected to be composed primarily of: (1) Runoff from commercial and residential areas; (2) storm water runoff from industrial areas; (3) runoff from construction sites; and (4) non-storm water discharges. Part 2 of the permit application has been designed to allow the applicant the opportunity to propose MEP control measures for each of these components of the discharge. Discharges from some municipal systems may also contain pollutants from other sources, such as runoff from land disposal activities (leaking septic tanks, landfills and land application of sewage sludge). Where other sources, such as land disposal, contribute significant amounts of pollutants to a municipal storm sewer system, appropriate control measures should be included on a site-specific basis. Proposed management programs will then be evaluated in the development of permit conditions.

There is some overlap in the manner in which these pollutant sources are characterized and their sources identified. For instance, improper disposal of oil into storm drains is often associated with do-it-yourself automobile oil changes in residential areas, or improper application or over-use of herbicides and pesticides in residential areas can also occur in industrial areas. Also, some control measures will reduce pollutant loads for multiple components of the municipal storm sewer discharge. These measures should be identified under all appropriate places in the application; as discussed below, however, double counting of pollutant removal must be avoided when the total assessment of control measures is performed.

Although many land use programs have multiple purposes, including the reduction of pollutants in discharges from municipal separate storm sewer systems, the proposed management programs in today's rule are intended to address only those controls which can be implemented by the permit applicant or co-applicants. EPA cannot abrogate its responsibilities under the CWA to implement the NPDES permit program by relying on pollution control programs that are outside the NPDES program. For example, municipal permit management programs may not rely exclusively on erosion or sediment control laws for implementing that portion of management programs that address discharges from construction sites, unless such laws implement NPDES permit program requirements entirely and that such implementation is a part of the permit.

EPA anticipates that storm water management programs will evolve and mature over time. The permits for discharges from municipal separate storm sewer systems will be written to reflect changing conditions that result from program development and implementation and corresponding improvements in water quality. The proposed permit applications will require applicants to provide a description of the range of control measures considered for implementation during the term of the permit. Flexibility in developing permit conditions will be encouraged by providing applicants an opportunity to identify in the permit application priority controls appropriate for the initial implementation of management programs. Many commenters endorsed the flexible site-specific storm water program approach as proposed as a method for addressing regional water quality control programs in a cost effective manner. To this extent, EPA agrees with one municipality that management programs should focus on more serious problems and sources of pollutants identified in the municipal system. However, EPA believes that to implement section 402(p)(3), comprehensive storm water management programs which address a number of major sources of pollutants to a system are necessary. Municipal programs should not be focused solely on a single source of pollution, such as illicit connections.

One commenter maintained that management program development *48053 should be flexible enough to allow for con-

sideration of what is attainable based on the area's climate, vegetation, hydrology, and land uses. EPA agrees with this comment. Some strategies for reducing pollutants in the northeast will not be practical in the southwest, such as management programs for deicing activities. The permit application process will determine what strategies are appropriate in different locations.

Several commenters supported addressing storm water pollutant problems through management practices or programs rather than end of pipe controls or treatment. EPA agrees with this comment to the extent that storm water management practices are a general theme of this rulemaking with regard to municipal permits. However, there will be cases where such discharges are best addressed through technology such as retention, detention or infiltration ponds.

One commenter reacted unfavorably to the flexible site-specific management plan approach stating that there is no hard criteria upon which to judge the adequacy of programs. Another commenter felt that there should be a BAT standard for municipal permits. Another commenter stated that the rule should contain specific BMPs that the permittee must comply with. EPA disagrees with these comments. The Clean Water Act requires municipalities to apply for permits that will reduce pollutants in discharges to the maximum extent practicable and sets out the types of controls that are contemplated to deal with storm water discharges from municipalities. The language of CWA section 402(p)(3) contemplates that, because of the fundamentally different characteristics of many municipalities, municipalities will have permits tailored to meet particular geographical, hydrological, and climatic conditions. Management practices and programs may be incorporated into the terms of the permit where appropriate. Permit conditions, which require that storm water management programs be developed and implemented or require specific practices, are enforceable in accordance with the terms of the permit. EPA disagrees with the notion that this regulation, which addressed permit application requirements, should create mandatory permit requirements which may have no legitimate application to a particular municipality. The whole point of the permit scheme for these discharges is to avoid inflexibility in the types and levels of control. Further, to the degree that such mandatory requirements may be appropriate, these requirements should be established under the authority of section 402(p)(6) of the CWA and not in this rulemaking, which addresses permit application requirements.

Some commenters suggested that management programs should be developed as part of the permit conditions and not as part of the permit application. EPA agrees that management programs and their ongoing development should be part of the permit term. However, EPA is convinced, and many commenters agree, that the permit application should contain information on what the permittee has done to date and what it proposes and plans to do during the permit term based upon its discharge characterization and source identification data. This is a reasonable and logical approach and one that meets the intent and letter of section 402(p)(3) of the CWA. As stated above, this would be an appropriate method for implementing storm water management programs that should mature and evolve over time.

Applicants will propose priorities based on a consideration of appropriate controls including, but not limited to, consideration of controls that address: reducing pollutants to municipal separate storm sewer system discharges that are associated with storm water from commercial and residential areas (§ 122.26(d)(2)(iv)(A)); illicit discharges and illegal disposal (§ 122.26(d)(2)(iv)(B)); storm water from industrial areas (§ 122.26(d)(2)(iv)(C)); and runoff from construction sites (§ 122.26(d)(2)(iv)(D)). Permits for different municipalities will place different emphasis on controlling various components of discharges from municipal storm sewers. For example, the potential for cross-connections (such as municipal sewage or industrial process wastewater discharges to a municipal separate storm sewer) is generally expected to be greater in municipalities with older developed areas. On the other hand, municipalities with larger areas of new development will have a greater opportunity to focus controls to reduce pollutants in storm water generated by the area after it is developed, discharges from construction sites, and other planning activities.

EPA requested comments on the process and methods for developing appropriate priorities in management programs pro-

posed in applications and how the development of these priorities can be coordinated with controls on other discharges to ensure the achievement of water quality standards and the goals of the CWA.

Discharges from diffuse sources in residential areas was recognized by several commenters as a significant source of pollutants. Accordingly, these elements of the management plans have been retained. In conjunction with the importance of developing programs for illicit connections, numerous commenters stated that education programs are a priority. Another commenter emphasized that ordinances prohibiting such discharges and their enforcement is a crucial means of a successful program in this regard. EPA agrees with these comments and consequently will retain those portions of management program development that include a description of a program for educational activities such as public information for the proper disposal of oil and toxic materials and the use of herbicides, pesticides and fertilizers.

Some commenters noted that discharge characterization is necessary for development of appropriate management plans. EPA agrees with these comments and has retained the discharge characterization components in this rulemaking. However, EPA disagrees that the results of all discharge characterization procedures (i.e., part 1 and part 2) are necessary to describe and propose a program as required in part 2 of the application. The application of various models is available to permit applicants, where needed, to develop appropriate management programs. All available site specific discharge characterization data should be available to the permit writer to draft appropriate conditions for the term of the permit.

One commenter noted that an important aspect of developing management plans is establishing the necessary legal authority to improve water quality. EPA agrees with this comment and has retained those aspects of the regulation which call for development and attainment of adequate legal authority in both parts of the municipal application.

One commenter stated that programs should address previously identified water quality problems in other programs that are required by section 304(1) of the CWA. EPA agrees that identified water quality problems need to be addressed by management programs, and the municipal permit application will call for an identification of these waters. However, EPA does not endorse addressing these waters to the exclusion of all others within the boundaries of the municipal separate storm sewer system. Some waters may experience substantial degradation after rain events and still not be listed under section 304(1). Further, water quality impacts in listed waters may not be related to storm water discharges, while other non-listed waters do have water quality impacts from storm water discharges. Similarly, EPA agrees with one commenter that it may be desirable to focus attention and resources on certain problem watersheds within a municipality, and controls may be imposed and programs prioritized on that basis. However, such a focus should not be to the exclusion of other waters and watersheds that have water quality problems (although less troublesome) traceable to storm water discharges. The CWA requires that permits address discharges to waters of the United States, not just waters previously targeted under special programs.

Some commenters expressed concern that the permit application requires the design of management programs before knowing what will be in the permits. EPA disagrees with the thrust of this comment, that is that the order of requirements is inappropriate. The permit applicant will have two years to develop proposed plans which can be considered by permit writers in the development of the permit. Based upon a consideration of the management program proposed by the municipality and other relevant information, permits can be tailored for individual programs. One commenter stated that the cornerstone of management programs are inspection and enforcement programs. EPA agrees that these two elements are important components. Without inspection and enforcement mechanisms the programs will undoubtedly falter. Accordingly these requirements in the description of management programs in the permit application have been retained. In a similar vein, one commenter emphasized the importance of developing legal authority, financial capability, and administrative infrastructure. EPA agrees with this comment and has retained those aspects of the regulation that call for a description of applicants plans and resources in these areas.

One commenter stressed that control of discharges into the municipal system from industries is an important goal of municipal storm water management programs. EPA agrees with this comment and has retained the proposed description of management programs to address discharges from industrial sources. Other commenters identified industries as the principal contributors of pollutants to municipal separate storm sewer systems.

In addition, EPA will continue to evaluate procedures and methods to control storm water discharges to the extent necessary to mitigate impacts on water quality in the studies required under section 402(p)(5) of the CWA. One purpose of these studies will be to evaluate the costs and water quality benefits associated with implementing these procedures and methods. This evaluation will address a number of factors which impact the implementation costs associated with these programs, such as the extent to which similar municipal ordinances are currently being implemented, the degree to which existing municipal programs (such as flood management programs or construction site inspections) can be expanded to address water quality concerns, the resource intensiveness of the control, and whether the control program will involve public or private expenditures. This information, along with information gained during permit implementation will aid in the dynamic long-term development of municipal storm water management programs.

a. Measures to reduce pollutants in runoff from commercial and residential areas. The NURP program evaluated runoff from lands primarily dedicated to residential and commercial activities. The areas evaluated in the study reflect some other activities, such as light industry, which are commonly dispersed among residential and commercial areas. The NURP study selected sampling locations that were thought to be relatively free of illicit discharges and storm water from heavy industrial sites including storm water runoff from heavy construction sites. Of course, in a study such as NURP it was impossible to totally isolate various contributions to the runoff. In developing the permit application requirements in today's rule EPA has, in general, relied on the NURP definition of urban runoff—runoff from lands used for residential, commercial and light industrial activities.

NURP and numerous other studies have shown that runoff from residential and commercial areas washes a number of pollutants into receiving waters. Of equal importance is the volume of storm water runoff leaving urban areas during storm events. Large intermittent volumes of runoff can destroy aquatic habitat. As the percentage of paved surfaces increases, the volume and rate of runoff and the corresponding pollutant loads also increase. Thus, the amount of storm water runoff from commercial and residential areas and the pollutant loadings associated with storm water runoff increases as development progresses; and they remain at an elevated level for the lifetime of the development.

Proposed § 122.26(d)(2)(iv)(A) requires municipal storm sewer system applicants to provide in part 2 of the application a description of a proposed management program that will describe priorities for implementing management programs based on a consideration of appropriate controls including:

- A description of maintenance activities and a maintenance schedule for structural controls;
- A description of planning procedures including a comprehensive master plan to control after construction is completed, the discharge of pollutants from municipal separate storm sewers which receive discharges from new development and significant redevelopment after construction is completed (in response to comment this contemplates an engineering policy and procedure strategy with long term planning);
- A description of practices for operating and maintaining public highways and procedures for reducing the impact on receiving waters of such discharges from municipal storm sewer system;
- A description of procedures to assure that flood management projects assess the impacts on the water quality of receiving water bodies; and

- 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 and other measures for commercial applicators and distributors, and controls for application in public right-of-ways and at municipal facilities.

Water quality problems caused by municipal storm sewer discharges will generally be most acute in heavily developed areas. Prevention measures may be desirable and cost effective. However, structural control measures may also be effective, although opportunities for implementing these measures may be limited in previously developed areas. Commonly used structural technologies include a wide variety of treatment techniques, including first flush diversion systems, detention/infiltration basins, retention basins, extended detention basins, infiltration trenches, porous pavement, oil/grit separators, grass swales, and swirl concentrators. A major problem associated with sound storm water management is the need for operating *48055 and maintaining the system for its expected life.

The unavailability of land in highly developed areas often makes the use of structural controls infeasible for modifying many existing systems. Non-structural practices can play a more important role. Non-structural practices can include erosion control, streambank management techniques, street cleaning operations, vegetation/lawn maintenance controls, debris removal, road salt application management and public awareness programs.

As noted above, the first component of the proposed program to reduce pollutants in storm water from commercial and residential areas which discharge to municipal storm sewer systems is to describe maintenance activities and schedule. The second component of the proposed program to reduce pollutants in storm water from commercial and residential areas which discharge to municipal storm sewer systems provides that applicants describe the planning procedures and a comprehensive master plan that will assure that increases of pollutant loading associated with newly developed areas are, to the maximum extent practicable, limited. These measures should address storm water from commercial and residential areas which discharge to the municipal storm sewer that occur after the construction phase of development is completed. Controls for construction activities are addressed later in today's rule. One commenter noted the feasibility of developing management plans for newly developing areas. EPA agrees with this comment and has retained that portion of the regulation that deals with a description of controls for areas of new development. Similarly, one municipality stressed the importance and achievability of addressing storm water discharges from construction sites.

As urban development occurs, the volume of storm water and its rate of discharge increases. These increases are caused when pavement and structures cover soils and destroy vegetation which otherwise would slow and absorb runoff. Development also accelerates erosion through alteration of the land surface. Areas that are in the process of development offer the greatest potential for utilizing the full range of structural and non-structural best management practices. If these measures are to provide controls to reduce pollutant discharges after the area has been developed, comprehensive planning must be used to incorporate these measures as the area is in the process of developing. These measures offer an important opportunity to limit increases in pollutant loads.

The third component of § 122.26(d)(2)(iv)(A) provides a description of practices for operating and maintaining public roads and highways and procedures for reducing the impact on receiving waters of discharges from municipal storm sewer systems. General guidelines recommended for managing highway storm water runoff include litter control, pesticide/herbicide use management, reducing direct discharges, reducing runoff velocity, grassed channels, curb elimination, catchbasin maintenance, appropriate streetcleaning, establishing and maintaining vegetation, development of management controls for salt storage facilities, education and calibration practices for deicing application, infiltration practices, and detention/retention practices.

The fourth component of § 122.26(d)(2)(iv)(A) provides that applicants identify procedures that enable flood management agencies to consider the impact of flood management projects on the water quality of receiving streams. A well-developed storm water management program can reduce the amount of pollutants in storm water discharges as well as benefit flood control objectives. As discussed above, increased development can increase both the quantity of runoff from commercial and residential areas and the pollutant load associated with such discharges. Disturbing the land cover, altering natural drainage patterns, and increasing impervious area all increase the quantity and rate of runoff, thereby increasing both erosion and flooding potential. An integrated planning approach helps planners make the best decisions to benefit both flood control and water quality objectives.

The fifth component of § 122.26(d)(2)(iv)(A) would provide that municipal applicants submit 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. Such a program may include controls such as educational activities and other measures for commercial applicators and distributors and controls for application in public rights-of-way and at municipal facilities. Discharges of these materials to municipal storm sewer systems can be controlled by proper application of these materials. Some commenters noted that insecticides used in residential areas are a probable source of pollutants in storm water discharges from residential areas, as well as salting and other de-icing activities. In response to this comment, part of a community management plan may include controls or education programs to limit the impacts of these sources of pollutants. One commenter noted that many communities already have household toxic disposal programs. Where appropriate these can be incorporated into municipal management programs.

Some commenters suggested substituting the management program description for residential and commercial areas with a simple identification of applicable management practices. EPA agrees that identification of appropriate management practices is a critical component of a program description for these areas. In essence, this is what the program description is designed to achieve. However, for the reasons discussed in greater detail above, EPA is convinced that an appropriate program must address all of the components of the management program for residential and commercial areas that are outlined in today's rule. Further, for the purposes of writing a permit with enforceable conditions, the application should identify a schedule to implement management practices. The applicant should be able to estimate the reduction in pollutant loads as a result of the development of certain management practices and programs (§ 122.26(d)(2)(v)). A program may also include public education programs, which are not necessarily viewed as traditional BMPs.

b. Measures for illicit discharges and improper disposal. The CWA requires that NPDES permits for discharges from municipal storm sewers "shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers." In today's rule, EPA will begin to implement this statutory mandate by focusing on two types of discharges to large and medium municipal separate storm sewer systems. See § 122.26(d)(1)(iv)(D) and (d)(2)(iv)(B). One type of non-storm water discharges are illicit discharges which are plumbed into the system or that result from leakage of sanitary sewage system. The other class of non-storm water discharges result from the improper disposal of materials such as used oil and other toxic materials.

Illicit discharges. In some municipalities, illicit connections of sanitary, commercial and industrial discharges to storm sewer systems have had a significant impact on the water quality of receiving waters. Although the *48056 NURP study did not emphasize identifying illicit connections to storm sewers other than to assure that monitoring sites used in the study were free from sanitary sewage contamination, the study concluded that illicit connections can result in high bacterial counts and dangers to public health. The study also noted that removing such discharges presented opportunities for dramatic improvements in the quality of urban storm water discharges.

Other studies have shown that illicit connections to storm sewers can create severe, wide-spread contamination problems.

For example, the Huron River Pollution Abatement Program inspected 660 businesses, homes and other buildings located in Washtenaw County, Michigan and identified 14% of the buildings as having improper storm drain connections. Illicit discharges were detected at a higher rate of 60% for automobile related businesses, including service stations, automobile dealerships, car washes, body shops and light industrial facilities. While some of the problems discovered in this study were the result of improper plumbing or illegal connections, a majority were approved connections at the time they were built. Many commenters emphasized the identification and elimination of illicit connections as a priority, including leakage from sanitary sewers. EPA agrees with these comments and intends to retain this portion of the program without modification.

A wide variety of technologies exist for detecting illicit discharges. The effectiveness of these measures largely depends upon the site-specific design of the system. Under today's rule, permit applicants would develop a description of a proposed management program, including priorities for implementing the program and a schedule to implement a program to identify illicit discharges to the municipal storm sewer system. This rulemaking will require the initial priorities for analyzing various portions of the system and the appropriate detection techniques to be used.

Improper disposal. The permit application requirements for municipal storm sewer systems include a requirement that the municipal permit applicant describe a program to assist and facilitate in the proper management of used oil and toxic materials. Improper management of used oil can lead to discharges to municipal storm sewers that in turn may have a significant impact on receiving water bodies. EPA estimates that, annually, 267 million gallons of used oil, including 135 million gallons of used oil from do-it-yourself automobile oil changes, are disposed of improperly. An additional 70 million gallons of used oil, most coming from service stations and repair shops, are used for road oiling. Many commenters emphasized the elimination of discharges composed of improperly disposed of oil and toxic material. One commenter identified motor oil as the major source of oil contamination and that EPA needs to encourage proper disposal of used oil. Several other commenters emphasized the importance of recycling programs for oil. EPA agrees with these comments and intends to retain this portion of the program without modification. One commenter identified public awareness and timely reporting of illegal dumping as critical components of this portion of the program. EPA agrees with this comment and intends for management programs to deal with this problem.

c. Measures to reduce pollutants in storm water discharges through municipal separate storm sewers from municipal landfills, hazardous waste treatment, disposal and recovery facilities that are subject to section 313 of title III of SARA. As discussed in section VI.C of today's preamble, industrial facilities that discharge storm water through a large or medium municipal separate storm sewer system are required to apply for a permit under § 122.26(c) or seek coverage under a promulgated general permit. Today's rule also requires the municipal storm sewer permittee to describe a program to address industrial dischargers that are covered under the municipal storm sewer permit. Today's rule requires the municipal applicant to identify such discharges (see source identification requirements under § 122.26(d)(2)(ii)), provide a description of a program to monitor pollutants in runoff from certain industrial facilities that discharge to the municipal separate storm sewer system, identify priorities and procedures for inspections, and establish and implement control measures for such discharges. Should a municipality suspect that an individual discharger is discharging pollutants in storm water above acceptable limits, and the owner/operator of the system has no authority over the discharge, the municipality should contact the NPDES permitting authority for appropriate action. Two examples of possible action are: if the facility already has an individual permit, the permit may be reopened and further controls imposed; or if the facility is covered by a promulgated general permit, then an individual site-specific permit application may be required.

In the December 7, 1988, proposal, EPA requested comments concerning what storm water discharges from industrial facilities through municipal systems should be monitored. One of the proposed approaches was to require data on portions of the municipal system which receive storm water from facilities which are listed in the proposed regulatory definition

at § 122.26(b)(14) of "storm water discharge associated with industrial activity" (with the exception of construction activities and uncontaminated storm water from oil and gas operations) which discharge through the municipal system. However, given the large number of facilities meeting this definition that discharge through municipal systems, a monitoring program that requires the submission of quantitative data regarding portions of the municipal systems receiving storm water from such facilities may not be practicable. Such a requirement could, for some systems, potentially become the most resource intensive requirements in the municipal permit. Therefore, EPA proposed various ways to develop appropriate targeting for monitoring programs.

EPA requested comments on a requirement that, at a minimum, monitoring programs address discharges from municipal separate storm sewer outfalls that contain storm water discharges from municipal landfills, hazardous waste treatment, disposal and recovery facilities, and runoff from industrial facilities that are subject to section 313 of title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). Section 313 of title III requires that operators or certain facilities that manufacture, import, process, or otherwise use certain toxic chemicals report annually their releases of those chemicals to any environmental media. Section 313(b) of title III specifies that a facility is covered for the purposes of reporting if it meets all of the following criteria:

- The facility has ten or more full-time employees;
- The facility is in Standard Industrial Classification (SIC) codes 20 through 39;
- The facility manufactured (including quantities imported), processed, or otherwise used a listed chemical in amounts that exceed certain threshold quantities during the calendar year for which reporting is required.

Listed chemicals include 329 toxic chemicals listed at 40 CFR 372.45. After 1989, the threshold quantities of listed chemicals that the facility must manufacture, import or process (in order to trigger the submission of a release *48057 report) is 25,000 pounds per year. The threshold for a use other than manufacturing, importing or processing of listed toxic chemicals is 10,000 pounds per year. EPA promulgated a final regulation clarifying these reporting requirements on February 16, 1988, (53 FR 4500).

EPA received numerous comments regarding limiting the types of facilities that are initially subject to monitoring and municipal management programs. Numerous municipalities agreed that focusing on the above facilities is an appropriate means for setting priorities for the development of control measures to eliminate or reduce pollutants associated with industrial facilities. Commenters agreed that the potential for toxic materials in discharges is high because of the high volume of such materials at these facilities and that information regarding discharges and material management practices will be available through section 313 of SARA. One commenter noted that building on an established program will contribute to establishing an effective storm water program. Accordingly, EPA has specified at § 122.26(d)(2)(ii)(C) that the municipal applicant must describe a program that identifies priorities and procedures for inspections and establishing and implementing control measures for these facilities.

Several commenters suggested that these facilities should not be singled out because the presence of the threshold amounts of SARA 313 chemicals does not indicate that significant quantities of those chemicals are likely to enter the facility's storm water runoff. Instead it was suggested that municipalities should monitor storm sewers as a whole to determine what chemicals are present and therefore what facilities are responsible. EPA disagrees with these comments. The object of these requirements is initially to set priorities for monitoring requirements. Then, if the situation requires, controls can be developed and instituted. If a facility is a member of this class of facilities and does not discharge excessive quantities of SARA 313 chemicals, then it may not be subjected to further monitoring and controls. As noted above, the selection of facilities is only a means of setting priorities for facilities for the development of municipal plans.

EPA agrees, however, that there will be other facilities that are significant sources of pollutants and should be addressed by municipalities as soon as possible under management programs. Accordingly, those industrial facilities that the municipal permit applicant determines to be contributing a substantial pollutant loading to the municipal storm sewer system shall be addressed in this portion of the municipal management program.

EPA also requested comments on monitoring programs for municipal discharges including the submission of quantitative data on the following constituents;

- Any pollutants limited in an effluent guidelines for the industry subcategories, where applicable;
- Any pollutant listed in a discharging facility's NPDES permits for process wastewater, where applicable;
- Oil and grease, pH, BOD5, COD, TSS, total phosphorus, total Kjeldahl nitrogen, and nitrate plus nitrite nitrogen;
- Any information on discharges required under 40 CFR 122.21(g)(7)(iii) and (iv).

These are the same constituents that are to be addressed in individual permit applicants for storm water discharges associated with industrial activity.

Several industries and municipalities submitted comments on this issue. Some commenters agreed that these are appropriate parameters. Some commenters advised that the ability of municipalities to implement this aspect of the program depended on industries submitting this data. Several industries provided comments suggesting that the approach should allow the permittee flexibility in determining which parameters are chosen because of the burdens of monitoring and the complexity of materials and flows in municipal systems.

In light of these comments, EPA has retained § 122.26(d)(2)(iv)(C) as proposed requiring municipalities to describe a monitoring program which utilizes the above parameters. Monitoring for these parameters provides consistency with the individual application requirements for industries, provides uniformity in municipal applications, and will narrow the parameters to conform to the types of industries discharging into the municipal systems. Monitoring programs may consist of programs undertaken by the municipality exclusively or requirements imposed on industry by the municipality, or a combination of approaches. Appropriate procedures are discussed in municipal permit application guidance.

EPA requested comments on appropriate means for municipalities to determine what facilities are contributing pollutants to municipal systems. Many commenters responded with numerous methodologies. Some of these have been addressed in guidance. Municipalities will have options in selecting the most appropriate methodology given their circumstances as described in their permit applications.

EPA initially favors establishing monitoring requirements to be applied to those outfalls that directly discharge to waters of the United States. EPA received one comment from a municipality with regard to this issue which agreed that this was the most logical approach. Monitoring of outfalls close to the point of discharge to waters of the United States is generally preferable when attempting to identify priorities for developing pollutant control programs. However, under certain circumstances, it may be preferable to monitor at the point where the runoff from the industrial facility discharges to the municipal system. For example, if many facilities discharge substantially similar storm water to a municipal system it may be more practicable to monitor discharges from representative facilities in order to characterize pollutants in the discharge.

As noted by numerous industries, if municipal characterization plans reveal problems from certain industrial dischargers, then such facilities may be required to provide further data from their own monitoring. As noted above, EPA envisions

that this data could then be used to develop appropriate control practices or techniques and/or require individual permit applications if a general permit covering the facility proves inadequate.

~~Comments were also solicited as to whether end-of-pipe treatment generally was more appropriate than source controls~~ for storm water from industrial facilities which discharge to municipal systems. Many commenters, including both municipalities and industries, stated that source controls are the only practical and feasible means of controlling pollutants in storm water runoff, and specifically opposed the concept of end-of-pipe treatment or other controls. Some commenters maintained that, from an economic and environmental standpoint, end-of-pipe treatment may be the only effective means. One advised that the prompt cleanup of spills, controlled wash down of process areas, covering of material loading areas, storm water runoff diversion, covered storage areas, detention basins or other such mechanisms would prevent storm water from mixing with pollutants and possibly discharging them into receiving waters. Another noted that in the urban areas, there is little potential for treatment; consequently, it would seem *48058 that controls and/or retrofitting existing facilities would be necessary when violations are found and that citizens will be better served by source controls appropriate to the individual problem.

EPA agrees with these comments to the extent that source controls and management programs are the general thrust of these regulations. However, in some situations end-of-pipe treatment, such as holding ponds, may be the only reasonable alternative. EPA disagrees with one industrial commenter that the municipalities should be almost entirely responsible for treating municipal discharges at the end of-the-pipe without reliance on source controls by industrial dischargers. Municipal programs may require controls on industrial sources with demonstrated storm water discharge problems. One industrial association noted that its member companies already have incentive to properly handle their materials and facilities because of other environmental programs with spill and erosion controls.

Numerous commenters stated that the program addressing industrial dischargers through municipal systems needs to be clearly defined in order to eliminate, as much as possible, potential conflicts between the system operator and dischargers. EPA has provided a framework for development of management plans to control pollutants from these particular sources. However, because of the differences in municipal systems and hydrology nationwide, EPA is not convinced that program specificity is an appropriate approach. The concept of the management program is to provide flexibility to the permit applicants to develop regional site specific control programs.

One commenter suggested that required controls should be limited to a facility's proportional contribution (based on concentration) of pollutants. EPA disagrees. Most facilities discharging through a municipal separate storm sewer will need to be covered by a general or individual permit. These permits will control the introduction of pollutants from that facility through the municipal storm sewer to the waters of the U.S. Any additional controls placed on the facility by the municipality will be at the discretion of the municipality. EPA is not requiring municipalities to adopt a particular level of controls on industrial facilities as suggested by the commenter.

One commenter questioned how dischargers that discharged both into the waters of the United States and through a municipal system will be addressed and whether there is a potential for inconsistent requirements. Industries that discharge storm water associated with industrial activity into the waters of the United States are required to be covered by individual permits or general permits for such discharges. Dischargers of storm water associated with industrial activity through municipal separate storm sewer systems will be subject to municipal management programs that address such discharges as well as to an individual or general NPDES permit for those discharges. EPA does not believe there is a significant risk of inconsistent requirements, since each industrial facility must meet BAT/BCT-level controls in its NPDES permit. EPA doubts that municipalities will impose much more stringent controls.

Many commenters stated that if cities and municipalities are to be responsible for industrial storm water discharges through their system, then municipalities should have authority to make determinations as to what industries should be regulated, how they are regulated, and when enforcement actions are undertaken. In response, EPA notes that the proposal has been changed and that municipalities will not be solely responsible for industries discharging through their system. Nonetheless, municipalities will be required to meet the terms of their permits related to industrial dischargers. Municipalities may undertake programs that go beyond the threshold requirements of the permit. Some municipal entities stated that municipal permittees should be able to require permit applications from industries in the same manner that EPA does and also require permits. In response, if operators of large and medium municipal separate storm sewer systems wish to employ such a program, then this portion of the management program may incorporate such practices.

d. Measures to reduce pollutants in runoff from construction sites into municipal systems. Section VI.F.8 of today's rule discusses EPA's proposal to define the term "storm water discharge associated with industrial activity" to include runoff from construction sites, including preconstruction activities except operations that result in the disturbance of less than 5 acres total land area which are not part of a larger common plan of development or sale. Under today's rule, facilities that discharge runoff from construction sites that meet this definition will be required to submit permit applications unless they are to be covered by another individual or general NPDES permit. Permit application requirements for such discharges are at 40 CFR 122.26(c)(1)(ii).

Section 122.26(d)(2)(iv)(D) of today's rule requires applicants for a permit for large or medium municipal separate storm sewer systems to submit a description of a proposed management program to control pollutants in construction site runoff that discharges to municipal systems. Under this provision, municipal applicants will submit a description of a program for implementing and maintaining structural and non-structural best management practices for controlling storm water runoff at construction sites. The program will address procedures for site planning, enforceable requirements for nonstructural and structural best management practices, procedures for inspecting sites and enforcing control measures, and educational and training measures. Generally, construction site ordinances are effective when they are implemented. However, in many areas, even though ordinances exist, they have limited effectiveness because they are not adequately implemented. Maintaining best management practices also presents problems. Retention and infiltration basins fill up and silt fences may break or be overtopped. Weak inspection and enforcement point to the need for more emphasis on training and education to complement regulatory programs. Permits issued to municipalities will address these concerns.

8. Assessment of Controls

EPA proposed that municipal applicants provide an initial assessment of the effectiveness of the control method for structural or non-structural controls which have been proposed in the management program. Some commenters stated that the assessment of controls should be left to the term of the permit because the effectiveness of controls will be hard to establish. EPA believes that an initial estimate or assessment is needed because the performance of appropriate management controls is highly dependent on site-specific factors. The assessment will be used in conjunction with the development of pollutant loading and concentration estimates (see VI.H.6.c) and the evaluation of water quality benefits associated with implementing controls. Such assessments do not have to be verified with quantitative data, but can be based on accepted engineering design practices. Further more precise assessments based upon quantitative data can be undertaken during the term of the permit.

**48059 I. Annual Reports*

As discussed earlier in today's preamble, EPA has provided for proposed flexible permit application requirements to facilitate the development of site-specific programs to control the discharge of pollutants from large and medium municipal

separate storm sewer systems. Many municipalities are in the early stages of the complex task of developing a program suitable for controlling pollutants in discharges under a NPDES permit, while other municipalities have relatively sophisticated programs in place. In order to ensure that such site-specific programs are developed in a timely manner, EPA proposed to require permittees of municipal separate storm sewer systems to submit status reports every year which reflect the development of their control programs.

The reports will be used by the permitting authority to aid in evaluating compliance with permit conditions and where necessary, modify permit conditions to address changed conditions. EPA requested comments on the appropriate content of the annual reports. Based on these comments EPA has added the following in these reports: an analysis of data, including monitoring data, that is accumulated throughout the year; new outfalls or discharges; annual expenditures; identification of water quality improvements or degradation on watershed basis; budget for year following each annual report; and administrative information including enforcement activities, inspections, and public education programs. EPA views this information as important for evaluating the municipal program. Annual monitoring data and identified water quality improvements are important for evaluating the success of management programs in reducing pollutants. If new outfalls come into existence during the term of the permit, these may be sources of pollutants and appropriate permit conditions will be developed. Annual reports should reflect the level of enforcement activity and inspections undertaken to ensure that the legal authority developed by the municipality is properly exercised. Many of the management programs depend upon an ongoing high level of public education. Accordingly, the undertaking of these programs on an annual basis should be documented.

J. Application Deadlines

The CWA provided a statutory time frame for implementing the storm water permit application process and issuance and compliance with permits.

The CWA requires EPA to promulgate permit application requirements for storm water discharges associated with industrial activity and for large municipal separate storm sewer systems by "no later than two years" after the date of enactment (i.e. no later than February 4, 1989). In conjunction with this requirement, the Act requires that permit applications for these classes of discharges be submitted within one year after the statutory date by which EPA is to promulgate permit application requirements by providing that such applications "shall be filed no later than three years" after the date of enactment of the WQA (i.e., no later than February 4, 1990).

The CWA also requires EPA to promulgate final regulations governing storm water permit application requirements for discharges from municipal separate storm sewer systems serving a population of 100,000 or more but less than 250,000 by "no later than four years" after enactment (i.e. no later than February 4, 1991). Permit applications for medium municipal separate storm sewer systems "shall be filed no later than five years" after the date of enactment of the CWA (i.e., no later than February 4, 1992). The CWA did not establish the time period between designation and permit application submittal for case-by-case designations under section 402(p)(2)(E).

Comments on earlier rulemakings involving storm water application deadlines have established that applicants need adequate time to obtain "representative" storm water samples. Many commenters have indicated that at least one full year is needed to obtain such samples. This is because many discharges are located in areas where testing during dry seasons or winter would not be feasible. The intermittent and unpredictable nature of storm water discharges can result in difficult and time-consuming data gathering. Moreover, some operators of municipal separate storm sewer systems have many storm water discharges associated with industrial activity, which can require considerable time to identify, analyze, and submit applications. This creates a tremendous practical problem for the extremely high number of unpermitted storm

water discharges. The public's interest in a sound storm water program and the development of a useful storm water data base is best served by establishing an application deadline which will allow sufficient time to gather, analyze, and prepare meaningful applications. Based on a consideration of these factors, EPA proposed that individual permit applications for storm water discharges associated with industrial activity, which currently are not covered by a permit and that are required to obtain a permit, be submitted one year after the final rule is promulgated.

EPA received numerous comments from industries on the one year requirement for submitting applications. Several commenters supported the proposed deadline as realistic, while others believed more time was needed to meet the information and quantitative requirement.

EPA rejects the assertion by some commenters that a year is too short a period of time to obtain the required quantitative data. Today's rule generally requires applications for storm water discharges associated with industrial activity to be submitted on or before November 18, 1991. Operators of storm water discharges associated with industrial activity which discharge through a municipal separate storm sewer are subject to the same application deadline as other storm water discharges associated with industrial activity. Since final regulation at § 122.21(g)(7) provides considerable latitude for selecting rain events for quantitative data, EPA is convinced that in most cases data can be obtained during the one year time frame. If data cannot be collected during the one year time frame because of anomalous weather (e.g. drought conditions), then permitting authorities may grant additional time for submitting that data on a case-by-case basis. See § 122.21(g)(7).

Operators of storm water discharges which are currently covered by a permit will not be required to submit a permit application until their existing permit expires. In recognition of the time required to collect storm water discharge data, EPA will allow facilities which currently have a NPDES permit for a storm water discharge and which must reapply for permit renewal during the first year following promulgation of today's permit application requirements the option of applying in accordance with existing Form 1 and Form 2C requirements (in lieu of applying in accordance with the revised application requirements).

As discussed in section VI.D.4 and section VI.F.6 of today's preamble, EPA has established a two part permit application both for both group applications for sufficiently similar facilities that discharge storm water associated with industrial activity and for operators of large or medium municipal separate storm sewer systems. The deadlines for submitting *48060 permit applications in today's rule provide adequate time for: (1) Applicants to prepare Part 1 of the application; (2) EPA or an approved State to adequately review applications; and (3) applicants to prepare the contents of the part 2 application.

Part 1 of the group application for storm water discharges associated with industrial activity must be submitted within 120 days from the publication of these final permit application regulations. This time is necessary to form groups and for individual members of the group to prepare the non-quantitative information required in part 1 of the application. Part 1 of the group application will be submitted to EPA Headquarters in Washington, DC and reviewed within 60 days after being received. Part 2 of the application would then be submitted within one year after the part 1 application is approved. It should be noted that many facilities located in States in which general permits can be issued, will be eligible for coverage by a storm water general permit to be promulgated in the near future. Such facilities may either seek coverage under such general permits or participate in the group application.

Several comments were received by EPA that indicated that a period of 120 days was too short a period for groups to be formed. EPA disagrees with these comments. The information that EPA is requiring to be submitted by the group or group representative is information that is generally available such as the location of the facility, its industrial activity,

and material management practices. EPA believes that 120 days is sufficient to gather and submit this information along with an identification of 10% of the facilities which will submit quantitative data. To ameliorate any difficulties for applicants, EPA has provided a means for late facilities to "add on" where appropriate, on a case-by-case basis, as discussed in section VI.F.4. above.

Several comments were received with regard to the requirement that new dischargers submit an application at least 180 days before the date on which the discharge is to commence. One commenter noted that it will be difficult for a facility to know when a storm water discharge is to commence since precipitation and runoff cannot be predicted to any degree of accuracy. In response, new dischargers must apply for a storm water permit application 180 days before that facility commences manufacturing, processing, or raw material storage operations which may result in the discharge of pollutants from storm water runoff, and 90 days for new construction sites.

For large municipal separate storm sewer systems (systems serving a population of more than 250,000), EPA proposed that part 1 of the permit application be submitted within one year of the date of the final regulations, with approval or disapproval by the permit issuing authority of the provisions of the part 1 permit application within 90 days after receiving part 1 of the application. The Part 2 portion of the application was to be submitted within two years of the date of promulgation.

For medium municipal separate storm sewer systems (systems serving a population of more than 100,000, but less than 250,000), EPA proposed that permit applications would be required nine months after the date of the final rule, with approval or disapproval of the provisions of the part 1 permit application within 90 days after receiving the part 1 application. The part 2 portion of the application would then be submitted no later than one year after the part 1 application has been approved.

Numerous comments were received by EPA from municipalities on these proposed deadlines. Many of these comments reflect the sentiment that the deadlines are too tight and that the required information would not be available for submission within the required time frame. Some commenters suggested deadlines that would add over three years to the permit application process. Other commenters suggested a revamped application process and a shorter deadline of 18 months. Some commenters explained that additional time would be needed to obtain adequate legal authority, while another stated that an inventory of outfalls required more time. One commenter maintained that intergovernmental agreements will require more time to prepare, and others expressed the view that more time was needed for the review of part 1 of the application by permitting authorities. Others felt more time was needed for collecting data, or hiring additional staff to accomplish the work. Most of these commenters did not provide specific details regarding what would be an appropriate amount of time and why.

After reviewing these comments EPA has decided to modify some of the deadlines as proposed. EPA is convinced that to properly achieve the goals of the CWA, the permit application requirements as discussed in previous sections are appropriate; but that the deadlines for medium municipal separate storm sewer systems should be adjusted so that the program's goals can be properly accomplished. After reviewing comments, EPA believes that medium municipalities will have fewer resources and existing institutional arrangements than large cities and therefore more time should be granted to these cities for submitting parts 1 and 2 of the application.

Accordingly EPA will require large municipal systems to submit part 1 of the permit application no later than November 18, 1991. Part 1 will be reviewed and approved or disapproved by the Director within 90 days. Part 2 of the application will then be submitted November 16, 1992. Medium municipal systems will submit part 1 of the application on May 18, 1992. Approval or disapproval by the Director will be accomplished within 90 days. Part 2 of the application will be sub-

mitted by May 17, 1993. These deadlines will give large systems two years to complete the application process, and medium systems 2 years and 6 months to submit applications. EPA is convinced that the permit application schedule is warranted and should provide adequate time to prepare the application.

In establishing these regulatory deadlines EPA is fully aware that they are not synchronized with the statutory deadlines as established by Congress. One commenter argued that the deadlines as proposed were contrary to the deadlines established by Congress and that EPA had no authority to extend these deadlines. (For large municipal separate storm sewer systems and storm water discharges associated with industrial activity, Congress established a deadline of February 4, 1990, for submission of permit applications; for medium municipal separate storm sewer systems, the deadline is February 4, 1992.) In response, this regulation provides certain deadlines for meeting the substantive requirements of this rule-making—requirements which EPA is convinced are necessary for the development of enforceable and sound storm water permits. EPA believes it is important to give applicants sufficient time to reasonably comply with the permit application requirements set out today. EPA will therefore accept applications for storm water discharge permits up to the dates specified in today's rule. By establishing these regulatory deadlines, however, EPA is not attempting to waive or revoke the statutory deadlines established in Section 402(p) of the CWA and does not assert the authority to do so. The statutory permit application deadlines *48061 continue to be enforceable requirements.

EPA was not able to promulgate the final application regulations for storm water discharges before the February 4, 1990, deadline for industrial and large municipal dischargers despite its best efforts. Further, as noted above, EPA is not able to waive the statutory deadline. Dischargers concerned with complying with the statutory deadline should submit a permit application as required under this rulemaking as expeditiously as possible.

Operators of storm water discharges that are not specifically required to file a permit application under today's rule may be required to obtain a permit for their discharge on the basis of a case-by-case designation by the Administrator or the NPDES State.

The Administrator or NPDES State may also designate storm water discharges (except agricultural storm water discharges), that contribute to a violation of a water quality standard or that are significant contributors of pollutants to waters of the United States for a permit. Prior to a case-by-case determination that an individual permit is required for a storm water discharge, the Administrator or NPDES State may require the operator of the discharge to submit a permit application. 40 CFR 124.52(c) requires the operator of designated storm water discharges to submit a permit application within 60 days of notice, unless permission for a later date is granted. The 60-day deadline is consistent with the procedures for designating other discharges for a NPDES permit on a case-by-case basis found at 40 CFR 124.52. The 60-day deadline recognizes that case-by-case designations often require an expedited response, however, flexibility exists to allow for case-by-case extensions.

The December 7, 1988, proposal also proposed Part 504 State Storm Water Management Programs. The Agency has not included this component in today's rule. The Agency believes this program element is appropriate for addressing in regulations promulgated under section 402(p)(6) of the CWA.

VII. Economic Impact

EPA has prepared an Information Collection Request for the purpose of estimating the information collection burden imposed on Federal, State and local governments and industry for revisions to NPDES permit application requirements for storm water discharges codified in 40 CFR part 122. EPA is promulgating these revisions in response to Section 402(p)(4) of the Clean Water Act, as amended by the Water Quality Act of 1987 (WQA). The revisions would apply to: Storm water discharges associated with industrial activity; discharges from municipal separate storm sewer systems

serving a population of 250,000 or more and discharges from municipal separate storm sewer systems serving a population of 100,000 or more, but less than 250,000.

The estimated annual cost of applying for NPDES permits for discharges from municipal separate storm sewer systems is \$4.2 million. EPA estimates that an average permit application for a large municipality will cost \$76,681 and require 4,534 hours to prepare. The average application for a medium municipality will cost \$49,249 (2,912 hours) to prepare. The annual respondent cost for NPDES permit applications, notices of intent, and notifications for facilities with discharges associated with industrial activity is estimated to be \$9.5 million (271,248 hours). EPA estimates that the average preparation cost of an individual industrial permit application would be \$1,007 (28.6 hours). Average Group application will cost \$74.00 per facility (2.1 hours). The average cost of the notification and notice of intent to be covered by general permit is \$17.00 (0.5 hours).

The annual cost to the Federal Government and approved States for administration of the program is estimated to be \$588,603. The total cost for municipalities, industry, and State and Federal authorities is estimated to be \$14.5 million annually.

In general, the cost estimates provided in the ICR focus primarily on the costs associated with developing, submitting and reviewing the permit applications associated with today's rule. EPA will continue to evaluate procedures and methods to control storm water discharges to the extent necessary to mitigate impacts on water quality in the studies required under section 402(p)(5) of the CWA. Executive Order 12291 requires EPA and other agencies to perform regulatory analyses of major regulations. Major rules are those which impose a cost on the economy of \$100 million or more annually or have certain other economic impacts. Today's proposed amendments would generally make the NPDES permit application regulations more flexible and less burdensome for the regulated community. These regulations do not, satisfy any of the criteria specified in section 1(b) of the Executive Order and, as such, do not constitute a major rule. This regulation was submitted to the Office of Management and Budget (OMB) for review.

VIII. Paperwork Reduction Act

The information collection requirements in this rule have been submitted for approval to the Office of Management and Budget (OMB) under provision of the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. and have been assigned OMB control number 2040-0086.

Public reporting burden for permit applications for storm water discharges associated with industrial activity (other than from construction facilities) is estimated to average 28.6 hours per individual permit application, 0.5 hours per notice of intent to be covered by general permit, and 2.1 hours per group applicant. The public reporting burden for permit applications for storm water discharges associated with industrial activity from construction activities submitting individual applications is estimated to average 4.5 hours per response. The public reporting burden for facilities which discharge storm water associated with industrial activity to municipal separate storm sewers serving a population over 100,000 to notify the operator of the municipal separate storm sewer system is estimated to average 0.5 hours per response.

The reporting burden for system-wide permit applications for discharges from municipal separate storm sewer systems serving a population of 250,000 or more is estimated to average 4,534 hours per response. The reporting burden for system-wide permit applications for discharges from municipal separate storm sewer systems serving a population of 100,000 or more, but less than 250,000 is estimated to average 2,912 hours per response. Estimates of reporting burden include time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

IX. Regulatory Flexibility Act

Under the Regulatory Flexibility Act, 5 U.S.C. 601 et seq., EPA is required to prepare a Regulatory Flexibility Analysis to assess the impact of rules on small entities. No Regulatory Flexibility Analysis is required, however, where the head of the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities.

Today's amendments to the regulations would generally make the NPDES permit applications regulations more flexible and less burdensome for permittees. Accordingly, I hereby *48062 certify, pursuant to 5 U.S.C. 605(b), that these amendments do not, have a significant impact on a substantial number of small entities.

List of Subjects in 40 CFR Parts 122, 123, and 124

Administrative practice and procedure, Environmental protection, Reporting and recordkeeping requirements, Water pollution control.

Authority: Clean Water Act, 33 U.S.C. 1251 et seq.

Dated: October 31, 1990.

William K. Reilly,

Administrator.

For the reasons stated in the preamble, parts 122, 123, and 124 of title 40 of the Code of Federal Regulations are amended as follows:

PART 122—EPA ADMINISTERED PERMIT PROGRAMS; THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM Subpart B—Permit Application and Special NPDES Program Requirements 1. The authority citation for part 122 continues to read as follows:

Authority: Clean Water Act, 33 U.S.C. 1251 et seq.

2. Section 122.1 is amended by revising paragraph (b)(2)(iv) to read as follows:

§ 122.1 Purpose and scope.

(b) ***

(2) ***

(iv) Discharges of storm water as set forth in § 122.26; and

3. Section 122.21 is amended by revising paragraph (c)(1), by removing the last sentence of paragraph (f)(7), by removing paragraph (f)(9), by adding two sentences at the end of paragraph (g)(3), by revising paragraph (g)(7) introductory text, by removing and reserving paragraph (g)(10) and by revising the introductory text of paragraph (k) to read as follows:

§ 122.21 Application for a permit (applicable to State programs, see § 123.25).

* * * * *

(c) Time to apply. (1) Any person proposing a new discharge, shall submit an application at least 180 days before the date on which the discharge is to commence, unless permission for a later date has been granted by the Director. Facilities proposing a new discharge of storm water associated with industrial activity shall submit an application 180 days before that facility commences industrial activity which may result in a discharge of storm water associated with that industrial activity. Facilities described under § 122.26(b)(14)(x) shall submit applications at least 90 days before the date on which construction is to commence. Different submittal dates may be required under the terms of applicable general permits. Persons proposing a new discharge are encouraged to submit their applications well in advance of the 90 or 180 day requirements to avoid delay. See also paragraph (k) of this section and § 122.26 (c)(1)(i)(G) and (c)(1)(ii).

* * * * *

(g) * * *

(3) * * * The average flow of point sources composed of storm water may be estimated. The basis for the rainfall event and the method of estimation must be indicated.

* * * * *

(7) Effluent characteristics. Information on the discharge of pollutants specified in this paragraph (except information on storm water discharges which is to be provided as specified in § 122.26). When "quantitative data" for a pollutant are required, the applicant must collect a sample of effluent and analyze it for the pollutant in accordance with analytical methods approved under 40 CFR part 136. When no analytical method is approved the applicant may use any suitable method but must provide a description of the method. When an applicant has two or more outfalls with substantially identical effluents, the Director may allow the applicant to test only one outfall and report that the quantitative data also apply to the substantially identical outfalls. The requirements in paragraphs (g)(7) (iii) and (iv) of this section that an applicant must provide quantitative data for certain pollutants known or believed to be present do not apply to pollutants present in a discharge solely as the result of their presence in intake water; however, an applicant must report such pollutants as present. Grab samples must be used for pH, temperature, cyanide, total phenols, residual chlorine, oil and grease, fecal coliform and fecal streptococcus. For all other pollutants, 24-hour composite samples must be used. However, a minimum of one grab sample may be taken for effluents from holding ponds or other impoundments with a retention period greater than 24 hours. In addition, for discharges other than storm water discharges, the Director may waive composite sampling for any outfall for which the applicant demonstrates that the use of an automatic sampler is infeasible and that the minimum of four (4) grab samples will be a representative sample of the effluent being discharged. For storm water discharges, all samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inch and at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. Where feasible, the variance in the duration of the event and the total rainfall of the event should not exceed 50 percent from the average or median rainfall event in that area. For all applicants, a flow-weighted composite shall be taken for either the entire discharge or for the first three hours of the discharge. The flow-weighted composite sample for a storm water discharge may be taken with a continuous sampler or as a combination of a minimum of three sample aliquots taken in each hour of discharge for the entire discharge or for the first three hours of the discharge, with each aliquot being separated by a minimum period of fifteen minutes (applicants submitting permit applications for storm water discharges under § 122.26(d) may collect flow weighted composite samples using different protocols with respect to the time duration between the collection of sample aliquots, subject to the approval of the Director). However, a minimum of one grab sample may be taken for

storm water discharges from holding ponds or other impoundments with a retention period greater than 24 hours. For a flow-weighted composite sample, only one analysis of the composite of aliquots is required. For storm water discharge samples taken from discharges associated with industrial activities, quantitative data must be reported for the grab sample taken during the first thirty minutes (or as soon thereafter as practicable) of the discharge for all pollutants specified in § 122.26(c)(1). For all storm water permit applicants taking flow-weighted composites, quantitative data must be reported for all pollutants specified in § 122.26 except pH, temperature, cyanide, total phenols, residual chlorine, oil and grease, fecal coliform, and fecal streptococcus. The Director may allow or establish appropriate site-specific sampling procedures or requirements, including sampling locations, the season in which the sampling takes place, the minimum duration between the previous measurable storm event and the storm event sampled, the minimum or maximum level of precipitation required for an appropriate storm event, the form of precipitation sampled (snow melt or rain fall), protocols for collecting samples under 40 CFR part 136, and additional time for submitting data on a *48063 case-by-case basis. An applicant is expected to "know or have reason to believe" that a pollutant is present in an effluent based on an evaluation of the expected use, production, or storage of the pollutant, or on any previous analyses for the pollutant. (For example, any pesticide manufactured by a facility may be expected to be present in contaminated storm water runoff from the facility.)

* * * * *

(k) Application requirements for new sources and new discharges. New manufacturing, commercial, mining and silvicultural dischargers applying for NPDES permits (except for new discharges of facilities subject to the requirements of paragraph (h) of this section or new discharges of storm water associated with industrial activity which are subject to the requirements of § 122.26(c)(1) and this section (except as provided by § 122.26(c)(1)(ii)) shall provide the following information to the Director, using the application forms provided by the Director:

* * * * *

4. Section 122.22(b) introductory text is revised to read as follows:

§ 122.22 Signatories to permit applications and reports (applicable to State programs, see § 123.25).

* * * * *

(b) All reports required by permits, and other information requested by the Director shall be signed by a person described in paragraph (a) of this section, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

* * * * *

5. Section 122.26 is revised to read as follows:

§ 122.26 Storm water discharges (applicable to State NPDES programs, see § 123.25).

(a) Permit requirement. (1) Prior to October 1, 1992, discharges composed entirely of storm water shall not be required to obtain a NPDES permit except:

(i) A discharge with respect to which a permit has been issued prior to February 4, 1987;

(ii) A discharge associated with industrial activity (see § 122.26(a)(4));

(iii) A discharge from a large municipal separate storm sewer system;

(iv) A discharge from a medium municipal separate storm sewer system;

(v) A discharge which the Director, or in States with approved NPDES programs, either the Director or the EPA 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. This designation may include a discharge from any conveyance or system of conveyances used for collecting and conveying storm water runoff or a system of discharges from municipal separate storm sewers, except for those discharges from conveyances which do not require a permit under paragraph (a)(2) of this section or agricultural storm water runoff which is exempted from the definition of point source at § 122.2.

The Director may designate discharges from municipal separate storm sewers on a system-wide or jurisdiction-wide basis. In making this determination the Director may consider the following factors:

(A) The location of the discharge with respect to waters of the United States as defined at 40 CFR 122.2.

(B) The size of the discharge;

(C) The quantity and nature of the pollutants discharged to waters of the United States; and

(D) Other relevant factors.

(2) The Director may not require a permit for discharges of storm water 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 that has 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) Large and medium municipal separate storm sewer systems. (i) Permits must be obtained for all discharges from large and medium municipal separate storm sewer systems.

(ii) The Director may either issue one system-wide permit covering all discharges from municipal separate storm sewers within a large or medium municipal storm sewer system or issue distinct permits for appropriate categories of discharges within a large or medium municipal separate storm sewer system including, but not limited to: all discharges owned or operated by the same municipality; located within the same jurisdiction; all discharges within a system that discharge to the same watershed; discharges within a system that are similar in nature; or for individual discharges from municipal separate storm sewers within the system.

(iii) The operator of a discharge from a municipal separate storm sewer which is part of a large or medium municipal separate storm sewer system must either:

(A) Participate in a permit application (to be a permittee or a co-permittee) with one or more other operators of discharges from the large or medium municipal separate storm sewer system which covers all, or a portion of all, discharges from the municipal separate storm sewer system;

(B) Submit a distinct permit application which only covers discharges from the municipal separate storm sewers for which the operator is responsible; or

(C) A regional authority may be responsible for submitting a permit application under the following guidelines:

(1) The regional authority together with co-applicants shall have authority over a storm water management program that is in existence, or shall be in existence at the time part 1 of the application is due;

(2) The permit applicant or co-applicants shall establish their ability to make a timely submission of part 1 and part 2 of the municipal application;

(3) Each of the operators of municipal separate storm sewers within the systems described in paragraphs (b)(4) (i), (ii), and (iii) or (b)(7) (i), (ii), and (iii) of this section, that are under the purview of the designated regional authority, shall comply with the application requirements of paragraph (d) of this section.

(iv) One permit application may be submitted for all or a portion of all municipal separate storm sewers within adjacent or interconnected large or medium municipal separate storm sewer systems. The Director may issue one system-wide permit covering all, or a portion of all municipal separate storm sewers in adjacent or interconnected large or medium municipal separate storm sewer systems.

(v) Permits for all or a portion of all discharges from large or medium municipal separate storm sewer systems that are issued on a system-wide, jurisdiction-wide, watershed or other basis may specify different conditions relating to different discharges covered by the permit, including different management programs for different drainage areas which contribute storm water to the system.

(vi) Co-permittees need only comply with permit conditions relating to discharges from the municipal separate storm sewers for which they are operators.

***48064** (4) Discharges through large and medium municipal separate storm sewer systems. In addition to meeting the requirements of paragraph (c) of this section, an operator of a storm water discharge associated with industrial activity which discharges through a large or medium municipal separate storm sewer system shall submit, to the operator of the municipal separate storm sewer system receiving the discharge no later than May 15, 1991, or 180 days prior to commencing such discharge: the name of the facility; a contact person and phone number; the location of the discharge; a description, including Standard Industrial Classification, which best reflects the principal products or services provided by each facility; and any existing NPDES permit number.

(5) Other municipal separate storm sewers. The Director may issue permits for municipal separate storm sewers that are designated under paragraph (a)(1)(v) of this section on a system-wide basis, jurisdiction-wide basis, watershed basis or other appropriate basis, or may issue permits for individual discharges.

(6) Non-municipal separate storm sewers. For storm water discharges associated with industrial activity from point sources which discharge through a non-municipal or non-publicly owned separate storm sewer system, the Director, in his discretion, may issue: a single NPDES permit, with each discharger a co-permittee to a permit issued to the operator of the portion of the system that discharges into waters of the United States; or, individual permits to each discharger of storm water associated with industrial activity through the non-municipal conveyance system.

(i) All storm water discharges associated with industrial activity that discharge through a storm water discharge system that is not a municipal separate storm sewer must be covered by an individual permit, or a permit issued to the operator of the portion of the system that discharges to waters of the United States, with each discharger to the non-municipal conveyance a co-permittee to that permit.

(ii) Where there is more than one operator of a single system of such conveyances, all operators of storm water discharges associated with industrial activity must submit applications.

(iii) Any permit covering more than one operator shall identify the effluent limitations, or other permit conditions, if any, that apply to each operator.

(7) Combined sewer systems. Conveyances that discharge storm water runoff combined with municipal sewage are point sources that must obtain NPDES permits in accordance with the procedures of § 122.21 and are not subject to the provisions of this section.

(8) Whether a discharge from a municipal separate storm sewer is or is not subject to regulation under this section shall have no bearing on whether the owner or operator of the discharge is eligible for funding under title II, title III or title VI of the Clean Water Act. See 40 CFR part 35, subpart I, appendix A(b)H.2.j.

(b) Definitions. (1) Co-permittee means a permittee to a NPDES permit that is only responsible for permit conditions relating to the discharge for which it is operator.

(2) 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.

(3) Incorporated place means the District of Columbia, or a city, town, township, or village that is incorporated under the laws of the State in which it is located.

(4) Large municipal separate storm sewer system means all municipal separate storm sewers that are either:

(i) Located in an incorporated place with a population of 250,000 or more as determined by the latest Decennial Census by the Bureau of Census (appendix F); or

(ii) Located in the counties listed in appendix H, except municipal separate storm sewers that are located in the incorporated places, townships or towns within such counties; or

(iii) Owned or operated by a municipality other than those described in paragraph (b)(4) (i) or (ii) of this section and that are designated by the Director as part of the large or medium municipal separate storm sewer system due to the interrelationship between the discharges of the designated storm sewer and the discharges from municipal separate storm sewers described under paragraph (b)(4) (i) or (ii) of this section. In making this determination the Director may consider the following factors:

(A) Physical interconnections between the municipal separate storm sewers;

(B) The location of discharges from the designated municipal separate storm sewer relative to discharges from municipal separate storm sewers described in paragraph (b)(4)(i) of this section;

(C) The quantity and nature of pollutants discharged to waters of the United States;

(D) The nature of the receiving waters; and

(E) Other relevant factors; or

(iv) The Director may, upon petition, designate as a large municipal separate storm sewer system, municipal separate storm sewers located within the boundaries of a region defined by a storm water management regional authority based on a jurisdictional, watershed, or other appropriate basis that includes one or more of the systems described in paragraph (b)(4) (i), (ii), (iii) of this section.

(5) Major municipal separate storm sewer outfall (or "major outfall") means a municipal separate storm sewer 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 circular pipe which is associated with a drainage area of more than 50 acres); or for municipal separate storm sewers that receive storm water from lands zoned for industrial activity (based on comprehensive zoning plans or the equivalent), an outfall that discharges from a single pipe with an inside diameter of 12 inches or more or from its equivalent (discharge from other than a circular pipe associated with a drainage area of 2 acres or more).

(6) Major outfall means a major municipal separate storm sewer outfall.

(7) Medium municipal separate storm sewer system means all municipal separate storm sewers that are either:

(i) Located in an incorporated place with a population of 100,000 or more but less than 250,000, as determined by the latest Decennial Census by the Bureau of Census (appendix G); or

(ii) Located in the counties listed in appendix I, except municipal separate storm sewers that are located in the incorporated places, townships or towns within such counties; or

(iii) Owned or operated by a municipality other than those described in paragraph (b)(4) (i) or (ii) of this section and that are designated by the Director as part of the large or medium municipal separate storm sewer system due to the interrelationship between the discharges of the designated storm sewer and the discharges from municipal separate storm sewers described under paragraph (b)(4) (i) or (ii) of this section. In making this determination the Director may consider the following factors:

*48065 (A) Physical interconnections between the municipal separate storm sewers;

(B) The location of discharges from the designated municipal separate storm sewer relative to discharges from municipal separate storm sewers described in paragraph (b)(7)(i) of this section;

(C) The quantity and nature of pollutants discharged to waters of the United States;

(D) The nature of the receiving waters; or

(E) Other relevant factors; or

(iv) The Director may, upon petition, designate as a medium municipal separate storm sewer system, municipal separate storm sewers located within the boundaries of a region defined by a storm water management regional authority based on a jurisdictional, watershed, or other appropriate basis that includes one or more of the systems described in paragraphs (b)(7) (i), (ii), (iii) of this section.

(8) Municipal separate storm sewer means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

(i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created

by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, 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 to waters of the United States;

(ii) Designed or used for collecting or conveying storm water;

(iii) Which is not a combined sewer; and

(iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

(9) Outfall means a point source as defined by 40 CFR 122.2 at the point where a municipal separate storm sewer discharges to waters of the United States and does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels or other conveyances which connect segments of the same stream or other waters of the United States and are used to convey waters of the United States.

(10) Overburden means any material of any nature, consolidated or unconsolidated, that overlies a mineral deposit, excluding topsoil or similar naturally-occurring surface materials that are not disturbed by mining operations.

(11) Runoff coefficient means the fraction of total rainfall that will appear at a conveyance as runoff.

(12) Significant materials includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under section 101(14) of CERCLA; any chemical the facility is required to report pursuant to section 313 of title III of SARA; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with storm water discharges.

(13) Storm water means storm water runoff, snow melt runoff, and surface runoff and drainage.

(14) Storm water discharge associated with industrial activity means the discharge from any conveyance which is used for collecting and conveying storm water and which is directly related to manufacturing, processing or raw materials storage areas at an industrial plant. The term does not include discharges from facilities or activities excluded from the NPDES program under 40 CFR part 122. For the categories of industries identified in paragraphs (b)(14) (i) through (x) of this section, the term includes, but is not limited to, storm water discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility; material handling sites; refuse sites; sites used for the application or disposal of process waste waters (as defined at 40 CFR part 401); sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas (including tank farms) for raw materials, and intermediate and finished products; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to storm water. For the categories of industries identified in paragraph (b)(14)(xi) of this section, the term includes only storm water discharges from all the areas (except access roads and rail lines) that are listed in the previous sentence where material handling equipment or activities, raw materials, intermediate products, final products, waste materials, by-products, or industrial machinery are exposed to storm water. For the purposes of this paragraph, material handling activities include the storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, finished product, by-product or waste product. The term excludes areas located on plant lands separate from the plant's industrial activities, such as office buildings and accompanying parking lots as long as the drainage from the excluded areas is not mixed with storm

water drained from the above described areas. Industrial facilities (including industrial facilities that are Federally, State, or municipally owned or operated that meet the description of the facilities listed in this paragraph (b)(14)(i)-(xi) of this section) include those facilities designated under the provisions of paragraph (a)(1)(v) of this section. The following categories of facilities are considered to be engaging in "industrial activity" for purposes of this subsection:

(i) Facilities subject to storm water effluent limitations guidelines, new source performance standards, or toxic pollutant effluent standards under 40 CFR subchapter N (except facilities with toxic pollutant effluent standards which are exempted under category (xi) in paragraph (b)(14) of this section);

(ii) Facilities classified as Standard Industrial Classifications 24 (except 2434), 26 (except 265 and 267), 28 (except 283), 29, 311, 32 (except 323), 33, 3441, 373;

(iii) Facilities classified as Standard Industrial Classifications 10 through 14 (mineral industry) including active or inactive mining operations (except for areas of coal mining operations no longer meeting the definition of a reclamation area under 40 CFR 434.11(1) because the performance bond issued to the facility by the appropriate SMCRA authority has been released, or except for areas of non-coal mining operations which have been released from applicable State or Federal reclamation requirements after December 17, 1990) and oil and gas exploration, production, processing, or treatment operations, or transmission facilities that discharge storm water contaminated by contact with or that has come into contact with, any overburden, raw material, intermediate products, finished products, byproducts or waste products located on the site of such operations; (inactive mining operations are mining sites that are not being actively mined, but which have an identifiable owner/operator; inactive mining sites do not include sites where mining claims are being maintained prior to disturbances associated with the extraction, beneficiation, or processing of mined *48066 materials, nor sites where minimal activities are undertaken for the sole purpose of maintaining a mining claim);

(iv) Hazardous waste treatment, storage, or disposal facilities, including those that are operating under interim status or a permit under subtitle C of RCRA;

(v) Landfills, land application sites, and open dumps that receive or have received any industrial wastes (waste that is received from any of the facilities described under this subsection) including those that are subject to regulation under subtitle D of RCRA;

(vi) Facilities involved in the recycling of materials, including metal scrapyards, battery reclaimers, salvage yards, and automobile junkyards, including but limited to those classified as Standard Industrial Classification 5015 and 5093;

(vii) Steam electric power generating facilities, including coal handling sites;

(viii) Transportation facilities classified as Standard Industrial Classifications 40, 41, 42 (except 4221-25), 43, 44, 45, and 5171 which have vehicle maintenance shops, equipment cleaning operations, or airport deicing operations. Only those portions of the facility that are either involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication), equipment cleaning operations, airport deicing operations, or which are otherwise identified under paragraphs (b)(14) (i)-(vii) or (ix)-(xi) of this section are associated with industrial activity;

(ix) Treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of the facility, with a design flow of 1.0 mgd or more, or required to have an approved pretreatment program under 40 CFR part 403. Not included are farm lands, domestic gardens or lands used for sludge management where sludge is beneficially reused and which are not physically located in

the confines of the facility, or areas that are in compliance with section 405 of the CWA;

(x) Construction activity including clearing, grading and excavation activities except: operations that result in the disturbance of less than five acres of total land area which are not part of a larger common plan of development or sale;

(xi) Facilities under Standard Industrial Classifications 20, 21, 22, 23, 2434, 25, 265, 267, 27, 283, 285, 30, 31 (except 311), 323, 34 (except 3441), 35, 36, 37 (except 373), 38, 39, 4221-25, (and which are not otherwise included within categories (ii)-(x));

(c) Application requirements for storm water discharges associated with industrial activity—(1) Individual application. Dischargers of storm water associated with industrial activity are required to apply for an individual permit, apply for a permit through a group application, or seek coverage under a promulgated storm water general permit. Facilities that are required to obtain an individual permit, or any discharge of storm water which the Director is evaluating for designation (see 40 CFR 124.52(c)) under paragraph (a)(1)(v) of this section and is not a municipal separate storm sewer, and which is not part of a group application described under paragraph (c)(2) of this section, shall submit an NPDES application in accordance with the requirements of § 122.21 as modified and supplemented by the provisions of the remainder of this paragraph. Applicants for discharges composed entirely of storm water shall submit Form 1 and Form 2F. Applicants for discharges composed of storm water and non-storm water shall submit Form 1, Form 2C, and Form 2F. Applicants for new sources or new discharges (as defined in § 122.2 of this part) composed of storm water and non-storm water shall submit Form 1, Form 2D, and Form 2F.

(i) Except as provided in § 122.26(c)(1)(ii)-(iv), the operator of a storm water discharge associated with industrial activity subject to this section shall provide:

(A) A site map showing topography (or indicating the outline of drainage areas served by the outfall(s) covered in the application if a topographic map is unavailable) of the facility including: each of its drainage and discharge structures; the drainage area of each storm water outfall; paved areas and buildings within the drainage area of each storm water outfall, each past or present area used for outdoor storage or disposal of significant materials; each existing structural control measure to reduce pollutants in storm water runoff, materials loading and access areas, areas where pesticides, herbicides, soil conditioners and fertilizers are applied, each of its hazardous waste treatment, storage or disposal facilities (including each area not required to have a RCRA permit which is used for accumulating hazardous waste under 40 CFR 262.34); each well where fluids from the facility are injected underground; springs, and other surface water bodies which receive storm water discharges from the facility;

(B) An estimate of the area of impervious surfaces (including paved areas and building roofs) and the total area drained by each outfall (within a mile radius of the facility) and a narrative description of the following: Significant materials that in the three years prior to the submittal of this application have been treated, stored or disposed in a manner to allow exposure to storm water; method of treatment, storage or disposal of such materials; materials management practices employed, in the three years prior to the submittal of this application, to minimize contact by these materials with storm water runoff; materials loading and access areas; the location, manner and frequency in which pesticides, herbicides, soil conditioners and fertilizers are applied; the location and a description of existing structural and non-structural control measures to reduce pollutants in storm water runoff; and a description of the treatment the storm water receives, including the ultimate disposal of any solid or fluid wastes other than by discharge;

(C) A certification that all outfalls that should contain storm water discharges associated with industrial activity have been tested or evaluated for the presence of non-storm water discharges which are not covered by a NPDES permit; tests for such non-storm water discharges may include smoke tests, fluorometric dye tests, analysis of accurate schematics, as

well as other appropriate tests. The certification shall include a description of the method used, the date of any testing, and the on-site drainage points that were directly observed during a test;

~~(D) Existing information regarding significant leaks or spills of toxic or hazardous pollutants at the facility that have taken place within the three years prior to the submittal of this application;~~

(E) Quantitative data based on samples collected during storm events and collected in accordance with § 122.21 of this part from all outfalls containing a storm water discharge associated with industrial activity for the following parameters:

(1) Any pollutant limited in an effluent guideline to which the facility is subject;

(2) Any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit);

(3) Oil and grease, pH, BOD5, COD, TSS, total phosphorus, total Kjeldahl nitrogen, and nitrate plus nitrite nitrogen;

(4) Any information on the discharge required under paragraph § 122.21(g)(7)(iii) and (iv) of this part;

*48067 (5) Flow measurements or estimates of the flow rate, and the total amount of discharge for the storm event(s) sampled, and the method of flow measurement or estimation; and

(6) The date and duration (in hours) of the storm event(s) sampled, rainfall measurements or estimates of the storm event (in inches) which generated the sampled runoff and the duration between the storm event sampled and the end of the previous measurable (greater than 0.1 inch rainfall) storm event (in hours);

(F) Operators of a discharge which is composed entirely of storm water are exempt from the requirements of § 122.21 (g)(2), (g)(3), (g)(4), (g)(5), (g)(7)(i), (g)(7)(ii), and (g)(7)(v); and

(G) Operators of new sources or new discharges (as defined in § 122.2 of this part) which are composed in part or entirely of storm water must include estimates for the pollutants or parameters listed in paragraph (c)(1)(i)(E) of this section instead of actual sampling data, along with the source of each estimate. Operators of new sources or new discharges composed in part or entirely of storm water must provide quantitative data for the parameters listed in paragraph (c)(1)(i)(E) of this section within two years after commencement of discharge, unless such data has already been reported under the monitoring requirements of the NPDES permit for the discharge. Operators of a new source or new discharge which is composed entirely of storm water are exempt from the requirements of § 122.21 (k)(3)(ii), (k)(3)(iii), and (k)(5).

(ii) The operator of an existing or new storm water discharge that is associated with industrial activity solely under paragraph (b)(14)(x) of this section, is exempt from the requirements of § 122.21(g) and paragraph (c)(1)(i) of this section. Such operator shall provide a narrative description of:

(A) The location (including a map) and the nature of the construction activity;

(B) The total area of the site and the area of the site that is expected to undergo excavation during the life of the permit;

(C) Proposed measures, including best management practices, to control pollutants in storm water discharges during construction, including a brief description of applicable State and local erosion and sediment control requirements;

(D) Proposed measures to control pollutants in storm water discharges that will occur after construction operations have been completed, including a brief description of applicable State or local erosion and sediment control requirements;

(E) An estimate of the runoff coefficient of the site and the increase in impervious area after the construction addressed in the permit application is completed, the nature of fill material and existing data describing the soil or the quality of the discharge; and

(F) The name of the receiving water.

(iii) The operator of an existing or new discharge composed entirely of storm water from an oil or gas exploration, production, processing, or treatment operation, or transmission facility is not required to submit a permit application in accordance with paragraph (c)(1)(i) of this section, unless the facility:

(A) Has had a discharge of storm water resulting in the discharge of a reportable quantity for which notification is or was required pursuant to 40 CFR 117.21 or 40 CFR 302.6 at anytime since November 16, 1987; or

(B) Has had a discharge of storm water resulting in the discharge of a reportable quantity for which notification is or was required pursuant to 40 CFR 110.6 at any time since November 16, 1987; or

(C) Contributes to a violation of a water quality standard.

(iv) The operator of an existing or new discharge composed entirely of storm water from a mining operation is not required to submit a permit application unless the discharge has come into contact with, any overburden, raw material, intermediate products, finished product, byproduct or waste products located on the site of such operations.

(v) Applicants shall provide such other information the Director may reasonably require under § 122.21(g)(13) of this part to determine whether to issue a permit and may require any facility subject to paragraph (c)(1)(ii) of this section to comply with paragraph (c)(1)(i) of this section.

(2) Group application for discharges associated with industrial activity. In lieu of individual applications or notice of intent to be covered by a general permit for storm water discharges associated with industrial activity, a group application may be filed by an entity representing a group of applicants (except facilities that have existing individual NPDES permits for storm water) that are part of the same subcategory (see 40 CFR subchapter N, part 405 to 471) or, where such grouping is inapplicable, are sufficiently similar as to be appropriate for general permit coverage under § 122.28 of this part. The part 1 application shall be submitted to the Office of Water Enforcement and Permits, U.S. EPA, 401 M Street, SW., Washington, DC 20460 (EN-336) for approval. Once a part 1 application is approved, group applicants are to submit Part 2 of the group application to the Office of Water Enforcement and Permits. A group application shall consist of:

(i) Part 1. Part 1 of a group application shall:

(A) Identify the participants in the group application by name and location. Facilities participating in the group application shall be listed in nine subdivisions, based on the facility location relative to the nine precipitation zones indicated in appendix E to this part.

(B) Include a narrative description summarizing the industrial activities of participants of the group application and explaining why the participants, as a whole, are sufficiently similar to be covered by a general permit;

(C) Include a list of significant materials stored exposed to precipitation by participants in the group application and materials management practices employed to diminish contact by these materials with precipitation and storm water runoff;

(D) Identify ten percent of the dischargers participating in the group application (with a minimum of 10 dischargers, and

either a minimum of two dischargers from each precipitation zone indicated in appendix E of this part in which ten or more members of the group are located, or one discharger from each precipitation zone indicated in appendix E of this part in which nine or fewer members of the group are located) from which quantitative data will be submitted in part 2. If more than 1,000 facilities are identified in a group application, no more than 100 dischargers must submit quantitative data in Part 2. Groups of between four and ten dischargers may be formed. However, in groups of between four and ten, at least half the facilities must submit quantitative data, and at least one facility in each precipitation zone in which members of the group are located must submit data. A description of why the facilities selected to perform sampling and analysis are representative of the group as a whole in terms of the information provided in paragraph (c)(1) (i)(B) and (i)(C) of this section, shall accompany this section. Different factors impacting the nature of the storm water discharges, such as processes used and material management, shall be represented, to the extent feasible, in a manner roughly equivalent to their proportion in the group.

(ii) Part 2. Part 2 of a group application shall contain quantitative *48068 data (NPDES Form 2F), as modified by paragraph (c)(1) of this section, so that when part 1 and part 2 of the group application are taken together, a complete NPDES application (Form 1, Form 2C, and Form 2F) can be evaluated for each discharger identified in paragraph (c)(2)(i)(D) of this section.

(d) Application requirements for large and medium municipal separate storm sewer discharges. The operator of a discharge from a large or medium municipal separate storm sewer or a municipal separate storm sewer that is designated by the Director under paragraph (a)(1)(v) of this section, may submit a jurisdiction-wide or system-wide permit application. Where more than one public entity owns or operates a municipal separate storm sewer within a geographic area (including adjacent or interconnected municipal separate storm sewer systems), such operators may be a coapplicant to the same application. Permit applications for discharges from large and medium municipal storm sewers or municipal storm sewers designated under paragraph (a)(1)(v) of this section shall include;

(1) Part 1. Part 1 of the application shall consist of;

(i) General information. The applicants' name, address, telephone number of contact person, ownership status and status as a State or local government entity.

(ii) Legal authority. A description of existing legal authority to control discharges to the municipal separate storm sewer system. When existing legal authority is not sufficient to meet the criteria provided in paragraph (d)(2)(i) of this section, the description shall list additional authorities as will be necessary to meet the criteria and shall include a schedule and commitment to seek such additional authority that will be needed to meet the criteria.

(iii) Source identification. (A) A description of the historic use of ordinances, guidance or other controls which limited the discharge of non-storm water discharges to any Publicly Owned Treatment Works serving the same area as the municipal separate storm sewer system.

(B) A USGS 7.5 minute topographic map (or equivalent topographic map with a scale between 1:10,000 and 1:24,000 if cost effective) extending one mile beyond the service boundaries of the municipal storm sewer system covered by the permit application. The following information shall be provided:

(1) The location of known municipal storm sewer system outfalls discharging to waters of the United States;

(2) A description of the land use activities (e.g. divisions indicating undeveloped, residential, commercial, agricultural and industrial uses) accompanied with estimates of population densities and projected growth for a ten year period within

the drainage area served by the separate storm sewer. For each land use type, an estimate of an average runoff coefficient shall be provided;

~~(3) The location and a description of the activities of the facility of each currently operating or closed municipal landfill or other treatment, storage or disposal facility for municipal waste;~~

(4) The location and the permit number of any known discharge to the municipal storm sewer that has been issued a NPDES permit;

(5) The location of major structural controls for storm water discharge (retention basins, detention basins, major infiltration devices, etc.); and

(6) The identification of publicly owned parks, recreational areas, and other open lands.

(iv) Discharge characterization. (A) Monthly mean rain and snow fall estimates (or summary of weather bureau data) and the monthly average number of storm events.

(B) Existing quantitative data describing the volume and quality of discharges from the municipal storm sewer, including a description of the outfalls sampled, sampling procedures and analytical methods used.

(C) A list of water bodies that receive discharges from the municipal separate storm sewer system, including downstream segments, lakes and estuaries, where pollutants from the system discharges may accumulate and cause water degradation and a brief description of known water quality impacts. At a minimum, the description of impacts shall include a description of whether the water bodies receiving such discharges have been:

(1) Assessed and reported in section 305(b) reports submitted by the State, the basis for the assessment (evaluated or monitored), a summary of designated use support and attainment of Clean Water Act (CWA) goals (fishable and swimmable waters), and causes of nonsupport of designated uses;

(2) Listed under section 304(l)(1)(A)(i), section 304(l)(1)(A)(ii), or section 304(l)(1)(B) of the CWA that is not expected to meet water quality standards or water quality goals;

(3) Listed in State Nonpoint Source Assessments required by section 319(a) of the CWA that, without additional action to control nonpoint sources of pollution, cannot reasonably be expected to attain or maintain water quality standards due to storm sewers, construction, highway maintenance and runoff from municipal landfills and municipal sludge adding significant pollution (or contributing to a violation of water quality standards);

(4) Identified and classified according to eutrophic condition of publicly owned lakes listed in State reports required under section 314(a) of the CWA (include the following: A description of those publicly owned lakes for which uses are known to be impaired; a description of procedures, processes and methods to control the discharge of pollutants from municipal separate storm sewers into such lakes; and a description of methods and procedures to restore the quality of such lakes);

(5) Areas of concern of the Great Lakes identified by the International Joint Commission;

(6) Designated estuaries under the National Estuary Program under section 320 of the CWA;

(7) Recognized by the applicant as highly valued or sensitive waters;

- (8) Defined by the State or U.S. Fish and Wildlife Services's National Wetlands Inventory as wetlands; and
- (9) Found to have pollutants in bottom sediments, fish tissue or biosurvey data.

(D) Field screening. Results of a field screening analysis for illicit connections and illegal dumping for either selected field screening points or major outfalls covered in the permit application. At a minimum, a screening analysis shall include a narrative description, for either each field screening point or major outfall, of visual observations made during dry weather periods. If any flow is observed, two grab samples shall be collected during a 24 hour period with a minimum period of four hours between samples. For all such samples, a narrative description of the color, odor, turbidity, the presence of an oil sheen or surface scum as well as any other relevant observations regarding the potential presence of non-storm water discharges or illegal dumping shall be provided. In addition, a narrative description of the results of a field analysis using suitable methods to estimate pH, total chlorine, total copper, total phenol, and detergents (or surfactants) shall be provided along with a description of the flow rate. Where the field analysis does not involve analytical methods approved under 40 CFR part 136, the applicant shall provide a description of the method used including the name of the manufacturer of the test method along with the range and accuracy of the test. Field screening points shall be either major outfalls or other outfall points (or *48069 any other point of access such as manholes) randomly located throughout the storm sewer system by placing a grid over a drainage system map and identifying those cells of the grid which contain a segment of the storm sewer system or major outfall. The field screening points shall be established using the following guidelines and criteria:

- (1) A grid system consisting of perpendicular north-south and east-west lines spaced 1/4 mile apart shall be overlaid on a map of the municipal storm sewer system, creating a series of cells;
- (2) All cells that contain a segment of the storm sewer system shall be identified; one field screening point shall be selected in each cell; major outfalls may be used as field screening points;
- (3) Field screening points should be located downstream of any sources of suspected illegal or illicit activity;
- (4) Field screening points shall be located to the degree practicable at the farthest manhole or other accessible location downstream in the system, within each cell; however, safety of personnel and accessibility of the location should be considered in making this determination;
- (5) Hydrological conditions; total drainage area of the site; population density of the site; traffic density; age of the structures or buildings in the area; history of the area; and land use types;
- (6) For medium municipal separate storm sewer systems, no more than 250 cells need to have identified field screening points; in large municipal separate storm sewer systems, no more than 500 cells need to have identified field screening points; cells established by the grid that contain no storm sewer segments will be eliminated from consideration; if fewer than 250 cells in medium municipal sewers are created, and fewer than 500 in large systems are created by the overlay on the municipal sewer map, then all those cells which contain a segment of the sewer system shall be subject to field screening (unless access to the separate storm sewer system is impossible); and
- (7) Large or medium municipal separate storm sewer systems which are unable to utilize the procedures described in paragraphs (d)(1)(iv)(D) (1) through (6) of this section, because a sufficiently detailed map of the separate storm sewer systems is unavailable, shall field screen no more than 500 or 250 major outfalls respectively (or all major outfalls in the system, if less); in such circumstances, the applicant shall establish a grid system consisting of north-south and east-west lines spaced 1/4 mile apart as an overlay to the boundaries of the municipal storm sewer system, thereby creating a

series of cells; the applicant will then select major outfalls in as many cells as possible until at least 500 major outfalls (large municipalities) or 250 major outfalls (medium municipalities) are selected; a field screening analysis shall be undertaken at these major outfalls.

(E) Characterization plan. Information and a proposed program to meet the requirements of paragraph (d)(2)(iii) of this section. Such description shall include: the location of outfalls or field screening points appropriate for representative data collection under paragraph (d)(2)(iii)(A) of this section, a description of why the outfall or field screening point is representative, the seasons during which sampling is intended, a description of the sampling equipment. The proposed location of outfalls or field screening points for such sampling should reflect water quality concerns (see paragraph (d)(1)(iv)(C) of this section) to the extent practicable.

(v) Management programs. (A) A description of the existing management programs to control pollutants from the municipal separate storm sewer system. The description shall provide information on existing structural and source controls, including operation and maintenance measures for structural controls, that are currently being implemented. Such controls may include, but are not limited to: Procedures to control pollution resulting from construction activities; floodplain management controls; wetland protection measures; best management practices for new subdivisions; and emergency spill response programs. The description may address controls established under State law as well as local requirements.

(B) A description of the existing program to identify illicit connections to the municipal storm sewer system. The description should include inspection procedures and methods for detecting and preventing illicit discharges, and describe areas where this program has been implemented.

(vi) Fiscal resources. (A) 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.

(2) Part 2. Part 2 of the 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, 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 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 storm sewer of spills, dumping or disposal of materials other than storm water;

(D) Control through interagency agreements among coapplicants the contribution of pollutants from one portion of the municipal system to another portion of the municipal system;

(E) Require compliance with conditions 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.

(ii) Source identification. The location of any major outfall that discharges to waters of the United States that was not reported under paragraph (d)(1)(iii)(B)(1) of this section. 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;

(iii) Characterization data. When "quantitative data" for a pollutant are required under paragraph (d)(a)(iii)(A)(3) of this paragraph, the applicant must collect a sample of effluent in accordance with 40 CFR 122.21(g)(7) and analyze it for the pollutant in accordance with analytical methods approved under 40 CFR part 136. When no analytical method is approved the applicant may use any suitable method but must provide a description of the method. The applicant must provide information characterizing the quality and quantity of discharges covered in the permit application, including:

(A) Quantitative data from representative outfalls designated by the Director (based on information received *48070 in part 1 of the application, the Director shall designate between five and ten outfalls or field screening points as representative of the commercial, residential and industrial land use activities of the drainage area contributing to the system or, where there are less than five outfalls covered in the application, the Director shall designate all outfalls) developed as follows:

(1) For each outfall or field screening point designated under this subparagraph, samples shall be collected of storm water discharges from three storm events occurring at least one month apart in accordance with the requirements at § 122.21(g)(7) (the Director may allow exemptions to sampling three storm events when climatic conditions create good cause for such exemptions);

(2) A narrative description shall be provided of the date and duration of the storm event(s) sampled, rainfall estimates of the storm event which generated the sampled discharge and the duration between the storm event sampled and the end of the previous measurable (greater than 0.1 inch rainfall) storm event;

(3) For samples collected and described under paragraphs (d)(2)(iii) (A)(1) and (A)(2) of this section, quantitative data shall be provided for: the organic pollutants listed in Table II; the pollutants listed in Table III (toxic metals, cyanide, and total phenols) of appendix D of 40 CFR part 122, and for the following pollutants:

Total suspended solids (TSS)

Total dissolved solids (TDS)

COD

BOD5

Oil and grease

Fecal coliform

Fecal streptococcus

pH

Total Kjeldahl nitrogen

Nitrate plus nitrite

Dissolved phosphorus

Total ammonia plus organic nitrogen

Total phosphorus

(4) Additional limited quantitative data required by the Director for determining permit conditions (the Director may require that quantitative data shall be provided for additional parameters, and may establish sampling conditions such as the location, season of sample collection, form of precipitation (snow melt, rainfall) and other parameters necessary to insure representativeness);

(B) Estimates of the annual pollutant load of the cumulative discharges to waters of the United States from all identified municipal outfalls and the event mean concentration of the cumulative discharges to waters of the United States from all identified municipal outfalls during a storm event (as described under § 122.21(c)(7)) for BOD5, COD, TSS, dissolved solids, total nitrogen, total ammonia plus organic nitrogen, total phosphorus, dissolved phosphorus, cadmium, copper, lead, and zinc. Estimates shall be accompanied by a description of the procedures for estimating constituent loads and concentrations, including any modelling, data analysis, and calculation methods;

(C) A proposed schedule to provide estimates for each major outfall identified in either paragraph (d)(2)(ii) or (d)(1)(iii)(B)(1) of this section of the seasonal pollutant load and of the event mean concentration of a representative storm for any constituent detected in any sample required under paragraph (d)(2)(iii)(A) of this section; and

(D) A proposed monitoring program for representative data collection for the term of the permit that describes the location of outfalls or field screening points to be sampled (or the location of instream stations), why the location is representative, the frequency of sampling, parameters to be sampled, and a description of sampling equipment.

(iv) Proposed management program. A proposed management program covers the duration of the permit. It shall include 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. Separate proposed programs may be submitted by each coapplicant. Proposed programs may impose controls on a systemwide basis, a watershed basis, a jurisdiction basis, or on individual outfalls. Proposed programs will be considered by the Director when developing permit conditions to reduce pollutants in discharges to the maximum extent practicable. Proposed management programs shall describe priorities for implementing controls. Such programs shall be based on:

(A) A description of structural and source control measures to reduce pollutants from runoff from commercial and residential areas that are discharged from the municipal storm sewer system that are to be implemented during the life of the permit, accompanied with an estimate of the expected reduction of pollutant loads and a proposed schedule for implementing such controls. At a minimum, the description shall include:

(1) A description of maintenance activities and a maintenance schedule for structural controls to reduce pollutants (including floatables) in discharges from municipal separate storm sewers;

(2) 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. (Controls to reduce pollutants in discharges from municipal separate storm sewers containing construction site runoff are addressed in paragraph (d)(2)(iv)(D) of this section;

(3) A description of practices 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;

(4) 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;

(5) 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 (this program can be coordinated with the program developed under paragraph (d)(2)(iv)(C) of this section); and

(6) 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.

*48071 (B) A description of a program, including a schedule, 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. The proposed program shall include:

(1) A description of a program, including inspections, to implement and enforce an ordinance, orders or similar means to prevent illicit discharges to the municipal separate storm sewer system; this program description shall address all types of illicit discharges, however the following category of non-storm water discharges or flows shall be addressed where such discharges are identified by the municipality as sources of pollutants to waters of the United States: water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20)) to separate storm sewers, uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, and street wash water (program descriptions shall address discharges or flows from fire fighting only where such discharges or flows are identified as significant sources of pollutants to waters of the United States);

(2) 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;

(3) 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 (such procedures may include: sampling procedures for constituents such as fecal coliform, fecal streptococcus, surfactants (MBAS), residual chlorine, fluorides and potassium; testing with fluorometric dyes; or conducting in storm sewer inspections where safety and other considerations allow. Such description shall include the location of storm sewers that have been identified for such evaluation);

(4) A description of procedures to prevent, contain, and respond to spills that may discharge into the municipal separate

storm sewer;

(5) 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;

(6) 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; and

(7) A description of controls to limit infiltration of seepage from municipal sanitary sewers to municipal separate storm sewer systems where necessary;

(C) 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. The program shall:

(1) Identify priorities and procedures for inspections and establishing and implementing control measures for such discharges;

(2) Describe a monitoring program for storm water discharges associated with the industrial facilities identified in paragraph (d)(2)(iv)(C) of this section, to be implemented during the term of the permit, including the submission of quantitative data on the following constituents: any pollutants limited in effluent guidelines subcategories, where applicable; any pollutant listed in an existing NPDES permit for a facility; oil and grease, COD, pH, BOD5, TSS, total phosphorus, total Kjeldahl nitrogen, nitrate plus nitrite nitrogen, and any information on discharges required under 40 CFR 122.21(g)(7)(iii) and (iv).

(D) 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, which shall include:

(1) A description of procedures for site planning which incorporate consideration of potential water quality impacts;

(2) A description of requirements for nonstructural and structural best management practices;

(3) 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; and

(4) A description of appropriate educational and training measures for construction site operators.

(v) Assessment of controls. Estimated reductions in loadings of pollutants from discharges of municipal storm sewer constituents from municipal storm sewer systems expected as the result of the municipal storm water quality management program. The assessment shall also identify known impacts of storm water controls on ground water.

(vi) Fiscal analysis. 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.

(vii) Where more than one legal entity submits an application, the application shall contain a description of the roles and responsibilities of each legal entity and procedures to ensure effective coordination.

~~(viii) Where requirements under paragraph (d)(1)(iv)(E), (d)(2)(ii), (d)(2)(iii)(B) and (d)(2)(iv) of this section are not practicable or are not applicable, the Director may exclude any operator of a discharge from a municipal separate storm sewer which is designated under paragraph (a)(1)(v), (b)(4)(ii) or (b)(7)(ii) of this section from such requirements. The Director shall not exclude the operator of a discharge from a municipal separate storm sewer identified in appendix F, G, H or I of part 122, from any of the permit application requirements under this paragraph except where authorized under this section.~~

(e) Application deadlines. Any operator of a point source required to obtain a permit under paragraph (a)(1) of this section that does not have an effective NPDES permit covering its storm water outfalls shall submit an application in accordance with the following deadlines:

(1) For any storm water discharge associated with industrial activity identified in paragraph (b)(14) (i)-(xi) of this section, that is not part of a group application as described in paragraph (c)(2) of this section or which is not covered under a promulgated storm water general permit, a permit application made pursuant to paragraph (c) of this section shall be submitted to the Director by November 18, 1991;

*48072 (2) For any group application submitted in accordance with paragraph (c)(2) of this section:

(i) Part 1 of the application shall be submitted to the Director, Office of Water Enforcement and Permits by March 18, 1991;

(ii) Based on information in the part 1 application, the Director will approve or deny the members in the group application within 60 days after receiving part 1 of the group application.

(iii) Part 2 of the application shall be submitted to the Director, Office of Water Enforcement and Permits no later than 12 months after the date of approval of the part 1 application.

(iv) Facilities that are rejected as members of a group by the permitting authority shall have 12 months to file an individual permit application from the date they receive notification of their rejection.

(v) A facility listed under paragraph (b)(14) (i)-(xi) of this section may add on to a group application submitted in accordance with paragraph (e)(2)(i) of this section at the discretion of the Office of Water Enforcement and Permits, and only upon a showing of good cause by the facility and the group applicant; the request for the addition of the facility shall be made no later than February 18, 1992; the addition of the facility shall not cause the percentage of the facilities that are required to submit quantitative data to be less than 10%, unless there are over 100 facilities in the group that are submitting quantitative data; approval to become part of group application must be obtained from the group or the trade association representing the individual facilities.

(3) For any discharge from a large municipal separate storm sewer system;

(i) Part 1 of the application shall be submitted to the Director by November 18, 1991;

(ii) Based on information received in the part 1 application the Director will approve or deny a sampling plan under paragraph (d)(1)(iv)(E) of this section within 90 days after receiving the part 1 application;

(iii) Part 2 of the application shall be submitted to the Director by November 16, 1992.

(4) For any discharge from a medium municipal separate storm sewer system;

~~(i) Part 1 of the application shall be submitted to the Director by May 18, 1992.~~

(ii) Based on information received in the part 1 application the Director will approve or deny a sampling plan under paragraph (d)(1)(iv)(E) of this section within 90 days after receiving the part 1 application.

(iii) Part 2 of the application shall be submitted to the Director by May 17, 1993.

(5) A permit application shall be submitted to the Director within 60 days of notice, unless permission for a later date is granted by the Director (see 40 CFR 124.52(c)), for:

(i) A storm water discharge which the Director, or in States with approved NPDES programs, either the Director or the EPA Regional Administrator, determines that the discharge contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States (see paragraph (a)(1)(v) of this section);

(ii) A storm water discharge subject to paragraph (c)(1)(v) of this section.

(6) Facilities with existing NPDES permits for storm water discharges associated with industrial activity shall maintain existing permits. New applications shall be submitted in accordance with the requirements of 40 CFR 122.21 and 40 CFR 122.26(c) 180 days before the expiration of such permits. Facilities with expired permits or permits due to expire before May 18, 1992, shall submit applications in accordance with the deadline set forth under paragraph (e)(1) of this section.

(f) Petitions. (1) Any operator of a municipal separate storm sewer system may petition the Director to require a separate NPDES permit (or a permit issued under an approved NPDES State program) for any discharge into the municipal separate storm sewer system.

(2) Any person may petition the Director to require a NPDES permit for a discharge which is composed entirely of storm water which contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States.

(3) The owner or operator of a municipal separate storm sewer system may petition the Director to reduce the Census estimates of the population served by such separate system to account for storm water discharged to combined sewers as defined by 40 CFR 35.2005(b)(11) that is treated in a publicly owned treatment works. In municipalities in which combined sewers are operated, the Census estimates of population may be reduced proportional to the fraction, based on estimated lengths, of the length of combined sewers over the sum of the length of combined sewers and municipal separate storm sewers where an applicant has submitted the NPDES permit number associated with each discharge point and a map indicating areas served by combined sewers and the location of any combined sewer overflow discharge point.

(4) Any person may petition the Director for the designation of a large or medium municipal separate storm sewer system as defined by paragraphs (b)(4)(iv) or (b)(7)(iv) of this section.

(5) The Director shall make a final determination on any petition received under this section within 90 days after receiving the petition.

6. Section 122.28(b)(2)(i) is revised to read as follows:

§ 122.28 General permits (applicable to State NPDES programs, see § 123.25).

(b)***

(2) Requiring an individual permit. (i) The Director may require any discharger authorized by a general permit to apply for and obtain an individual NPDES permit. Any interested person may petition the Director to take action under this paragraph. Cases where an individual NPDES permit may be required include the following:

(A) The discharger or "treatment works treating domestic sewage" is not in compliance with the conditions of the general NPDES permit;

(B) A change has occurred in the availability of demonstrated technology or practices for the control or abatement of pollutants applicable to the point source or treatment works treating domestic sewage;

(C) Effluent limitation guidelines are promulgated for point sources covered by the general NPDES permit;

(D) A Water Quality Management plan containing requirements applicable to such point sources is approved;

(E) Circumstances have changed since the time of the request to be covered so that the discharger is no longer appropriately controlled under the general permit, or either a temporary or permanent reduction or elimination of the authorized discharge is necessary;

(F) Standards for sewage sludge use or disposal have been promulgated for the sludge use and disposal practice covered by the general NPDES permit; or

(G) The discharge(s) is a significant contributor of pollutants. In making this determination, the Director may consider the following factors:

(1) The location of the discharge with respect to waters of the United States;

(2) The size of the discharge;

(3) The quantity and nature of the pollutants discharged to waters of the United States; and

(4) Other relevant factors;

*48073 7. Section 122.42 is amended by adding paragraph (c) to read as follows:

§ 122.42 Additional conditions applicable to specified categories of NPDES permits (applicable to State NPDES programs, see § 123.25).

(c) Municipal separate storm sewer systems. The operator of a large or medium municipal separate storm sewer system or a municipal separate storm sewer that has been designated by the Director under § 122.26(a)(1)(v) of this part must submit an annual report by the anniversary of the date of the issuance of the permit for such system. The report shall in-

clude:

- (1) The status of implementing the components of the storm water management program that are established as permit conditions;
- (2) Proposed changes to the storm water management programs that are established as permit condition. Such proposed changes shall be consistent with § 122.26(d)(2)(iii) of this part; and
- (3) Revisions, if necessary, to the assessment of controls and the fiscal analysis reported in the permit application under § 122.26(d)(2)(iv) and (d)(2)(v) of this part;
- (4) A summary of data, including monitoring data, that is accumulated throughout the reporting year;
- (5) Annual expenditures and budget for year following each annual report;
- (6) A summary describing the number and nature of enforcement actions, inspections, and public education programs;
- (7) Identification of water quality improvements or degradation;

7a. Part 122 is amended by adding appendices E through I as follows:

Appendix E to Part 122—Rainfall Zones of the United States

insert illustration 416A

Not Shown: Alaska (Zone 7); Hawaii (Zone 7); Northern Mariana Islands (Zone 7); Guam (Zone 7); American Samoa (Zone 7); Trust Territory of the Pacific Islands (Zone 7); Puerto Rico (Zone 3) Virgin Islands (Zone 3).

Source: Methodology for Analysis of Detention Basins for Control of Urban Runoff Quality, prepared for U.S. Environmental Protection Agency, Office of Water, Nonpoint Source Division, Washington, DC, 1986.

Appendix F to Part 122—Incorporated Places With Populations Greater Than 250,000 According to Latest Decennial Census by Bureau of Census.

State	Incorporated place
Alabama	Birmingham.
Arizona	Phoenix.
	Tucson.
California	Long Beach.
	Los Angeles.
	Oakland.
	Sacramento.
	San Diego.
	San Francisco.
	San Jose.

Colorado	Denver.
District of Columbia	
Florida	Jacksonville.
	Miami.
Georgia	Tampa.
Illinois	Atlanta.
Indiana	Chicago.
Kansas	Indianapolis.
Kentucky	Wichita.
Louisiana	Louisville.
Maryland	New Orleans.
Massachusetts	Baltimore.
Michigan	Boston.
Minnesota	Detroit.
	Minneapolis
Missouri	St. Paul.
	Kansas City.
Nebraska	St. Louis.
New Jersey	Omaha.
New Mexico	Newark.
New York	Albuquerque.
	Buffalo.
	Bronx Borough.
	Brooklyn Borough.
	Manhattan Borough.
	Queens Borough.
	Staten Island Borough.
North Carolina	Charlotte.
Ohio	Cincinnati.
	Cleveland.
	Columbus.
	Toledo.
Oklahoma	Oklahoma City.
	Tulsa.
Oregon	Portland.
Pennsylvania	Philadelphia.
	Pittsburgh.

Tennessee	Memphis.
	Nashville/Davidson.
Texas	Austin.
	Dallas.
	El Paso.
	Fort Worth.
	Houston.
Virginia	San Antonio.
	Norfolk.
	Virginia Beach.
Washington	Seattle.
Wisconsin	Milwaukee.

*48074 Appendix G to Part 122—Incorporated Places With Populations Greater Than 100,000 and Less Than 250,000 According to Latest Decennial Census by Bureau of Census

State	Incorporated place
Alabama	Huntsville.
	Mobile.
	Montgomery.
Alaska	Anchorage.
Arizona	Mesa.
	Tempe.
Arkansas	Little Rock.
California	Anaheim.
	Bakersfield.
	Berkeley.
	Concord.
	Fremont.
	Fresno.
	Fullerton.
	Garden Grove.
	Glendale.
	Huntington Beach.
	Modesto.
	Oxnard.
	Pasadena.

	Riverside.
	San Bernadino.
	Santa Ana.
	Stockton.
	Sunnyvale.
Colorado	Torrance.
	Aurora.
	Colorado Springs.
	Lakewood.
Connecticut	Pueblo.
	Bridgeport.
	Hartford.
	New Haven.
	Stamford.
	Waterbury.
Florida	Fort Lauderdale.
	Hialeah.
	Hollywood.
	Orlando.
	St. Petersburg.
Georgia	Columbus.
	Macon.
	Savannah.
Idaho	Boise City.
Illinois	Peoria.
	Rockford.
Indiana	Evansville.
	Fort Wayne.
	Gary.
	South Bend.
Iowa	Cedar Rapids.
	Davenport.
	Des Moines.
Kansas	Kansas City.
	Topeka.
Kentucky	Lexington-Fayette.
Louisiana	Baton Rouge.

Massachusetts	Shreveport.
	Springfield.
Michigan	Worcester.
	Ann Arbor.
	Flint.
	Grand Rapids.
	Lansing.
	Livonia.
	Sterling Heights.
Mississippi	Warren.
Missouri	Jackson.
	Independence.
Nebraska	Springfield.
Nevada	Lincoln.
	Las Vegas.
New Jersey	Reno.
	Elizabeth.
	Jersey City.
New York	Paterson.
	Albany.
	Rochester.
	Syracuse.
North Carolina	Yonkers.
	Durham.
	Greensboro.
	Raleigh.
Ohio	Winston-Salem.
	Akron.
	Dayton.
Oregon	Youngstown.
Pennsylvania	Eugene.
	Allentown.
Rhode Island	Erie.
South Carolina	Providence.
Tennessee	Columbia.
	Chattanooga.
	Knoxville.

Texas	Amarillo. Arlington. Beaumont. Corpus Christi. Garland. Irving. Lubbock. Pasadena. Waco.
Utah	Salt Lake City.
Virginia	Alexandria. Chesapeake. Hampton. Newport News. Portsmouth. Richmond. Roanoke.
Washington	Spokane. Tacoma.
Wisconsin	Madison.

Appendix H to Part 122— Counties with Unincorporated Urbanized Areas With a Population of 250,000 or More According to the Latest Decennial Census by the Bureau of Census

State	County	Unincorporated urbanized population
California	Los Angeles	912,664
	Sacramento	449,056
	San Diego	304,758
Delaware	New Castle	257,184
Florida	Dade	781,949
Georgia	DeKalb	386,379
Hawaii	Honolulu	688,178
Maryland	Anne Arundel	271,458
	Baltimore	601,308
	Montgomery	447,993
Texas	Prince George's	450,188
	Harris	409,601

Utah	Salt Lake	304,632
Virginia	Fairfax	527,178
Washington	King	336,800

Appendix I to Part 122—Counties With Unincorporated Urbanized Areas Greater Than 100,000, But Less Than 250,000 According to the Latest Decennial Census by the Bureau of Census

State	County	Unincorporated urbanized population
Alabama	Jefferson	102,917
Arizona	Pima	111,479
California	Alameda	187,474
	Contra Costa	158,452
	Kern	117,231
	Orange	210,693
	Riverside	115,719
	San Bernardino	148,644
Florida	Broward	159,370
	Escambia	147,892
	Hillsborough	238,292
	Orange	245,325
	Palm Beach	167,089
	Pinellas	194,389
	Polk	104,150
	Sarasota	110,009
Georgia	Clayton	100,742
	Cobb	204,121
	Richmond	118,529
Kentucky	Jefferson	224,958
Louisiana	Jefferson	140,836
North Carolina	Cumberland	142,727
Nevada	Clark	201,775
Oregon	Multnomah	141,100
	Washington	109,348
South Carolina	Greenville	135,398
	Richland	124,684
Virginia	Arlington	152,599
	Henrico	161,204

Washington	Chesterfield	108,348
	Snohomish	103,493
	Pierce	196,113

PART 123—STATE PROGRAM REQUIREMENTS⁸. The authority citation for part 123 continues to read as follows:

*48075 Authority: Clean Water Act, 33 U.S.C. 1251 et seq.

9. Section 123.25 is amended by revising paragraph (a)(9) to read as follows:

§ 123.25 Requirements for permitting.

(a) * * *

(9) § 122.26—(Storm water discharges);

* * * * *

PART 124—PROCEDURES FOR DECISIONMAKING¹⁰. The authority citation for part 124 continues to read as follows:

Authority: Resource Conservation and Recovery Act, 42 U.S.C. 6901 et seq.; Safe Drinking Water Act, 42 U.S.C. 300f et seq.; Clean Water Act, 33 U.S.C. 1251 et seq.; and Clean Air Act, 42 U.S.C. 1857 et seq.

11. Section 124.52 is revised to read as follows:

§ 124.52 Permits required on a case-by-case basis.

(a) Various sections of part 122, subpart B allow the Director to determine, on a case-by-case basis, that certain concentrated animal feeding operations (§ 122.23), concentrated aquatic animal production facilities (§ 122.24), storm water discharges (§ 122.26), and certain other facilities covered by general permits (§ 122.28) that do not generally require an individual permit may be required to obtain an individual permit because of their contributions to water pollution.

(b) Whenever the Regional Administrator decides that an individual permit is required under this section, except as provided in paragraph (c) of this section, the Regional Administrator shall notify the discharger in writing of that decision and the reasons for it, and shall send an application form with the notice. The discharger must apply for a permit under § 122.21 within 60 days of notice, unless permission for a later date is granted by the Regional Administrator. The question whether the designation was proper will remain open for consideration during the public comment period under § 124.11 or § 124.118 and in any subsequent hearing.

(c) Prior to a case-by-case determination that an individual permit is required for a storm water discharge under this section (see 40 CFR 122.26 (a)(1)(v) and (c)(1)(v)), the Regional Administrator may require the discharger to submit a permit application or other information regarding the discharge under section 308 of the CWA. In requiring such information, the Regional Administrator shall notify the discharger in writing and shall send an application form with the notice. The discharger must apply for a permit under § 122.26 within 60 days of notice, unless permission for a later date is granted by the Regional Administrator. The question whether the initial designation was proper will remain open for consideration during the public comment period under § 124.11 or § 124.118 and in any subsequent hearing.

55 FR 47990-01, 1990 WL 348331 (F.R.)

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Note: The following form will not appear in the Code of Federal Regulations.

BILLING CODE 6560-50-M

[FR Doc. 90-26315 Filed 11-9-90; 12:17 pm]

55 FR 47990-01, 1990 WL 348331 (F.R.)
END OF DOCUMENT

ATTACHMENT 12

Westlaw

64 FR 68722-01, 1999 WL 1111032 (F.R.)

Page 1

RULES and REGULATIONS
ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 9, 122, 123, and 124

[FRL—6470-8]

RIN 2040-AC82

National Pollutant Discharge Elimination System—Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges

Wednesday, December 8, 1999

*68722 AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: Today's regulations (Phase II) expand the existing National Pollutant Discharge Elimination System (NPDES) storm water program (Phase I) to address storm water discharges from small municipal separate storm sewer systems (MS4s) (those serving less than 100,000 persons) and construction sites that disturb one to five acres. Although these sources are automatically designated by today's rule, the rule allows for the exclusion of certain sources from the national program based on a demonstration of the lack of impact on water quality, as well as the inclusion of others based on a higher likelihood of localized adverse impact on water quality. Today's regulations also exclude from the NPDES program storm water discharges from industrial facilities that have "no exposure" of industrial activities or materials to storm water. Finally, today's rule extends from August 7, 2001 until March 10, 2003 the deadline by which certain industrial facilities owned by small MS4s must obtain coverage under an NPDES permit. This rule establishes a cost-effective, flexible approach for reducing environmental harm by storm water discharges from many point sources of storm water that are currently unregulated.

EPA believes that the implementation of the six minimum measures identified for small MS4s should significantly reduce pollutants in urban storm water compared to existing levels in a cost-effective manner. Similarly, EPA believes that implementation of Best Management Practices (BMP) controls at small construction sites will also result in a significant reduction in pollutant discharges and an improvement in surface water quality. EPA believes this rule will result in monetized financial, recreational and health benefits, as well as benefits that EPA has been unable to monetize. Expected benefits include reduced scouring and erosion of streambeds, improved aesthetic quality of waters, reduced eutrophication of aquatic systems, benefit to wildlife and endangered and threatened species, tourism benefits, biodiversity benefits and reduced costs for siting reservoirs. In addition, the costs of industrial storm water controls will decrease due to the exclusion of storm water discharges from facilities where there is "no exposure" of storm water to industrial activities and materials.

DATES: This regulation is effective on February 7, 2000. The incorporation by reference of the rainfall erosivity factor publication listed in the rule is approved by the Director of the Federal Register as of February 7, 2000. For judicial review purposes, this final rule is promulgated as of 1:00 p.m. Eastern Standard Time, on December 22, 1999 as provided

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in 40 CFR 23.2.

ADDRESSES: The complete administrative record for the final rule and the ICR have been established under docket numbers W-97-12 (rule) and W-97-15 (ICR), and includes supporting documentation as well as printed, paper versions of electronic comments. Copies of information in the record are available upon request. A reasonable fee may be charged for copying. The record is available for inspection and copying from 9 a.m. to 4 p.m., Monday through Friday, excluding legal holidays, at the Water Docket, EPA, East Tower Basement, 401 M Street, SW, Washington, DC. For access to docket materials, please call 202/260-3027 to schedule an appointment.

FOR FURTHER INFORMATION CONTACT: George Utting, Office of Wastewater Management, Environmental Protection Agency, Mail Code 4203, 401 M Street, SW, Washington, DC 20460; (202) 260-5816; sw2@epa.gov.

SUPPLEMENTARY INFORMATION: Entities potentially regulated by this action include:

Category	Examples of regulated entities
Federal, State, Tribal, and Local Governments	Operators of small separate storm sewer systems, industrial facilities that discharge storm water associated with industrial activity or construction activity disturbing 1 to 5 acres.
Industry	Operators of industrial facilities that discharge storm water associated with industrial activity.
Construction Activity	Operators of construction activity disturbing 1 to 5 acres.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by this action. This table lists the types of entities that EPA is now aware could potentially be regulated by this action. Other types of entities not listed in the table could also be regulated. To determine whether your facility or company is regulated by this action, you should carefully examine the applicability criteria in §§122.26(b), 122.31, 122.32, and 123.35 of the final rule. If you have questions regarding the applicability of this action to a particular entity, consult the person listed in the preceding FOR FURTHER INFORMATION CONTACT section.

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I. Background

A. Proposed Rule and Pre-Proposal Outreach

On January 9, 1998 (63 FR 1536), EPA proposed to expand the National Pollutant Discharge Elimination System (NPDES) storm water program to include storm water discharges from municipal separate storm sewer systems (MS4s) and construction sites that were smaller than those previously included in the program. The proposal also addressed industrial sources that have "no exposure" of industrial activities and materials to storm water. Today, EPA is promulgating a final rule to implement most of the proposed revisions with minor changes based on public comments received on the proposal. Today's final rule also extends the deadline by which certain industrial facilities operated by municipalities of less than 100,000 population must be covered by a NPDES permit; the deadline is changed from August 7, 2001 until

March 10, 2003.

In 1972, Congress amended the Federal Water Pollution Control Act (commonly referred to as the Clean Water Act (CWA)) to prohibit the discharge of any pollutant to waters of the United States from a point source unless the discharge is authorized by an NPDES permit. The NPDES program is a program designed to track point sources and require the implementation of the controls necessary to minimize the discharge of pollutants. Initial efforts to improve water quality under the NPDES program primarily focused on reducing pollutants in industrial process wastewater and municipal sewage. These discharge sources were easily identified as responsible for poor, often drastically degraded, water quality conditions.

As pollution control measures for industrial process wastewater and municipal sewage were implemented and refined, it became increasingly evident that more diffuse sources of water pollution were also significant causes of water quality impairment. Specifically, storm water runoff draining large surface areas, such as agricultural and urban land, was found to be a major cause of water quality impairment, including the nonattainment of designated beneficial uses.

In 1987, Congress amended the CWA to require implementation, in two phases, of a comprehensive national program for addressing storm water discharges. The first phase of the program, commonly referred to as "Phase I," was promulgated on November 16, 1990 (55 FR 47990). Phase I requires NPDES permits for storm water discharge from a large number of priority sources including municipal separate storm sewer systems ("MS4s") generally serving populations of 100,000 or more and several categories of industrial activity, including construction sites that disturb five or more acres of land.

Today's rule, which is the second phase of the storm water program, expands the existing program to include discharges of storm water from smaller municipalities in urbanized areas and from construction sites that disturb between one and five acres of land. Today's rule allows certain sources to be excluded from the national program based on a demonstrable lack of impact on water quality. The rule also allows other sources not automatically regulated on a national basis to be designated for inclusion based on increased likelihood for localized adverse impact on water quality.*68724 Today's rule also conditionally excludes storm water discharges from industrial facilities that have "no exposure" of industrial activities or materials to storm water. Today's rule and the effort that led to its development are commonly referred to as "Phase II." On August 7, 1995, EPA promulgated a final rule that required facilities to be regulated under Phase II to apply for a NPDES permit by August 7, 2001, unless the NPDES permitting authority designates them as requiring a permit by an earlier date. (60 FR 40230). That rule is referred to as "the Interim Phase II Rule." Today's rule replaces the Interim Phase II rule.

EPA performed extensive outreach and worked with a variety of stakeholders prior to proposing today's rule. On September 9, 1992, EPA published a notice requesting information and public comment on how to prepare regulations under CWA section 402(p)(6) (see 57 FR 41344). The notice identified three sets of issues associated with developing new NPDES storm water regulations: (1) How should EPA identify unregulated sources of storm water to protect water quality; (2) what types of control strategies should EPA develop for these sources, and (3) what are appropriate deadlines for implementing new requirements. The notice recognized that potential sources for coverage under the section 402(p)(6) regulations would fall into two main categories: municipal separate storm sewer systems and individual (commercial and residential) sources. EPA received more than 130 comments on the September 9, 1992, notice. For further discussion of the comments received, see Storm Water Discharges Potentially Addressed by Phase II of the National Pollutant Discharge Elimination System: Report to Congress (EPA, 1995a), pp. 1-21 to 1-22, and Appendix J (which provides a detailed summary of the comments received as they relate to the specific issues raised in the notice).

In early 1993, the Rensselaerville Institute and EPA held public and expert meetings to assist in developing and analyz-

ing options for identifying unregulated sources and possible controls. The report on the 1993 meetings identified two options that were favored by the various groups that participated. One option was a program that allowed States to select sources to be controlled in a manner consistent with criteria developed by EPA. A second option was a tiered approach under which EPA would select high priority sources for control by NPDES permits and States would select other sources for control under a State water quality program other than the NPDES program. For additional details see the "Report on the EPA Storm Water Management Program (Rensselaerville Study)," Appendix I of Storm Water Discharges Potentially Addressed by Phase II of the National Pollutant Discharge Elimination System: Report to Congress (EPA, 1995a).

EPA also conducted outreach with representatives of small entities in conjunction with the convening of a Small Business Advocacy Review Panel under the Small Business Regulatory Enforcement Fairness Act (SBREFA). This process is discussed in section IV.E of today's preamble. For additional background see the discussion in the preamble to the proposal for today's rule.

To assist EPA by providing advice and recommendations regarding the urban municipal wet weather water pollution control program, EPA established the Urban Wet Weather Flows Federal Advisory Committee (hereinafter, "FACA Committee") under the Federal Advisory Committee Act (FACA). The Office of Management and Budget approved the charter for the FACA Committee on March 10, 1995. The FACA Committee provided a forum for identifying and addressing issues associated with water quality impacts from storm water sources.

The FACA Committee established two subcommittees: the Storm Water Phase II FACA Subcommittee and the Sanitary Sewer Overflows (SSOs) FACA Subcommittee. Consistent with the requirements of FACA, the membership of both the FACA Committee and the subcommittees was balanced among EPA's various outside stakeholder interests, including representatives from municipalities, States, Indian Tribes, EPA, industrial and commercial sectors, agriculture, and environmental and public interest groups.

The Storm Water Phase II FACA Subcommittee ("Subcommittee") met fourteen times between September 1995 and June 1998. The 32 Subcommittee members discussed possible regulatory frameworks at these meetings as well as during numerous other meetings and conference calls. Members of the FACA Committee provided views regarding the development of the "no exposure" provision and other provisions in drafts of the Phase II rule. EPA provided Subcommittee members with four successive drafts of the proposed rule and preamble, outlines of the rule, summaries of the written comments received on each draft, and documents identifying the changes made to each draft. In the course of providing input to the Committee, individual Subcommittee members provided significant input and advice that EPA considered in the context of public comments received. Ultimately, the Subcommittee did not provide a written report back to the FACA Committee, and the FACA Committee did not provide written advice and recommendations to EPA. The Agency, therefore, did not rely on group recommendations in developing today's rule, but does consider the process to have resulted in important public outreach.

B. Water Quality Concerns/Environmental Impact Studies and Assessments

Storm water runoff from lands modified by human activities can harm surface water resources and, in turn, cause or contribute to an exceedance of water quality standards by changing natural hydrologic patterns, accelerating stream flows, destroying aquatic habitat, and elevating pollutant concentrations and loadings. Such runoff may contain or mobilize high levels of contaminants, such as sediment, suspended solids, nutrients (phosphorous and nitrogen), heavy metals and other toxic pollutants, pathogens, toxins, oxygen-demanding substances (organic material), and floatables (U.S. EPA. 1992. Environmental Impacts of Storm Water Discharges: A National Profile. EPA 841-R-92-001. Office of Water. Washington, DC). After a rain, storm water runoff carries these pollutants into nearby streams, rivers, lakes, estuaries, wetlands,

and oceans. The highest concentrations of these contaminants often are contained in "first flush" discharges, which occur during the first major storm after an extended dry period (Schueler, T.R. 1994. "First Flush of Stormwater Pollutants Investigated in Texas." Note 28. Watershed Protection Techniques 1(2)). Individually and combined, these pollutants impair water quality, threatening designated beneficial uses and causing habitat alteration or destruction.

Uncontrolled storm water discharges from areas of urban development and construction activity negatively impact receiving waters by changing the physical, biological, and chemical composition of the water, resulting in an unhealthy environment for aquatic organisms, wildlife, and humans. The following sections discuss the studies and data that address and support this finding.

Although water quality problems also can occur from agricultural storm water discharges and return flows from irrigated agriculture, this area of *68725 concern is statutorily exempted from regulation as a point source under the Clean Water Act and is not discussed here. (See CWA section 502(14)). Other storm water sources not specifically identified in the regulations may be of concern in certain areas and can be addressed on a case-by-case (or category-by-category) basis through the NPDES designation authority preserved by CWA section 402(p)(2)(6), as well as today's rule.

1. Urban Development

Urbanization alters the natural infiltration capability of the land and generates a host of pollutants that are associated with the activities of dense populations, thus causing an increase in storm water runoff volumes and pollutant loadings in storm water discharged to receiving waterbodies (U.S. EPA, 1992). Urban development increases the amount of impervious surface in a watershed as farmland, forests, and meadowlands with natural infiltration characteristics are converted into buildings with rooftops, driveways, sidewalks, roads, and parking lots with virtually no ability to absorb storm water. Storm water and snow-melt runoff wash over these impervious areas, picking up pollutants along the way while gaining speed and volume because of their inability to disperse and filter into the ground. What results are storm water flows that are higher in volume, pollutants, and temperature than the flows in less impervious areas, which have more natural vegetation and soil to filter the runoff (U.S. EPA, 1997. Urbanization and Streams: Studies of Hydrologic Impacts. EPA 841-R-97-009. Office of Water, Washington, DC).

Studies reveal that the level of imperviousness in an area strongly correlates with the quality of the nearby receiving waters. For example, a study in the Puget Sound lowland ecoregion found that when the level of basin development exceeded 5 percent of the total impervious area, the biological integrity and physical habitat conditions that are necessary to support natural biological diversity and complexity declined precipitously (May, C.W., E.B. Welch, R.R. Horner, J.R. Karr, and B.W. May. 1997. Quality Indices for Urbanization Effects in Puget Sound Lowland Streams, Technical Report No. 154. University of Washington Water Resources Series). Research conducted in numerous geographical areas, concentrating on various variables and employing widely different methods, has revealed a similar conclusion: stream degradation occurs at relatively low levels of imperviousness, such as 10 to 20 percent (even as low as 5 to 10 percent according to the findings of the Washington study referenced above) (Schueler, T.R. 1994. "The Importance of Imperviousness." Watershed Protection Techniques 1(3); May, C., R.R. Horner, J.R. Karr, B.W. Mar, and E.B. Welch. 1997. "Effects Of Urbanization On Small Streams In The Puget Sound Lowland Ecoregion." Watershed Protection Techniques 2(4); Yoder, C.O., R.J. Miltner, and D. White. 1999. "Assessing the Status of Aquatic Life Designated Uses in Urban and Suburban Watersheds." In Proceedings: National Conference on Retrofits Opportunities in Urban Environments. EPA 625-R-99-002, Washington, DC; Yoder, C.O and R.J. Miltner. 1999. "Assessing Biological Quality and Limitations to Biological Potential in Urban and Suburban Watersheds in Ohio." In Comprehensive Stormwater & Aquatic Ecosystem Management Conference Papers, Auckland, New Zealand). Furthermore, research has indicated that few, if any, urban streams can support diverse benthic communities at imperviousness levels of 25 percent or more. An area of medium

density single family homes can be anywhere from 25 percent to nearly 60 percent impervious, depending on the design of the streets and parking (Schueler, 1994).

In addition to impervious areas, urban development creates new pollution sources as population density increases and brings with it proportionately higher levels of car emissions, car maintenance wastes, pet waste, litter, pesticides, and household hazardous wastes, which may be washed into receiving waters by storm water or dumped directly into storm drains designed to discharge to receiving waters. More people in less space results in a greater concentration of pollutants that can be mobilized by, or disposed into, storm water discharges from municipal separate storm sewer systems. A modeling system developed for the Chesapeake Bay indicated that contamination of the Bay and its tributaries from runoff is comparable to, if not greater than, contamination from industrial and sewage sources (Cohn-Lee, R. and D. Cameron. 1992. "Urban Stormwater Runoff Contamination of the Chesapeake Bay: Sources and Mitigation." The Environmental Professional, Vol. 14).

a. Large-Scale Studies and Assessments

In support of today's regulatory designation of MS4s in urbanized areas, the Agency relied on broad-based assessments of urban storm water runoff and related water quality impacts, as well as more site-specific studies. The first national assessment of urban runoff characteristics was completed for the Nationwide Urban Runoff Program (NURP) study (U.S. EPA. 1983. Results of the Nationwide Urban Runoff Program, Volume 1—Final Report. Office of Water. Washington, D.C.). The NURP study is the largest nationwide evaluation of storm water discharges, which includes adverse impacts and sources, undertaken to date.

EPA conducted the NURP study to facilitate understanding of the nature of urban runoff from residential, commercial, and industrial areas. One objective of the study was to characterize the water quality of discharges from separate storm sewer systems that drain residential, commercial, and light industrial (industrial parks) sites. Storm water samples from 81 residential and commercial properties in 22 urban/suburban areas nationwide were collected and analyzed during the 5-year period between 1978 and 1983. The majority of samples collected in the study were analyzed for eight conventional pollutants and three heavy metals.

Data collected under the NURP study indicated that discharges from separate storm sewer systems draining runoff from residential, commercial, and light industrial areas carried more than 10 times the annual loadings of total suspended solids (TSS) than discharges from municipal sewage treatment plants that provide secondary treatment. The NURP study also indicated that runoff from residential and commercial areas carried somewhat higher annual loadings of chemical oxygen demand (COD), total lead, and total copper than effluent from secondary treatment plants. Study findings showed that fecal coliform counts in urban runoff typically range from tens to hundreds of thousands per hundred milliliters of runoff during warm weather conditions, with the median for all sites being around 21,000/100 ml. This is generally consistent with studies that found that fecal coliform mean values range from 1,600 coliform fecal units (CFU)/100 ml to 250,000 cfu/100 ml (Makepeace, D.K., D.W. Smith, and S.J. Stanley. 1995. "Urban Storm Water Quality: Summary of Contaminant Data." Critical Reviews in Environmental Science and Technology 25(2):93-139). Makepeace, et al., summarized ranges of contaminants from storm water, including physical contaminants such as total solids (76—36,200 mg/L) and copper (up to 1.41 mg/L); organic chemicals; organic compounds, such as oil and grease (up to 110 mg/L); and microorganisms. *68726

Monitoring data summarized in the NURP study provided important information about urban runoff from residential, commercial, and light industrial areas. The study concluded that the quality of urban runoff can be affected adversely by several sources of pollution that were not directly evaluated in the study, including illicit discharges, construction site

runoff, and illegal dumping. Data from the NURP study were analyzed further in the U.S. Geological Survey (USGS) Urban Storm Water Data Base for 22 Metropolitan Areas Throughout the United States study (Driver, N.E., M.H. Mustard, R.B. Rhinesmith, and R.F. Middleburg. 1985. U.S. Geological Survey Urban Storm Water Data Base for 22 Metropolitan Areas Throughout the United States. Report No. 85-337 USGS. Lakewood, CO). The USGS report summarized additional monitoring data compiled during the mid-1980s, covering 717 storm events at 99 sites in 22 metropolitan areas and documented problems associated with metals and sediment concentrations in urban storm water runoff. More recent reports have confirmed the pollutant concentration data collected in the NURP study (Marsalek, J. 1990. "Evaluation of Pollutant Loads from Urban Nonpoint Sources." *Wat. Sci. Tech.* 22(10/11):23-30; Makepeace, et al., 1995).

Commenters argued that the NURP study does not support EPA's contention that urban activities significantly jeopardize attainment of water quality standards. One commenter argued that the NURP study and the 1985 USGS study are seriously out of date. Because they were issued 10 years or more before the implementation of the current storm water permit program, the data in those reports do not reflect conditions that exist after implementation of permits issued by authorized States and EPA for storm water from construction sites, large municipalities, and industrial activities.

In response, EPA notes that it is not relying solely on the NURP study to describe current water quality impairment. Rather, EPA is citing NURP as a source of data on typical pollutant concentrations in urban runoff. Recent studies have not found significantly different pollutant concentrations in urban runoff when compared to the original NURP data (see Makepeace, et al., 1995; Marsalek, 1990; and Pitt, et al., 1995).

America's Clean Water—the States' Nonpoint Source Assessment (Association of State and Interstate Water Pollution Control Administrators (ASIWPCA). 1985. America's Clean Water—The States' Nonpoint Source Assessment. Prepared in cooperation with the U.S. EPA, Office of Water, Washington, DC), a comprehensive study of diffuse pollution sources conducted under the sponsorship of the Association of State and Interstate Water Pollution Control Administrators (ASIWPCA) and EPA revealed that 38 States reported urban runoff as a major cause of designated beneficial use impairment and 21 States reported storm water runoff from construction sites as a major cause of beneficial use impairment. In addition, the 1996 305(b) Report (U.S. EPA. 1998. The National Water Quality Inventory, 1996 Report to Congress. EPA 841-R-97-008. Office of Water. Washington, DC), provides a national assessment of water quality based on biennial reports submitted by the States as required under CWA section 305(b) of the CWA. In the CWA 305(b) reports, States, Tribes, and Territories assess their individual water quality control programs by examining the attainment or nonattainment of the designated uses assigned to their rivers, lakes, estuaries, wetlands, and ocean shores. A designated use is the legally applicable use specified in a water quality standard for a watershed, waterbody, or segment of a waterbody. The designated use is the desirable use that the water quality should support. Examples of designated uses include drinking water supply, primary contact recreation (swimming), and aquatic life support. Each CWA 305(b) report indicates the assessed fraction of a State's waters that are fully supporting, partially supporting, or not supporting designated beneficial uses.

In their reports, States, Tribes, and Territories first identified and then assigned the sources of water quality impairment for each impaired waterbody using the following categories: industrial, municipal sewage, combined sewer overflows, urban runoff/storm sewers, agricultural, silvicultural, construction, resource extraction, land disposal, hydrologic modification, and habitat modification. The 1996 Inventory, based on a compilation of 60 individual 305(b) reports submitted by States, Tribes, and Territories, assessed the following percentages of total waters nationwide: 19 percent of river and stream miles; 40 percent of lake, pond, and reservoir acres; 72 percent of estuary square miles; and 6 percent of ocean shoreline waters. The 1996 Inventory indicated that approximately 40 percent of the Nation's assessed rivers, lakes, and estuaries are impaired. Waterbodies deemed as "impaired" are either partially supporting designated uses or not support-

ing designated uses.

The 1996 Inventory also found urban runoff/discharges from storm sewers to be a major source of water quality impairment nationwide. Urban runoff/storm sewers were found to be a source of pollution in 13 percent of impaired rivers; 21 percent of impaired lakes, ponds, and reservoirs; and 45 percent of impaired estuaries (second only to industrial discharges). In addition, urban runoff was found to be the leading cause of ocean impairment for those ocean miles surveyed.

In addition, a recent USGS study of urban watersheds across the United States has revealed a link between urban development and contamination of local waterbodies. The study found the highest levels of organic contaminants, known as polycyclic aromatic hydrocarbons (PAHs) (products of combustion of wood, grass, and fossil fuels), in the reservoirs of urbanized watersheds (U.S. Geological Survey (USGS). 1998. Research Reveals Link Between Development and Contamination in Urban Watersheds. USGS news release. USGS National Water-Quality Assessment Program).

Urban storm water also can contribute significant amounts of toxicants to receiving waters. Pitt, et. al. (1993), found heavy metal concentrations in the majority of samples analyzed. Industrial or commercial areas were likely to be the most significant pollutant source areas (Pitt, R., R. Field, M. Lalor, M. Brown 1993. "Urban stormwater toxic pollutants: assessment, sources, and treatability" *Water Environment Research*, 67(3):260-75).

b. Local and Watershed-Based Studies

In addition to the large-scale nationwide studies and assessments, a number of local and watershed-based studies from across the country have documented the detrimental effects of urban storm water runoff on water quality. A study of urban streams in Milwaukee County, Wisconsin, found local streams to be highly degraded due primarily to urban runoff, while three studies in the Atlanta, Georgia, region were characterized as being "the first documentation in the Southeast of the strong negative relationship between urbanization and stream quality that has been observed in other ecoregions" (Masterson, J. and R. Bannerman. 1994. "Impacts of Storm Water Runoff on Urban Streams in Milwaukee County, Wisconsin." Paper presented at National Symposium on Water Quality: American Water Resources Association; Schueler, T.R. 1997. "Fish Dynamics in Urban Streams Near Atlanta, Georgia." #68727 Technical Note 94. Watershed Protection Techniques 2(4)). Several other studies, including those performed in Arizona (Maricopa County), California (San Jose's Coyote Creek), Massachusetts (Green River), Virginia (Tuckahoe Creek), and Washington (Puget Sound lowland ecoregion), all had the same finding: runoff from urban areas greatly impair stream ecology and the health of aquatic life; the more heavily developed the area, the more detrimental the effects (Lopes, T. and K. Fossum. 1995. "Selected Chemical Characteristics and Acute Toxicity of Urban Stormwater, Streamflow, and Bed Material, Maricopa County, Arizona." Water Resources Investigations Report 95-4074. USGS; Pitt, R. 1995. "Effects of Urban Runoff on Aquatic Biota." In Handbook of Ecotoxicology; Pratt, J. and R. Coler. 1979. "Ecological Effects of Urban Stormwater Runoff on Benthic Macroinvertebrates Inhabiting the Green River, Massachusetts." Completion Report Project No. A-094. Water Resources Research Center. University of Massachusetts at Amherst.; Schueler, T.R. 1997. "Historical Change in a Warmwater Fish Community in an Urbanizing Watershed." Technical Note 93. Watershed Protection Techniques 2(4); May, C., R. Horner, J. Karr, B. Mar, and E. Welch. 1997. "Effects Of Urbanization On Small Streams In The Puget Sound Lowland Ecoregion." Watershed Protection Techniques 2(4)).

Pitt and others also described the receiving water effects on aquatic organisms associated with urban runoff (Pitt, R.E. 1995. "Biological Effects of Urban Runoff Discharges" In Stormwater Runoff and Receiving Systems: Impact, Monitoring, and Assessment, ed. E.E Herricks, Lewis Publishers; Crunkilton, R., J. Kleist, D. Bierman, J. Ramcheck, and W. DeVita. 1999. "Importance of Toxicity as a Factor Controlling the Distribution of Aquatic Organisms in an Urban

Stream."In Comprehensive Stormwater & Aquatic Ecosystem Management Conference Papers. Auckland, New Zealand).

In Wisconsin, runoff samples were collected from streets, parking lots, roofs, driveways, and lawns. Source areas were broken up into residential, commercial, and industrial. Geometric mean concentration data for residential areas included total solids of about 500-800 mg/L from streets and 600 mg/L from lawns. Fecal coliform data from residential areas ranged from 34,000 to 92,000 cfu/100 mL for streets and driveways. Contaminant concentration data from commercial and industrial source areas were lower for total solids and fecal coliform, but higher for total zinc (Bannerman, R.T., D.W. Owens, R.B. Dods, and N.J. Hornewer. 1993. "Sources of Pollutants in Wisconsin Stormwater." *Wat. Sci. Tech.* 28(3-5):241-59).

Bannerman, et al. also found that streets contribute higher loads of pollutants to urban storm water than any other residential development source. Two small urban residential watersheds were evaluated to determine that lawns and streets are the largest sources of total and dissolved phosphorus in the basins (Waschbusch, R.J., W.R. Selbig, and R.T. Bannerman. 1999. "Sources of Phosphorus in Stormwater and Street Dirt from Two Urban Residential Basins In Madison, Wisconsin, 1994-95." *Water Resources Investigations Report 99-4021*. U.S. Geological Survey). A number of other studies have indicated that urban roadways often contain significant quantities of metal elements and solids (Sansalone, J.J. and S.G. Buchberger. 1997. "Partitioning and First Flush of Metals in Urban Roadway Storm Water." *ASCE Journal of Environmental Engineering* 123(2); Sansalone, J.J., J.M. Koran, J.A. Smithson, and S.G. Buchberger. 1998. "Physical Characteristics of Urban Roadway Solids Transported During Rain Events" *ASCE Journal of Environmental Engineering* 124(5); Klein, L.A., M. Lang, N. Nash, and S.L. Kirschner. 1974. "Sources of Metals in New York City Wastewater" *J. Water Pollution Control Federation* 46(12):2653-62; Barrett, M.E, R.D. Zuber, E.R. Collins, J.F. Malina, R.J. Charbeneau, and G.H. Ward., 1993. "A Review and Evaluation of Literature Pertaining to the Quantity and Control of Pollution from Highway Runoff and Construction." *Research Report 1943-1*. Center for Transportation Research, University of Texas, Austin).

c. Beach Closings/Advisories

Urban wet weather flows have been recognized as the primary sources of estuarine pollution in coastal communities. Urban storm water runoff, sanitary sewer overflows, and combined sewer overflows have become the largest causes of beach closings in the United States in the past three years. Storm water discharges from urban areas not only pose a threat to the ecological environment, they also can substantially affect human health. A survey of coastal and Great Lakes communities reports that in 1998, more than 1,500 beach closings and advisories were associated with storm water runoff (Natural Resources Defense Council. 1999. "A Guide to Water Quality at Vacation Beaches" New York, NY). Other reports also document public health, shellfish bed, and habitat impacts from storm water runoff, including more than 823 beach closings/advisories issued in 1995 and more than 407 beach closing/advisories issued in 1996 due to urban runoff (Natural Resources Defense Council. 1996. *Testing the Waters Volume VI: Who Knows What You're Getting Into*. New York, NY; NRDC. 1997. *Testing the Waters Volume VII: How Does Your Vacation Beach Rate*. New York, NY; Morton, T. 1997. *Draining to the Ocean: The Effects of Stormwater Pollution on Coastal Waters*. American Oceans Campaign, Santa Monica, CA). The Epidemiological Study of Possible Adverse Health Effects of Swimming in Santa Monica Bay (Haile, R.W., et. al. 1996. "An Epidemiological Study of Possible Adverse Health Effects of Swimming in Santa Monica Bay." Final Report prepared for the Santa Monica Bay Restoration Project) concluded that there is a 57 percent higher rate of illness in swimmers who swim adjacent to storm drains than in swimmers who swim more than 400 yards away from storm drains. This and other studies document a relationship between gastrointestinal illness in swimmers and water quality, the latter of which can be heavily compromised by polluted storm water discharges.

2. Non-Storm Water Discharges Through Municipal Storm Sewers

Studies have shown that discharges from MS4s often include wastes and wastewater from non-storm water sources. Federal regulations (§122.26(b)(2)) define an illicit discharge as “* * * any discharge to an MS4 that is not composed entirely of storm water * * *,” with some exceptions. These discharges are “illicit” because municipal storm sewer systems are not designed to accept, process, or discharge such wastes. Sources of illicit discharges include, but are not limited to: sanitary wastewater; effluent from septic tanks; car wash, laundry, and other industrial wastewaters; improper disposal of auto and household toxics, such as used motor oil and pesticides; and spills from roadway and other accidents.

Illicit discharges enter the system through either direct connections (e.g., wastewater piping either mistakenly or deliberately connected to the storm drains) or indirect connections (e.g., infiltration into the MS4 from cracked sanitary systems, spills collected by drain outlets, and paint or used oil dumped directly into a drain). The result is untreated discharges that contribute high levels of pollutants, *68728 including heavy metals, toxics, oil and grease, solvents, nutrients, viruses and bacteria into receiving waterbodies. The NURP study, discussed earlier, found that pollutant levels from illicit discharges were high enough to significantly degrade receiving water quality and threaten aquatic, wildlife, and human health. The study noted particular problems with illicit discharges of sanitary wastes, which can be directly linked to high bacterial counts in receiving waters and can be dangerous to public health.

Because illicit discharges to MS4s can create severe widespread contamination and water quality problems, several municipalities and urban counties performed studies to identify and eliminate such discharges. In Michigan, the Ann Arbor and Ypsilanti water quality projects inspected 660 businesses, homes, and other buildings and identified 14 percent of the buildings as having improper storm sewer drain connections. The program assessment revealed that, on average, 60 percent of automobile-related businesses, including service stations, automobile dealerships, car washes, body shops, and light industrial facilities, had illicit connections to storm sewer drains. The program assessment also showed that a majority of the illicit discharges to the storm sewer system resulted from improper plumbing and connections, which had been approved by the municipality when installed (Washtenaw County Statutory Drainage Board. 1987. Huron River Pollution Abatement Program).

In addition, an inspection of urban storm water outfalls draining into Inner Grays, Washington, indicated that 32 percent of these outfalls had dry weather flows. Of these flows, 21 percent were determined to have pollutant levels higher than the pollutant levels expected in typical urban storm water runoff characterized in the NURP study (U.S. EPA. 1993. Investigation of Inappropriate Pollutant Entries Into Storm Drainage Systems—A User's Guide. EPA 600/R-92/238. Office of Research and Development. Washington, DC). That same document reports a study in Toronto, Canada, that found that 59 percent of outfalls from the MS4 had dry-weather flows. Chemical tests revealed that 14 percent of these dry-weather flows were determined to be grossly polluted.

Inflows from aging sanitary sewer collection systems are one of the most serious illicit discharge-related problems. Sanitary sewer systems frequently develop leaks and cracks, resulting in discharges of pollutants to receiving waters through separate storm sewers. These pollutants include sanitary waste and materials from sewer main construction (e.g., asbestos cement, brick, cast iron, vitrified clay). Municipalities have long recognized the reverse problem of storm water infiltration into sanitary sewer collection systems; this type of infiltration often disrupts the operation of the municipal sewage treatment plant.

The improper disposal of materials is another illicit discharge-related problem that can result in contaminated discharges from separate storm sewer systems in two ways. First, materials may be disposed of directly in a catch basin or other storm water conveyance. Second, materials disposed of on the ground may either drain directly to a storm sewer or be

washed into a storm sewer during a storm event. Improper disposal of materials to street catch basins and other storm sewer inlets often occurs when people mistakenly believe that disposal to such areas is an environmentally sound practice. Part of the confusion may occur because some areas are served by combined sewer systems, which are part of the sanitary sewer collection system, and people assume that materials discharged to a catch basin will reach a municipal sewage treatment plant. Materials that are commonly disposed of improperly include used motor oil; household toxic materials; radiator fluids; and litter, such as disposable cups, cans, and fast-food packages. EPA believes that there has been increasing success in addressing these problems through initiatives such as storm drain stenciling and recycling programs, including household hazardous waste special collection days.

Programs that reduce illicit discharges to separate storm sewers have improved water quality in several municipalities. For example, Michigan's Huron River Pollution Abatement Program found the elimination of illicit connections caused a measurable improvement in the water quality of the Washtenaw County storm sewers and the Huron River (Washtenaw County Statutory Drainage Board, 1987). In addition, an illicit detection and remediation program in Houston, Texas, has significantly improved the water quality of Buffalo Bayou. Houston estimated that illicit flows from 132 sources had a flow rate as high as 500 gal/min. Sources of the illicit discharges included broken and plugged sanitary sewer lines, illicit connections from sanitary lines to storm sewer lines, and floor drain connections (Glanton, T., M.T. Garrett, and B. Gobby. 1992. *The Illicit Connection: Is It the Problem?* *Wat. Env. Tech.* 4(9):63-8).

3. Construction Site Runoff

Storm water discharges generated during construction activities can cause an array of physical, chemical, and biological water quality impacts. Specifically, the biological, chemical, and physical integrity of the waters may become severely compromised. Water quality impairment results, in part, because a number of pollutants are preferentially absorbed onto mineral or organic particles found in fine sediment. The interconnected process of erosion (detachment of the soil particles), sediment transport, and delivery is the primary pathway for introducing key pollutants, such as nutrients (particularly phosphorus), metals, and organic compounds into aquatic systems (Novotny, V. and G. Chesters. 1989. "Delivery of Sediment and Pollutants from Nonpoint Sources: A Water Quality Perspective." *Journal of Soil and Water Conservation*, 44(6):568-76). Estimates indicate that 80 percent of the phosphorus and 73 percent of the Kjeldahl nitrogen in streams is associated with eroded sediment (U.S. Department of Agriculture. 1989. "The Second RCA Appraisal, Soil, Water and Related Resources on Nonfederal Land in the United States, Analysis of Condition and Trends." Cited in Fennessey, L.A.J., and A.R. Jarrett. 1994. "The Dirt in a Hole: a Review of Sedimentation Basins for Urban Areas and Construction Sites." *Journal of Soil and Water Conservation*, 49(4):317-23).

In watersheds experiencing intensive construction activity, the localized impacts of water quality may be severe because of high pollutant loads, primarily sediments. Siltation is the largest cause of impaired water quality in rivers and the third largest cause of impaired water quality in lakes (U.S. EPA, 1998). The 1996 305(b) report also found that construction site discharges were a source of pollution in: 6 percent of impaired rivers; 11 percent of impaired lakes, ponds, and reservoirs; and 11 percent of impaired estuaries. Introduction of coarse sediment (coarse sand or larger) or a large amount of fine sediment is also a concern because of the potential of filling lakes and reservoirs (along with the associated remediation costs for dredging), as well as clogging stream channels (e.g., Paterson, R.G., M.I. Luger, E.J. Burby, E.J. Kaiser, H.R. Malcolm, and A.C. Beard. 1993. "Costs and Benefits of Urban Erosion and Sediment Control: North Carolina Experience." *Environmental Management* 17(2):167-78). Large inputs of coarse sediment into stream channels initially will reduce stream depth and minimize habitat complexity by filling in pools (U.S. EPA. 1991. *Monitoring Guidelines to Evaluate Effects of Forestry Activities on Streams in the Pacific Northwest and Alaska*. EPA 910/9-91-001. Seattle, WA). In addition, studies have shown that stream reaches affected by construction activities often extend well downstream of the construction site. For example, between 4.8 and 5.6 kilometers of stream below construction sites in

the Patuxent River watershed were observed to be impacted by sediment inputs (Fox, H.L. 1974. "Effects of Urbanization on the Patuxent River, with Special Emphasis on Sediment Transport, Storage, and Migration." Ph.D. dissertation. Johns Hopkins University, Baltimore, MD. As Cited in Klein, R.D. 1979. "Urbanization and Stream Quality Impairment." Water Resources Bulletin 15(4): 948-63).

A primary concern at most construction sites is the erosion and transport process related to fine sediment because rain splash, rills (i.e., a channel small enough to be removed by normal agricultural practices and typically less than 1-foot deep), and sheetwash encourage the detachment and transport of this material to waterbodies (Storm Water Quality Task Force. 1993. California Storm Water Best Management Practice Handbooks—Construction Activity. Oakland, CA: Blue Print Service). Construction sites also can generate other pollutants associated with onsite wastes, such as sanitary wastes or concrete truck washout.

Although streams and rivers naturally carry sediment loads, erosion from construction sites and runoff from developed areas can elevate these loads to levels well above those in undisturbed watersheds. It is generally acknowledged that erosion rates from construction sites are much greater than from almost any other land use (Novotny, V. and H. Olem. 1994. Water Quality: Prevention, Identification, and Management of Diffuse Pollution. New York: Van Nostrand Reinhold). Results from both field studies and erosion models indicate that erosion rates from construction sites are typically an order of magnitude larger than row crops and several orders of magnitude greater than rates from well-vegetated areas, such as forests or pastures (USDA. 1970. "Controlling Erosion on Construction Sites." Agriculture Information Bulletin, Washington, DC; Meyer, L.D., W.H. Wischmeier, and W.H. Daniel. 1971. "Erosion, Runoff and Revegetation of Denuded Construction Sites." Transactions of the ASAE 14(1):138-41; Owen, O.S. 1975. Natural Resource Conservation. New York: MacMillan. As cited in Paterson, et al., 1993).

A recent review of the efficiency of sediment basins indicated that inflows from 12 construction sites had a mean TSS concentration of about 4,500 mg/L (Brown, W.E. 1997. "The Limits of Settling." Technical Note No. 83. Watershed Protection Techniques 2(3)). In Virginia, suspended sediment concentrations from housing construction sites were measured at 500-3,000 mg/L, or about 40 times larger than the concentrations from already-developed urban areas (Kuo, C.Y. 1976. "Evaluation of Sediment Yields Due to Urban Development." Bulletin No. 98. Virginia Water Resources Research Center, Virginia Polytechnic Institute and State University, Blacksburg, VA).

Similar impacts from storm water runoff have been reported in a number of other studies. For example, Daniel, et al., monitored three residential construction sites in southeastern Wisconsin and determined that annual sediment yields were more than 19 times the yields from agricultural areas (Daniel, T.C.; D. McGuire, D. Stoffel, and B. Miller. 1979. "Sediment and Nutrient Yield from Residential Construction Sites" Journal of Environmental Quality 8(3):304-08). Daniel, et al., identified total storm runoff, followed by peak storm runoff, as the most influential factors controlling the sediment loadings from residential construction sites. Daniel, et al., also found that suspended sediment concentrations were 15,000-20,000 mg/L in moderate events and up to 60,000 mg/L in larger events.

Wolman and Schick (Wolman, M.G. and A.P. Schick. 1967. "Effects of Construction on Fluvial Sediment, Urban and Suburban Areas of Maryland." Water Resources Research 3(2): 451-64) studied the impacts of development on fluvial systems in Maryland and determined that sediment yields in areas undergoing construction were 1.5 to 75 times greater than detected in natural or agricultural catchments. The authors summarize the potential impacts of construction on sediment yields by stating that "the equivalent of many decades of natural or even agricultural erosion may take place during a single year from areas cleared for construction" (Wolman and Schick, 1967).

A number of studies have examined the effects of road construction on erosion rates and sediment yields. A highway

construction project in West Virginia disturbed only 4.2 percent of a 4.72-square-mile basin, but resulted in a three-fold increase in suspended sediment yields (Downs, S.C. and D.H. Appel. 1986. Progress Report on the Effects of Highway Construction on Suspended-Sediment Discharge in the Coal River and Trace Fork, West Virginia, 1975-81. USGS Water Resources Investigations Report 84-4275. Charlestown, WV). During the largest storm event, it was estimated that 80 percent of the sediment in the stream originated from the construction site. As is often the case, the increase in suspended sediment load could not be detected further downstream, where the drainage area was more than 50 times larger (269 square miles).

Another study evaluated the effect of 290 acres of highway construction on watersheds ranging in size from 5 to 38 square miles. Suspended sediment loads in the smallest watershed increased by 250 percent, and the estimated sediment yield from the construction area was 37 tons/acre during a 2-year period (Hainly, R.A. 1980. The Effects of Highway Construction on Sediment Discharge into Blockhouse Creek and Stream Valley Run, Pennsylvania. USGS Water Resources Investigations Report 80-68. Harrisburg, PA). A more recent study in Hawaii showed that highway construction increased suspended sediment loads by 56 to 76 percent in three small (1 to 4 square mile) basins (Hill, B.R. 1996. Streamflow and Suspended-Sediment Loads Before and During Highway Construction, North Halawa, Haiku, and Kamooalii Drainage Basins, Oahu, Hawaii, 1983-91. USGS Water Resources Investigations Report 96-4259. Honolulu, HI). A 1970 study determined that sediment yields from construction areas can be as much as 500 times the levels detected in rural areas (National Association of Counties Research Foundation. 1970. Urban Soil Erosion and Sediment Control. Water Pollution Control Research Series, Program #15030 DTL. Federal Water Quality Administration, U.S. Department of Interior. Washington, DC)

Yorke and Herb (Yorke, T.H., and W.J. Herb. 1978. Effects of Urbanization on Streamflow and Sediment Transport in the Rock Creek and Anacostia River Basins, Montgomery County, Maryland, 1962-74. USGS Professional Paper 1003, Washington, DC) evaluated nine subbasins in the Maryland portion of the Anacostia watershed for more than a decade in an effort to define the impacts of changing land use/land cover on sediment in runoff. Average annual suspended sediment yields for construction sites ranged from 7 to 100 tons/acre. Storm water discharges from construction sites that occur when the land area is disturbed (and prior to *68730 surface stabilization) can significantly impact designated uses. Examples of designated uses include public water supply, recreation, and propagation of fish and wildlife. The siltation process described previously can threaten all three designated uses by (1) depositing high concentrations of pollutants in public water supplies; (2) decreasing the depth of a waterbody, which can reduce the volume of a reservoir or result in limited use of a water body by boaters, swimmers, and other recreational enthusiasts; and (3) directly impairing the habitat of fish and other aquatic species, which can limit their ability to reproduce.

Excess sediment can cause a number of other problems for waterbodies. It is associated with increased turbidity and reduced light penetration in the water column, as well as more long-term effects associated with habitat destruction and increased difficulty in filtering drinking water. Numerous studies have examined the effect that excess sediment has on aquatic ecosystems. For example, sediment from road construction activity in Northern Virginia reduced aquatic insect and fish communities by up to 85 percent and 40 percent, respectively (Reed, J.R. 1997. "Stream Community Responses to Road Construction Sediments." Bulletin No. 97. Virginia Water Resources Research Center, Virginia Polytechnic Institute, Blacksburg, VA. As cited in Klein, R.D. 1990. A Survey of Quality of Erosion and Sediment Control and Storm Water Management in the Chesapeake Bay Watershed. Annapolis, MD: Chesapeake Bay Foundation). Other studies have shown that fine sediment (fine sand or smaller) adversely affects aquatic ecosystems by reducing light penetration, impeding sight-feeding, smothering benthic organisms, abrading gills and other sensitive structures, reducing habitat by clogging interstitial spaces within a streambed, and reducing the intergravel dissolved oxygen by reducing the permeability of the bed material (Everest, F.H., J.C. Beschta, K.V. Scrivener, J.R. Koski, J.R. Sedell, and C.J. Cederholm. 1987. "Fine Sediment and Salmonid Production: A Paradox." Streamside Management: Forestry and Fishery Interactions, Con-

tract No. 57, Institute of Forest Resources, University of Washington, Seattle, WA). For example, 4.8 and 5.6 kilometers of stream below construction sites in the Patuxent River watershed in Maryland were found to have fine sediment amounts 15 times greater than normal (Fox, 1974. As cited in Klein, 1979). Benthic organisms in the streambed can be smothered by sediment deposits, causing changes in aquatic flora and fauna, such as fish species composition (Wolman and Schick, 1967). In addition, the primary cause of coral reef degradation in coastal areas is attributed to land disturbances and dredging activities due to urban development (Rogers, C.S. 1990. "Responses of Coral Reefs and Reef Organizations to Sedimentation." Marine Ecology Progress Series, 62:185-202).

EPA believes that the water quality impact from small construction sites is as high as or higher than the impact from larger sites on a per acre basis. The concentration of pollutants in the runoff from smaller sites is similar to the concentrations in the runoff from larger sites. The proportion of sediment that makes it from the construction site to surface waters is likely the same for larger and smaller construction sites in urban areas because the runoff from either site is usually delivered directly to the storm drain network where there is no opportunity for the sediment to be filtered out.

The expected contribution of total sediment yields from small sites depends, in part, on the extent to which erosion and sedimentation controls are being applied. Because current storm water regulations are more likely to require erosion and sedimentation controls on larger sites in urban areas, smaller construction sites that lack such programs are likely to contribute a disproportionate amount of the total sediment from construction activities (MacDonald, L.H. 1997. Technical Justification for Regulating Construction Sites 1-5 Acres in Size. Unpublished report submitted to U.S. EPA, Washington, DC). Smaller construction sites are less likely to have an effective plan to control erosion and sedimentation, are less likely to properly implement and maintain their plans, and are less likely to be inspected (Brown, W. and D. Caraco. 1997. Controlling Storm Water Runoff Discharges from Small Construction Sites: A National Review. Submitted to Office of Wastewater Management, U.S. EPA, Washington, DC., by the Center for Watershed Protection, Silver Spring, MD). The proportion of sediment that makes it from the construction site to surface waters is likely the same for larger and smaller construction sites in urban areas because the runoff from either site is usually delivered directly to the storm drain network, where there is no opportunity for the sediment to be filtered out.

To confirm its belief that sediment yields from small sites are as high as or higher than the 20 to 150 tons/acre/year measured from larger sites, EPA gave a grant to the Dane County, Wisconsin Land Conservation Department, in cooperation with the USGS, to evaluate sediment runoff from two small construction sites. The first was a 0.34 acre residential lot and the second was a 1.72 acre commercial office development. Runoff from the sites was channeled to a single discharge point for monitoring. Each site was monitored before, during, and after construction.

The Dane County study found that total solids concentrations from these small sites are similar to total solids concentrations from larger construction sites. Results show that for both of the study sites, total solids and suspended solids concentrations were significantly higher during construction than either before or after construction. For example, preconstruction total solids concentrations averaged 642 mg/L during the period when ryegrass was established, active construction total solids concentrations averaged 2,788 mg/L, and post-construction total solids concentrations averaged 132 mg/L (on a pollutant load basis, this equaled 7.4 lbs preconstruction, 35 lbs during construction, and 0.6 lbs post-construction for total solids). While this site was not properly stabilized before construction, after construction was complete and the site was stabilized, post-construction concentrations were more than 20 times less than during construction. The results were even more dramatic for the commercial site. The commercial site had one preconstruction event, which resulted in total solids concentrations of 138 mg/L, while active construction averaged more than 15,000 mg/L and post-construction averaged only 200 mg/L (on a pollutant load basis, this equaled 0.3 lbs preconstruction, 490 lbs during construction, and 13.4 lbs post-construction for total solids). The active construction period resulted in more than 75 times more sediment than either before or after construction (Owens, D.W., P. Jopke, D.W. Hall, J. Balousek and A. Roa.

1999. "Soil Erosion from Small Construction Sites." Draft USGS Fact Sheet. USGS and Dane County Land Conservation Department, WI). The total solids concentrations from these small sites in Wisconsin are similar to total solids concentrations from larger construction sites. For example, a study evaluating the effects of highway construction in West Virginia found that a small storm produced a sediment concentration of 7,520 mg/L (Downs and Appel, 1986).

One important aspect of small construction sites is the number of small sites relative to larger construction sites *68731 and total land area within the watershed. Brown and Caraco surveyed 219 local jurisdictions to assess erosion and sediment control (ESC) programs. Seventy respondents provided data on the number of ESC permits for construction sites smaller than 5 acres. In 27 cases (38 percent of the respondents), more than three-quarters of the permits were for sites smaller than 5 acres; in another 18 cases (26 percent), more than half of the permits were for sites smaller than 5 acres.

In addition, data on the total acreage disturbed by smaller construction sites have been collected recently in two States (MacDonald, 1997). The most recent and complete data set is the listing of the disturbed area for each of the 3,831 construction sites permitted in North Carolina for 1994-1995 and 1995-1996. Nearly 61 percent of the sites that were 1 acre or larger were between 1.0 and 4.9 acres in size. This proportion was consistent between years. Data showed that this range of sites accounted for 18 percent of the total area disturbed by construction. The values showed very little variation between the 2 years of data. The total disturbed area for all sites over this 2-year period was nearly 33,000 acres, or about 0.1 percent of the total area of North Carolina.

EPA estimates that construction sites disturbing greater than 5 acres disturb 2.1-million acres of land (78.1 percent of the total) while sites disturbing between 1 and 5 acres of land disturb 0.5-million acres of land (19.4 percent). The remaining sites on less than 1 acres of land disturb 0.07-million acres of land (only 2.5 percent of the total). Given the high erosion rates associated with most construction sites, small construction sites can be a significant source of water quality impairment, particularly in small watersheds that are undergoing rapid development. Exempting sites under 1 acre will exclude only about 2.5 percent of acreage from program coverage, but will exclude a far higher number of sites, approximately 25 percent.

Several studies have determined that the most effective construction runoff control programs rely on local plan review and field enforcement (Paterson, R. G., 1994, "Construction Practices: the Good, the Bad, and the Ugly," Watershed Protection Techniques 1(3)). In his review, Paterson suggests that, given the critical importance of field implementation of erosion and sediment control programs and the apparent shortcomings that exist, much more focus should be given to plan implementation.

Several commenters disputed the data presented in the proposed rule for storm water discharges from smaller construction sites. One commenter stated that EPA has not adequately explained the basis for permitting construction activity down to 1 disturbed acre. Another commenter stated that EPA did not present sufficient data on water quality impacts from construction sites disturbing less than 5 acres.

EPA believes that the data presented above sufficiently support nationwide designation of storm water discharges from construction activity disturbing more than 1 acre. Based on total disturbed land area within a watershed, the cumulative effects of numerous small construction sites can have impacts similar to those of larger sites in a particular area. In addition, waivers for storm water discharges from smaller construction activity will exclude sites not expected to impair water quality. EPA will continue to collect water quality data on construction site storm water runoff.

C. Statutory Background

In 1972, Congress enacted the CWA to prohibit the discharge of any pollutant to waters of the United States from a point

source unless the discharge is authorized by an NPDES permit. Congress added CWA section 402(p) in 1987 to require implementation of a comprehensive program for addressing storm water discharges. Section 402(p)(1) required EPA or NPDES-authorized States or Tribes to issue NPDES permits for the following five classes of storm water discharges composed entirely of storm water ("storm water discharges") specifically listed under section 402(p)(2):

- (A) a discharge subject to an NPDES permit 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 that an NPDES permitting authority determines to be contributing to a violation of a water quality standard or a significant contributor of pollutants to the waters of the United States.

Section 402(p)(3)(A) requires storm water discharges associated with industrial activity to meet all applicable provisions of section 402 and section 301 of the CWA, including technology-based requirements and any more stringent requirements necessary to meet water quality standards. Section 402(p)(3)(B) establishes NPDES permit standards for discharges from municipal separate storm sewer systems, or MS4s. NPDES permits for discharges from MS4s (1) may be issued on a system or jurisdiction-wide basis, (2) must include a requirement to effectively prohibit non-storm water discharges into the storm sewers, and (3) must require controls to reduce pollutant discharges to the maximum extent practicable, including best management practices, and other provisions as the Administrator or the States determine to be appropriate for the control of such pollutants. At this time, EPA determines that water quality-based controls, implemented through the iterative processes described today are appropriate for the control of such pollutants and will result in reasonable further progress towards attainment of water quality standards. See sections II.L and II.H.3 of the preamble.

In CWA section 402(p)(4), Congress established statutory deadlines for the initial steps in implementing the NPDES program for storm water discharges. This section required development of NPDES permit application regulations, submission of NPDES permit applications, issuance of NPDES permits for sources identified in section 402(p)(2), and compliance with NPDES permit conditions. In addition, this section required industrial facilities and large MS4s to submit NPDES permit applications for storm water discharges by February 4, 1990. Medium MS4s were to submit NPDES permit applications by February 4, 1992. EPA and authorized NPDES States were prohibited from requiring an NPDES permit for any other storm water discharges until October 1, 1994.

Section 402(p)(5) required EPA to conduct certain studies and submit a report to Congress. This requirement is discussed in the following section.

Section 402(p)(6) requires EPA, in consultation with States and local officials, to issue regulations for the designation of additional storm water discharges to be regulated to protect water quality. It also requires EPA to extend the existing storm water program to regulate newly designated sources. At a minimum, the extension must establish (1) priorities, (2) requirements for State storm water management programs, and (3) expeditious deadlines. Section 402(p)(6) specifies that the program may include performance standards, guidelines, guidance, and management practices and treatment requirements, as *68732 appropriate. Today's rule implements this section.

D. EPA's Reports to Congress

Under CWA section 402(p)(5), EPA, in consultation with the States, was required to conduct a study. The study was to identify unregulated sources of storm water discharges, determine the nature and extent of pollutants in such discharges, and establish procedures and methods to mitigate the impacts of such discharges on water quality. Section 402(p)(5) also required EPA to report the results of the first two components of that study to Congress by October 1, 1988, and the final report by October 1, 1989.

In March 1995, EPA submitted to Congress a report that reviewed and analyzed the nature of storm water discharges from municipal and industrial facilities that were not already regulated under the initial NPDES regulations for storm water (U.S. Environmental Protection Agency, Office of Water. 1995. Storm Water Discharges Potentially Addressed by Phase II of the National Pollutant Discharge Elimination System Storm Water Program: Report to Congress. Washington, D.C. EPA 833-K-94-002) ("Report"). The Report also analyzed associated pollutant loadings and water quality impacts from these unregulated sources. Based on identification of unregulated municipal sources and analysis of information on impacts of storm water discharges from municipal sources, the Report recommended that the NPDES program for storm water focus on the 405 "urbanized areas" identified by the Bureau of the Census. The Report further found that a number of discharges from unregulated industrial facilities warranted further investigation to determine the need for regulation. It classified these unregulated industrial discharges in two groups: Group A and Group B. Group A comprised sources that may be considered a high priority for inclusion in the NPDES program for storm water because discharges from these sources are similar or identical to already regulated sources. These "look alike" storm water discharge sources were not covered in the initial NPDES regulations for storm water due to the language used to define "associated with industrial activity." In the initial regulations for storm water, "industrial activity" is identified using Standard Industrial Classification (SIC) codes. The use of SIC codes led to incomplete categorization of industrial activities with discharges that needed to be regulated to protect water quality. Group B consisted of 18 industrial sectors, which included sources that EPA expected to contribute to storm water contamination due to the activities conducted and pollutants anticipated onsite (e.g., vehicle maintenance, machinery and electrical repair, and intensive agricultural activities).

EPA reported on the latter component of the section 402(p)(5) study via President Clinton's Clean Water Initiative, which was released on February 1, 1994 (U.S. Environmental Protection Agency, Office of Water. 1994. President Clinton's Clean Water Initiative. Washington, D.C. EPA. 800-R-94-001) ("Initiative"). The Initiative addressed a number of issues associated with NPDES requirements for storm water discharges and proposed: (1) establishing a phased compliance with a water quality standards approach for discharges from municipal separate storm sewer systems with priority on controlling discharges from municipal growth and development areas, (2) clarifying that the maximum extent practicable standard should be applied in a site-specific, flexible manner, taking into account cost considerations as well as water quality effects; (3) providing an exemption from the NPDES program for storm water discharges from industrial facilities with no activities or significant materials exposed to storm water, (4) providing extensions to the statutory deadlines to complete implementation of the NPDES program for the storm water program, (5) targeting urbanized areas for the requirements in the NPDES program for storm water, and (6) providing control of discharges from inactive and abandoned mines located on Federal lands in a more targeted, flexible manner. Additionally, prior to promulgation of today's rule, section 431 of the Agency's Appropriation Act for FY 2000 (Departments of Veterans Affairs and Housing and Urban Development and Independent Agencies Appropriations Act of 2000, Public Law 106-74, section 432 (1999)) directed EPA to report on certain matters to be covered in today's rule. That report supplements the study required by CWA Section 402(p)(5). EPA is publishing the availability of that report elsewhere in this issue of the Federal Register.

Several commenters asserted that the Report to Congress is an inadequate basis for the designation and regulation of sources covered under today's final rule, specifically the nationwide designation of small municipal separate storm sewer systems within urbanized areas and construction activities disturbing between one and five acres.

EPA believes that it has developed an adequate record for today's regulation both through the Report to Congress and the Clean Water Initiative and through more recent activities, including the FACA Subcommittee process, regulatory notices and evaluation of comments, and recent research and analysis. EPA does not interpret the congressional reporting requirements of CWA section 402(p)(5) to be the sole basis for determining sources to be regulated under today's final rule.

EPA's decision to designate on a national basis small MS4s in urbanized areas is supported by studies that clearly show a direct correlation between urbanization and adverse water quality impacts from storm water discharges. (Schueler, T. 1987. Controlling Urban Runoff: A Practical Manual for Planning & Designing Urban BMPs. Metropolitan Washington Council of Governments). "Urbanized areas"—within which all small MS4s would be covered—represent the most intensely developed and dense areas of the Nation. They constitute only two percent of the land area but 63 percent of the total population. See section I.B.1, Urban Development, above, for studies and assessments of the link between urban development and storm water impacts on water resources.

Commenters argued that the Report to Congress does not address storm water discharges from construction sites. They further argued that the designation of small construction sites per today's final rule goes beyond the President's 1994 Initiative because the Initiative only recommends requiring municipalities to implement a storm water management program to control unregulated storm water sources, "including discharges from construction of less than 5 acres, which are part of growth, development and significant redevelopment activities." They point out that the Initiative provides that unregulated storm water discharges not addressed through a municipal program would not be covered by the NPDES program. Commenters assert that EPA has not developed a record independent of its section 402(p)(5) studies that demonstrates the necessity of regulating under a separate NPDES permit storm water discharges from smaller construction sites "to protect water quality." EPA disagrees.

EPA evaluated the nature and extent of pollutants from construction site sources in a process that was separate and distinct from the development of the Report to Congress. Today's decision to regulate certain storm water discharges from construction sites disturbing less than 5 acres arose in part *68733 out of the 9th Circuit remand in NRDC v. EPA, 966 F.2d 1292 (9th Cir. 1992). In that case, the court remanded portions of the Phase I storm water regulations related to discharges from construction sites. Those regulations define "storm water discharges associated with industrial activity" to include only those storm water discharges from construction sites disturbing 5 acres or more of total land area (see 40 CFR 122.26(b)(14)(x)). In its decision, the court concluded that the 5-acre threshold was improper because the Agency had failed to identify information "to support its perception that construction activities on less than 5 acres are non-industrial in nature" (966 F.2d at 1306). The court remanded the below 5 acre exemption to EPA for further proceedings (966 F.2d at 1310).

In a Federal Register notice issued on December 18, 1992, EPA noted that it did not believe that the Court's decision had the effect of automatically subjecting small construction sites to the existing application requirements and deadlines. EPA believed that additional notice and comment were necessary to clarify the status of these sites. The information received during the notice and comment process and additional research, as discussed in section I.B.3 Construction Site Runoff, formed the basis for the designation of construction activity disturbing between one and five acres on a nationwide basis. EPA's objectives in today's proposal include an effort to (1) address the 9th Circuit remand, (2) address water quality concerns associated with construction activities that disturb less than 5 acres of land, and (3) balance conflicting recommendations and concerns of stakeholders.

One commenter noted that EPA's proposal would fail to regulate industrial facilities identified as Group A and Group B in the March 1995 Report to Congress. EPA is relying on the analysis in the Report, which provided that the recommend-

ation for coverage was meant as guidance and was not intended to be an identification of specific categories that must be regulated under Section 402(p)(6). Report to Congress, p. 4-1. The Report recognized the existence of limited data on which to base loadings estimates to support the nationwide designation of individual or categories of sources. Report to Congress, p. 4-44. Furthermore, during FACA Subcommittee discussion, EPA continued to urge stakeholders to provide further data relating to industrial and commercial storm water sources, which EPA did not receive. EPA concluded that, due to insufficient data, these sources were not appropriate for nationwide designation at this time.

E. Industrial Facilities Owned or Operated by Small Municipalities

Congress granted extensions to the NPDES permit application process for selected classes of storm water discharges associated with industrial activity. On December 18, 1991, Congress enacted the Intermodal Surface Transportation Efficiency Act (ISTEA), which postponed NPDES permit application deadlines for most storm water discharges associated with industrial activity at facilities that are owned or operated by small municipalities. EPA and States authorized to administer the NPDES program could not require any municipality with a population of less than 100,000 to apply for or obtain an NPDES permit for any storm water discharge associated with industrial activity prior to October 1, 1992, except for storm water discharges from airports, power plants, or uncontrolled sanitary landfills. See 40 CFR 122.26(e)(1); 57 FR 11524, April 2, 1992 (reservation of NPDES application deadlines for ISTEA facilities).

The facilities exempted by ISTEA discharge storm water in the same manner (and are expected to use identical processes and materials) as the industrial facilities regulated under the 1990 Phase I regulations. Accordingly, these facilities pose similar water quality problems. The extended moratorium for these facilities was necessary to allow municipalities additional time to comply with NPDES requirements. The proposal for today's rule would have maintained the existing deadline for seeking coverage under an NPDES permit (August 7, 2001).

Today's rule changes the permit application deadline for such municipally owned or operated facilities discharging industrial storm water to make it consistent with the application date for small regulated MS4s. Because EPA missed its March 1999 deadline for promulgating today's rule, and the deadline for MS4s to submit permit applications has been extended to three years and 90 days from the date of this notice, the deadline for permitting ISTEA sources has been similarly extended. The permitting of these sources is discussed below in section "II.3. ISTEA Sources."

F. Related Nonpoint Source Programs

Today's rule addresses point source discharges of storm water runoff and non-storm water discharges into MS4s. Many of these sources have been addressed by nonpoint source control programs, which are described briefly below.

In 1987, section 319 was added to the CWA to provide a framework for funding State and local efforts to address pollutants from nonpoint sources not addressed by the NPDES program. To obtain funding, States are required to submit Nonpoint Source Assessment Reports identifying State waters that, without additional control of nonpoint sources of pollution, could not reasonably be expected to attain or maintain applicable water quality standards or other goals and requirements of the CWA. States are also required to prepare and submit for EPA approval a statewide Nonpoint Source Management Program for controlling nonpoint source water pollution to navigable waters within the State and improving the quality of such waters. State program submittals must identify specific best management practices (BMPs) and measures that the State proposes to implement in the first four years after program submission to reduce pollutant loadings from identified nonpoint sources to levels required to achieve the stated water quality objectives.

State nonpoint source programs funded under section 319 can include both regulatory and nonregulatory State and local approaches. Section 319(b)(2)(B) specifies that a combination of "nonregulatory or regulatory programs for enforcement,

technical assistance, financial assistance, education, training, technology transfer, and demonstration projects' may be used, as necessary, to achieve implementation of the BMPs or measures identified in the section 319 submittals.

Section 6217 of the Coastal Zone Act Reauthorization Amendments (CZARA) of 1990 provides that States with approved coastal zone management programs must develop coastal nonpoint pollution control programs and submit them to EPA and the National Oceanic and Atmospheric Administration (NOAA) for approval. Failure to submit an approvable program will result in a reduction of Federal grants under both the Coastal Zone Management Act and section 319 of the CWA.

State coastal nonpoint pollution control programs under CZARA must include enforceable policies and mechanisms that ensure implementation of the management measures throughout the coastal management area. EPA issued Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters under section 6217(g) in *68734 January 1993. The guidance identifies management measures for five major categories of nonpoint source pollution. The management measures reflect the greatest degree of pollutant reduction that is economically achievable for each of the listed sources. These management measures provide reference standards for the States to use in developing or refining their coastal nonpoint programs. A few management measures, however, contain quantitative standards that specify pollutant loading reductions. For example, the New Development Management Measure, which is applicable to construction in urban areas, requires (1) that by design or performance the average annual total suspended solid loadings be reduced by 80 percent and (2) to the extent practicable, that the pre-development peak runoff rate and average volume be maintained.

EPA and NOAA published Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance (1993). The document clarifies that States generally must implement management measures for each source category identified in the EPA guidance developed under section 6217(g). Coastal Nonpoint Pollution Control Programs are not required to address sources that are clearly regulated under the NPDES program as point source discharges. Specifically, such programs would not need to address small MS4s and construction sites covered under NPDES storm water permits (both general and individual).

II. Description of Program

A. Overview

1. Objectives EPA Seeks To Achieve in Today's Rule

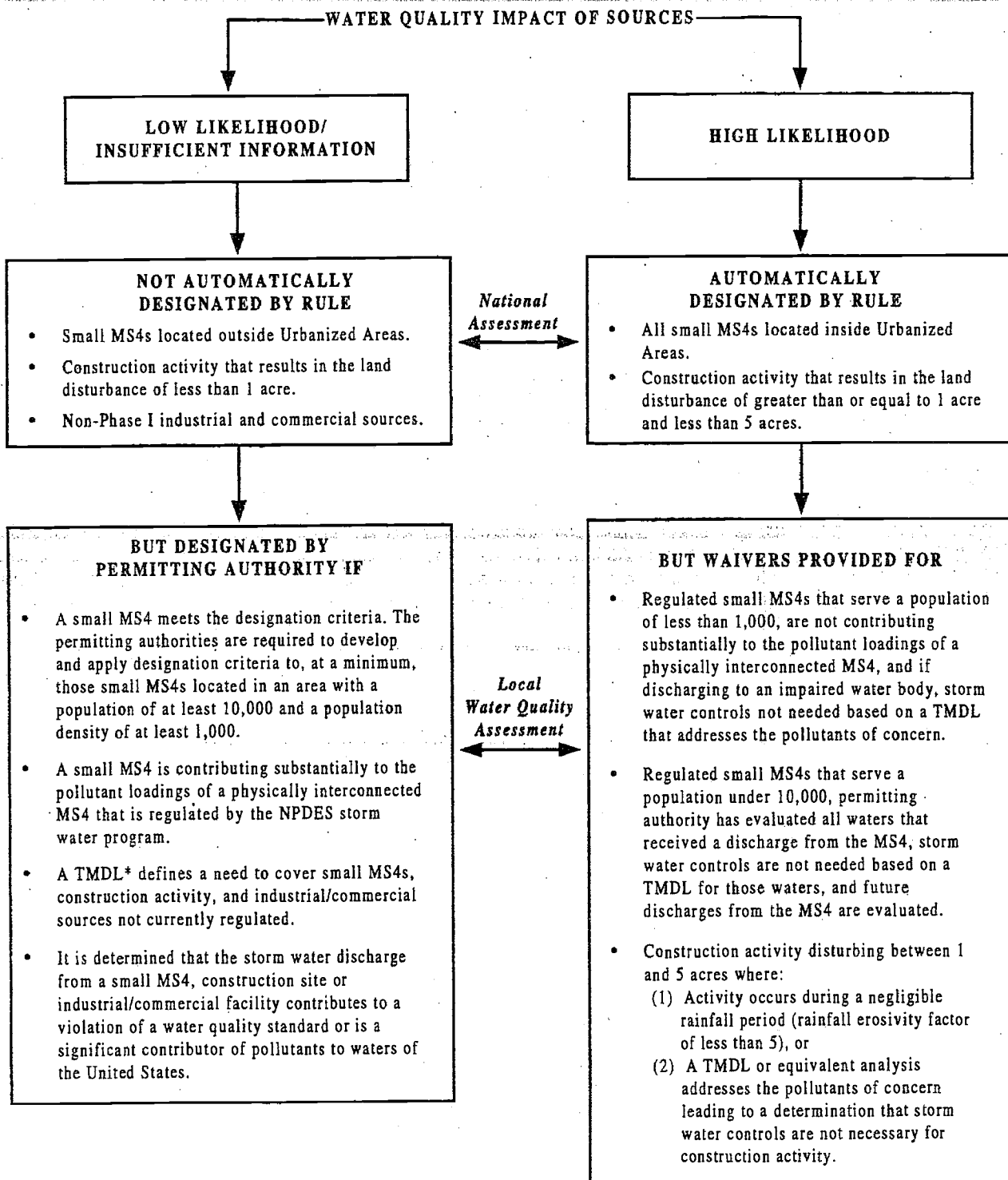
EPA seeks to achieve several objectives in today's final rule. First, EPA is implementing the requirement under CWA section 402(p)(6) to provide a comprehensive storm water program that designates and controls additional sources of storm water discharges to protect water quality. Second, EPA is addressing storm water discharges from the activities exempted under the 1990 storm water permit application regulations that were remanded by the Ninth Circuit Court of Appeals in *NRDC v. EPA*, 966 F.2d 1292 (9th Circuit, 1992). These are construction activities disturbing less than 5 acres and so-called "light" industrial activities not exposed to storm water (see discussion of "no exposure" below). Third, EPA is providing coverage for the so-called "donut holes" created by the existing NPDES storm water program. Donut holes are geographic gaps in the NPDES storm water program's regulatory scheme. They are MS4s located within areas covered by the existing NPDES storm water program, but not currently addressed by the storm water program because it is based on political jurisdictions. Finally, EPA also is trying to promote watershed planning as a framework for implementing water quality programs where possible.

Although EPA had options for different approaches (see alternatives discussed in the January 9, 1998, proposed regula-

tion), EPA believes it can best achieve its objectives through flexible innovations within the framework of the NPDES program. Unlike the interim section 402(p)(6) storm water regulations EPA promulgated in 1995, EPA no longer designates all of the unregulated storm water discharges for nationwide coverage under the NPDES program for storm water. The framework for today's final rule is one that balances automatic designation on a nationwide basis and locally-based designation and waivers. Nationwide designation applies to those classes or categories of storm water discharges that EPA believes present a high likelihood of having adverse water quality impacts, regardless of location. Specifically, today's rule designates discharges from small MS4s located in urbanized areas and storm water discharges from construction activities that result in land disturbance equal to or greater than one and less than five acres. As noted under Section I.B., Water Quality Concerns/Environmental Impact Studies and Assessments, these two categories of storm water sources, when unregulated, tend to cause significant adverse water quality impacts. Additional sources are not covered on a nationwide basis either because EPA currently lacks information indicating a consistent potential for adverse water quality impact or because EPA believes that the likelihood of adverse impacts on water quality is low, with some localized exceptions. Additional individual sources or categories of storm water discharges could, however, be covered under the program through a local designation process. A permitting authority may designate additional small MS4s after developing designation criteria and applying those criteria to small MS4s located outside of an urbanized area, in particular those with a population of 10,000 or more and a population density of at least 1,000. Exhibit 1 illustrates the designation framework for today's final rule.

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EXHIBIT 1.—PHASE II SOURCE DECISIONS



*EPA will continue to require States to comply with their Total Maximum Daily Load (TMDL) implementation schedules.

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*68736 The designation framework for today's final rule provides a significant degree of flexibility. The proposed provisions for nationwide designation of storm water discharges from construction and from small MS4s in urbanized areas allowed for a waiver of applicable requirements based on appropriate water quality conditions. Today's final rule expands and simplifies those waivers.

The permitting authority may waive the requirement for a permit for any small MS4 serving a jurisdiction with a population of less than 1,000 unless storm water controls are needed because the MS4 is contributing to a water quality impairment. The permitting authority may also waive permit coverage for MS4s serving a jurisdiction with a population of less than 10,000 if all waters that receive a discharge from the MS4 have been evaluated and discharges from the MS4 do not significantly contribute to a water quality impairment or have the potential to cause an impairment. Today's rule also allows States with a watershed permitting approach to phase in coverage for MS4s in jurisdictions with populations under 10,000.

Water quality conditions are also the basis for a waiver of requirements for storm water discharges from construction activities disturbing between one and five acres. For these small construction sources, the rule provides significant flexibility for waiving otherwise applicable regulatory requirements where a permitting authority determines, based on water quality and watershed considerations, that storm water discharge controls are not needed.

Coverage can be extended to municipal and construction sources outside the nationwide designated classes or categories based on watershed and case-by-case assessments. For the municipal storm water program, today's rule provides broad discretion to NPDES permitting authorities to develop and implement criteria for designating storm water discharges from small MS4s outside of urbanized areas. Other storm water discharges from unregulated industrial, commercial, and residential sources will not be subject to the NPDES permit requirements unless a permitting authority determines on a case-by-case basis (or on a categorical basis within identified geographic areas such as a State or watershed) that regulatory controls are needed to protect water quality. EPA believes that the flexibility provided in today's rule facilitates watershed planning.

2. General Requirements for Regulated Entities Under Today's Rule

As previously noted, today's final rule defines additional classes and categories of storm water discharges for coverage under the NPDES program. These designated dischargers are required to seek coverage under an NPDES permit. Furthermore, all NPDES-authorized States and Tribes are required to implement these provisions and make any necessary amendments to current State and Tribal NPDES regulations to ensure consistency with today's final rule. EPA remains the NPDES permitting authority for jurisdictions without NPDES authorization.

Today's final rule includes some new requirements for NPDES permitting authorities implementing the CWA section 402(p)(6) program. EPA has made a significant effort to build flexibility into the program while attempting to maintain an appropriate level of national consistency. Permitting authorities must ensure that NPDES permits issued to MS4s include the minimum control measures established under the program. Permitting authorities also have the ability to make numerous decisions including who is regulated under the program, i.e., case-by-case designations and waivers, and how responsibilities should be allocated between regulated entities.

Today's final rule extends the NPDES program to include discharges from the following: small MS4s within urbanized areas (with the exception of systems waived from the requirements by the NPDES permitting authority); other small MS4s meeting designation criteria to be established by the permitting authority; and any remaining MS4 that contributes

substantially to the storm water pollutant loadings of a physically interconnected MS4 already subject to regulation under the NPDES program. Small MS4s include urban storm sewer systems owned by Tribes, States, political subdivisions of States, as well as the United States, and other systems located within an urbanized area that fall within the definition of an MS4. These include, for example, State departments of transportation (DOTs), public universities, and federal military bases.

Today's final rule requires all regulated small MS4s to develop and implement a storm water management program. Program components include, at a minimum, 6 minimum measures to address: public education and outreach; public involvement; illicit discharge detection and elimination; construction site runoff control; post-construction storm water management in new development and redevelopment; and pollution prevention and good housekeeping of municipal operations. These program components will be implemented through NPDES permits. A regulated small MS4 is required to submit to the NPDES permitting authority, either in its notice of intent (NOI) or individual permit application, the BMPs to be implemented and the measurable goals for each of the minimum control measures listed above.

The rule addresses all storm water discharges from construction site activities involving clearing, grading and excavating land equal to or greater than 1 acre and less than 5 acres, unless requirements are otherwise waived by the NPDES permitting authority. Discharges from such sites, as well as construction sites disturbing less than 1 acre of land that are designated by the permitting authority, are required to implement requirements set forth in the NPDES permit, which may reference the requirements of a qualifying local program issued to cover such discharges.

The rule also addresses certain other sources regulated under the existing NPDES program for storm water. For municipally-owned industrial sources required to be regulated under the existing NPDES storm water program but exempted from immediate compliance by the Intermodal Surface Transportation Act of 1991 (ISTEA), the rule revises the existing deadline for seeking coverage under an NPDES permit (August 7, 2001) to make it consistent with the application date for small regulated MS4s. (See section I.3. below.) The rule also provides relief from NPDES storm water permitting requirements for industrial sources with no exposure of industrial materials and activities to storm water.

3. Integration of Today's Rule With the Existing Storm Water Program

In developing an approach for today's final rule, numerous early interested stakeholders encouraged EPA to seek opportunities to integrate, where possible, the proposed Phase II requirements with existing Phase I requirements, thus facilitating a unified storm water discharge control program. EPA believes that this objective is met by using the NPDES framework. This framework is already applied to regulated storm water discharge sources and is extended to those sources designated under today's rule. This approach facilitates program consistency, public access to information, and program oversight.*68737

EPA believes that today's final rule provides consistency in terms of program coverage and requirements for existing and newly designated sources. For example, the rule includes most of the municipal donut holes, those MS4s located in incorporated places, townships or towns with a population under 100,000 that are within Phase I counties. These MS4s are not addressed by the existing NPDES storm water program while MS4s in the surrounding county are currently addressed. In addition, the minimum control measures required in today's rule for regulated small MS4s are very similar to a number of the permit requirements for medium and large MS4s under the existing storm water program. Following today's rule, permit requirements for all regulated MS4s (both those under the existing program and those under today's rule) will require implementation of BMPs. Furthermore, with regard to the development of NPDES permits to protect water quality, EPA intends to apply the August 1, 1996, Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits (hereinafter, "Interim Permitting Approach") (see Section II.L.1. for further descrip-

tion) to all MS4s covered by the NPDES program.

EPA is applying NPDES permit requirements to construction sites below 5 acres that are similar to the existing requirements for those above 5 acres and above. In addition, today's rule allows compliance with qualifying local, Tribal, or State erosion and sediment controls to meet the erosion and sediment control requirements of the general permits for storm water discharges associated with construction, both above and below 5 acres.

4. General Permits

EPA recommends using general permits for all newly regulated storm water sources under today's rule. The use of general permits, instead of individual permits, reduces the administrative burden on permitting authorities, while also limiting the paperwork burden on regulated parties seeking permit authorization. Permitting authorities may, of course, require individual permits in some cases to address specific concerns, including permit non-compliance.

EPA recommends that general permits for MS4s, in particular, be issued on a watershed basis, but recognizes that each permitting authority must decide how to develop its general permit(s). Permit conditions developed to address concerns and conditions of a specific watershed could reflect a watershed plan; such 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. If the permitting authority issues a State-wide general permit, the permitting authority may include separate conditions tailored to individual watersheds or urbanized areas. Of course, for a newly regulated MS4, modification of an existing individual MS4 permit to include the newly regulated MS4 as a "limited co-permittee" also remains an option.

5. Tool Box

During the FACA process, many Storm Water Phase II FACA Subcommittee representatives expressed an interest, which was endorsed by the full Committee, in having EPA develop a "tool box" to assist States, Tribes, municipalities, and other parties involved in the Phase II program. EPA made a commitment to work with Storm Water Phase II FACA Subcommittee representatives in developing such a tool box, with the expectation that a tool box would facilitate implementation of the storm water program in an effective and cost-efficient manner. EPA has developed a preliminary working tool box (available on EPA's web page at www.epa.gov/owm/sw/toolbox). EPA intends to have the tool box fully developed by the time of the first general permits. EPA also intends to update the tool box as resources and data become available. The tool box will include the following eight main components: fact sheets; guidances; a menu of BMPs for the six MS4 minimum measures; an information clearinghouse; training and outreach efforts; technical research; support for demonstration projects; and compliance monitoring/assistance tools. EPA intends to issue the menu of BMPs, both structural and non-structural, by October 2000. In addition, EPA will issue by October 2000 a "model" permit and will issue by October 2001 guidance materials on the development of measurable goals for municipal programs.

In an attempt to avoid duplication, the Agency has undertaken an effort to identify and coordinate sources of information that relate to the storm water discharge control program from both inside and outside the Agency. Such information includes research and demonstration projects, grants, storm water management-related programs, and compendiums of available documents, including guidances, related directly or indirectly to the comprehensive NPDES storm water program. Based on this effort, EPA is developing a tool box containing fact sheets and guidance documents pertaining to the overall program and rule requirements (e.g., guidance on municipal and construction programs, and permitting authority guidance on designation and waiver criteria); models of current programs aimed at assisting States, Tribes, municipalities, and others in establishing programs; a comprehensive list of reference documents organized according to subject area (e.g., illicit discharges, watersheds, water quality standards attainment, funding sources, and similar types of references);

educational materials; technical research data; and demonstration project results. The information collected by EPA will not only provide the background for tool box materials, but will also be made available through an information clearinghouse on the world wide web.

With assistance from EPA, the American Public Works Association (APWA) developed a workbook and series of workshops on the proposed Phase II rule. Ten workshops were held from September 1998 through May 1999. Depending on available funding, these workshops may continue after publication of today's final rule. EPA also intends to provide training to enable regional offices to educate States, Tribes, and municipalities about the storm water program and the availability of the tool box materials.

The CWA currently provides funding mechanisms to support activities related to storm water. These mechanisms will be described in the tool box. Activities funded under grant and loan programs, which could be used to assist in storm water program development, include programs in the nonpoint source area, storm water demonstration projects, source water protection and wastewater construction projects. EPA has already provided funding for numerous research efforts in these areas, including a database of BMP effectiveness studies (described below), an assessment of technologies for storm water management, a study of the effectiveness of storm water BMPs for controlling the impacts of watershed imperviousness, protocols for wet weather monitoring, development of a dynamic model for wet weather flows, and numerous outreach projects.

EPA has entered into a cooperative agreement with the Urban Water Resources Research Council of the American Society of Civil Engineers (ASCE) to develop a scientifically-based management tool for the information *68738 needed to evaluate the effectiveness of urban storm water runoff BMPs nationwide. The long-term goal of the National Stormwater BMP Database project is to promote technical design improvements for BMPs and to better match their selection and design to the local storm water problems being addressed. The project team has collected and evaluated hundreds of existing published BMP performance studies and created a database covering about 75 test sites. The database includes detailed information on the design of each BMP and its watershed characteristics, as well as its performance. Eventually the database will include the nationwide collection of information on the characteristics of structural and non-structural BMPs, data collection efforts (e.g., sampling and flow gaging equipment), climatological characteristics, watershed characteristics, hydrologic data, and constituent data. The database will continue to grow as new BMP data become available. The initial release of the database, which includes data entry and retrieval software, is available on CD-ROM and operates on Windows^(R)-compatible personal computers. The ASCE project team envisions that periodic updates to the database will be distributed through the Internet. The team is currently developing a system for Internet retrieval of selected database records, and this system is expected to be available in early 2000.

EPA and ASCE invite BMP designers, owners and operators to participate in the continuing database development effort. To make this effort successful, a large database is essential. Interested persons are encouraged to submit their BMP performance evaluation data and associated BMP watershed characteristics for potential entry into the database. The software included in the CD-ROM allows data providers to enter their BMP data locally, retain and edit the data as needed, and submit them to the ASCE Database Clearinghouse when ready.

To obtain a copy of the database, please contact Jane Clary, Database Clearinghouse Manager, Wright Water Engineers, Inc., 2490 W. 26th Ave., Suite 100A, Denver, CO 80211; Phone 303-480-1700; E-mail clary@wrightwater.com.

In addition, EPA requests that researchers planning to conduct BMP performance evaluations compile and collect BMP reporting information according to the standard format developed by ASCE. The format is provided with the database software and is also available on the ASCE website at www.asce.org/peta/tech/nsbd01.html.

6. Deadlines Established in Today's Action

Exhibit 2 outlines the various deadlines established under today's final rule. EPA believes that the dates allow sufficient time for completion of both the NPDES permitting authority's and the permittee's program responsibilities.

Exhibit 2-Storm Water Phase II Actions Deadlines	
Activity	Deadline date
NPDES-authorized States modify NPDES program if no statutory change is required	1 year from date of publication of today's rule in the Federal Register.
NPDES-authorized States modify NPDES program if statutory change is required	2 years from date of publication of today's rule in the Federal Register.
EPA issues a menu of BMPs for regulated small MS4s	October 27, 2000
ISTEA sources submit permit application	3 years and 90 days from date of publication of today's rule in the Federal Register.
Permitting authority issues general permit(s) (if this type of permit coverage is selected)	3 years from date of publication of today's rule in the Federal Register.
Regulated small MS4s submit permit application:	
a. If designated under §122.32(a)(1) unless the permitting authority has established a phasing schedule under §123.35(d)(3)	a. 3 years and 90 days from date of publication of today's rule in the Federal Register.
b. If designated under §122.32(a)(2) or §§122.26(a)(9)(i) (C) or (D)	b. Within 180 days of notice.
Storm water discharges associated with small construction activity submit permit application:	
a. If designated under §122.26(b)(15)(i)	a. 3 years and 90 days from date of publication of today's rule in the Federal Register
b. If designated under §122.26(b)(15)(ii)	b. Within 180 days of notice.
Permitting authority designates small MS4s under §123.35(b)(2)	3 years from date of publication of today's rule in the Federal Register or 5 years from date of publication of today's rule in the Federal Register if a watershed plan is in place
Regulated small MS4s' program fully developed and implemented	Up to 5 years from date of permit issuance.
Reevaluation of the municipal storm water rules by EPA	13 years from date of publication of today's rule in the Federal Register
Permitting authority determination on a petition	Within 180 days of receipt.
Non-municipal sources designated under §122.26(a)(9)(i) (C) or (D) submit permit application	Within 180 days of notice.
Submission of No Exposure Certification	Every 5 years.

B. Readable Regulations

Today, EPA is finalizing new regulations in a "readable regulation" format. This reader-friendly, plain language ap-

proach is a departure from traditional regulatory language and should enhance the rule's readability. These plain language regulations use questions and answers, "you" to identify the person who must comply, and terms like "must" rather than "shall" to identify a mandate. This new format, which minimizes layers of subparagraphs, should also allow the reader to easily locate specific provisions of the regulation.

Some sections of today's final rule are presented in the traditional language and format because these sections amend existing regulations. The readable regulation format was not used in these existing provisions in an attempt to avoid confusion or disruption *68739 of the readability of the existing regulations.

Most commenters supported EPA's use of plain language and agreed with EPA that the question and answer format makes the rule easier to understand. Three commenters thought that EPA should retain the traditional rule format. The June 1, 1998, Presidential memorandum directs all government agencies to write documents in plain language. Based on the majority of the comments, EPA has retained the plain language format used in the January 9, 1998, proposal in today's final rule.

The proposal to today's final rule included guidance as well as legal requirements. The word "must" indicates a requirement. Words like "should," "could," or "encourage" indicate a recommendation or guidance. In addition, the guidance was set off in parentheses to distinguish it from requirements.

EPA received numerous comments supporting the inclusion of guidance in the text of the Code of Federal Regulations (CFR), as well as comments opposing inclusion of guidance. Supporters stated that preambles and guidance documents are often not accessible when rules are implemented. Any language not included in the CFR is therefore not available when it may be most needed. Commenters that opposed including guidance in the CFR expressed the concern that any language in the rule might be interpreted as a requirement, in spite of any clarifying language. They suggested that guidance be presented in the preamble and additional guidance documents.

The majority of commenters on this issue thought that the guidance should be retained but the distinction between requirements and guidance should be better clarified. Suggestions included clarifying text, symbols, and a change from use of the word "should" to "EPA recommends" or "EPA suggests". EPA believes that it is important to include the guidance in the rule and agrees that the distinction between requirements and EPA recommendations must be very clear. In today's final rule, EPA has put the guidance in paragraphs entitled "Guidance" and replaced the word "should" with "EPA recommends." This is intended to clarify that the recommendations contained in the guidance paragraphs are not legally binding.

C. Program Framework: NPDES Approach

Today's rule regulates Phase II sources using the NPDES permit program. EPA interprets Clean Water Act section 402(p)(6) as authorizing the Agency to develop a storm water program for Phase II sources either as part of the existing NPDES permit program or as a stand alone non-NPDES program such as a self-implementing rule. Under either approach, EPA interprets section 402(p)(6) as directing EPA to publish regulations that "regulate" the remaining unregulated sources, specifically to establish requirements that are federally enforceable under the CWA. Although EPA believes that it has the discretion to not require sources regulated under CWA section 402(p)(6) to be covered by NPDES permits, the Agency has determined, for the reasons discussed below, that it is most appropriate to use NPDES permits in implementing the program to address the sources designated for regulation in today's rule.

As discussed in Section II.A, Overview, EPA sought to achieve certain goals in today's final rule. EPA believes that the NPDES program best achieves EPA's goals for today's final rule for the reasons discussed below.

Requiring Phase II sources to be covered by NPDES permits helps address the consistency problems currently caused by municipal "donut holes." Donut holes are gaps in program coverage where a small unregulated MS4 is located next to or within a regulated larger MS4 that is subject to an NPDES permit under the Phase I NPDES storm water program. The existence of such "donut holes" creates an equity problem because similar discharges may remain unregulated even though they cause or contribute to the same adverse water quality impacts. Using NPDES permits to regulate the unregulated discharges in these areas is intended to facilitate the development of a seamless regulatory program for the mitigation and control of contaminated storm water discharges in an urbanized area. For example, today's rule allows a newly regulated MS4 to join as a "limited" co-permittee with a regulated MS4 by referencing a common storm water management program. Such cooperation should be further encouraged by the fact that the minimum control measures required in today's rule for regulated small MS4s are very similar to a number of the permit requirements for medium and large MS4s under the Phase I storm water program. The minimum control measures applicable to discharges from smaller MS4s are described with slightly more generality than under the Phase I permit application regulations for larger MS4s, thus enabling maximum flexibility for operators of smaller MS4s to optimize efforts to protect water quality.

Today's rule also applies NPDES permit requirements to construction sites below 5 acres that are similar to the existing requirements for those 5 acres and above. In addition, the rule would allow compliance with qualifying local, Tribal, or State erosion and sediment controls to meet the erosion and sediment control requirements of the general permits for storm water discharges associated with construction, both above and below 5 acres.

Incorporating the CWA section 402(p)(6) program into the NPDES program capitalizes upon the existing governmental infrastructure for administration of the NPDES program. Moreover, much of the regulated community already understands the NPDES program and the way it works.

Another goal of the NPDES program approach is to provide flexibility in order to facilitate and promote watershed planning and sensitivity to local conditions. NPDES permits promote those goals in several ways. NPDES general permits may be used to cover a category of regulated sources on a watershed basis or within political boundaries. The NPDES permitting process provides a mechanism for storm water controls tailored on a case-by-case basis, where necessary. In addition, the NPDES permit requirements of a permittee may be satisfied by another cooperating entity. Finally, NPDES permits may incorporate the requirements of existing State, Tribal and local programs, thereby accommodating State and Tribes seeking to coordinate the storm water program with other programs, including those that focus on watershed-based nonpoint source regulation.

In promoting the watershed approach to program administration, EPA believes NPDES general permits can cover a category of dischargers within a defined geographic area. Areas can be defined very broadly to include political boundaries (e.g., county), watershed boundaries, or State or Tribal land.

NPDES permits generally require an application or a notice of intent (NOI) to trigger coverage. This information exchange assures communication between the permitting authority and the regulated community. This communication is critical in ensuring that the regulated community is aware of the requirements and the permitting authority is aware of the potential for adverse impacts to water quality from identifiable locations. The NPDES permitting process includes the public as a valuable stakeholder and ensures *68740 that the public is included and information is made publicly available.

Another concern for EPA and several stakeholders was that the program ensure citizen participation. The NPDES approach ensures opportunities for citizen participation throughout the permit issuance process, as well as in enforcement actions. NPDES permits are also federally enforceable under the CWA.

EPA believes that the use of NPDES permits makes a significant difference in the degree of compliance with regulations in the storm water program. The NPDES program provides for public participation in the development, enforcement and revision of storm water management programs. Citizen suit enforcement has assisted in focusing attention on adverse water quality impacts on a localized, public priority basis. Citizens frequently rely on the NPDES permitting process and the availability of NOIs to track program implementation and help them enforce regulatory requirements.

NPDES permits are also advantageous to the permittee. The NPDES permit informs the permittee about the scope of what it is expected to do to be in compliance with the Clean Water Act. As explained more fully in EPA's April 1995 guidance, Policy Statement on Scope of Discharge Authorization and Shield Associated with NPDES Permits, compliance with an NPDES permit constitutes compliance with the Clean Water Act (see CWA section 402(k)). In addition, NPDES permittees are excluded from duplicative regulatory regimes under the Resource Conservation and Recovery Act and the Comprehensive Emergency Response, Compensation and Liability Act under RCRA's exclusions to the definition of "solid waste" and CERCLA's exemption for "federally permitted releases."

EPA considered suggestions that the Agency authorize today's rule to be implemented as a self-implementing rule. This would be a regulation promulgated at the Federal, State, or Tribal level to control some or all of the storm water dischargers regulated under today's rule. Under this approach, a rule would spell out the specific requirements for dischargers and impose the restrictions and conditions that would otherwise be contained in an NPDES permit. It would be effective until modified by EPA, a State, or a Tribe, unlike an NPDES permit which cannot exceed a duration of five years. Some stakeholders believed that this approach would reduce the burden on the regulated community (e.g., by not requiring permit applications), and considerably reduce the amount of additional paperwork, staff time and accounting required to administer the proposed permit requirements.

EPA is sensitive to the interest of some stakeholders in having a streamlined program that minimizes the burden associated with permit administration and maximizes opportunities for field time spent by regulatory authorities. Key provisions in today's rule address some of these concerns by promoting a streamlined approach to permit issuance by, for example, using general permits and allowing the incorporation of existing programs. By adopting the NPDES approach rather than a self-implementing rule, today's rule also allows for consistent regulation between larger MS4s and construction sites regulated under the existing storm water management rule and smaller sources regulated under today's rule.

EPA believes that it is most appropriate to use NPDES permits to implement a program to address the sources regulated by today's rule. In addition to the reasons discussed above, NPDES permits provide a better mechanism than would a self-implementing rule for tailoring storm water controls on a case-by-case basis, where necessary. One commenter reasoned this concern could be addressed by including provisions in the regulation that allow site-specific BMPs (i.e., case-by-case permits), suggesting storm water discharges that might require site-specific BMPs can be identified during the designation process of the regulatory authority. EPA believes that, in addition to its complexity, the commenter's approach lacks the other advantages of the NPDES permitting process.

A self-implementing rule would not ensure the degree of public participation that the NPDES permit process provides for the development, enforcement and revision of the storm water management program. A self-implementing rule also might not have provided the regulated community the "permit shield" under CWA section 402(k) that is provided by an NPDES permit. Based on all these considerations, EPA declined to adopt a self-implementing rule approach and adopted the NPDES approach.

Some State representatives sought alternative approaches for State implementation of the storm water program for Phase II sources. These State representatives asserted that a non-NPDES alternative approach best facilitated watershed man-

agement and avoided duplication and overlapping regulations. These representatives believed the NPDES approach would undercut State programs that had developed storm water controls tailored to local watershed concerns. Finally, a number of commenters expressed the view that States implement a variety of programs not based on the CWA that are effective in controlling storm water, and that EPA should provide incentives for their implementation and improvement in performance.

Throughout the development of the rule, State representatives sought alternatives to the NPDES approach for State implementation of the storm water program for Phase II sources. Discussions focused on an approach whereby States could develop an alternative program that EPA would approve or disapprove based on identified criteria, including that the alternative non-NPDES program would result in "equivalent or better protection of water quality." The State representatives, however, were unable to propose or recommend criteria for gauging whether a program would provide equivalent protection. EPA also did not receive any suggestions for objective, workable criteria in response to the Agency's explicit request for specific criteria (by which EPA could objectively judge such programs) in the preamble to the proposed rule.

EPA evaluated several existing State initiatives to address storm water and found many cases where standards under State programs may be coordinated with the Federal storm water program. Where the NPDES permit is developed in coordination with State standards, there are opportunities to avoid duplication and overlapping requirements. Under today's rule, an NPDES permitting authority may include conditions in the NPDES permit that direct an MS4 to follow the requirements imposed under State standards, rather than the requirements of §122.34(b). This is allowed as long as the State program at a minimum imposes the relevant requirements of §122.34(b). Additional opportunities follow from other provisions in today's rule.

Seeking to further explore the feasibility of a non-NPDES approach, the Agency, after the proposal, had extensive discussions with representatives of a number of States. Discussions related specifically to possible alternatives for regulations of urban storm water discharges and MS4s specifically. The Agency also sought input on these issues from other stakeholders.

As a result of these discussions, many of the commenters provided input on issues such as: whether or not the Agency should require NPDES permits; whether location of MS4s in urbanized *68741 areas should be the basis for designation or whether designation should be based on other determinations relating to water quality; whether States should be allowed to satisfy the conditions of the rule through the use of existing State programs; and issues concerning timing and resources for program implementation.

In response, today's rule still follows the regulatory scheme of the proposed rule, but incorporates additional flexibility to address some of the concerns raised by commenters.

In order to facilitate implementation by States that utilize a watershed permitting approach or similar approach (i.e., based on a State's unified watershed assessments), today's rule allows States to phase in coverage for MS4s in jurisdictions with a population less than 10,000. Under such an approach, States could focus their resources on a rolling basis to assist smaller MS4s in developing storm water programs.

In addition, in response to concerns that the rule should not require permit coverage for MS4s that do not significantly contribute to water quality impairments, today's rule provides options for two waivers for small MS4s. The rule allows permitting authorities to exempt from the requirement for a permit any MS4 serving a jurisdiction with a population less than 1,000, unless the State determines that the MS4 must implement storm water controls because it is significantly contributing to a water quality impairment. A second waiver option applies to MS4s serving a jurisdiction with a population less than 10,000. For those MS4s, the State must determine that discharges from the MS4 do not significantly contribute

to a water quality impairment, or have the potential for such an impairment, in order to provide the exemption. The State must review this waiver on a periodic basis no less frequently than once every five years.

Throughout the development of today's rule, commenters questioned whether the Clean Water Act authorized the use of the NPDES permit program, pointing out that the text of CWA 402(p)(6) does not use the word "permit." Based on the absence of the word "permit" and the express mention of State storm water management programs, the commenters asserted that Congress did not intend for Phase II sources to be regulated using NPDES permits.

EPA disagrees with the commenters' interpretation of section 402(p)(6). Section 402(p)(6) does not preclude use of permits as part of the "comprehensive program" to regulate designated sources. The language provides EPA with broad discretion in the establishment of the "comprehensive program." Absence of the word "permit" (a term that the statute does not otherwise define) does not preclude use of a permit, which is a familiar and reasonably well understood regulatory implementation vehicle. First, section 402(p)(6) says that EPA must establish a comprehensive program that "shall, at a minimum, establish priorities, establish requirements for State stormwater management programs, and establish expeditious deadlines." The "at a minimum" language suggests that the Agency may, and perhaps should, develop a comprehensive program that does more than merely attend to these minimum criteria. Use of the term "at a minimum" preserves for the Agency broad discretion to establish a comprehensive program that includes use of NPDES permits.

Further, in the final sentence of the section, Congress included additional language to affirm the Agency's discretion. The final sentence clarifies that the Phase II program "may include performance standards, guidelines, guidance, and management practices and treatment requirements, as appropriate." Under existing CWA programs, performance standards, (effluent limitations) guidelines, management practices, and treatment requirements are typically implemented through NPDES or dredge and fill permits.

Although EPA believes that it had the discretion to not require permits, the Agency has determined that it is reasonable to interpret section 402(p)(6) to authorize permits. Moreover, for the reasons discussed above, the Agency believes that it is appropriate to use NPDES permits in implementing today's rule.

D. Federal Role

Today's final rule describes EPA's approach to expand the existing storm water program under CWA section 402(p)(6). As in all other Federal programs, the Federal government plays an integral role in complying with, developing, implementing, overseeing, and enforcing the program. This section describes EPA's role in the revised storm water program:

1. Develop Overall Framework of the Program

The storm water discharge control program under CWA section 402(p)(6) consists of the rule, tool box, and permits. EPA's primary role is to ensure timely development and implementation of all components. Today's rule is a refinement of the first step in developing the program. EPA is fully committed to continuing to work with involved stakeholders on developing the tool box and issuing permits. As noted in today's rule, EPA will assess the municipal storm water program based on (1) evaluations of data from the NPDES municipal storm water program, (2) research concerning water quality impacts on receiving waters from storm water, and (3) research on BMP effectiveness. (Section II.H, Municipal Role, provides a more detailed discussion of this provision.)

EPA is planning to standardize minimum requirements for construction and post-construction BMPs in a new rulemaking under Title III of the CWA. While larger construction sites are already subject to NPDES permits (and smaller sites will be subject to permits pursuant to today's rule), the permits generally do not contain specific requirements for BMP design

or performance. The permits require the preparation of storm water pollution prevention plans, but actual BMP selection and design is at the discretion of permittees, in conformance with applicable State and local requirements. Where there are existing State and local requirements specific to BMPs, they vary widely, and many jurisdictions do not have such requirements.

In developing these regulations, EPA intends to evaluate the inclusion of design and maintenance criteria as minimum requirements for a variety of BMPs used for erosion and sediment control at construction sites, as well as for permanent BMPs used to manage post-construction storm water discharges. The Agency plans to consider the merits and performance of all appropriate management practices (both structural and non-structural) that can be used to reduce adverse water quality impacts. EPA does not intend to require the use of particular BMPs at specific sites, but plans to assist builders and developers in BMP selection by publishing data on the performance to be expected by various BMP types. EPA would like to build upon the successes of some of the effective State and local storm water programs currently in place around the country, and to establish nation-wide criteria to support builders and local jurisdictions in appropriate BMP selection.

2. Encourage Consideration of Smart Growth Approaches

In the proposal, EPA invited comment on possible approaches for providing *68742 incentives for local decision making that would limit the adverse impacts of growth and development on water quality. EPA asked for comments on this "smart growth" approach.

EPA received comments on all sides of this issue. A number of commenters supported the idea of "smart growth" incentives but did not present concrete ideas. Several commenters suggested "smart growth" criteria. States that have adopted "smart growth" laws were worried that EPA's focus on urbanized areas for municipal requirements could encourage development outside of designated growth areas. Today's final rule clearly allows States to expand coverage of their municipal storm water program outside of urbanized areas. In addition, the flexibility of the six municipal minimum measures should avoid encouragement of development into rural rather than urban areas. For example, as part of the post-construction minimum measure, EPA recommends that municipalities consider policies and ordinances that encourage infill development in higher density urban areas, and areas with existing infrastructure, in order to meet the measure's intent.

EPA also received several comments expressing concern that incorporating "smart growth" incentives threatened the autonomy of local governments. One commenter was worried that "incentives" could become more onerous than the minimum measures. EPA is very aware of municipal concerns about possible federal interference with local land use planning. EPA is also cognizant of the difficulty surrounding incentives for "smart growth" activities due to these concerns. However, the Agency believes it has addressed these concerns by proposing a flexible approach and will continue to support the concept of "smart growth" by encouraging policies that limit the adverse impacts of growth and development on water quality.

3. Provide Financial Assistance

Although Congress has not established a fund to fully finance implementation of the proposed extension of the existing NPDES storm water program under CWA section 402(p)(6), numerous federal financing programs (administered by EPA and other federal agencies) can provide some financial assistance. The primary funding mechanism is the Clean Water State Revolving Fund (SRF) program, which provides sources of low-cost financing for a range of water quality infrastructure projects, including storm water. In addition to the SRF, federal financial assistance programs include the Water Quality Cooperative Agreements under CWA section 104(b)(3), Water Pollution Control Program grants to States under

CWA section 106, and the Transportation Equity Act for the 21st Century (TEA-21) among others. In addition, Section 319 funds may be used to fund any urban storm water activities that are not specifically required by a draft or final NPDES permit. EPA will develop a list of potential funding sources as part of the tool box implementation effort. EPA anticipates that some of these programs will provide funds to help develop and, in limited circumstances, implement the CWA section 402(p)(6) storm water discharge control program.

EPA received numerous comments that requested additional funding. Congress provided one substantial new source of potential funding for transportation related storm water projects—TEA-21. The Department of Transportation has included a number of water-related provisions in its TEA-21 planning. These include Transportation Enhancements, Environmental Restoration and Pollution Abatement, and Environmental Streamlining. More information on TEA-21 is available at the following internet sites: www.fhwa.dot.gov/tea21/outreach.htm and www.tea21.org.

4. Implement the Program in Jurisdictions Not Authorized To Administer the NPDES Program

Because today's final rule uses the NPDES framework, EPA will be the NPDES permitting authority in several States, Tribal jurisdictions, and Territories. As such, EPA will have the same responsibilities as any other NPDES permitting authority—issuing permits, designating additional sources, and taking appropriate enforcement actions—and will seek to tailor the storm water discharge control program to the specific needs in that State, Tribal jurisdiction, or Territory. EPA also plans to provide support and oversight, including outreach, training, and technical assistance to the regulated communities. Section II.G. of today's preamble provides a separate discussion related to the NPDES permitting authority's responsibilities for today's final rule.

5. Oversee State and Tribal Programs

Under the NPDES program, EPA plays an oversight role for NPDES-approved States and Tribes. In this role, EPA and the State or Tribe work together to implement, enforce, and improve the NPDES program. Part of this oversight role includes working with States and Tribes to modify their programs where programmatic or implementation concerns impede program effectiveness. This role will be vitally important when States and Tribes make adjustments to develop, implement, and enforce today's extension of the existing NPDES storm water discharge control program. In addition, States maintain a continuing planning process (CPP) under CWA section 303(e), which EPA periodically reviews to assess the program's achievements.

In its oversight role, EPA takes action to address States and Tribes who have obtained NPDES authorization but are not fulfilling their obligations under the NPDES program. If an NPDES-authorized State or Tribe fails to implement an adequate NPDES storm water program, for example, EPA typically enters into extensive discussions to resolve outstanding issues. EPA has the authority to withdraw the entire NPDES program when resolution cannot be reached. Partial program withdrawal is not provided for under the CWA except for partial approvals.

EPA is also working with the States and Tribes to improve nonpoint source management programs and assessments to incorporate key program elements. Key nonpoint source program elements include setting short and long term goals and objectives; establishing public and private partnerships; using a balanced approach incorporating Statewide and watershed-wide abatement of existing impairments; preventing future impairments; developing processes to address both impaired and threatened waters; reviewing and upgrading all program components, including program revisions on a 5-year cycle; addressing federal land management and activities inconsistent with State programs; and managing State nonpoint source management programs effectively.

In particular, EPA works with the States and Tribes to strengthen their nonpoint source pollution programs to address all

significant nonpoint sources, including agricultural sources, through the CWA section 319 program. EPA is working with other government agencies, as well as with community groups, to effect voluntary changes regarding watershed protection and reduced nonpoint source pollution.

In addition, EPA and NOAA have published programmatic and technical guidance to address coastal nonpoint source pollution. Under Section 6217 of the CZARA, States are developing and implementing coastal nonpoint pollution control programs approved by EPA and NOAA.*68743

6. Comply With Applicable Requirements as a Discharger

Today's final rule covers federally operated facilities in a variety of ways. These facilities are generally areas where people reside, such as a federal prison, hospital, or military base. It also includes federal parkways and road systems with separate storm sewer systems. Today's rule requires federal MS4s to comply with the same application deadlines that apply to regulated small MS4s generally. EPA believes that all federal MS4s serve populations of less than 100,000.

EPA received several comments that asked if individual buildings like post offices are considered to be small MS4s and thereby regulated in today's rule if they are in an urbanized area. Most of these buildings have at most a parking lot with runoff or a storm sewer that connects with a municipality's MS4. EPA does not intend that individual federal buildings be considered to be small MS4s. This is discussed in section II.H.2.b. of today's preamble.

Federal facilities can also be included under requirements addressing storm water discharges associated with small construction activities. In any case, discharges from these facilities will need to comply with all applicable NPDES requirements and any additional water quality-related requirements imposed by a State, Tribal, or local government. Failure to comply can result in enforcement actions. Federal facilities can act as models for municipal and private sector facilities and implement or test state-of-the-art management practices and control measures.

E. State Role

Today's final rule sets forth an NPDES approach for implementing the extension of the existing storm water discharge control program under CWA section 402(p)(6). State assumption of the NPDES program is voluntary, consistent with the principles of federalism. Because most States are approved to implement the NPDES program, they will tailor their storm water discharge control programs to address their water quality needs and objectives. While today's rule establishes the basic framework for the section 402(p)(6) program, States as well as Tribes (see discussion in section II.F) have an important role in fine-tuning the program to address the water quality issues within their jurisdictions. The basic framework allows for adjustments based on factors that vary geographically, including climate patterns and terrain.

Where States do not have NPDES authority, they are not required to implement the storm water discharge control program, but they may still participate in water quality protection through participation in the CWA section 401 certification process (for any permits) and through development of water quality standards and TMDLs.

1. Develop the Program

In expanding the existing NPDES program for storm water discharges, States must evaluate whether revisions to their NPDES programs are necessary. If so, modifications must be made in accordance with §123.62. Under §123.62, States must revise their NPDES programs within 1 year, or within 2 years if statutory changes are necessary.

Some States and departments of transportation (DOTs) commented that this timeframe is too short, anticipating that the State legislative process and the modification of regulations combined would take beyond 2 years. The deadline language

in §123.62 is not new language for the storm water discharge control program; it applies to all NPDES programs. EPA believes the vast majority of States will meet the deadline and will work with States in those cases where there may be difficulty meeting this deadline due to the timing of legislative sessions and the regulatory development process.

An authorized State NPDES program must meet the requirements of CWA section 402(b) and conform to the guidelines issued under CWA section 304(i)(2). Today's final rule under §123.25 adds specific cross references to the storm water discharge control program components to ensure that States adequately address these requirements.

2. Comply With Applicable Requirements as a Discharger

Today's final rule covers State operated separate storm sewer systems in a variety of ways. These systems generally drain areas where people reside, such as a prison, hospital, or other populated facility. These systems are included under the definition of a regulated small MS4, which specifically identifies systems operated by State departments of transportation. Alternatively, storm water discharges from State activities may be regulated under the section addressing storm water discharges associated with small construction activities. In any case, discharges from these facilities must comply with all applicable NPDES requirements. Failure to comply can result in enforcement actions. State facilities can act as models for municipal and private sector facilities and implement or test state-of-the-art management practices and control measures.

3. Communicate With EPA

Under approved NPDES programs, States have an ongoing obligation to share information with EPA. This dialogue is particularly important in the CWA section 402(p)(6) storm water program where these governments continue to develop a great deal of the guidance and outreach related to water quality.

F. Tribal Role

The proposal to today's final rule provides background information on EPA's 1984 Indian Policy and the criteria for treatment of an Indian Tribe in the same manner as a State. Today's final rule extends the existing NPDES program for storm water discharges to two types of dischargers located in Indian country. First, the final rule designates storm water discharges from any regulated small MS4, including Tribal systems. Second, the final rule regulates discharges associated with construction activity disturbing between one and five acres of land, including sites located in Indian country. Operators in each of these categories of regulated activity must apply for coverage under an NPDES permit by 3 years and 90 days from the date of publication of today's final rule. Under existing regulations, however, EPA or an authorized NPDES Tribe may require a specified storm water discharger to apply for NPDES permit coverage before this deadline based on a determination that the discharge is contributing to a violation of a water quality standard (including designated uses) or is a significant contributor of pollutants.

Under today's rule, a Tribal governmental entity may regulate storm water discharges on its reservation in two ways—as either an NPDES-authorized Tribe or as a regulated MS4. If a Tribe is authorized to operate the NPDES program, the Tribe must implement today's final rule for the NPDES program for storm water for covered dischargers located within the EPA recognized boundaries. Otherwise, EPA is generally the permitting/program authority within Indian country. Discussions about the State Role in the preceding section also apply to NPDES authorized Tribes. For additional information on the role and responsibilities of the permitting authority in the NPDES storm water program, see §123.35 (and Section II.G. of today's preamble) and § 123.25(a).*68744

Under today's final rule, if the Indian reservation is located entirely or partially within an “urbanized area,” as defined in

§122.32(a)(1), the Tribe must obtain an NPDES permit if it operates a small MS4 within the urbanized area portion. Tribal MS4s located outside an urbanized area are not automatically covered, but may be designated by EPA pursuant to §122.32(a)(2) of today's rule or may request designation as a regulated small MS4 from EPA. A Tribe that is a regulated MS4 for NPDES program purposes is required to implement the six minimum control measures to the extent allowable under Federal law.

The Tribal representative on the Storm Water Phase II FACA Subcommittee asked EPA to provide a list of the Tribes located in urbanized areas that would fall within the NPDES storm water program under today's final rule. In December 1996, EPA developed a list of federally recognized American Indian Areas located wholly or partially in Bureau of the Census-designated urbanized areas (see Appendix 1). Appendix 1 not only provides a listing of reservations and individual Tribes, but also the name of the particular urbanized area in which the reservation is located and an indication of whether the urbanized area contains a medium or large MS4 that is already covered by the existing Phase I regulations.

Some of the Tribes listed in Appendix 1 are only partially located in an urbanized area. If the Tribe's MS4 serves less than 1,000 people within an urbanized area, the permitting authority may waive the Tribe's MS4 storm water requirements if it meets the conditions of §122.32(c). EPA does not have information on the Tribal populations within the urbanized areas, so it can not identify the Tribes that are eligible for a waiver. Therefore, a Tribe that believes it qualifies for a waiver should contact its permitting authority.

G. NPDES Permitting Authority's Role for the NPDES Storm Water Small MS4 Program

As noted previously, the NPDES permitting authority can be EPA or an authorized State or an authorized Tribe. The following discussion describes the role of the NPDES permitting authority under today's final rule.

1. Comply With Implementation Requirements

NPDES permitting authorities must perform certain duties to implement the NPDES storm water municipal program. Section 123.35(a) of today's final rule emphasizes that permitting authorities have existing obligations under the NPDES program. Section 123.35 focuses on specific issues related to the role of the NPDES authority to support administration and implementation of the municipal storm water program under CWA section 402(p)(6).

2. Designate Sources

Section 123.35(b) of today's final rule addresses the requirements for the NPDES permitting authority to designate sources of storm water discharges to be regulated under §§122.32 through 122.36. NPDES permitting authorities must develop a process, as well as criteria, to designate small MS4s. They must also have the authority to designate a small MS4 if and when circumstances that support a waiver under §122.32(c) change. EPA may make designations if an NPDES-approved State or Tribe fails to do so.

NPDES permitting authorities must examine geographic jurisdictions that they believe should be included in the storm water discharge control program but are not located in an "urbanized area". Small MS4s in these areas are not designated automatically. Discharges from such areas should be brought into the program if found to have actual or potential exceedances of water quality standards, including impairment of designated uses, or other adverse impacts on water quality, as determined by local conditions or watershed and TMDL assessments. EPA's aim is to address discharges to impaired waters and to protect waters with the potential for problems. EPA encourages NPDES permitting authorities, local governments, and the interested public to work together in the context of a watershed plan to address water quality issues, including those associated with municipal storm water runoff.

EPA received comments stating that the process of developing criteria and applying it to all MS4s outside an urbanized area serving a population of 10,000 or greater and with a density of 1,000 people per square mile is too time-consuming and resource-intensive. These commenters believe that the permitting authority should decide which MS4s must be brought into the storm water discharge control program and that population and density should not be an overriding criteria. One suggested way of doing so was to only designate MS4s with demonstrated contributions to the impairment of water quality uses as shown by a TMDL. EPA disagrees with this suggestion. The TMDL process is time-consuming. MS4s outside of urbanized areas may cause water quality problems long before a TMDL is completed.

EPA believes that permitting authorities should consider the potential water quality impacts of storm water from all jurisdictions with a population of 10,000 or greater and a density of 1,000 people per square mile. EPA is using data summarized in the NURP study and in the CWA section 305(b) reports to support this approach for targeted designation outside of urbanized areas. EPA is not mandating which criteria are to be used, but has provided examples of criteria that may be useful in evaluating potential water quality impacts. EPA believes that the flexibility provided in this section of today's final rule allows the permitting authority to develop criteria and a designation process that is easy to use and protects water quality. Therefore, the provisions of § 123.35(b) remain as proposed.

a. Develop Designation Criteria

Under §123.35(b), the NPDES permitting authority must establish designation criteria to evaluate whether a storm water discharge results in or has the potential to result in exceedances of water quality standards, including impairment of designated uses, or other significant water quality impacts, including adverse habitat and biological impacts.

EPA recommends that NPDES permitting authorities consider, in a balanced manner, certain locally-focused criteria for designating any MS4 located outside of an urbanized area on the basis of significant water quality impacts. EPA recommends consideration of criteria such as discharge to sensitive waters, high growth or growth potential, high population density, contiguity to an urbanized area, significant contribution of pollutants to waters of the United States, and ineffective control of water quality concerns by other programs. These suggested designation criteria are intended to help encourage the permitting authority to use an objective method for identifying and designating, on a local basis, sources that adversely impact water quality. More information about these criteria and the reasons why they are suggested by EPA is included in the January 9, 1998, proposal (63 FR 1561) for today's final rule.

The suggested criteria are meant to be taken in the aggregate, with a great deal of flexibility as to how each should be weighed in order to best account for watershed and other local conditions and to allow for a more tailored case-by-case analysis. The application of criteria is meant to be geographically specific. Furthermore, each criterion does not have to be met in order for a small MS4 *68745 to qualify for designation, nor should an MS4 necessarily be designated on the basis of one or two criteria alone.

EPA believes that the application of the recommended designation criteria provides an objective indicator of real and potential water quality impacts from urban runoff on both the local and watershed levels. EPA encourages the application of the recommended criteria in a watershed context, thereby allowing for the evaluation of the water quality impacts of the portions of a watershed outside of an urbanized area. For example, situations exist where the urbanized area represents a small portion of a degraded watershed, and the adjacent nonurbanized areas of the watershed have significant cumulative effects on the quality of the receiving waters.

EPA received numerous suggestions of additional criteria that should be added and reasons why some of the criteria in the proposal to today's final rule were not appropriate. EPA developed its suggested designation criteria based on findings of the NURP study and other studies that indicate pollutants of concern, including total suspended solids, chemical

oxygen demand, and temperature. These criteria were the subject of considerable discussion by the Storm Water Phase II FACA Subcommittee. EPA developed them in response to recommendations from the subcommittee during development of the proposed rule. The listed criteria are only suggestions. Permitting authorities are required to develop their own criteria. EPA has not found any reason to change its suggested list of criteria and the suggestions remain as proposed.

b. Apply Designation Criteria

After customizing the designation criteria for local conditions, the permitting authority must apply such criteria, at a minimum, to any MS4 located outside of an urbanized area serving a jurisdiction with a population of at least 10,000 and a population density of 1,000 people per square mile or greater (see §123.35(b)(2)). If the NPDES permitting authority determines that an MS4 meets the criteria, the permitting authority must designate it as a regulated small MS4. This designation must occur within 3 years of publication of today's final rule. Alternatively, the NPDES authority can designate within 5 years from the date of final regulation if the designation criteria are applied on a watershed basis where a comprehensive watershed plan exists (a comprehensive watershed plan is one that includes the equivalents of TMDLs) (see §123.35(b)(3)). The extended 5 year deadline is intended to provide incentives for watershed-based designations. If an NPDES-authorized State or Tribe does not develop and apply designation criteria within this timeframe, then EPA has the opportunity to do so in lieu of the authorized State or Tribe.

NPDES permitting authorities can designate any small MS4, including one below 10,000 in population and 1,000 in density. EPA established the 10,000/1,000 threshold based on the likelihood of adverse water quality impacts at these population and density levels. In addition, the 1,000 persons per square mile threshold is consistent with both the Bureau of the Census definition of an "urbanized area" (see Section II.H.2. below) and stakeholder discussions concerning the definition of a regulated small MS4.

One commenter requested that EPA develop interim deadlines for development of designation criteria. EPA believes that the designation deadline identified in today's final rule at §123.35(b)(3) provides States and Tribes with a flexibility that allows them to develop and apply the criteria locally in a timely fashion, while at the same time establishing an expeditious deadline.

c. Designate Physically Interconnected Small MS4s

In addition to applying criteria on a local basis for potential designation, the NPDES permitting authority must designate any MS4 that contributes substantially to the pollutant loadings of a physically interconnected municipal separate storm sewer that is regulated by the NPDES program for storm water discharges (see §123.35(b)(4)). To be "physically interconnected," the MS4 of one entity, including roads with drainage systems and municipal streets, is physically connected directly to the municipal separate storm sewer of another entity. This provision applies to all MS4s located outside of an urbanized area. EPA added this section in recognition of the concerns of local government stakeholders that a local government should not have to shoulder total responsibility for a storm water program when storm water discharges from another MS4 are also contributing pollutants or adversely affecting water quality. This provision also helps to provide some consistency among MS4 programs and to facilitate watershed planning in the implementation of the NPDES storm water program. EPA recommended physical interconnectedness in the existing NPDES storm water regulations as a factor for consideration in the designation of additional sources.

Today's final rule does not include interim deadlines for identifying physically interconnected MS4s. However, consistent with the deadlines identified in §123.35(b)(3) of today's final rule, EPA encourages the permitting authority to make these determinations within 3 years from the date of publication of the final rule or within 5 years if the permitting authority is implementing a comprehensive watershed plan. Alternatively, the affected jurisdiction could use the petition

process under 40 CFR 122.26(f) in seeking to have the permitting authority designate the contributing jurisdiction.

Several commenters expressed concerns about who could be designated under this provision (§123.35(b)(4)). One commenter requested that the word "substantially" be deleted from the rule because they believe any MS4 that contributes at all to a physically interconnected municipal separate storm sewer should be regulated. EPA believes that the word "substantially" provides necessary flexibility to the permitting authorities. The permitting authority can decide if an MS4 is contributing discharges to another municipal separate storm sewer in a manner that requires regulation. If the operator of a regulated municipal separate storm sewer believes that some of its pollutant loadings are coming from an unregulated MS4, it can petition the permitting authority to designate the unregulated MS4 for regulation.

d. Respond to Public Petitions for Designation

Today's final rule reiterates the existing opportunity for the public to petition the permitting authority for designation of a point source to be regulated to protect water quality. The petition opportunity also appears in existing NPDES regulations at 40 CFR 122.26(f). Any person may petition the permitting authority to require an NPDES permit for a discharge composed entirely of storm water that contributes to a violation of a water quality standard or is a significant contributor of pollutants to the waters of the United States (see §123.32(b)). The NPDES permitting authority must make a final determination on any petition within 180 days after receiving the petition (see §123.35(c)). EPA believes that a 180 day limit balances the public's need for a timely final determination with the NPDES permitting authority's need to prioritize its workload. If an NPDES-approved State or Tribe fails to act *68746 within the 180-day timeframe, EPA may make a determination on the petition. EPA believes that public involvement is an important component of the NPDES program for storm water and feels that this provision encourages public participation. Section II.K, Public Involvement/Public Role, further discusses this topic.

3. Provide Waivers

Today's rule provides two opportunities for the NPDES permitting authority to exempt certain small MS4s from the need for a permit based on water quality considerations. See §§122.32(d) and (e). The two waiver opportunities have different size thresholds and take different approaches to considering the water quality impacts of discharges from the MS4.

In the proposal, EPA requested comment on the option of waiving coverage for all MS4s with less than 1,000 people unless the permitting authority determined that the small MS4 should be regulated based on significant adverse water quality impacts. A number of commenters supported this option. They expressed concern that compliance with the rule requirements and certification of one of the waiver provisions were both costly for very small communities. They stated that the permitting authority should identify a water quality problem before requiring compliance. Today's rule essentially adopts this alternative approach for MS4s serving a population under 1,000.

The final rule has expanded the waiver provision that EPA proposed for small MS4s with a population less than 1,000. The proposed rule would have required a small MS4 operator to certify that storm water controls are not needed based on either wasteload allocations that are part of TMDLs that address the pollutants of concern, or a comprehensive watershed plan implemented for the waterbody that includes the equivalents of TMDLs and addresses the pollutant(s) of concern. Commenters noted that the proposed waivers would be unattainable if a TMDL or equivalent analysis was required for every pollutant that could possibly be present in any amount in discharges from an MS4 regardless of whether the pollutant is causing water quality impairment. Commenters asked that EPA identify what constitutes the "pollutant(s) of concern" for which a TMDL or its equivalent must be developed. For example, §122.30(c) indicates that the MS4 program is intended to control "sediment, suspended solids, nutrients, heavy metals, pathogens, toxins, oxygen-demanding substances, and floatables." Commenters asked whether TMDLs or equivalent analyses have to address all of these.

EPA has revised the proposed waiver in response to these concerns. Under today's rule, NPDES permitting authorities may waive the requirements of today's rule for any small MS4 with a population less than 1,000 that does not contribute substantially to the pollutant loadings of a physically interconnected MS4, unless the small MS4 discharges pollutants that have been identified as a cause of impairment of the waters to which the small MS4 discharges. If the small MS4 does discharge pollutants that have been identified as impairing the water body into which the small MS4 discharges, the NPDES permitting authority may grant a waiver only if it determines that storm water controls are not needed based on an EPA approved or established TMDL that addresses the pollutant(s) of concern.

Unlike the proposed rule, §122.32(d) does not allow the waiver for MS4s serving a population under 1,000 to be based on "the equivalent of a TMDL." Because §122.32(d) requires a pollutant specific analysis only for a pollutant that has been identified as a cause of impairment, a TMDL is required for such pollutant before the waiver may be granted. Once a pollutant has been identified as the cause of impairment of a water body, the State should develop a TMDL for that pollutant for that water body. Thus, §122.32(d) takes a different approach than that taken for the waiver in §122.32(e) for MS4s serving a population under 10,000, which can be based upon an analysis that is "the equivalent of a TMDL." This is because §122.32(d) requires an analysis to support the waiver for MS4s under 1,000 only if a waterbody to which the MS4 discharges has been identified as impaired. The §122.32(e) waiver, on the other hand, would be available for larger MS4s but only after the State affirmatively establishes lack of impairment based upon a comprehensive analysis of smaller urban waters that might not otherwise be evaluated for the purposes of CWA section 303. Since §122.32(e) requires the analysis of waters that have not been identified as impaired, an actual TMDL is not required and an analysis that is the equivalent of a TMDL can suffice to support the waiver.

Where a State is the NPDES permitting authority, the permitting authority is responsible for the development of the TMDLs as well as the assessment of the extent to which a small MS4's discharge contributes pollutants to a neighboring regulated system. In States where EPA is the permitting authority, EPA will use a State's TMDLs to determine whether storm water controls are required for the small MS4s.

The proposed rule would have required the operator of the small MS4 serving a population under 1,000 to certify that its discharge was covered under a TMDL that indicated that discharges from its particular system were not having an adverse impact on water quality (i.e., it was either not assigned wasteload allocations under TMDLs or its discharge is within an assigned allocation). Many commenters expressed concerns that MS4 operators serving less than 1,000 persons may lack the technical capacity to certify that their discharges are not contributing to adverse water quality impacts. These commenters thought that the permitting authority should make such a certification. Today's rule provides flexibility as to how the waiver is administered. Permitting authorities are ultimately responsible for granting the waiver, but are free to determine whether or not to require small MS4 operators that are seeking waivers to submit information or a written certification.

Under §122.32(e) a State may grant a waiver to an MS4 serving a population between 1,000 and 10,000 only if the State has made a comprehensive effort to ensure that the MS4 will not cause or contribute to water quality impairment. To grant a §122.32(e) waiver, the NPDES permitting authority must evaluate all waters of the U.S. that receive a discharge from the MS4 and determine that storm water controls are not needed. The permitting authority's evaluation must be based on wasteload allocations that are part of an EPA approved or established TMDL or, if a TMDL has not been developed or approved, an equivalent analysis that determines sources and allocations for the pollutant(s) of concern. The pollutants of concern that the permitting authority must evaluate include biochemical oxygen demand (BOD), sediment or a parameter that addresses sediment (such as total suspended solids, turbidity or siltation), pathogens, oil and grease, and any other pollutant that has been identified as a cause of impairment of any water body that will receive a discharge from the MS4. Finally, the permitting authority must have determined that future discharges from the MS4 do not have

the potential to result in exceedances of water quality standards, including impairment of designated uses, or other significant *68747 water quality impacts, including habitat and biological impacts.

Although EPA did not propose this specific approach, the Agency did request comment on whether to increase the proposed 1,000 population threshold for a waiver. The §122.32(e) waiver was developed in response to comments, including States' concerns that they needed greater flexibility to focus their efforts on MS4s that were causing water quality impairment. Several commenters thought that the threshold should be increased from 1,000 to 5,000 or 10,000. Others suggested additional ways of qualifying for a waiver for MS4s that discharge to waters that are not covered by a TMDL or watershed plan. EPA carefully considered all the options for expanding the waiver provisions and has decided to expand the waiver only in the very narrow circumstances described above where a comprehensive analysis has been undertaken to demonstrate that the MS4 is not causing water quality impairment.

The NPDES permitting authority can, at any time, mandate compliance with program requirements from a previously waived small MS4 if circumstances change. For example, a waiver can be withdrawn in circumstances where the permitting authority later determines that a waived small MS4's storm water discharge to a small stream will cause adverse impacts to water quality or significantly interfere with attainment of water quality standards. A "change in circumstances" could involve receipt of new information. Changed circumstances can also allow a regulated small MS4 operator to request a waiver at any time.

Some commenters expressed concerns about allowing any small MS4 waivers. One commenter stated that storm water pollution prevention plans are necessary to control storm water pollution and should be required from all regulated small MS4s. For the reasons stated in the Background section above, EPA agrees that the discharges from most MS4s in urbanized areas should be addressed by a storm water management program outlined in today's rule. For MS4s serving very small areas, however, the TMDL development process provides an opportunity to determine whether an MS4 serving a population less than 1,000 is having a negative impact on any receiving water that is impaired by a pollutant that the MS4 discharges. MS4s serving populations up to 10,000 may receive a waiver only if a comprehensive analysis of its impact on receiving water has been performed.

Other commenters said that waivers should not be allowed for small MS4s that discharge into another regulated MS4. These commenters stated that the word "substantially" should be removed from §122.32(d)(i) so that a waiver would not be allowed for any system "contributing to the storm water pollutant loadings of a physically interconnected regulated MS4." As previously mentioned under the designation discussion of section II.G.2.c, EPA believes that the word "substantially" provides needed flexibility to the permitting authorities. It is important to note that this is only one aspect that the permitting authority must consider when deciding on the appropriateness of a waiver.

4. Issue Permits

NPDES permitting authorities have a number of responsibilities regarding the permit process. Sections 123.35(d) through (g) ensure a certain level of consistency for permits, yet provide numerous opportunities for flexibility. NPDES permitting authorities must issue NPDES permits to cover municipal sources to be regulated under §122.32, unless waived under §122.32(c). EPA encourages permitting authorities to use general permits as the vehicle for permitting and regulating small MS4s. The Agency notes, however, that some operators may wish to take advantage of the option to join as a co-permittee with an MS4 regulated under the existing NPDES storm water program.

Today's final rule includes a provision, §123.35(f), that requires NPDES permitting authorities to either include the requirements in §122.34 for NPDES permits issued for regulated small MS4s or to develop permit limits based on a permit application submitted by a small MS4. See Section II.H.3.a, Minimum Control Measures, for more details on the actual

§122.34 requirements. See Section II.H.3.c for alternative and joint permitting options.

In an attempt to avoid duplication of effort, §122.34(c) allows NPDES permitting authorities to include permit conditions that direct an MS4 to meet the requirements of a qualifying local, Tribal, or State municipal storm water management program. For a local, Tribal, or State program to "qualify," it must impose, at a minimum, the relevant requirements of §122.34(b). A regulated small MS4 must still follow the procedural requirements for an NPDES permit (i.e., submit an application, either an individual application or an NOI under a general permit) but will instead follow the substantive pollutant control requirements of the qualifying local, Tribal, or State program.

Under §122.35(b), NPDES permitting authorities may also recognize existing responsibilities among governmental entities for the minimum control measures in an NPDES small MS4 storm water permit. For example, the permit might acknowledge the existence of a State administered program that addresses construction site runoff and require that the municipalities only develop substantive controls for the remaining minimum control measures. By acknowledging existing programs, this provision is meant to reduce the duplication of efforts and to increase the flexibility of the NPDES storm water program.

Section 123.35(e) of today's final rule requires permitting authorities to specify a time period of up to 5 years from the issuance date of an NPDES permit for regulated small MS4 operators to fully develop and implement their storm water programs. As discussed more fully below, permitting authorities should be providing extensive support to the local governments to assist them in developing and implementing their programs.

In the proposed rule, EPA stated that the permitting authority would develop the menu of BMPs and if they failed to do so, EPA would develop the menu. Commenters felt that EPA should develop a menu of BMPs, rather than just providing guidance. In the settlement agreement for seeking an extension to the deadline for issuing today's rule, EPA committed to developing a menu of BMPs by October 27, 2000. Permitting authorities can adopt EPA's menu or develop their own. The menu itself is not intended to replace more comprehensive BMP guidance materials. As part of the tool box efforts, EPA will provide separate guidance documents that discuss the results from EPA-sponsored nationwide studies on the design, operation and maintenance of BMPs. Additionally, EPA expects that the new rulemaking on construction BMPs may provide more specific design, operation and maintenance criteria.

5. Support and Oversee the Local Programs

NPDES permitting authorities are responsible for supporting and overseeing the local municipal programs. Section 123.35(h) of today's final rule highlights issues associated with these responsibilities.

To the extent possible, NPDES permitting authorities should provide financial assistance to MS4s, which *68748 often have limited resources, for the development and implementation of local programs. EPA recognizes that funding for programs at the State and Tribal levels may also be limited, but strongly encourages States and Tribes to provide whatever assistance is possible. In lieu of actual dollars, NPDES permitting authorities can provide cost-cutting assistance in a number of ways. For example, NPDES permitting authorities can develop outreach materials for MS4s to distribute or the NPDES permitting authority can actually distribute the materials. Another option is to implement an erosion and sediment control program across an entire State (or Tribal land), thus alleviating the need for the MS4 to implement its own program. The NPDES permitting authority must balance the need for site-specific controls, which are best handled by a local MS4, with its ability to offer financial assistance. EPA, States, Tribes, and MS4s should work as a team in making these kinds of decisions.

NPDES permitting authorities are responsible for overseeing the local programs. Permitting authorities should work with

the regulated community and other stakeholders to assist in local program development and implementation. This might include sharing information, analyzing reports, and taking enforcement actions, as necessary. NPDES permitting authorities play a vital role in supporting local programs by providing technical and programmatic assistance, conducting research projects, and monitoring watersheds. The NPDES permitting authority can also assist the MS4 permittee in obtaining adequate legal authority at the local level in order to implement the local component of the CWA section 402(p)(6) program.

NPDES permitting authorities are encouraged to coordinate and utilize the data collected under several programs. States and Tribes address point and nonpoint source storm water discharges through a variety of programs. In developing programs to carry out CWA section 402(p)(6), EPA recommends that States and Tribes coordinate all of their water pollution evaluation and control programs, including the continuing planning process under CWA section 303(e), the existing NPDES program, the CZARA program, and nonpoint source pollution control programs.

In addition, NPDES permitting authorities are encouraged to provide a brief (e.g., two-page) reporting format to facilitate compilation and analysis of data from reports submitted under §122.34(g)(3). EPA intends to develop a model form for this purpose.

H. Municipal Role

1. Scope of Today's Rule

Today's final rule attempts to establish an equitable and comprehensive four-pronged approach for the designation of municipal sources. First, the approach defines for automatic coverage the municipal systems believed to be of highest threat to water quality. Second, the approach designates municipal systems that meet a set of objective criteria used to measure the potential for water quality impacts. Third, the approach designates on a case-by-case basis municipal systems that "contribute substantially to the pollutant loadings of a physically-interconnected [regulated] MS4." Finally, the approach designates on a case-by-case basis, upon petition, municipal systems that "contribute to a violation of a water quality standard or are a significant contributor of pollutants."

Today's final rule automatically designates for regulation small MS4s located in urbanized areas, and requires that NPDES permitting authorities examine for potential designation, at a minimum, a particular subset of small MS4s located outside of urbanized areas. Today's rule also includes provisions that allow for waivers from the otherwise applicable requirements for the smallest MS4s that are not causing impairment of a receiving water body. Qualifications for the waivers vary depending on whether the MS4 serves a population under 1,000 or a population under 10,000. See §§122.32(d) and (e). These waivers are discussed further in section II.G.3. Any small MS4 automatically designated by the final rule or designated by the permitting authority under today's final rule is defined as a "regulated" small MS4 unless it receives a waiver.

In today's final rule, all regulated small MS4s must establish a storm water discharge control program that meets the requirements of six minimum control measures. These minimum control measures are public education and outreach on storm water impacts, public involvement participation, illicit discharge detection and elimination, construction site storm water runoff control, post-construction storm water management in new development and redevelopment, and pollution prevention/good housekeeping for municipal operations.

Today's rule allows for a great deal of flexibility in how an operator of a regulated small MS4 is authorized to discharge under an NPDES permit, by providing various options for obtaining permit coverage and satisfying the required minimum control measures. For example, the NPDES permitting authority can incorporate by reference qualifying State, Tri-

bal, or local programs in an NPDES general permit and can recognize existing responsibilities among different governmental entities for the implementation of minimum control measures. In addition, a regulated small MS4 can participate in the storm water management program of an adjoining regulated MS4 and can arrange to have another governmental entity implement a minimum control measure on their behalf.

2. Municipal Definitions

a. Municipal Separate Storm Sewer Systems (MS4s)

The CWA does not define the term "municipal separate storm sewer." EPA defined municipal separate storm sewer in the existing storm water permit application regulations to mean, in part, a conveyance or system of conveyances (including roads with drainage systems and municipal streets) that is "owned or operated by a State, city, town borough, county, parish, district, association, or other public body * * * designed or used for collecting or conveying storm water which is not a combined sewer and which is not part of a Publicly Owned Treatment Works as defined at 40 CFR 122.2" (see §122.26(b)(8)(i)). Section 122.26 contains definitions of medium and large municipal separate storm sewer systems but no definition of a municipal separate storm sewer system, even though the term MS4 is commonly used. In today's rule, EPA is adding a definition of municipal separate storm sewer system and small municipal separate storm sewer system along with the abbreviations MS4 and small MS4.

The existing municipal permit application regulations define "medium" and "large" MS4s as those located in an incorporated place or county with a population of at least 100,000 (medium) or 250,000 (large) as determined by the latest Decennial Census (see §§122.26(b)(4) and 122.26(b)(7)). In today's final rule, these regulations have been revised to define all medium and large MS4s as those meeting the above population thresholds according to the 1990 Decennial Census.

Today's rule also corrects the titles and contents of Appendices F, G, H, & I to Part 122. EPA is adding those incorporated places and counties whose 1990 population caused them to be defined as a "medium" or "large" MS4. All of these MS4s have applied for *68749 permit coverage so the effect of this change to the appendices is simply to make them more accurate. They will not need to be revised again because today's rule "freezes" the definition of "medium" and "large" MS4s at those that qualify based on the 1990 census.

EPA received several comments supporting and opposing the proposal to "freeze" the definitions based on the 1990 census. Commenters who disagreed with EPA's position cited the unfairness of municipalities that reach the medium or large threshold at a later date having fewer permitting requirements compared to those that were already at the population thresholds when the existing storm water regulations took effect. EPA recognizes this disparity but does not believe it is unfair, as explained in the proposed rule. The decision was based on the fact that the deadlines from the existing regulations have lapsed, and because the permitting authority can always require more from operators of MS4s serving "newly over 100,000" populations.

b. Small Municipal Separate Storm Sewer Systems

The proposal to today's final rule added "the United States" as a potential owner or operator of a municipal separate storm sewer. This addition was intended to address an omission from existing regulations and to clarify that federal facilities are, in fact, covered by the NPDES program for municipal storm water discharges when the federal facility is like other regulated MS4s. EPA received a comment that this change would cause federal facilities located in Phase 1 areas to be considered Phase 1 dischargers due to the definition of medium and large MS4s. All MS4s located in Phase 1 cities or counties are defined as Phase 1 medium or large MS4s. EPA believes that all federal facilities serve a population of un-

der 100,000 and should be regulated as small MS4s. Therefore, in §122.26(a)(16) of today's final rule, EPA is adding federal facilities to the NPDES storm water discharge control program by changing the proposed definition of small municipal separate storm sewer system. Paragraph (i) of this section restates the definition of municipal separate storm sewer with the addition of "the United States" as a owner or operator of a small municipal separate storm sewer. Paragraph (ii) repeats the proposed language that states that a small MS4 is a municipal separate storm sewer that is not medium or large.

Most commenters agreed that federal facilities should be covered in the same way as other similar MS4s. However, EPA received several comments asking whether individual federal buildings such as post offices or urban offices of the U.S. Park Service must apply for coverage as regulated small MS4s. Most of these buildings have, at most, a parking lot with runoff or a storm sewer that connects with a municipality's MS4. In §122.26(a)(16)(iii), EPA clarifies that the definition of small MS4 does not include individual buildings. These buildings may have a municipal separate storm sewer but they do not have a "system" of conveyances. The minimum measures for small MS4s were written to apply to storm sewer "systems" providing storm water drainage service to human populations and not to individual buildings. This is true of municipal separate storm sewers from State buildings as well as from federal buildings.

There will likely be situations where the permitting authority must decide if a federal or State complex should be regulated as a small MS4. A federal complex of two or three buildings could be treated as a single building and not be required to apply for coverage. In these situations, permitting authorities will have to use their best judgment as to the nature of the complex and its storm water conveyance system. Permitting authorities should also consider whether the federal or State complex cooperates with its municipality's efforts to implement their storm water management program.

Along with the questions about individual buildings, EPA received many questions about how various provisions of the rule should be interpreted for federal and State facilities. EPA acknowledges that federal and State facilities are different from municipalities. EPA believes, however, that the minimum measures are flexible enough that they can be implemented by these facilities. As an example, DOD commenters asked about how to interpret the term "public" for military installations when implementing the public education measure. EPA agrees with the suggested interpretation of "public" for DOD facilities as "the resident and employee population within the fence line of the facility."

EPA also received many comments from State departments of transportation (DOTs) that suggested the ways in which they are different from municipalities and should therefore be regulated differently. Storm water discharges from State DOTs in Phase 1 areas should already be regulated under Phase I. The preamble to Phase 1 clearly states that "all systems within a geographical area including highways and flood control districts will be covered." Many permitting authorities regulated State DOTs as co-permittees with the Phase 1 municipality in which the highway is located. State DOTs that are already regulated under Phase I are not required to comply with Phase II. State DOTs that are not already regulated have various options for meeting the requirements of today's rule. These options are discussed in Section II.H.3.c.iv below. Several DOTs commented that some of the minimum measures are outside the scope of their mission or that they do not have the legal authority required for implementation. EPA believes that the flexibility of the minimum measures allows them to be implemented by most MS4s, including DOTs. When a DOT does not have the necessary legal authority, EPA encourages the DOT to coordinate their storm water management efforts with the surrounding municipalities and other State agencies. Under today's rule, DOTs can use any of the options of §122.35 to share their storm water management responsibilities. DOTs may also want to work with their permitting authority to develop a State-wide DOT storm water permit.

There are many storm water discharges from State DOTs and other State MS4s located in Phase 1 areas that were not regulated under Phase 1. Today's rule adds many more State facilities as well as all federal facilities located in urbanized

areas. All of these State and federal facilities that fit the definition of a small MS4 must be covered by a storm water management program. The individual permitting authorities must decide what type of permit is most applicable.

The existing NPDES storm water program already regulates storm water from federally or State-operated industrial sources. Federal or State facilities that are currently regulated due to their industrial discharges may already be implementing some of today's rule requirements.

EPA received comments that questioned the apparent inconsistency between regulating a federal facility such as a hospital and not regulating a similar private facility. Normally, this type of private facility is regulated by the MS4. EPA believes that federal facilities are subject to local water quality regulations, including storm water requirements, by virtue of the waiver of sovereign immunity in CWA section 313. However, there are special problems faced by MS4s in their efforts to regulate federal facilities that have not been encountered in regulating similar private facilities. To ensure comprehensive coverage, today's rule merely clarifies the need for permit coverage for these federal facilities.

i. Combined Sewer Systems (CSS). The definition of small MS4s does not include combined sewer systems. A combined sewer system is a wastewater collection system that conveys sanitary wastewater and storm water through a single set of pipes to a publicly-owned treatment works (POTW) for treatment before discharging to a receiving waterbody. During wet weather events when the capacity of the combined sewer system is exceeded, the system is designed to discharge prior to the POTW treatment plant directly into a receiving waterbody. Such an overflow is a combined sewer overflow or CSO. Combined sewer systems are not subject to existing regulations for municipal storm water discharges, nor will they be subject to today's regulations. EPA addresses combined sewer systems and CSOs in the National Combined Sewer Overflow (CSO) Control Policy issued on April 19, 1994 (59 FR 18688). The CSO Control Policy contains provisions for developing appropriate, site-specific NPDES permit requirements for combined sewer systems. CSO discharges are subject to limitations based on the best available technology economically achievable for toxic pollutants and based on the best conventional pollutant control technology for conventional pollutants. MS4s are subject to a different technology standard for all pollutants, specifically to reduce pollutants to the maximum extent practicable.

Some municipalities are served by both separate storm sewer systems and combined sewer systems. If such a municipality is located within an urbanized area, only the separate storm sewer systems within that municipality is included in the NPDES storm water program and subject to today's final rule. If the municipality is not located in an urbanized area, then the NPDES permitting authority has discretion as to whether the discharges from the separate storm sewer system is subject to today's final rule. The NPDES permitting authority will use the same process to designate discharges from portions of an MS4 for permit coverage where the municipality is also served by a combined sewer system.

EPA recognizes that municipalities that have both combined and separate storm sewer systems may wish to find ways to develop a unified program to meet all wet weather water pollution control requirements more efficiently. In the proposal to today's final rule, EPA sought comment on ways to achieve such a unified program. Many municipalities that are served by CSSs and MS4s commented that it is inequitable to force them to comply with Phase II at this time because implementation of the CSO Control Policy through their NPDES permits already imposes a significant financial burden. They requested an extension of the implementation time frame. They did not provide ideas on how to unify the two programs. EPA encourages permitting authorities to work with these municipalities as they develop and begin implementation of their CSO and storm water management programs. If both sets of requirements are carefully coordinated early, a cost-effective wet weather program can be developed that will address both CSO and storm water requirements.

ii. Owners/Operators. Several commenters mentioned the difference between the existing storm water application requirement for municipal operators and the proposed municipal requirement for owners or operators to apply. They felt

that this inconsistency is confusing. The preamble to the existing regulations makes numerous references to owner/operator so there was no intent to make a clear distinction between Phase I and Phase II. Section 122.21(b) states that when the owner and operator are different, the operator must obtain the permit. MS4s often have several operators. The owner may be responsible for one part of the system and a regional authority may be responsible for other aspects. EPA proposed the "owner or operator" language to convey this dual responsibility. However, when the owner is responsible for some part of a storm water management plan, it is also an operator.

EPA has revised the regulation language to clarify that "an operator" must apply for a permit. When responsibilities for the MS4 are shared, all operators must apply.

c. Regulated Small MS4s

In today's final rule, all small MS4s located in an urbanized area are automatically designated as "regulated" small MS4s provided that they were not previously designated into the existing storm water program. Unlike medium and large MS4s under the existing storm water regulations, not all small MS4s are designated under today's final rule. Therefore, today's rule distinguishes between "small" MS4s and "regulated small" MS4s.

EPA's definition of "regulated small MS4s" in the proposal to today's rule included mention of incorporated places and counties. Along with the definition, EPA included Appendices 6 and 7 to assist in the identification of areas that would probably require coverage as "automatically designated" (Appendix 6) or "potentially designated" (Appendix 7). The definition and the appendices raised many questions about exactly who was required to comply with the proposed requirements. Commenters raised issues about the definition of "incorporated place" and the status of towns, townships, and other places that are not considered incorporated by the Census Bureau. They also asked about special districts, regional authorities, MS4s already regulated, and other questions in order to clarify the rule's coverage.

EPA has revised §122.32(a) to clarify that discharges are regulated under today's rule if they are from a small MS4 that is in an urbanized area and has not received a waiver or they are designated by the permitting authority. Today's rule does not regulate the county, city, or town. Today's rule regulates the MS4. Therefore, even though a county may be listed in Appendix 6, if that county does not own or operate the municipal storm sewer systems, the county does not have to submit an application or develop a storm water management program. If another entity does own or operate an MS4 within the county, for example, a regional utility district, that other entity needs to submit the application and develop the program.

Some commenters suggested that EPA should change the rule language to specifically allow regional authorities to be the permitted entity and to allow small MS4s to apply as co-permittees. EPA believes that the best way to clarify that regional authorities can be the primary permitted entity is the change to §122.32(a) and the explanation above. Because EPA assumes that today's regulation will be implemented through general permits, MS4s will not be co-permittees under a general permit in the same manner as under individual permits. EPA has added §122.33(a)(4) and made a minor change to §122.35(a) to clarify that small MS4s can work together to share the responsibilities of a storm water management program. This is discussed further in Section II.H.3.c.iv below.

The proposed rule stated that when a county or Federal Indian reservation is only partially included in an urbanized area, only MS4s in the urbanized portion of the county or Federal Indian reservation would be regulated. In the rare cases when an incorporated place is only partially included in the urbanized area, the entire incorporated place would be regulated. EPA received comments asking about towns and *68751 townships, because they were not considered to be incorporated areas according to the Census Bureau's definition. Would the whole town/township be covered or only the part of the town/township in the urbanized area? States use many different types of systems in their geographical divisions.

Some towns are similar to incorporated cities and others are large areas that are more similar to counties. Some commenters thought that the urbanized area boundary was arbitrary, and if part of a town or county was covered, it all should be covered. Other commenters noted that some townships and counties encompass very large areas of which only a small portion is urbanized. Due to the great variety of situations, EPA has decided that for all geographical entities, only MS4s in the urbanized area are automatically designated. The population densities associated with the Census Bureau's designation of urbanized areas provide the basis for designation of these areas to protect water quality. This focused designation provides for consistency and allows for flexibility on the part of the MS4 and the permitting authority. In those situations where an incorporated place or a town is not all in an "urbanized area", there is a good possibility that it is served by more than one MS4. In those cases where the area is served by the same MS4, it makes sense to develop a storm water program for the whole area. Permitting authorities may also decide to designate all MS4s within a county or township, if they believe it is necessary to protect water quality.

Most operators of MS4s will not need to independently determine the status of coverage under today's rule. EPA has revised the proposed Appendices 6 and 7 to include towns and townships. Therefore, these appendices will alert most MS4s as to whether they are likely to be covered under today's rule. However, each permitting authority must make the decision as to who requires coverage. Most likely, an illustrative list of the regulated areas will be published with the general permit. If not, the operator can contact its permitting authority or the Bureau of the Census to find out if their separate storm sewer systems are within an urbanized area.

i. Urbanized Area Description. Under the Bureau of the Census definition of "urbanized area," adopted by EPA for the purposes of today's final rule, "an urbanized area (UA) comprises a place and the adjacent densely settled surrounding territory that together have a minimum population of 50,000 people." The proposal to today's rule provided the full definition and case studies to help explain the census category of "urbanized area." Appendix 2 is a simplified urbanized area illustration to help demonstrate the concept of urbanized areas in relation to today's final rule. The "urbanized area" is the shaded area that includes within its boundaries incorporated places, a portion of a Federal Indian reservation, portions of two counties, an entire town, and portions of another town. All small MS4s located in the shaded area are covered by the rule, unless and until waived by the permitting authority. Any small MS4s located outside of the shaded area are subject to potential designation by the permitting authority.

There are 405 urbanized areas in the United States that cover 2 percent of total U.S. land area and contain approximately 63 percent of the nation's population (see Appendix 3 for a listing of urbanized areas of the United States and Puerto Rico). These numbers include U.S. Territories, although Puerto Rico is the only territory to have Census-designated urbanized areas. Urbanized areas constitute the largest and most dense areas of settlement. The purpose of determining an "urbanized area" is to delineate the boundaries of development and map the actual built-up urban area. The Bureau of the Census geographers liken it to flying over an urban area and drawing a line around the boundary of the built-up area as seen from the air.

Using data from the latest decennial census, the Census Bureau applies the urbanized area definition nationwide (including U.S. Tribes and Territories) and determines which places and counties are included within each urbanized area. For each urbanized area, the Bureau provides full listings of who is included, as well as detailed maps and special CD-ROM files for use with computerized mapping systems (such as GIS). Each State's data center receives a copy of the list, and some maps, automatically. The States also have the CD-ROM files and a variety of publications available to them for reference from the Bureau of the Census. In addition, local or regional planning agencies may have urbanized area files already. New listings for urbanized areas based on the 2000 Census will be available by July/August 2001, but the more comprehensive computer files will not be available until late 2001/early 2002.

Additional designations based on subsequent census years will be governed by the Bureau of the Census' definition of an urbanized area in effect for that year. Based on historical trends, EPA expects that any area determined by the Bureau of the Census to be included within an urbanized area as of the 1990 Census will not later be excluded from the urbanized area as of the 2000 Census. However, it is important to note that even if this situation were to occur, for example, due to a possible change in the Bureau of the Census' urbanized area definition, a small MS4 that is automatically designated into the NPDES program for storm water under an urbanized area calculation for any given Census year will remain regulated regardless of the results of subsequent urbanized area calculations.

ii. Rationale for Using Urbanized Areas. EPA is using urbanized areas to automatically designate regulated small MS4s on a nationwide basis for several reasons: (1) studies and data show a high correlation between degree of development/urbanization and adverse impacts on receiving waters due to storm water (U.S. EPA, 1983; Driver et al., 1985; Pitt, R.E. 1991. "Biological Effects of Urban Runoff Discharges." Presented at the Engineering Foundation Conference: Urban Runoff and Receiving Systems; An Interdisciplinary Analysis of Impact, Monitoring and Management, August 1991. Mt. Crested Butte, CO. American Society of Civil Engineers, New York. 1992.; Pitt, R.E. 1995. "Biological Effects of Urban Runoff Discharges," in Storm water Runoff and Receiving Systems: Impact, Monitoring, and Assessment. Lewis Publishers, New York.; Galli, J. 1990. Thermal Impacts Associated with Urbanization and Storm water Management Best Management Practices. Prepared for the Sediment and Storm water Administration of the Maryland Department of the Environment.; Klein, 1979), (2) the blanket coverage within the urbanized area encourages the watershed approach and addresses the problem of "donut-holes," where unregulated areas are surrounded by areas currently regulated (storm water discharges from donut hole areas present a problem due to their contributing uncontrolled adverse impacts on local waters, as well as by frustrating the attainment of water quality goals of neighboring regulated communities), (3) this approach targets present and future growth areas as a preventative measure to help ensure water quality protection, and (4) the determination of urbanized areas by the Bureau of the Census allows operators of small MS4s to quickly determine whether they are included in the NPDES storm water program as a regulated small MS4.

Urbanized areas have experienced significant growth over the past 50 years. According to EPA calculations *68752 based on Census data from 1980 to 1990, the national average rate of growth in the United States during that 10-year period was more than 4 percent. For the same period, the average growth within urbanized areas was 15.7 percent and the average for outside of urbanized areas was just more than 1 percent. The new development occurring in these growing areas can provide some of the best opportunities for implementing cost-effective storm water management controls.

EPA received many comments on the proposal to designate discharges based on location within urbanized areas. EPA considered numerous other approaches; several of which are discussed in the proposal to today's final rule. Several commenters wanted designation to be based on proven water quality problems rather than inclusion in an urbanized area. One commenter proposed an approach based on the CWA 303(d) listing of impaired waters and the wasteload allocation conducted under the TMDL process. (See section III.L. on the section 303(d) and TMDL process). The commenter's proposal would designate small MS4s on a case-by-case basis, covering only those discharges where receiving streams are shown to have water quality problems, particularly a failure to meet water quality standards, including designated uses. The commenter further described a non-NPDES approach where a State would require cost-effective measures based on a proportionate share under a waste load allocation, equitably allocated among all pollutant contributors. These waste load allocations would be developed with input from all stakeholders, and remedial measures would be implemented in a phased manner based on the probability of results and/or economic feasibility. The States would then periodically reassess the receiving streams to determine whether the remedial measures are working, and if not, require additional control measures using the same procedure used to establish the initial measures. What the commenter describes is almost a TM- DL.

EPA considered a remedial approach based on water quality impairment and rejected it for failure to prevent almost certain degradation caused by urban storm water. EPA's main concern in opting not to take a case-by-case approach to designation was that this approach would not provide controls for storm water discharges in receiving streams until after a site-specific demonstration of adverse water quality impact. The commenter's suggestion would do nothing to prevent pollution in waters that may be meeting water quality standards, including supporting designated uses. The approach would also rely on identifying storm water management programs following comprehensive watershed plans and TMDL development. In most States, water quality assessments have traditionally been conducted for principal mainstream rivers and their major tributaries, not all surface waters. The establishment of TMDLs nationwide will take many years, and many States will conduct additional monitoring to determine water quality conditions prior to establishing TMDLs. In addition, a case-by-case approach would not address the problem of "donut holes" within urbanized areas and a lack of consistency among similarly situated municipal systems would remain commonplace. After careful consideration of all comments, EPA still believes that the approach in today's rule is the most appropriate to protect water quality. Protection includes prevention as well as remediation.

d. Municipal Designation by the Permitting Authority

Today's final rule also allows NPDES permitting authorities to designate MS4s that should be included in the storm water program as regulated small MS4s but are not located within urbanized areas. The final rule requires, at a minimum, that a set of designation criteria be applied to all small MS4s within a jurisdiction that serves a population of at least 10,000 and has a population density of at least 1,000. Appendix 7 to this preamble provides an illustrative list of places that the Agency anticipates meet this criteria. In addition, any small MS4 may be the subject of a petition to the NPDES permitting authority for designation. See Section II.G, NPDES Permitting Authority's Role for more details on the designation and petition processes. EPA believes that the approach of combining nationwide and local designation to determine municipal coverage balances the potential for significant adverse impacts on water quality with local watershed protection and planning efforts.

e. Waiving the Requirements for Small MS4s

Today's final rule includes some flexibility in the nationwide coverage of all small MS4s located in urbanized areas by providing the NPDES permitting authority with the discretion to waive the otherwise applicable requirements of the smallest MS4s that are not causing the impairment of a receiving water body. Qualifications for the waiver vary depending on whether the MS4 serves a population under 1,000 or a population between 1,000 and 10,000. Note that even if a small MS4 has requirements waived, it can subsequently be brought back into the program if circumstances change. See Section II.G, NPDES Permitting Authority's Role, for more details on this process.

3. Municipal Permit Requirements

a. Overview

i. Summary of Permitting Options. Today's rule outlines six minimum control measures that constitute the framework for a storm water discharge control program for regulated small MS4s that, when properly implemented, will reduce pollutants to the maximum extent practicable (MEP). These six minimum control measures are specified in §122.34(b) and are discussed below in section "II.H.3.b, Program Requirements-Minimum Control Measures." All operators of regulated small MS4s are required to obtain coverage under an NPDES permit, unless the requirement is waived by the permitting authority in accordance with today's rule. Implementation of §122.34(b) may be required either through an individual permit or, if the State or EPA makes one available to the facility, through a general permit. The process for issuing and obtaining these permits is discussed below in section "II.H.3.c, Application Requirements."

As an alternative to implementing a program that complies with the requirements of §122.34, today's rule provides operators of regulated small MS4s with the option of applying for an individual permit under §122.26(d). The permit application requirements in §122.26 were originally drafted to apply to medium and large MS4s. Although EPA believes that the requirements of § 122.34 provide a regulatory option that is appropriate for most small MS4s, the operators of some small MS4s may prefer more individualized requirements. This alternative permitting option for regulated small MS4s that wish to develop their own program is discussed below in section "II.H.3.c.iii. Alternative Permit Option." The second alternative permitting option for regulated small MS4s is to become co-permittees with a medium or large MS4 regulated under § 122.26(d), as discussed below in section "II.H.3.c.v. Joint Permit Programs."

ii. Water Quality-Based Requirements. Any NPDES permit issued under today's rule must, at a minimum, require the operator to develop, implement, and *68753 enforce a storm water management program designed to reduce the discharge of pollutants from a regulated system to the MEP, to protect water quality, and satisfy the appropriate water quality requirements of the Clean Water Act (see MEP discussion in the following section). Absent evidence to the contrary, EPA presumes that a small MS4 program that implements the six minimum measures in today's rule does not require more stringent limitations to meet water quality standards. Proper implementation of the measures will significantly improve water quality. As discussed further below, however, small MS4 permittees should modify their programs if and when available information indicates that water quality considerations warrant greater attention or prescriptiveness in specific components of the municipal program. If the program is inadequate to protect water quality, including water quality standards, then the permit will need to be modified to include any more stringent limitations necessary to protect water quality.

Regardless of the basis for the development of the effluent limitations (whether designed to implement the six minimum measures or more stringent or prescriptive limitations to protect water quality), EPA considers narrative effluent limitations requiring implementation of BMPs to be the most appropriate form of effluent limitations for MS4s. CWA section 402(p)(3)(b)(iii) expresses a preference for narrative rather than numeric effluent limits, for example, by reference to "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)(iii). EPA determines that pollutants from wet weather discharges are most appropriately controlled through management measures rather than end-of-pipe numeric effluent limitations. As explained in the Interim Permitting Policy for Water Quality-Based Effluent Limitations in Storm Water Permits, issued on August 1, 1996 [61 FR 43761 (November 26, 1996)], EPA believes that the currently available methodology for derivation of numeric water quality-based effluent limitations is significantly complicated when applied to wet weather discharges from MS4s (compared to continuous or periodic batch discharges from most other types of discharge). Wet weather discharges from MS4s introduce a high degree of variability in the inputs to the models currently available for derivation of water quality based effluent limitations, including assumptions about instream and discharge flow rates, as well as effluent characterization. In addition, EPA anticipates that determining compliance with any such numeric limitations may be confounded by practical limitations in sample collection.

In the first two to three rounds of permit issuance, EPA envisions that a BMP-based storm water management program that implements the six minimum measures will be the extent of the NPDES permit requirements for the large majority of regulated small MS4s. Because the six measures represent a significant level of control if properly implemented, EPA anticipates that a permit for a regulated small MS4 operator implementing BMPs to satisfy the six minimum control measures will be sufficiently stringent to protect water quality, including water quality standards, so that additional, more stringent and/or more prescriptive water quality based effluent limitations will be unnecessary.

If a small MS4 operator implements the six minimum control measures in § 122.34(b) and the discharges are determined

to cause or contribute to non-attainment of an applicable water quality standard, the operator needs to expand or better tailor its BMPs within the scope of the six minimum control measures. EPA envisions that this process will occur during the first two to three permit terms. After that period, EPA will revisit today's regulations for the municipal separate storm sewer program.

If the permitting authority (rather than the regulated small MS4 operator) needs to impose additional or more specific measures to protect water quality, then that action will most likely be the result of an assessment based on a TMDL or equivalent analysis that determines sources and allocations of pollutant(s) of concern. EPA believes that the small MS4's additional requirements, if any, should be guided by its equitable share based on a variety of considerations, such as cost effectiveness, proportionate contribution of pollutants, and ability to reasonably achieve wasteload reductions. Narrative effluent limitations in the form of BMPs may still be the best means of achieving those reductions.

See Section II.L, Water Quality Issues, for further discussion of this approach to permitting, consistent with EPA's interim permitting guidance. Pursuant to CWA section 510, States implementing their own NPDES programs may develop more stringent or more prescriptive requirements than those in today's rule.

EPA's interpretation of CWA section 402(p)(3)(B)(iii) was recently reviewed by the Ninth Circuit in *Defenders of Wildlife, et al v. Browner*, No. 98-71080 (September 15, 1999). The Court upheld the Agency's action in issuing five MS4 permits that included water quality-based effluent limitations. The Court did, however, disagree with EPA's interpretation of the relationship between CWA sections 301 and 402(p). The Court reasoned that MS4s are not compelled by section 301(b)(1)(C) to meet all State water quality standards, but rather that the Administrator or the State may rely on section 402(p)(3)(B)(iii) to require such controls. Accordingly, the *Defenders of Wildlife* decision is consistent with the Agency's 1996 "Interim Permitting Policy for Water Quality-Based Effluent Limitations in Storm Water Permits."

As noted, the 1996 Policy describes how permits would implement an iterative process using BMPs, assessment, and re-focused BMPs, leading toward attainment of water quality standards. The ultimate goal of the iteration would be for water bodies to support their designated uses. EPA believes this iterative approach is consistent with and implements section 301(b)(1)(C), notwithstanding the Ninth Circuit's interpretation. As an alternative to basing these water quality-based requirements on section 301(b)(1)(C), however, EPA also believes the iterative approach toward attainment of water quality standards represents a reasonable interpretation of CWA section 402(p)(3)(B)(iii). For this reason, today's rule specifies that the "compliance target" for the design and implementation of municipal storm water control programs is "to reduce pollutants to the maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of the CWA." The first component, reductions to the MEP, would be realized through implementation of the six minimum measures. The second component, to protect water quality, reflects the overall design objective for municipal programs based on CWA section 402(p)(6). The third component, to implement other applicable water quality requirements of the CWA, recognizes the Agency's specific determination under CWA section 402(p)(3)(B)(iii) of the need to achieve reasonable further progress toward attainment of water quality standards according to the iterative BMP process, as well as the determination that State or EPA officials who establish TMDLs could allocate waste loads to *68754 MS4s, as they would to other point sources.

EPA does not presume that water quality will be protected if a small MS4 elects not to implement all of the six minimum measures and instead applies for alternative permit limits under §122.26(d). Operators of such small MS4s that apply for alternative permit limits under §122.26(d) must supply additional information through individual permit applications so that the permit writer can determine whether the proposed program reduces pollutants to the MEP and whether any other provisions are appropriate to protect water quality and satisfy the appropriate water quality requirements of the Clean Water Act.

iii. Maximum Extent Practicable. Maximum extent practicable (MEP) is the statutory standard that establishes the level of pollutant reductions that operators of regulated MS4s must achieve. The CWA requires that NPDES permits for discharges from MS4s "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." CWA Section 402(p)(3)(B)(iii). This section also calls for "such other provisions as the [EPA] Administrator or the State determines appropriate for the control of such pollutants." EPA interprets this standard to apply to all MS4s, including both existing regulated (large and medium) MS4s, as well as the small MS4s regulated under today's rule.

For regulated small MS4s under today's rule, authorization to discharge may be under either a general permit or individual permit, but EPA anticipates and expects that general permits will be the most common permit mechanism. The general permit will explain the steps necessary to obtain permit authorization. Compliance with the conditions of the general permit and the series of steps associated with identification and implementation of the minimum control measures will satisfy the MEP standard. Implementation of the MEP standard under today's rule will typically require the permittee to develop and implement appropriate BMPs to satisfy each of the required six minimum control measures.

In issuing the general permit, the NPDES permitting authority will establish requirements for each of the minimum control measures. Permits typically will require small MS4 permittees to identify in their NOI the BMPs to be performed and to develop the measurable goals by which implementation of the BMPs can be assessed. Upon receipt of the NOI from a small MS4 operator, the NPDES permitting authority will have the opportunity to review the NOI to verify that the identified BMPs and measurable goals are consistent with the requirement to reduce pollutants under the MEP standard, to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act. If necessary, the NPDES permitting authority may ask the permittee to revise their mix of BMPs, for example, to better reflect the MEP pollution reduction requirement. Where the NPDES permit is not written to implement the minimum control measures specified under §122.34(b), for example in the case of an individual permit under §122.33(b)(2)(ii), the MEP standard will be applied based on the best professional judgment of the permit writer.

Commenters argued that MEP is, as yet, an undefined term and that EPA needs to further clarify the MEP standards by providing a regulatory definition that includes recognition of cost considerations and technical feasibility. Commenters argued that, without a definition, the regulatory community is not adequately on notice regarding the standard with which they need to comply. EPA disagrees that affected MS4 permittees will lack notice of the applicable standard. The framework for the small MS4 permits described in this notice provides EPA's interpretation of the standard and how it should be applied.

EPA has intentionally not provided a precise definition of MEP to allow maximum flexibility in MS4 permitting. MS4s need the flexibility to optimize reductions in storm water pollutants on a location-by-location basis. EPA envisions that this evaluative process will consider such factors as conditions of receiving waters, specific local concerns, and other aspects included in a comprehensive watershed plan. Other factors may include MS4 size, climate, implementation schedules, current ability to finance the program, beneficial uses of receiving water, hydrology, geology, and capacity to perform operation and maintenance.

The pollutant reductions that represent MEP may be different for each small MS4, given the unique local hydrologic and geologic concerns that may exist and the differing possible pollutant control strategies. Therefore, each permittee will determine appropriate BMPs to satisfy each of the six minimum control measures through an evaluative process. Permit writers may evaluate small MS4 operator's proposed storm water management controls to determine whether reduction of pollutants to the MEP can be achieved with the identified BMPs.

EPA envisions application of the MEP standard as an iterative process. MEP should continually adapt to current conditions and BMP effectiveness and should strive to attain water quality standards. Successive iterations of the mix of BMPs and measurable goals will be driven by the objective of assuring maintenance of water quality standards. If, after implementing the six minimum control measures there is still water quality impairment associated with discharges from the MS4, after successive permit terms the permittee will need to expand or better tailor its BMPs within the scope of the six minimum control measures for each subsequent permit. EPA envisions that this process may take two to three permit terms.

One commenter observed that MEP is not static and that if the six minimum control measures are not achieving the necessary water quality improvements, then an MS4 should be expected to revise and, if necessary, expand its program. This concept, it is argued, must be clearly part of the definition of MEP and thus incorporated into the binding and operative aspects of the rule. As is explained above, EPA believes that it is. The iterative process described above is intended to be sensitive to water quality concerns. EPA believes that today's rule contains provisions to implement an approach that is consistent with this comment.

b. Program Requirements/Minimum Control Measures

A regulated small MS4 operator must develop and implement a storm water management program designed to reduce the discharge of pollutants from their MS4 to protect water quality. The storm water management program must include the following six minimum measures.

i. Public Education and Outreach on Storm Water Impacts. Under today's final rule, operators of small MS4s must implement a public education program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of storm water discharges on water bodies and the steps to reduce storm water pollution. The public education program should inform individuals and households about the problem and the steps they can take to reduce or prevent storm water pollution.

EPA believes that as the public gains a greater understanding of the storm water program, the MS4 is likely to gain more support for the program (including funding initiatives). In addition, compliance with the program will probably be greater if the public understands the personal responsibilities expected of them. Well-informed citizens can act as formal or informal educators to further disseminate information and gather support for the program, thus easing the burden on the municipalities to perform all educational activities.

MS4s are encouraged to enter into partnerships with their States in fulfilling the public education requirement. It may be more cost-effective to utilize a State education program instead of numerous MS4s developing their own programs. MS4 operators are also encouraged to work with other organizations (e.g., environmental, nonprofit and industry organizations) that might be able to assist in fulfilling this requirement.

The public education program should be tailored, using a mix of locally appropriate strategies, to target specific audiences and communities (particularly minority and disadvantaged communities). Examples of strategies include distributing brochures or fact sheets, sponsoring speaking engagements before community groups, providing public service announcements, implementing educational programs targeted at school age children, and conducting community-based projects such as storm drain stenciling, and watershed and beach cleanups. Operators of MS4s may use storm water educational information provided by the State, Tribe, EPA, or environmental, public interest, trade organizations, or other MS4s. Examples of successful public education efforts concerning polluted runoff can be found in many State nonpoint source pollution control programs under CWA section 319.

The public education program should inform individuals and households about steps they can take to reduce storm water pollution, such as ensuring proper septic system maintenance, ensuring the use and disposal of landscape and garden chemicals including fertilizers and pesticides, protecting and restoring riparian vegetation, and properly disposing of used motor oil or household hazardous wastes. Additionally, the program could inform individuals and groups on how to become involved in local stream and beach restoration activities as well as activities coordinated by youth service and conservation corps and other citizen groups. Finally, materials or outreach programs should be directed toward targeted groups of commercial, industrial, and institutional entities likely to have significant storm water impacts. For example, MS4 operators should provide information to restaurants on the impact of grease clogging storm drains and to auto garages on the impacts of used oil discharges.

EPA received comments from representatives of State DOTs and U.S. Department of Defense (DOD) installations seeking exemption from the public education requirement. While today's rule does not exempt DOTs and military bases from the user education requirement, the Agency believes the flexibility inherent in the Rule addresses many of the concerns expressed by these commenters.

Certain DOT representatives commented that if their agencies were not exempt from the user education measure's requirements, they should at least be allowed to count DOT employee education as an adequate substitute. EPA supports the use of existing materials and programs, granted such materials and programs meet the rule's requirement that the MS4 user community (i.e., the public) is also educated concerning the impacts of storm water discharges on water bodies and the steps to reduce storm water pollution.

Finally, certain DOD representatives requested that "public," as applied to their installations, be defined as the resident and employee populations within the fence line of the facility. EPA agrees that the education effort should be directed toward those individuals who frequent the federally owned land (i.e., residents and individuals who come there to work and use the MS4 facilities).

EPA also received a number of comments from municipalities stating that education would be more thorough and cost effective if accomplished by EPA on the national level. EPA believes that a collaborative State and local approach, in conjunction with significant EPA technical support, will best meet the goal of targeting, and reaching, specific local audiences. EPA technical support will include a tool box which will contain fact sheets, guidance documents, an information clearinghouse, and training and outreach efforts.

Finally, EPA received comments expressing concern that the public education program simply encourages the distribution of printed material. EPA is sensitive to this concern. Upon evaluation, the Agency made changes to the proposal's language for today's rule. The language has been changed to reflect EPA's belief that a successful program is one that includes a variety of strategies locally designed to reach specific audiences.

ii. Public Involvement/Participation. Public involvement is an integral part of the small MS4 storm water program. Accordingly, today's final rule requires that the municipal storm water management program must comply with applicable State and local public notice requirements. Section 122.34(b)(2) recommends a public participation process with efforts to reach out and engage all economic and ethnic groups. EPA believes there are two important reasons why the public should be allowed and encouraged to provide valuable input and assistance to the MS4's program.

First, early and frequent public involvement can shorten implementation schedules and broaden public support for a program. Opportunities for members of the public to participate in program development and implementation could include serving as citizen representatives on a local storm water management panel, attending public hearings, working as citizen volunteers to educate other individuals about the program, assisting in program coordination with other pre-existing pro-

grams, or participating in volunteer monitoring efforts. Moreover, members of the public may be less likely to raise legal challenges to a MS4's storm water program if they have been involved in the decision making process and program development and, therefore, internalize personal responsibility for the program themselves.

Second, public participation is likely to ensure a more successful storm water program by providing valuable expertise and a conduit to other programs and governments. This is particularly important if the MS4's storm water program is to be implemented on a watershed basis. Interested stakeholders may offer to volunteer in the implementation of all aspects of the program, thus conserving limited municipal resources.

EPA recognizes that there are a number of challenges associated with public involvement. One challenge is in engaging people in the public meeting and program design process. Another challenge is addressing conflicting viewpoints. Nevertheless, EPA strongly believes that these challenges can be addressed by use of an aggressive and inclusive program. Section II.K. provides further discussion on public involvement.

A number of municipalities sought clarification from EPA concerning what the public participation program must *68756 actually include. In response, the actual requirements are minimal, but the Agency's recommendations are more comprehensive. The public participation program must only comply with applicable State and local public notice requirements. The remainder of the preamble, as well as the Explanatory Note accompanying the regulatory text, provide guidance to the MS4s concerning what elements a successful and inclusive program should include. EPA will provide technical support as part of the tool box (i.e., providing model public involvement programs, conducting public workshops, etc.) to assist MS4 operators meet the intent of this measure.

Finally, the Agency encourages MS4s to seek public participation prior to submitting an NOI. For example, public participation at this stage will allow the MS4 to involve the public in developing the BMPs and measurable goals for their NOI.

iii. Illicit Discharge Detection and Elimination. Discharges from small MS4s often include wastes and wastewater from non-storm water "illicit" discharges. Illicit discharge is defined at 40 CFR 122.26(b)(2) as any discharge to a municipal separate storm sewer that is not composed entirely of storm water, except discharges pursuant to an NPDES permit and discharges resulting from fire fighting activities. As detailed below, other sources of non-storm water, that would otherwise be considered illicit discharges, do not need to be addressed unless the operator of the MS4 identifies one or more of them as a significant source of pollutants into the system. EPA's Nationwide Urban Runoff Program (NURP) indicated that many storm water outfalls still discharge during substantial dry periods. Pollutant levels in these dry weather flows were shown to be high enough to significantly degrade receiving water quality. Results from a 1987 study conducted in Sacramento, California, revealed that slightly less than one-half of the water discharged from a municipal separate storm sewer system was not directly attributable to precipitation runoff (U.S. Environmental Protection Agency, Office of Research and Development. 1993. Investigation of Inappropriate Pollutant Entries Into Storm Drainage Systems—A User's Guide. Washington, DC EPA 600/R-92/238.) A significant portion of these dry weather flows results from illicit and/or inappropriate discharges and connections to the municipal separate storm sewer system. Illicit discharges enter the system through either direct connections (e.g., wastewater piping either mistakenly or deliberately connected to the storm drains) or indirect connections (e.g., infiltration into the storm drain system or spills collected by drain inlets).

Under the existing NPDES program for storm water, permit applications for large and medium MS4s are to include a program description for effective prohibition against non-storm water discharges into their storm sewers (see 40 CFR 122.26 (d)(1)(v)(B) and (d)(1)(iv)(B)). Further, EPA believes that in implementing municipal storm water management plans under these permits, large and medium MS4 operators generally found their illicit discharge detection and elimina-

tion programs to be cost-effective. Properly implemented programs also significantly improved water quality.

In today's rule, any NPDES permit issued to an operator of a regulated small MS4 must, at a minimum, require the operator to develop, implement and enforce an illicit discharge detection and elimination program. Inclusion of this measure for regulated small MS4s is consistent with the "effective prohibition" requirement for large and medium MS4s. Under today's rule, the NPDES permit will require the operator of a regulated small MS4 to: (1) Develop (if not already completed) a storm sewer system map showing the location of all outfalls, and names and location of all waters of the United States that receive discharges from those outfalls; (2) to the extent allowable under State, Tribal, or local law, effectively prohibit through ordinance, or other regulatory mechanism, illicit discharges into the separate storm sewer system and implement appropriate enforcement procedures and actions as needed; (3) develop and implement a plan to detect and address illicit discharges, including illegal dumping, to the system; and (4) inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste.

The illicit discharge and elimination program need only address the following categories of non-storm water discharges if the operator of the small MS4 identifies them as significant contributors of pollutants to its small MS4: water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20)), uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, and street wash water (discharges 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). If the operator of the MS4 identifies one or more of these categories of sources to be a significant contributor of pollutants to the system, it could require specific controls for that category of discharge or prohibit the discharges completely.

Several comments were received on the mapping requirements of the proposal. Most comments said that more flexibility should be given to the MS4s to determine their mapping needs, and that resources could be better spent in addressing problems once the illicit discharges are detected. EPA reviewed the mapping requirements in the proposed rule and agrees that some of the information is not necessary in order to begin an illicit discharge detection and elimination program. Today's rule requires a map or set of maps that show the locations of all outfalls and names and locations of receiving waters. Knowing the locations of outfalls and receiving waters are necessary to be able to conduct dry weather field screening for non-storm water flows and to respond to illicit discharge reports from the public. EPA recommends that the operator collect any existing information on outfall locations (e.g., review city records, drainage maps, storm drain maps), and then conduct field surveys to verify the locations. It will probably be necessary to "walk" (i.e. wade small receiving waters or use a boat for larger receiving waters) the streambanks and shorelines, and it may take more than one trip to locate all outfalls. A coding system should be used to mark and identify each outfall. MS4 operators have the flexibility to determine the type (e.g. topographic, GIS, hand or computer drafted) and size of maps which best meet their needs. The map scale should be such that the outfalls can be accurately located. Once an illicit discharge is detected at an outfall, it may be necessary to map that portion of the storm sewer system leading to the outfall in order to locate the source of the discharge.

Several comments requested clarification of the requirement to develop and implement a plan to detect and eliminate illicit discharges. EPA recommends that plans include procedures for the following: locating priority areas; tracing the source of an illicit discharge; removing the source of the discharge; and program evaluation *68757 and assessment. EPA recommends that MS4 operators identify priority areas (i.e., problems areas) for more detailed screening of their system based on higher likelihood of illicit connections (e.g., areas with older sanitary sewer lines), or by conducting ambient

sampling to locate impacted reaches. Once priority areas are identified, EPA recommends visually screening outfalls during dry weather and conducting field tests, where flow is occurring, of selected chemical parameters as indicators of the discharge source. EPA's manual for investigation of inappropriate pollutant entries into the storm drainage system (EPA, 1993) suggests the following parameter list: specific conductivity, fluoride and/or hardness concentration, ammonia and/or potassium concentration, surfactant and/or fluorescence concentration, chlorine concentration, pH and other chemicals indicative of industrial sources. The manual explains why each parameter is a good indicator and how the information can be used to determine the type of source flow. The Agency is not recommending that fluoride and chlorine, generally used to locate potable water discharges, be addressed under this program, therefore a short list of parameters may include conductivity, ammonia, surfactant and pH. Some MS4s have found it useful to measure for fecal coliform or E. coli in their testing program. Observations of physical characteristics of the discharge are also helpful such as flow rate, temperature, odor, color, turbidity, floatable matter, deposits and stains, and vegetation.

The implementation plan should also include procedures for tracing the source of an illicit discharge. Once an illicit discharge is detected and field tests provide source characteristics, the next step is to determine the actual location of the source. Techniques for tracing the discharge to its place of origin may include: following the flow up the storm drainage system via observations and/or chemical testing in manholes or in open channels; televising storm sewers; using infrared and thermal photography; conducting smoke or dye tests.

The implementation plan should also include procedures for removing the source of the illicit discharge. The first step may be to notify the property owner and specify a length of time for eliminating the discharge. Additional notifications and escalating legal actions should also be described in this part of the plan.

Finally, the implementation plan should include procedures for program evaluation and assessment. Procedures could include documentation of actions taken to locate and eliminate illicit discharges such as: number of outfalls screened, complaints received and corrected, feet of storm sewers televised, numbers of discharges and quantities of flow eliminated, number of dye or smoke tests conducted. Appropriate records of such actions should be kept and should be submitted as part of the annual reports for the first permit term, as specified by the permitting authority (reports only need to be submitted in years 2 and 4 in later permits). For more on reporting requirements, see § 122.34(g).

EPA received comments regarding an MS4's legal authority beyond its jurisdictional boundaries to inspect or take enforcement against illicit discharges. EPA recognizes that illicit flows may originate in one jurisdiction and cross into one or more jurisdictions before being discharged at an outfall. In such instances, EPA expects the MS4 that detects the illicit flow to trace it to the point where it leaves their jurisdiction and notify the adjoining MS4 of the flow, and any other physical or chemical information. The adjoining MS4 should then trace it to the source or to the location where it enters their jurisdiction. The process of notifying the adjoining MS4 should continue until the source is located and eliminated. In addition, because any non-storm water discharge to waters of the U.S. through an MS4 is subject to the prohibition against unpermitted discharges pursuant to CWA section 301 (a), remedies are available under the federal enforcement provisions of CWA sections 309 and 505.

EPA requested and received comments regarding the prohibition and enforcement provision for this minimum measure. Commenters specifically questioned the proposal that the operator only has to implement the appropriate prohibition and enforcement procedures "to the extent allowable under State or Tribal law." They raised concerns that by qualifying prohibition and enforcement procedures in this manner, the operator could altogether ignore this minimum measure where affirmative legal authority did not exist. Comments suggested that EPA require States to grant authority to those municipalities where it did not exist. Other comments, however, stated that municipalities cannot exercise legal authority not granted to them under State law, which varies considerably from one State to another. EPA has no intention of directing

State legislatures on how to allocate authority and responsibility under State law. As noted above, there is at least one remedy (the federal CWA) to control non-storm water discharges through MS4s. If State law prevents political subdivisions from controlling discharges through storm sewers, EPA anticipates common sense will prevail to provide those MS4 operators with the ability to meet the requirements applicable for their discharges.

One comment reinforced the importance of public information and education to the success of this measure. EPA agrees and suggests that MS4 operators consider a variety of ways to inform and educate the public which could include storm drain stenciling; a program to promote, publicize, and facilitate public reporting of illicit connections or discharges; and distribution of visual and/or printed outreach materials. Recycling and other public outreach programs could be developed to address potential sources of illicit discharges, including used motor oil, antifreeze, pesticides, herbicides, and fertilizers.

EPA received comments that State DOT's lack authority to implement this measure. EPA believes that most DOTs can implement most parts of this measure. If a DOT does not have the necessary legal authority to implement any part of this measure, EPA encourages them to coordinate their storm water management efforts with the surrounding MS4s and other State agencies. Many DOTs that are regulated under Phase I of this program are co-permittees with the local regulated MS4. Under today's rule, DOTs can use any of the options of §122.35 to share their storm water management responsibilities.

EPA received comments requesting clarification of various terms such as "outfall" and "illicit discharge." One comment asked EPA to reinforce the point that a "ditch" could be considered an outfall. The term "outfall" is defined at 40 CFR 122.26(b)(9) as "a point source at the point where a municipal separate storm sewer discharges to waters of the United States * * *". The term municipal separate storm sewer is defined at 40 CFR § 122.26(b)(8) as "a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) * * *". Following the logic of these definitions, a "ditch" may be part of the municipal separate storm sewer, and at the point where the ditch discharges to waters of the United States, it would be an outfall. As with any determination about jurisdictional provisions of the CWA, however, final decisions require case specific evaluations of fact.*68758

One commenter specifically requested clarification on the relationship between the term "illicit discharge" and non-storm water discharges from fire fighting. The comment suggested that it would be impractical to attempt to determine whether the flow from a specific fire (i.e., during a fire) is a significant source of pollution. EPA intends that MS4s will address all allowable non-storm water flows categorically rather than individually. If an MS4 is concerned that flows from fire fighting 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. In this example, a review of existing procedures with the fire department and/or hazardous materials team may reveal weaknesses or strengths previously unknown to the MS4 operator.

EPA received comments requesting modifications to the rule to include on-site sewage disposal systems (i.e., septic systems) in the scope of the illicit discharge program. On-site sewage disposal systems that flow into storm drainage systems are within the definition of illicit discharge as defined by the regulations. Where they are found to be the source of an illicit discharge, they need to be eliminated similar to any other illicit discharge source. Today's rule was not modified to include discharges from on-site sewage disposal systems specifically because those sources are already within the

scope of the existing definition of illicit discharge.

iv. Construction Site Storm Water Runoff Control. Over a short period of time, storm water runoff from construction site activity can contribute more pollutants, including sediment, to a receiving stream than had been deposited over several decades (see section I.B.3). Storm water runoff from construction sites can include pollutants other than sediment, such as phosphorus and nitrogen, pesticides, petroleum derivatives, construction chemicals, and solid wastes that may become mobilized when land surfaces are disturbed. Generally, properly implemented and enforced construction site ordinances effectively reduce these pollutants. In many areas, however, the effectiveness of ordinances in reducing pollutants is limited due to inadequate enforcement or incomplete compliance with such local ordinances by construction site operators (Paterson, R.G. 1994. "Construction Practices: The Good, the Bad, and the Ugly." Watershed Protection Techniques 1(2)).

Today's rule requires operators of regulated small MS4s to develop, implement, and enforce a pollutant control program to reduce pollutants in any storm water runoff from construction activities that result in land disturbance of 1 or more acres (see §122.34(b)(4)). Construction activity on sites disturbing less than one acre must be included in the program if the construction activity is part of a larger common plan of development or sale that would disturb one acre or more.

The construction runoff control program of the regulated small MS4 must include an ordinance or other regulatory mechanism to require erosion and sediment controls to the extent practicable and allowable under State, Tribal or local law. The program also must include sanctions to ensure compliance (for example, non-monetary penalties, fines, bonding requirements, and/or permit denials for non-compliance). The program must also include, at a minimum: requirements for construction site operators to implement appropriate erosion and sediment control BMPs, such as silt fences, temporary detention ponds and diversions; procedures for site plan review by the small MS4 which incorporate consideration of potential water quality impacts; requirements to control other waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may adversely impact water quality; procedures for receipt and consideration of information submitted by the public to the MS4; and procedures for site inspection and enforcement of control measures by the small MS4.

Today's rule provides flexibility for regulated small MS4s by allowing them to exclude from their construction pollutant control program runoff from those construction sites for which the NPDES permitting authority has waived NPDES storm water small construction permit requirements. For example, if the NPDES permitting authority waives permit coverage for storm water discharges from construction sites less than 5 acres in areas where the rainfall erosivity factor is less than 5, then the regulated small MS4 does not have to include these sites in its storm water management program. Even if requirements for a discharge from a given construction site are waived by the NPDES permitting authority, however, the regulated small MS4 may still choose to control those discharges under the MS4's construction pollutant control program, particularly where such discharges may cause siltation problems in storm sewers. See Section II.I.1.b for more information on construction waivers by the permitting authority.

Some commenters suggested that the proposed construction minimum measure requirements went beyond the permit application requirements concerning construction for medium and large MS4s. In response, EPA has made changes to the proposed measure so that it more closely resembles the MS4 permit application requirements in existing regulations. For example, as described below, the Agency revised the proposed requirements for "pre-construction review of site management plans" to require "procedures for site plan review."

One commenter expressed concerns that addressing runoff from construction sites within urbanized areas (through the small MS4 program) differently from construction sites outside urbanized areas (which will not be covered by the small MS4 program) will encourage urban sprawl. Today's rule, together with the existing requirements, requires all construc-

tion greater than or equal to 1 acre, unless waived, to be covered by an NPDES permit whether it is located inside or outside of an urbanized area (see §122.26(b)(15)). Today's rule does not require small MS4s to control runoff from construction sites more stringently or prescriptively than is required for construction site runoff outside urbanized areas. Therefore, today's rule imposes no substantively different onsite controls on runoff of storm water from construction sites in urbanized areas than from construction sites outside of urbanized areas.

One commenter recommended that the small MS4 construction site storm water runoff control program address all storm water runoff from construction sites, not just the runoff into the MS4. The commenter also believed that MS4s should provide clear, objective standards for all construction sites. EPA agrees. Because today's rule only regulates discharges from the MS4, the construction pollutant control measure only requires small MS4 operators to control runoff into its system. As a practical matter, however, EPA anticipates that MS4 operators will find that regulation of all construction site runoff, whether they runoff into the MS4 or not, will prove to be the most simple and efficient program. The Agency may provide more specific criteria for construction site BMPs in the forthcoming rule being developed under CWA section 402(m). See section II.D.1 of today's rule.

One commenter stated that there is no need for penalties at the local level by the small MS4 because the CWA already imposes sufficient penalties to ensure compliance. EPA disagrees and believes that enforcement and compliance at the local level is both necessary and preferable. Examples of sanctions, some not available under the CWA, include non-monetary penalties, monetary fines, bonding requirements, and denial of future or other local permits.

One commenter recommended that EPA should not include the requirement to control pollutants other than sediment from construction sites in this measure. EPA disagrees with this comment. The requirement is to control waste that "may cause adverse impacts on water quality." Such wastes may include discarded building materials, concrete truck washout, chemicals, pesticides, herbicides, litter, and sanitary waste. These wastes, when exposed to and mobilized by storm water, can contribute to water quality impairment.

The proposed rule required "procedures for pre-construction review of site management plans." EPA requested comment on expanding this provision to require both review and approval of construction site storm water plans. Many commenters expressed the concern that review and approval of site plans is not only costly and time intensive, but may unnecessarily delay construction projects and unduly burden staff who administer the local program. In addition, some commenters expressed confusion whether EPA proposed pre-construction review for all site management plans or only higher priority sites. To address these comments, and be consistent with the permit application requirements for larger MS4s, EPA changed "procedures for pre-construction review of site management plans" to "procedures for site plan review." Today's rule requires the small MS4 to develop procedures for site plan review so as to incorporate consideration of adverse potential water quality impacts. Procedures should include review of site erosion and sediment control plans, preferably before construction activity begins on a site. The objective is for the small MS4 operator and the construction site operator to address storm water runoff from construction activity early in the project design process so that potential consequences to the aquatic environment can be assessed and adverse water quality impacts can be minimized or eliminated.

One commenter requested that EPA delete the requirement for "procedures for receipt and consideration of information submitted by the public" because it went beyond existing storm water requirements. Another commenter stated that establishing a separate process to respond to public inquiries on a project is a burden to small communities, especially if the project has gone through an environmental review. One commenter requested clarification of this provision. EPA has retained this requirement in today's final rule to require some formality in the process for addressing public inquiries regarding storm water runoff from construction activities. EPA does not intend that small MS4s develop a separate, bur-

densome process to respond to every public inquiry. A small MS4 could, for example, simply log public complaints on existing storm water runoff problems from construction sites and pass that information on to local inspectors. The inspectors could then investigate complaints based on the severity of the violation and/or priority area.

One commenter believed that the proposed requirement of "regular inspections during construction" would require every construction project to be inspected more than once by the small MS4 during the term of a construction project. EPA has deleted the reference to "regular inspections." Instead, the small MS4 will be required to "develop procedures for site inspection and enforcement of control measures." Procedures could include steps to identify priority sites for inspection and enforcement based on the nature and extent of the construction activity, topography, and the characteristics of soils and receiving water quality.

In order to avoid duplication of small MS4 construction requirements with NPDES construction permit requirements, today's rule adds §122.44(s) to recognize that the NPDES permitting authority can incorporate qualifying State, Tribal, or local erosion and sediment control requirements in NPDES permits for construction site discharges. For example, a construction site operator who complies with MS4 construction pollutant control programs that are referenced in the NPDES construction permit would satisfy the requirements of the NPDES permit. See section II.I.1.d for more information on incorporating qualifying programs by reference into NPDES construction permits. This provision has no impact on, or direct relation to, the small MS4 operator's responsibilities under the construction site storm water runoff control minimum measure. Conversely, under §122.35(b), the permitting authority may recognize in the MS4's permit that another governmental entity, or the permitting authority itself, is responsible for implementing one or more of the minimum measures (including construction site storm water runoff control), and not include this measure in the small MS4's permit. In this case, the other governmental entity's program must satisfy all of the requirements of the omitted measure.

v. Post-Construction Storm Water Management in New Development and Redevelopment. The NURP study and more recent investigations indicate that prior planning and designing for the minimization of pollutants in storm water discharges is the most cost-effective approach to storm water quality management. Reducing pollutant concentrations in storm water after the discharge enters a storm sewer system is often more expensive and less efficient than preventing or reducing pollutants at the source. Increased human activity associated with development often results in increased pollutant loading from storm water discharges. If potential adverse water quality impacts are considered from the beginning stages of a project, new development and redevelopment provides more opportunities for water quality protection. For example, minimization of impervious areas, maintenance or restoration of natural infiltration, wetland protection, use of vegetated drainage ways, and use of riparian buffers have been shown to reduce pollutant loadings in storm water runoff from developed areas. EPA encourages operators of regulated small MS4s to identify specific problem areas within their jurisdictions and initiate innovative solutions and designs to focus attention on those areas through local planning.

In today's rule at §122.34(b)(5), NPDES permits issued to an operator of a regulated small MS4 will require the operator to develop, implement, and enforce a program to address storm water runoff from new development and redevelopment projects that result in land disturbance of greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, that discharge into the MS4. Specifically, the NPDES permit will require the operator of a regulated small MS4 to: (1) Develop and implement *68760 strategies which include a combination of structural and/or non-structural best management practices (BMPs) appropriate for the community; (2) use an ordinance, or other regulatory mechanism to address post-construction runoff from new development and redevelopment projects to the extent allowable under State, Tribal or local law; (3) ensure adequate long-term operation and maintenance of BMPs; and (4) ensure that controls are in place that would minimize water quality impacts. EPA intends the term "redevelopment" to refer to alterations of a property that change the "footprint" of a site or building in such a way that results in the disturbance of equal to or greater than 1 acre of land. The term is not intended to include such activities as

exterior remodeling, which would not be expected to cause adverse storm water quality impacts and offer no new opportunity for storm water controls.

EPA received comments requesting guidance and clarification of the rule requirements. The scope of the comments ranged from general requests for more details on how MS4 operators should accomplish the four requirements listed above, to specific requests for information regarding transfer of ownership for structural controls, as well as ongoing responsibility for operation and maintenance. By the term "combination" of BMPs, EPA intends a combination of structural and/or non-structural BMPs. For this requirement, the term "combination" is meant to emphasize that multiple BMPs should be considered and adopted for use in the community. A single BMP generally cannot significantly reduce pollutant loads because pollutants come from many sources within a community. The BMPs chosen should: (1) Be appropriate for the local community; (2) minimize water quality impacts; and (3) attempt to maintain pre-development runoff conditions. In choosing appropriate BMPs, EPA encourages small MS4 operators to participate in locally-based watershed planning efforts which attempt to involve a diverse group of stakeholders. Each new development and redevelopment project should have a BMP component. If an approach is chosen that primarily focuses on regional or non-structural BMPs, however, then the BMPs may be located away from the actual development site (e.g., a regional water quality pond).

Non-structural BMPs are preventative actions that involve management and source controls such as: (1) Policies and ordinances that provide requirements and standards to direct growth to identified areas, protect sensitive areas such as wetlands and riparian areas, maintain and/or increase open space (including a dedicated funding source for open space acquisition), provide buffers along sensitive water bodies, minimize impervious surfaces, and minimize disturbance of soils and vegetation; (2) policies or ordinances that encourage infill development in higher density urban areas, and areas with existing storm sewer infrastructure; (3) education programs for developers and the public about project designs that minimize water quality impacts; and (4) other measures such as minimization of the percentage of impervious area after development, use of measures to minimize directly connected impervious areas, and source control measures often thought of as good housekeeping, preventive maintenance and spill prevention. Detailed examples of non-structural BMPs follow.

Preserving open space may help to protect water quality as well as provide other benefits such as recharging groundwater supplies, detaining storm water, supporting wildlife and providing recreational opportunities. Although securing funding for open space acquisition may be difficult, various funding mechanisms have been used. New Jersey uses a portion of their State sales tax (voter approved for a ten year period) as a stable source of funding to finance the preservation of historic sites, open space and farmland. Colorado uses part of the proceeds from the State lottery to acquire and manage open space. Some local municipalities use a percentage of the local sales tax revenue to pay for open space acquisition (e.g., Jefferson County, CO has had an open space program in place since 1977 funded by a 0.50 percent sales tax). Open space can be acquired in the form of: fee simple purchase; easements; development rights; purchase and sellback or leaseback arrangements; purchase options; private land trusts; impact fees; and land dedication requirements. Generally, fee simple purchases provide the highest level of development control and certainty of preservation, whereas the other forms of acquisition may provide less control, though they would also generally be less costly.

Cluster development, while allowing housing densities comparable to conventional zoning practice, concentrates housing units in a portion of the total site area which provides for greater open space, recreation, stream protection and storm water control. This type of development, by reducing lot sizes, can protect sensitive areas and result in less impervious surface, as well as reduce the cost for roads and other infrastructure.

Minimizing directly connected impervious areas (DCIAs) is a drainage strategy that seeks to reduce paved areas and dir-

ects storm water runoff to landscaped areas or to structural controls such as grass swales or buffer strips. This strategy can slow the rate of runoff, reduce runoff volumes, attenuate peak flows, and encourage filtering and infiltration of storm water. It can be made an integral part of drainage planning for any development (Urban Drainage and Flood Control District, Denver, CO. 1992. Urban Storm Drainage Criteria Manual, Volume 3—Best Management Practices). The Urban Drainage and Flood Control District manual describes three levels for minimizing DCIAs. At Level 1 all impervious surfaces are made to drain over grass-covered areas before reaching a storm water conveyance system. Level 2 adds to Level 1 and replaces street curb and gutter systems with low-velocity grass-lined swales and pervious street shoulders. In addition to Levels 1 and 2, Level 3 over-sizes swales and configures driveway and street crossing culverts to use grass-lined swales as elongated detention basins.

Structural BMPs include: (1) Storage practices such as wet ponds and extended-detention outlet structures; (2) filtration practices such as grassed swales, sand filters and filter strips; and (3) infiltration practices such as infiltration basins and infiltration trenches.

EPA recommends that small MS4 operators ensure the appropriate implementation of the structural BMPs by considering some or all of the following: (1) Pre-construction review of BMP designs; (2) inspections during construction to verify BMPs are built as designed; (3) post-construction inspection and maintenance of BMPs; and (4) sanctions to ensure compliance with design, construction or operation and maintenance (O&M) requirements of the program.

EPA cautions that certain infiltration systems such as dry wells, bored wells or tile drainage fields may be subject to Underground Injection Control (UIC) program requirements (see 40 CFR Part 144.12.). To find out more about these requirements, contact your state UIC Program, or call EPA's Safe Drinking Water Hotline at 1-800-426-4791.

In order to meet the third post-construction requirement (ensuring adequate long-term O&M of BMPs), EPA recommends that small MS4 operators evaluate various O&M management agreement options. The most common options are agreements between the MS4 operator and another party such as post-development landowners (e.g., homeowners' associations, office park owners, other government departments or entities), or regional authorities (e.g., flood control districts, councils of government). These agreements typically require the post-construction property owner to be responsible for the O&M and may include conditions which: allow the MS4 operator to be reimbursed for O&M performed by the MS4 operator that is the responsibility of the property owner but is not performed; allow the MS4 operator to enter the property for inspection purposes; and in some cases specify that the property owner submit periodic reports.

In providing the guidance above, EPA intends the requirements in today's rule to be consistent with the permit application requirements for large MS4s for post-construction controls for new development and redevelopment. MS4 operators have significant flexibility both to develop this measure as appropriate to address local concerns, and to apply new control technologies as they become available. Storm water pollution control technologies are constantly being improved. EPA recommends that MS4s be responsive to these changes, developments or improvements in control technologies. EPA will provide more detailed guidance addressing the responsibility for long-term O&M of storm water controls in guidance materials. The guidance will also provide information on appropriate planning considerations, structural controls and non-structural controls. EPA also intends to develop a broad menu of BMPs as guidance to ensure flexibility to accommodate local conditions.

EPA received comments suggesting that requirements for new development be treated separately from redevelopment in the rule. The comment stressed that new development on raw land presents fewer obstacles and more opportunities to incorporate elements for preventing water quality impacts, whereas redevelopment projects are constrained by space limitations and existing infrastructure. Another comment suggested allowing waivers from the redevelopment requirements if

the redevelopment does not result in additional adverse water quality impacts, and where BMPs are not technologically or economically feasible. EPA recognizes that redevelopment projects may have more site constraints which narrow the range of appropriate BMPs. Today's rule provides small MS4 operators with the flexibility to develop requirements that may be different for redevelopment projects, and may also include allowances for alternate or off-site BMPs at certain redevelopment projects. Non-structural BMPs may be the most appropriate approach for smaller redevelopment projects.

EPA received comments requesting clarification on what is meant by "pre-development" conditions within the context of redevelopment. Pre-development refers to runoff conditions that exist onsite immediately before the planned development activities occur. Pre-development is not intended to be interpreted as that period before any human-induced land disturbance activity has occurred.

EPA received comments on the guidance language in the proposed rule and preamble which suggest that implementation of this measure should "attempt to maintain pre-development runoff conditions" and that "post-development conditions should not be different than pre-development conditions in a way that adversely affects water quality." Many comments expressed concern that maintaining pre-development runoff conditions is impossible and cost-prohibitive, and objected to any reference to "flow" or increase in volume of runoff. Other comments support the inclusion of this language in the final rule. Similar references in today's rule relating to pre-development runoff conditions are intended as recommendations to attempt to maintain pre-development runoff conditions. With these recommendations, EPA intends to prevent water quality impacts resulting from increased discharges of pollutants, which may result from increased volume of runoff. In many cases, consideration of the increased flow rate, velocity and energy of storm water discharges following development unavoidably must be taken into consideration in order to reduce the discharge of pollutants, to meet water quality standards and to prevent degradation of receiving streams. EPA recommends that municipalities consider these factors when developing their post-construction storm water management program.

Some comments said that the quoted phrases in the paragraph above are directives that imply federal land use control, which they argue is beyond the authority of the CWA. EPA recognizes that land use planning is within the authority of local governments.

EPA disagrees, however, with the implication that today's rule dictates any such land use decisions. The requirement for small MS4 operators to develop a program to address discharges resulting from new development and redevelopment is essentially a pollution prevention measure. The Rule provides the MS4 operator with flexibility to determine the appropriate BMPs to address local water quality concerns. EPA recognizes that these program goals may not be applied to every site, and expects that MS4s will develop an appropriate combination of BMPs to be applied on a site-by-site, regional or watershed basis.

vi. Pollution Prevention/Good Housekeeping for Municipal Operations. Under today's final rule, operators of MS4s must develop and implement an operation and maintenance program ("program") that includes a training component and has the ultimate goal of preventing or reducing storm water from municipal operations (in addition to those that constitute storm water discharges associated with industrial activity). This measure's emphasis on proper O&M of MS4s and employee training, as opposed to requiring the MS4 to undertake major new activities, is meant to ensure that municipal activities are performed in the most efficient way to minimize contamination of storm water discharges.

The program must include government employee training that addresses prevention measures pertaining to municipal operations such as: parks, golf courses and open space maintenance; fleet maintenance; new construction or land disturbance; building oversight; planning; and storm water system maintenance. The program can use existing storm water pollution prevention training materials provided by the State, Tribe, EPA, or environmental, public interest, or trade organ-

izations.

EPA also encourages operators of MS4s to consider the following in developing a program: (1) Implement maintenance activities, maintenance schedules, and long-term inspection procedures for structural and non-structural storm water controls to reduce floatables and other pollutants discharged from the separate storm sewers; (2) implement controls for reducing or eliminating the discharge of pollutants from streets, roads, highways, municipal parking lots, maintenance and storage yards, waste transfer stations, fleet or maintenance shops with outdoor storage areas, and salt/sand storage locations and snow disposal areas operated by the MS4; (3) adopt procedures for the proper disposal of waste removed from the separate storm sewer systems and areas listed above in (2), including dredge *68762 spoil, accumulated sediments, floatables, and other debris; and (4) adopt procedures to ensure that new flood management projects are assessed for impacts on water quality and existing projects are assessed for incorporation of additional water quality protection devices or practices. Ultimately, the effective performance of the program measure depends on the proper maintenance of the BMPs, both structural and non-structural. Without proper maintenance, BMP performance declines significantly over time. Additionally, BMP neglect may produce health and safety threats, such as structural failure leading to flooding, undesirable animal and insect breeding, and odors. Maintenance of structural BMPs could include: replacing upper levels of gravel; dredging of detention ponds; and repairing of retention basin outlet structure integrity. Maintenance of non-structural BMPs could include updating educational materials periodically.

EPA emphasizes that programs should identify and incorporate existing storm water practices and training, as well as non-storm water practices or programs that have storm water pollution prevention benefits, as a means to avoid duplication of efforts and reduce overall costs. EPA recommends that MS4s incorporate these new obligations into their existing programs to the greatest extent feasible and urges States to evaluate MS4 programs with programmatic efficiency in mind. EPA designed this minimum control measure as a modified version of the permit application requirements for medium and large MS4s described at 40 CFR 122.26(d)(2)(iv), in order to provide more flexibility for these smaller MS4s. Today's requirements provide for a consistent approach to control pollutants from O&M among medium, large, and regulated small MS4s.

By properly implementing a program, operators of MS4s serve as a model for the rest of the regulated community. Furthermore, the establishment of a long-term program could result in cost savings by minimizing possible damage to the system from floatables and other debris and, consequently, reducing the need for repairs.

EPA received comments requesting clarification of what this measure requires. Certain municipalities expressed concern that the measure has the potential to impose significant costs associated with EPA's requirement that operators of MS4s consider implementing controls for reducing or eliminating the discharge of pollutants from streets, roads, highways, municipal parking lots, and salt/sand storage locations and snow disposal areas operated by the municipality. EPA disagrees that a requirement to consider such controls will impose considerable costs.

One commenter objected to the preamble language from the proposal suggesting that EPA does not expect the MS4 to undertake new activity. While it remains the Agency's expectation that major new activity will not be required, the MEP process should drive MS4s to incorporate the measure's obligations into their existing programs to achieve the pollutant reductions to the maximum extent practicable.

Certain commenters requested a definition for "municipal operations." EPA has revised the language to more clearly define municipal operations. Questions may remain concerning whether discharges from specific municipal activities constitute discharges associated with industrial activities (requiring NPDES permit authorization according to the requirements for industrial storm water that apply in that State) or from municipal operations (subject only to the controls

developed in the MS4 control program). Even though there may be different substantive requirements that apply depending on the source of the discharge, EPA has modified the deadlines for permit coverage so that all the regulated municipally owned and operated sources become subject to permit requirements on the same date. The deadline is the same for permit coverage for this minimum measure as for permit coverage for municipally owned/operated industrial sources.

c. Application Requirements

An NPDES permit that authorizes the discharge from a regulated small MS4 may take the form of either an individual permit issued to one or more facilities as co-permittees or a general permit that applies to a group of MS4s. For reasons of administrative efficiency and to reduce the paperwork burden on permittees, EPA expects that most discharges from regulated small MS4s will be authorized under general permits. These NPDES general permits will provide specific instructions on how to obtain coverage, including application requirements. Typically, such application requirements will be satisfied by the submission of a Notice of Intent (NOI) to be covered by the general permit. In this section, EPA explains the small MS4 operator's application requirements for obtaining coverage under a NPDES permit for storm water.

i. Best Management Practices and Measurable Goals, Section 122.34(d) of today's rule requires the operator of a regulated small MS4 that wishes to implement a program under §122.34 to identify and submit to the NPDES permitting authority a list of the best management practices ("BMPs") that will be implemented for each minimum control measure in their storm water management program. They also must submit measurable goals for the development and implementation of each BMP. The BMPs and the measurable goals must be included either in an NOI to be covered under a general permit or in an individual permit application.

The operator's submission must identify, as appropriate, the months and years in which the operator will undertake actions required to implement each of the minimum control measures, including interim milestones and the frequency of periodic actions. The Agency revised references to "starting and completing" actions from the proposed rule because many actions will be repetitive or ongoing. The submission also must identify the person or persons responsible for implementing or coordinating the small MS4 storm water program. See § 122.34(d). The submitted BMPs and measurable goals become enforceable according to the terms of the permit. The first permit can allow the permittee up to five years to fully implement the storm water management program.

Several commenters opposed making the measurable goals enforceable permit conditions. Some suggested that a permittee should be able to change its goals so that BMPs that are not functioning as intended can be replaced. EPA agrees that a permittee should be free to switch its BMPs and corresponding goals to others that accomplish the minimum measure or measures. The permittee is required to implement BMPs that address the minimum measures in §122.34(b). If the permittee determines that its original combination of BMPs are not adequate to achieve the objectives of the municipal program, the MS4 should revise its program to implement BMPs that are adequate and submit to the permitting authority a revised list of BMPs and measurable goals. EPA suggests that permits describe the process for revising BMPs and measurable goals, such as whether the permittee should follow the same procedures as were required for the submission of the original NOI and whether the permitting authority's approval is necessary prior to the permittee implementing the revised BMPs. The permittee should indicate on its periodic report whether any BMPs and measurable goals have been revised since the last periodic report.

Some commenters expressed concern that making the measurable goals enforceable would encourage the development of easily attained goals and, conversely, discourage the setting of ambitious goals. Others noted that it is often difficult to determine the pollutant reduction that can be achieved by BMPs until several years after implementation. Much of the opposition to the enforceability of measurable goals appears to have been based on a mistaken understanding that meas-

urable goals must consist of pollutant reduction targets to be achieved by the corresponding BMPs.

Today's rule requires the operator to submit either measurable goals that serve as BMP design objectives or goals that quantify the progress of implementation of the actions or performance of the permittee's BMPs. At a minimum, the required measurable goals should describe specific actions taken by the permittee to implement each BMP and the frequency and the dates for such actions. Although the operator may choose to do so, it is not required to submit goals that measure whether a BMP or combination of BMPs is effective in achieving a specific result in terms of storm water discharge quality. For example, a measurable goal might involve a commitment to inspect a given number of drainage areas of the collection system for illicit connections by a certain date. The measurable goal need not commit to achieving a specific amount of pollutant reduction through the elimination of illicit connections. Other measurable goals could include the date by which public education materials would be developed, a certain percentage of the community participating in a clean-up campaign, the development of a mechanism to address construction site runoff, and a reduction in the percentage of imperviousness associated with new development projects.

To reduce the risk that permittees will develop inadequate BMPs, EPA intends to develop a menu of BMPs to assist the operators of regulated small MS4s with the development of municipal programs. States may also develop a menu of BMPs. Today's rule provides that the measurable goals that demonstrate compliance with the minimum control measures in §§122.34 (b)(3) through (b)(6) do not have to be met if the State or EPA has not issued a menu of BMPs at the time the MS4 submits its NOI. Commenters pointed out that the proposed rule would have made the measurable goals unenforceable if the menu of BMPs was not available, but the proposal was silent as to the enforceability of the implementation of BMPs. Today's rule clarifies that the operators are not free to do nothing prior to the issuance of a menu of BMPs; they still must make a good faith effort to implement the BMPs designed to comply with each measure. See §122.34(d)(2). The operators would not, however, be liable for failure to meet its measurable goals if a menu of BMPs was not available at the time they submit their NOI.

The proposed rule provision in §123.35 stated that the "[f]ailure to issue the menu of BMPs would not affect the legal status of the general permit." This concept is included in the final rule in §122.34(d)(2)'s clarification that the permittee still must comply with other requirements of the general permit.

Unlike the proposed rule, today's rule does not require that each BMP in the menu developed by the State or EPA be regionally appropriate, cost-effective and field-tested. Various commenters criticized those criteria as unworkable, and one described them as "ripe for ambiguity and abuse." Other commenters feared that the operators of regulated small MS4s would never be required to achieve their goals until menus were developed that were cost-effective, field-tested and appropriate for every conceivable subregion.

While some municipal commenters supported the requirement that a menu of BMPs be made available that included BMPs that had been determined to be regionally appropriate, field-tested and cost-effective, others raised concerns that they would be restricted to a limited menu. Some commenters supported such a detailed menu because they thought they would only be able to select BMPs that were on the menu, while others thought that it was the permitting authority's responsibility to develop BMPs narrowly tailored to their situation. In response, EPA notes that the operators will not be restricted to implementing only, or all of, the BMPs included on the menu. Since the menu does not require permittees to implement the BMPs included on the menu, it is also not necessary to apply the public notice and other procedures that some commenters thought should be applied to the development of the menu of BMPs.

The purpose of the BMP menu is to provide guidance to assist the operators of regulated small MS4s with the development and refinement of their local program, not to limit their options. Permittees may implement BMPs other than those

on the menu unless a State restricts its permittees to specific BMPs. To the extent possible, EPA will develop a menu of BMPs that describes the appropriateness of BMPs to specific regions, whether the BMPs have been field-tested, and their approximate costs. The menu, however, is not intended to relieve permittees of the need to implement BMPs that are appropriate for their specific circumstances.

If there are no known relevant BMPs for a specific circumstance, a permittee has the option of developing and implementing pilot BMPs that may be better suited to their circumstances. Where BMPs are experimental, the permittee should consider committing to measurable goals that address its schedule for implementing its selected BMPs rather than goals of achieving specific pollutant reductions. If the BMPs implemented by the permittee do not achieve the desired objective, the permittee may be required to commit to different or revised BMPs.

As stated in §123.35(g), EPA is committed to issuing a menu of BMPs prior to the deadline for the issuance of permits. This menu would serve as guidance for all operators of regulated small MS4s nationwide. After developing the initial menu of BMPs, EPA intends to periodically modify, update, and supplement the menu of BMPs based on the assessments of the MS4 storm water program and research. States may rely on EPA's menu of BMPs or issue their own. If States develop their own menus, they would constitute additional guidance (or perhaps requirements in some States) for the operators to follow. Several commenters were confused by the proposed rule language that stated that States must provide or issue a menu of BMPs and, if they fail to do so, EPA "may" do so. Some read this language as not requiring either EPA or the State to develop the menu. EPA had intended that it would develop a menu and that States could either provide the EPA developed menu or one developed by the State.

EPA has dropped the proposed language that States "must" develop the menu of BMPs. Some commenters thought that it was inappropriate to require States to issue guidance. A menu of BMPs issued by either EPA or a permittee's State will satisfy the condition in §122.34(d) that a regulatory authority provide a menu of BMPs. A State could require its permittees to follow its menu of BMPs provided that they are adequate to implement §122.34(b).

Several commenters raised concerns that operators of small MS4s could be *68764 required to submit their BMPs and measurable goals before EPA or the State has issued a menu of BMPs. EPA has assumed primary responsibility for developing a menu of BMPs to minimize the possibility of this occurring. Should a general permit be issued before a menu of BMPs is available, the permit writer would have the option of delaying the date by which the identification of the BMPs and measurable goals must be submitted to the permitting authority until some time after a menu of BMPs is available.

Several municipal commenters raised concerns that they would begin to develop a program only to be later told by the permitting authority or challenged in a citizen suit that their BMPs were inadequate. They expressed a need for certainty regarding what their permit required. Several commenters suggested that EPA require permitting authorities to approve or disapprove the submitted BMPs and measurable goals. EPA disagrees that formal approval or disapproval by the permitting authority is needed.

EPA acknowledges that the lack of a formal approval process does place on the permittee some responsibility for designing and determining the adequacy of its BMPs. Once the permittee has submitted its BMPs to the permitting authority as part of its NOI, it must implement them in order to achieve the corresponding measurable goals. EPA does not believe that this results in the uncertainty to the extent expressed by some commenters or unduly expose the permittee to the risk of citizen suit. If the permit is very specific regarding what the permittee must do, then the uncertainty is eliminated. If the permit is less prescriptive, the permittee has greater latitude in determining for itself what constitutes an adequate program. A citizen suit could impose liability on the permittee only if the program that it develops and implements

clearly does not satisfy the requirements of the general permit. EPA believes today's approach strikes a balance between the competing goals of providing certainty as to what constitutes an adequate program and providing flexibility to the permittees.

Commenters were divided on whether five years was a reasonable and expeditious schedule for a MS4 to implement its program. Some thought that it was an appropriate amount of time to allow for the development and implementation of adequate programs. One questioned whether the permittee had to be implementing all of its program within that time, and suggested that there may be cases where a permitting authority would need flexibility to allow more time. One commenter suggested that five years is too long and would amount to a relaxation of implementation in their area. EPA believes it will take considerable time to complete the tasks of initially developing a program, commencing to implement it, and achieving results. EPA notes, however, that full implementation of an appropriate program must occur as expeditiously as possible, and not later than five years.

EPA solicited comment on how an NOI form might best be formatted to allow for measurable goal information (e.g., through the use of check boxes or narrative descriptions) while taking into account the Agency's intention to facilitate computer tracking. All commenters supported the development of a checklist NOI, but most noted that there would need to be room for additional information to cover unusual situations. One noted that, while a summary of measurable goals might be reduced to one sheet, attachments that more fully described the program and the planned BMPs would be necessary. EPA agrees that in most cases a "checklist" will not be able to capture the information on what BMPs a permittee intends to implement and its measurable goals for their implementation. EPA will continue to consider whether to develop a model NOI form and make it available for permitting authorities that choose to use it. What will be required on an MS4's NOI, however, is more extensive than what is usually required on an NOI, so a "form" NOI for MS4s may be impractical.

ii. Individual Permit Application for a §122.34(b) program. In some cases, an operator of a regulated small MS4s may seek coverage under an individual NPDES permit, either because it chooses to do so or because the NPDES permitting authority has not made the general permit option available to that source. For small MS4s that are to implement a §122.34(b) program in today's rule, EPA is promulgating simplified individual permit application requirements at §122.33(b)(2)(i). Under the simplified individual permit application requirements, the operator submits an application to the NPDES permitting authority that includes the information required under §122.21(f) and an estimate of square mileage served by the small MS4. They are also required to supply the BMP and measurable goal information required under §122.34(d). Consistent with CWA section 308 and analogous State law, the permitting authority could request any additional information to gain a better understanding of the system and the areas draining into the system.

Commenters suggested that the requirements of §122.21(f) are not necessarily applicable to a small MS4. One suggested that it was not appropriate to require the following information: a description of the activities conducted by the applicant which require it to obtain an NPDES permit; the name, mailing address, and location of the facility; and up to four Standard Industrial Classification ("SIC") codes which best reflect the principal products or services provided by the facility. In response, EPA notes that the requirements in §122.21(f) are generic application requirements applicable to NPDES applicants. With the exception of the SIC code requirement, EPA believes that they are applicable to MS4s. In the SIC code portion of the standard application, the applicant may simply put "not applicable."

One commenter asked that EPA clarify whether §122.21(f)(5)'s requirement to indicate "whether the facility is located on Indian lands," referred to tribal lands, Indian country, or Indian reservations. For some local governments this is a complex issue with no easy "yes" or "no" answer. See the discussion in the Section II.F in the proposal to today's rule regarding what tribal lands are subject to the federal trust responsibility for purposes of the NPDES program.

One commenter suggested that the application should not have to list the permits and approvals required under §122.21(f)(6). EPA notes that the applicant must only list the environmental permits that the applicant has received that cover the small MS4. The applicant is not required to list permits for other operations conducted by the small MS4 operator (e.g., for an operation of an airport or landfill). Again, in most cases the applicant could respond "not applicable" to this portion of the application.

One commenter suggested that the topographic map requirement of §122.21(f)(7) was completely different from, and significantly more onerous than, the mapping requirement outlined in the proposed rule at §122.34(b)(3)(i). EPA agrees and has modified the final rule to clarify that a map that satisfies the requirements of §122.34(b)(3)(i) also satisfies the map requirements for MS4 applicants seeking individual permits under §122.33(b)(2)(i).

EPA is adding a new paragraph to §122.44(k) to clarify that requirements to implement BMPs developed pursuant to CWA 402(p) are appropriate permit *68765 conditions. While such conditions could be included under the existing provision in §122.44(k)(3) for "practices reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA," EPA believes it is clearer to specifically list in § 122.44(k) BMPs that implement storm water programs in light of the frequency with which they are used as effluent limitations.

iii. Alternative Permit Options/Tenth Amendment. As an alternative to implementing a program that addresses each of the six minimum measures according to the requirements of §122.34(b), today's rule provides the operators of regulated small MS4s with the option of applying for an individual permit under existing §122.26(d). See §122.33(b)(2)(ii). If a system operator does not want to be held accountable for implementation of each of the minimum measures, an individual permit option under §122.33(b)(2)(ii) remains available. (As explained in the next section of this preamble, §122.35(b) also provides an opportunity for relief from permit obligations for some of the minimum measures, but that relief exists within the framework of the minimum measures.)

EPA originally drafted the individual permit application requirements in § 122.26(d) to apply to medium and large MS4s. Today's rule abbreviates the individual permit application requirements for small MS4s. Although EPA believes that the storm water management program requirements of §122.34, including the minimum measures, provide the most appropriate means to control pollutants from most small MS4s, the Agency does recognize that the operators of some small MS4s may prefer more individualized permit requirements. Among other possible reasons, an operator may seek to avoid having to "regulate" third parties discharging into the separate storm sewer system. Alternatively, an operator may determine that structural controls, such as constructed wetlands, are more appropriate or effective to address the discharges that would otherwise be addressed under the construction and/or development/redevelopment measures.

Some MS4s commenters alleged that an absolute requirement to implement the minimum measures violates the Tenth Amendment to the U.S. Constitution. While EPA disagrees that requiring MS4s to implement the minimum measures would violate the Constitution, today's rule does provide small MS4s with the option of developing more individualized measures to reduce the pollutants and pollution associated with urban storm water that will be regulated under today's rule.

Some commenters specifically objected that §122.34's minimum measures for small MS4s violate the Tenth Amendment insofar as they require the operators of MS4s to regulate third parties. The minimum measures include requirements for small MS4 operators to prohibit certain non-storm water discharges, control storm water discharges from construction greater than one acre, and take other actions to control third party sources of storm water discharges into their MS4s. Commenters also argued that it was inappropriate for EPA to require local governments to enact ordinances that will consume local revenues and put local governments in the position of bearing the political responsibility for implementing

the program. One commenter argued that EPA was prohibited from conditioning the issuance of an NPDES permit upon the small MS4 operators waiving their constitutional right to be free from such requirements to regulate third parties. The Agency replies to each comment in turn.

~~Because the rule does rely on local governments—who operate municipal separate storm sewer systems—to regulate discharges from third parties into storm sewers, EPA acknowledges that the rule implicates the Tenth Amendment and constitutional principles of federalism. EPA disagrees, however, that today's rule is inconsistent with federalism principles. [As political subdivisions of States, municipalities enjoy the same protections as States under the Tenth Amendment.]~~

The Supreme Court has interpreted the Tenth Amendment to preclude federal actions that compel States or their political subdivisions to enact or administer a federal regulatory program. See *New York v. United States*, 505 U.S. 144 (1992); *Printz v. United States*, 117 S.Ct. 2365 (1997). The *Printz* case, however, did acknowledge that the restriction does not apply when federal requirements of general applicability—requirements that regulate all parties engaging in a particular activity—do not excessively interfere with the functioning of State governments when those requirements are applied to States (or their political subdivisions). See *Printz*, 117 S.Ct. at 2383.

Today's rule imposes a federal requirement of general applicability, namely, the requirement to obtain and comply with an NPDES permit, on municipalities that operate a municipal separate storm sewer system. By virtue of this rule, the permit will require the municipality/storm sewer operator to develop a storm water control program. The rule specifies the components of the control program, which are primarily "management"-type controls, for example, municipal regulation of third party storm water discharges associated with construction, as well as development and redevelopment, when those discharges would enter the municipal system.

Unlike the circumstances reviewed in the *New York* and *Printz* cases, today's rule merely applies a generally applicable requirement (the CWA permit requirement) to municipal point sources. The CWA establishes a generally applicable requirement to obtain an NPDES permit to authorize point source discharge to waters of the United States. Because municipalities own and operate separate storm sewers, including storm sewers into which third parties may discharge pollutants, NPDES permits may require municipalities to control the discharge of pollutants into the storm sewers in the first instance. Because NPDES permits can impose end-of-pipe numeric effluent limits, narrative effluent limits in the form of "management" program requirements are also within the scope of Clean Water Act authority. As noted above, however, EPA believes that such narrative limitations are the most appropriate form of effluent limitation for these types of permits. For municipal separate storm sewer permits, CWA section 402(p)(3)(B)(iii) specifically authorizes "controls to reduce 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."

The Agency did not design the minimum measures in §122.34 to "commandeer" state regulatory mechanisms, but rather to reduce pollutant discharges from small MS4s. The permit requirement in CWA section 402 is a requirement of general applicability. The operator of a small MS4 that does not prohibit and/or control discharges into its system essentially accepts "title" for those discharges. At a minimum, by providing free and open access to the MS4s that convey discharges to the waters of the United States, the municipal storm sewer system enables water quality impairment by third parties. Section 122.34 requires the operator of a regulated small MS4 to control a third *68766 party only to the extent that the MS4 collection system receives pollutants from that third party and discharges it to the waters of the United States. The operators of regulated small MS4s cannot passively receive and discharge pollutants from third parties. The Agency concedes that administration of a municipal program will consume limited local revenues for implementation;

but those consequences stem from the municipal operator's identity as a permitted sewer system operator. The Tenth Amendment does not create a blanket municipal immunity from generally applicable requirements. Development of a program based on the minimum measures and implementation of that program should not "excessively interfere" with the functioning of municipal government, especially given the "practicability" threshold under CWA section 402(p)(3)(B)(iii).

As noted above, today's rule also allows regulated small MS4s to opt out of the minimum measures approach. The individual permit option provides for greater flexibility in program implementation and also responds to the comment about requiring a municipal permit applicant's waiver of any arguable constitutional rights. The individual permit option responds to questions about the rule's alleged unconstitutionality by more specifically focusing on the pollutants discharged from municipal point sources. Today's rule gives operators of MS4s the option to seek an individual permit that varies from the minimum measures/management approach that is otherwise specified in today's rule. Even if the minimum measures approach was constitutionally suspect, a requirement that standing alone would violate constitutional principles of federalism does not raise concerns if the entity subject to the requirement may opt for an alternative action that does not raise a federalism issue.

For municipal system operators who seek to avoid third party regulation according to all or some of the minimum measures, §122.26(d) requires the operator to submit a narrative description of its storm water sewer system and any existing storm water control program, as well as the monitoring data to enable the permit writer to develop appropriate permit conditions. The permit writer can then develop permit conditions and limitations that vary from the six minimum measures prescribed in today's rule. The information will enable the permit writer to develop an NPDES permit that will result in pollutant reduction to the maximum extent practicable. See *NRDC v. EPA*, 966 F.2d at 1308, n17. If determined appropriate under CWA section 402(p)(3)(B)(iii), for example BMPs to meet water quality standards, the permit could also incorporate any more stringent or prescriptive effluent limits based on the individual permit application information.

For small MS4 operators seeking an individual permit, both Part 1 and Part 2 of the application requirements in §122.26(d)(1) and (2) are required to be submitted within 3 years and 90 days of the date of publication of this Federal Register notice. Some of the information required in Part 1 will necessarily have to be developed by the permit applicant prior to the development of Part 2 of the application. The permit applicant should coordinate with its permitting authority regarding the timing of review of the information.

The operators of regulated small MS4s that apply under §122.26(d) may apply to implement certain of the §122.34(b) minimum control measures, and thereby focus the necessary evaluation for additional limitations on alternative controls to the §122.34(b) measures that the small MS4 will not implement. The permit writer may determine "equivalency" for some or all of the minimum measures by developing a rough estimate of the pollutant reduction that would be achieved if the MS4 implemented the §122.34 minimum measure and to incorporate that pollutant reduction estimate in the small MS4's individual permit as an effluent limitation. The Agency recognizes that, based on current information, any such estimates will probably have a wide range. Anticipation of this wide range is one of the reasons EPA believes MS4 operators need flexibility in determining the mix of BMPs (under the minimum measures) to achieve water quality objectives. Therefore, for example, if a system operator seeks to employ an alternative that involves structural controls, wide ranges will probably be associated with gross pollutant reduction estimates. Permit writers will undoubtedly develop other ways to ensure that permit limits ensure reduction of pollutants to the maximum extent practicable.

Small MS4 operators that pursue this individual permit option do not need to submit details about their future program requirements (e.g., the MS4's future plans to obtain legal authority required by §§122.26(d)(1)(ii) and (d)(2)). A small MS4 operator might elect to supply such information if it intends for the permit writer to take those plans into account

when developing the small MS4's permit conditions.

Several operators of small MS4s commented that they currently lacked the authority they would need to implement one or more of the minimum measures in §122.34(b). Today's rule recognizes that the operators of some small MS4s might not have the authority under State law to implement one or more of the measures using, for example, an ordinance or other regulatory mechanism. To address these situations, each minimum measure in §122.34(b) that would require the small MS4 operator to develop an ordinance or other regulatory mechanism states that the operator is only required to implement that requirement to "the extent allowable under State, Tribal or local law." See § 122.34(b)(3)(ii) (illicit discharge elimination), § 122.34(b)(4)(ii) (construction runoff control) and §122.34(b)(5)(ii) (post-construction storm water management). This regulatory language does not mean that a operator of a small MS4 with ordinance making authority can simply fail to pass an ordinance necessary for a §122.34(b) program. The reference to "the extent allowable under * * * local law" refers to the local laws of other political subdivisions to which the MS4 operator is subject. Rather, a small MS4 operator that seeks to implement a program under section §122.34(b) may omit a requirement to develop an ordinance or other regulatory mechanism only to the extent its municipal charter, State constitution or other legal authority prevents the operator from exercising the necessary authority. Where the operator cannot obtain the authority to implement any activity that is only required to "the extent allowable under State, Tribal or local law," the operator may satisfy today's rule by administering the remaining §122.34(b) requirements.

Finally, although today's rule provides operators of small MS4s with an option of applying for a permit under §122.26(d), States authorized to administer the NPDES program are not required to provide this option. NPDES-authorized States could require all regulated small MS4s to be permitted under the minimum measures management approach in §122.34 as a matter of State law. Such an approach would be deemed to be equally or more stringent than what is required by today's rule. See 40 CFR 123.2(i). The federalism concerns discussed above do not apply to requirements imposed by a State on its political subdivisions.

iv. Satisfaction of Minimum Measure Obligations by Another Entity. An operator of a regulated small MS4 may *68767 satisfy the requirement to implement one or more of the six minimum measures in §122.34(b) by having a third party implement the measure or measures. Today's rule provides a variety of means for small MS4 operators to share responsibility for different aspects of their storm water management program. The means by which the operators of various MS4s share responsibility may affect who is ultimately responsible for performance of the minimum measure and who files the periodic reports on the implementation of the minimum measure. Section 122.35 addresses these issues. The rule describes two different variants on third party implementation with different consequences if the third party fails to implement the measure.

If the permit covering the discharge from a regulated small MS4 identifies the operator as the entity responsible for a particular minimum control measure, then the operator-permittee remains responsible for the implementation of that measure even if another entity has agreed to implement the control measure. Section 122.35(a). Another party may satisfy the operator-permittee's responsibility by implementing the minimum control measure in a manner at least as stringent or prescriptive as the corresponding NPDES permit requirement. If the third party fails to do so, the operator-permittee remains responsible for its performance. The operator of the MS4 should consider entering into an agreement with the third party that acknowledges the responsibility to implement the minimum measure. The operator-permittee's NOI and its annual §122.34(f)(3) reports submitted to the NPDES permitting authority must identify the third party that is satisfying one or more of the permit obligations. This requirement ensures that the permitting authority is aware which entity is supposed to implement which minimum measures.

If, on the other hand, the regulated small MS4's permit recognizes that an NPDES permittee other than the operator-per-

mittee is responsible for a particular minimum control measure, then the operator-permittee is relieved from the responsibility for implementing that measure. The operator-permittee is also relieved from the responsibility for implementing any measure that the operator's permit indicates will be performed by the NPDES permitting authority. Section 122.35(b). The MS4 operator-permittee would be responsible for implementing the remaining minimum measures.

Today's final rule differs from the proposed version of §122.35(b), which stated that, even if the third party's responsibility is recognized in the permit, the MS4 operator-permittee remained responsible for performance if the third party failed to perform the measure consistent with §122.34(b). Under today's rule, the operator-permittee is relieved from responsibility for performance of a measure if the third party is an NPDES permittee whose permit makes it responsible for performance of the measure (including, for example, a State agency other than the State agency that issues NPDES permits) or if the third party is the NPDES permitting authority itself. Because the permitting authority is acknowledging the third party's responsibility in the permit, commenters thought that the MS4 operator-permittee should not be responsible for ensuring that the other entity is implementing the control measure properly. EPA agrees that the operator-permittee should not be conditionally responsible when the requirements are enforceable against some other NPDES permittee. If the third party fails to perform the minimum measure, the requirements will be enforceable against the third party. In addition, the NPDES permitting authority could reopen the operator-permittee's permit under § 122.62 and modify the permit to make the operator responsible for implementing the measure. A new paragraph has been added to §122.62 to clarify that the permit may be reopened in such circumstances.

Today's rule also provides that the operator-permittee is not conditionally responsible where it is the State NPDES permitting authority itself that fails to implement the measure. The permitting authority does not need to issue a permit to itself (i.e., to the same State agency that issues the permit) for the sole purpose of relieving the small MS4 from responsibility in the event the State agency does not satisfy its obligation to implement a measure. EPA does not believe that the small MS4 should be responsible in the situation where the NPDES permit issued to the small MS4 operator recognizes that the State agency that issues the permit is responsible for implementing a measure. If the State does fail to implement the measure, the State agency could be held accountable for its commitment in the permit to implement the measure. Where the State does not fulfill its responsibility to implement a measure, a citizen also could petition for withdrawal of the State's NPDES program or it could petition to have the MS4's permit reopened to require the MS4 operator to implement the measure.

EPA notes that not every State program that addresses erosion and sediment control from construction sites will be adequate to satisfy the requirement that each regulated small MS4 have a program to the extent required by § 122.34(b)(4). For example, although all NPDES States are required to issue NPDES permits for construction activity that disturbs greater than one acre, the State's NPDES permit program will not necessarily be extensive enough to satisfy a regulated small MS4's obligation under §122.34(b)(4). NPDES States will not necessarily be implementing all of the required elements of that minimum measure, such as procedures for site plan review in each jurisdiction required to develop a program and procedures for receipt and consideration of information submitted by the public on individual construction sites. In order for a State erosion and sediment control program to satisfy a small MS4 operator's obligation to implement §122.34(b)(4), the State program would have to include all of the elements of that minimum measure.

Where the operator-permittee is itself performing one or more of the minimum measures, the operator-permittee remains responsible for all of the reporting requirements under §122.34(f)(3). The operator-permittee's reports should identify each entity that is performing the control measures within the geographic jurisdiction of the regulated small MS4. If the other entity also operates a regulated MS4 and files reports on the progress of implementation of the measures within the geographic jurisdiction of the MS4, then the operator-permittee need not include that same information in its own reports.

If the other entity operates a regulated MS4 and is performing all of the minimum measures for the permittee, the permittee is not required to file the reports required by §122.34(f)(3). This relief from reporting is specified in §122.35(a).

Section 122.35 addresses the concerns of some commenters who sought relief for governmental facilities that are classified as small MS4s under today's rule. These facilities frequently discharge storm water through another regulated MS4 and could be regulated by that MS4's program. For example, a State owned office complex that operates its storm sewer system in an urbanized area will be regulated as an MS4 under today's rule even though its system may be subject to the storm water controls of the municipality in *68768 which it is located. Today's rule specifically revised the definition of MS4 to recognize that different levels of government often operate MS4s and that each such separate entity (including the federal government) should be responsible for its discharges. If both MS4s agree, the downstream MS4 can develop a storm water management program that regulates the discharge from both MS4s. The upstream small MS4 operator still must submit an NOI that identifies the entity on which the upstream small MS4 operator is relying to satisfy its permit obligations. No reports are required from the upstream small MS4 operator, but the upstream operator must remain in compliance with the downstream MS4 operator's storm water management program. This option allows small MS4s to work together to develop one storm water management program that satisfies the permit obligations of both. If they cannot agree, the upstream small MS4 operator must develop its own program.

As mentioned previously, comments from federal facilities and State organizations that operate MS4s requested that their permit requirements differ from those of MS4s that are political subdivisions of States (cities, towns, counties, etc.). EPA acknowledges that there are differences; e.g., many federal and State facilities do not serve a resident population and thus might require a different approach to public education. EPA believes, however, that MS4s owned by State and federal governments can develop storm water management plans that address the minimum measures. Federal and State owned small MS4s may choose to work with adjacent municipally owned MS4s to develop a unified plan that addresses all of the required measures within the jurisdiction of all of the contiguous MS4s. The options in §122.35 minimize the burden on small MS4s that are covered by another MS4's program.

One commenter recommended that if one MS4 discharges into a second MS4, the operator of the upstream MS4 should have to provide a copy of its NOI or permit application to the operator of the receiving MS4. EPA did not adopt this recommendation because the NOI and permit application will be publicly available; but EPA does recommend that NPDES permitting authorities consider it as a possible permit requirement. The commenter also suggested that monitoring data should be collected by the upstream MS4 and provided to the downstream MS4. EPA is not adopting such a uniform monitoring requirement because EPA believes it is more appropriate to let the MS4 operators work out the need for such data. If necessary, the downstream MS4s might want to make such data a condition to allowing the upstream MS4 to connect to its system.

v. Joint Permit Programs. Many commenters supported allowing the operators of small MS4s to apply as co-permittees so they each would not have to develop their own storm water management program. Today's rule specifically allows regulated small MS4s to join with either other small MS4s regulated under §122.34(d) or with medium and large MS4s regulated under §122.26(d).

As is discussed in the previous section, regulated small MS4s may indicate in their NOIs that another entity is performing one or more of its required minimum control measures. Today's rule under §122.33(b)(1) also specifically allows the operators of regulated small MS4s to jointly submit an NOI. The joint NOI must clearly indicate which entity is required to implement which control measure in each geographic jurisdiction within the service area of the entire small MS4. The operator of each regulated small MS4 remains responsible for the implementation of each minimum measure for its MS4 (unless, as is discussed in the previous section above, the permit recognizes that another entity is responsible for com-

pleting the measure.) The joint NOI, therefore, is legally equivalent to each entity submitting its own NOI. EPA is, however, revising the rule language to specifically authorize the joint submission of NOIs in response to comments that suggested that such explicit authorization might encourage programs to be coordinated on a watershed basis.

Section 122.33(b)(2)(iii) authorizes regulated small MS4s to jointly apply for an individual permit to implement today's rule, where allowed by an NPDES permitting authority. The permit application should contain sufficient information to allow the permitting authority to allocate responsibility among the parties under one of the two permitting options in §§122.33(b)(2)(i) and (ii).

Section 122.33(b)(3) of today's rule also allows an operator of a regulated small MS4 to join as a co-permittee in an existing NPDES permit issued to an adjoining medium or large MS4 or source designated under the existing storm water program. This co-permittee option applies only with the agreement of all co-permittees. Under this co-permittee arrangement, the operator of the regulated small MS4 must comply with the terms and conditions of the applicable permit rather than the permit condition requirements of §122.34 of today's rule. The regulated small MS4 that wishes to be a co-permittee must comply with the applicable requirements of §122.26(d), but would not be required to fulfill all the permit application requirements applicable to medium and large MS4s. Specifically, the regulated small MS4 is not required to comply with the application requirements of §122.26(d)(1)(iii) (Part 1 source identification), §122.26(d)(1)(iv) (Part 1 discharge characterization), and §122.26(d)(2)(iii) (Part 2 discharge characterization data). Furthermore, the regulated small MS4 operator could satisfy the requirements in §122.26(d)(1)(v) (Part 1 management programs) and §122.26(d)(2)(iv) (Part 2 proposed management program) by referring to the adjoining MS4 operator's existing plan. An operator pursuing this option must describe in the permit modification request how the adjoining MS4's storm water program addresses or needs to be supplemented in order to adequately address discharges from the MS4. The request must also explain the role of the small MS4 operator in coordinating local storm water activities and describe the resources available to accomplish the storm water management plan.

EPA sought comments regarding the appropriateness of the application requirements in these subsections of §122.26(d). One commenter stated that newly regulated smaller MS4s should not be required to meet the existing regulations' Part II application requirements under §122.26(d) regarding the control of storm water discharges from industrial activity. EPA disagrees. The smaller MS4 operators designated for regulation in today's rule may satisfy this requirement by referencing the legal authority of the already regulated MS4 program to the extent the newly regulated MS4 will rely on such legal authority to satisfy its permit requirements. If the smaller MS4 operator plans to rely on its own legal authorities, it must identify it in the application. If the smaller MS4 operator does not elect to use its own legal authority, they may file an individual permit application for an alternate program under §122.33(b)(2)(ii).

The explanatory language in §122.33(b)(3) recommends that the smaller MS4s designated under today's rule identify how an existing plan "would need to be supplemented in order to adequately address your discharges." One commenter suggested that this must be regulatory language and not guidance. EPA disagrees that this needs to be mandatory language. *68769 Since many of the smaller MS4s designated today are "donut holes" within the geographic jurisdiction of an already regulated MS4, the larger MS4's program generally will be adequate to address the newly regulated MS4's discharges. The small MS4 applicant should consider the adequacy of the existing MS4's program to address the smaller MS4's water quality needs, but EPA is not imposing specific requirements. Where circumstances suggest that the existing program is inadequate with respect to the newly designated MS4 and the applicant does not address the issue, the NPDES permitting authority must require that the existing program be supplemented.

Commenters recommended that the application deadline for smaller MS4s designated today be extended so that existing regulated MS4s would not have to modify their permit in the middle of their permit term, provided that permit renewal

would occur within a reasonable time (12 to 18 months) of the deadline. In response, EPA notes that today's rule allows operators of newly designated small MS4s up to three years and 90 days from the promulgation of today's rule to submit an application to be covered under the permit issued to an already regulated MS4. The permitting authority has a reasonable time after receipt of the application to modify the existing permit to include the newly designated source. If an existing MS4's permit is up for renewal in the near future, the operator of a newly designated small MS4 may take that into account when timing its application and the NPDES permitting authority may take that into account when processing the application.

Another commenter suggested that the rule should include a provision to allow permit application requirements for smaller MS4s designated today to be determined by the permitting authority to account for the particular needs/wants of an already regulated MS4 operator. EPA does not believe that the regulations should specifically require this approach. When negotiating whether to include a newly designated MS4 in its program, the already regulated MS4 operator may require the newly designated MS4's operator to provide any information that is necessary.

The co-permitting approach allows small MS4s to take advantage of existing programs to ease the burden of creating their own programs. The operators of regulated small MS4s, however, may find it simpler to apply for a program under today's rule, and to identify the medium or large MS4 operator that is implementing portions of its §122.34(b) minimum measures.

d. Evaluation and Assessment

Under today's rule, operators of regulated small MS4s are required to evaluate the appropriateness of their identified BMPs and progress toward achieving their identified measurable goals. The purpose of this evaluation is to determine whether or not the MS4 is meeting the requirements of the minimum control measures. The NPDES permitting authority is responsible for determining whether and what types of monitoring needs to be conducted and may require monitoring in accordance with State/Tribe monitoring plans appropriate to the watershed. EPA does not encourage requirements for "end-of-pipe" monitoring for regulated small MS4s. Rather, EPA encourages permitting authorities to carefully examine existing ambient water quality and assess data needs. Permitting authorities should consider a combination of physical, chemical, and biological monitoring or the use of other environmental indicators such as exceedance frequencies of water quality standards, impacted dry weather flows, and increased flooding frequency. (Clayton, R. and W. Brown, 1996. Environmental Indicators to Assess Storm Water Control Programs and Practices. Center for Watershed Protection, Silver Spring, MD.) Section II.L., Water Quality Issues, discusses monitoring in greater detail.

As recommended by the Intergovernmental Task Force on Monitoring Water Quality (ITFM), the NPDES permitting authority is encouraged to consider the following watershed objectives in determining monitoring requirements: (1) To characterize water quality and ecosystem health in a watershed over time, (2) to determine causes of existing and future water quality and ecosystem health problems in a watershed and develop a watershed management program, (3) to assess progress of watershed management program or effectiveness of pollution prevention and control practices, and (4) to support documentation of compliance with permit conditions and/or water quality standards. With these objectives in mind, the Agency encourages participation in group monitoring programs that can take advantage of existing monitoring programs undertaken by a variety of governmental and nongovernmental entities. Many States may already have a monitoring program in effect on a watershed basis. The ITFM report is included in the docket for today's rule (Intergovernmental Task Force on Monitoring Water Quality, 1995. The Strategy for Improving Water-Quality Monitoring in the United States: Final Report of the Intergovernmental Task Force on Monitoring Water Quality. Copies can be obtained from: U.S. Geological Survey, Reston, VA.).

EPA expects that many types of entities will have a role in supporting group monitoring activities—including federal agencies, State agencies, the public, and various classes or categories of point source dischargers. Some regulated small MS4s might be required to contribute to such monitoring efforts. EPA expects, however, that their participation in monitoring activities will be relatively limited. For purposes of today's rule, EPA recommends that, in general, NPDES permits for small MS4s should not require the conduct of any additional monitoring beyond monitoring that the small MS4 may be already performing. In the second and subsequent permit terms, EPA expects that some limited ambient monitoring might be appropriately required for perhaps half of the regulated small MS4s. EPA expects that such monitoring will only be done in identified locations for relatively few pollutants of concern. EPA does not anticipate "end-of-pipe" monitoring requirements for regulated small MS4s.

EPA received a wide range of comments on this section of the rule. Some commenters believe that EPA should require monitoring; others want a strong statement that the newly regulated small MS4s should not be required to monitor. Many commenters raised questions about exactly what EPA expects MS4s to do to evaluate and assess their BMPs. EPA has intentionally written today's rule to provide flexibility to both MS4s and permitting authorities regarding appropriate evaluation and assessment. Permitting authorities can specify monitoring or other means of evaluation when writing permits. If additional requirements are not specified, MS4s can decide what they believe is the most appropriate way to evaluate their storm water management program. As mentioned above, EPA expects that the necessity for monitoring and its extent may change from permit cycle to permit cycle. This is another reason for making the evaluation and assessment rule requirements very flexible.

i. Recordkeeping. The NPDES permitting authority is required to include at least the minimum appropriate recordkeeping conditions in each permit. Additionally, the NPDES permitting authority can specify that permittees develop, maintain, and/or *68770 submit other records to determine compliance with permit conditions. The MS4 operator must keep these records for at least 3 years but is not required to submit records to the NPDES permitting authority unless specifically directed to do so. The MS4 operator must make the records, including the storm water management program, available to the public at reasonable times during regular business hours (see 40 CFR 122.7 for confidentiality provision). The MS4 operator is also able to assess a reasonable charge for copying and to establish advance notice requirements for members of the public.

EPA received a comment that questioned EPA's authority to require MS4s to make their records available to the public. EPA disagrees with the commenter and believes that the CWA does give EPA the authority to require that MS4 records be available. It is also more practical for the public to request records directly from the MS4 than to request them from EPA who would then make the request to the MS4. Based on comments, EPA revised the proposed rule so as not to limit the time for advance notice requirements to 2 business days.

ii. Reporting. Under today's rule, the operator of a regulated small MS4 is required to submit annual reports to the NPDES permitting authority for the first permit term. For subsequent permit terms, the MS4 operator must submit reports in years 2 and 4 unless the NPDES permitting authority requires more frequent reports. EPA received several comments supporting this timing for report submittal. Other commenters suggested that annual reports during the first permit cycle are too burdensome and not necessary. EPA believes that annual reports are needed during the first 5-year permit term to help permitting authorities track and assess the development of MS4 programs, which should be established by the end of the initial term. Information contained in these reports can also be used to respond to public inquiries.

The report must include (1) the status of compliance with permit conditions, an assessment of the appropriateness of identified BMPs and progress toward achieving measurable goals for each of the minimum control measures, (2) results of information collected and analyzed, including monitoring data, if any, during the reporting period, (3) a summary of

what storm water activities the permittee plans to undertake during the next reporting cycle, and (4) a change in any identified measurable goal(s) that apply to the program elements.

The NPDES permitting authority is encouraged to provide a brief two-page reporting format to facilitate compiling and analyzing the data from submitted reports. EPA does not believe that submittal of a brief annual report of this nature is overly burdensome, and has not changed the required reporting time frame from the proposal. The permitting authority will use the reports in evaluating compliance with permit conditions and, where necessary, will modify the permit conditions to address changed conditions.

iii. Permit-As-A-Shield. Section 122.36 describes the scope of authorization (i.e. "permit-as-a-shield") under an NPDES permit as provided by section 402(k) of the CWA. Section 402(k) provides that compliance with an NPDES permit is deemed compliance, for purposes of enforcement under CWA sections 309 and 505, with CWA sections 301, 302, 306, 307, and 403, except for any standard imposed under section 307 for toxic pollutants injurious to human health.

EPA's Policy Statement on Scope of Discharge Authorization and Shield Associated with NPDES Permits, originally issued on July 1, 1994, and revised on April 11, 1995, provides additional information on this matter.

e. Other Applicable NPDES Requirements

Any NPDES permit issued to an operator of a regulated small MS4 must also include other applicable NPDES permit requirements and standard conditions, specifically the applicable requirements and conditions at 40 CFR 122.41 through 122.49. Reporting requirements for regulated small MS4s are governed by §122.34 and not the existing requirements for medium and large MS4s at § 122.42(c). In addition, the NPDES permitting authority is encouraged to consult the Interim Permitting Approach, issued on August 1, 1996. The discussion on the Interim Permitting Approach in Section II.L.1, Water Quality Based Effluent Limits, provides more information. The provisions of §§122.41 through 122.49 establish permit conditions and limitations that are broadly applicable to the entire range of NPDES permits. These provisions should be interpreted in a manner that is consistent with provisions that address specific classes or categories of discharges. For example, §122.44(d) is a general requirement that each NPDES permit shall include conditions to meet water quality standards. This requirement will be met by the specific approach outlined in today's rule for the implementation of BMPs. BMPs are the most appropriate form of effluent limitations to satisfy technology requirements and water quality-based requirements in MS4 permits (see the introduction to Section II.H.3, Municipal Permit Requirements, Section II.H.3.h, Reevaluation of Rule, and the discussion of the Interim Permitting Policy in Section II.L.1. below).

f. Enforceability

NPDES permits are federally enforceable. Violators may be subject to the enforcement actions and penalties described in CWA sections 309, 504, and 505 or under similar water pollution enforcement provisions of State, tribal or local law. Compliance with a permit issued pursuant to section 402 of the Clean Water Act is deemed compliance, for purposes of sections 309 and 505, with sections 301, 302, 306, 307, and 403 (except any standard imposed under section 307 for toxic pollutants injurious to human health).

g. Deadlines

Today's final rule includes "expeditious deadlines" as directed by CWA section 402(p)(6). In proposed §122.26(e), the permit application for the "ISTEA" facilities was maintained as August 7, 2001 and the permit application deadline for storm water discharges associated with other construction activity was established as 3 years and 90 days from the final rule date. In proposed § 122.33(c)(1), operators of regulated small MS4s were required to seek permit coverage within 3

years and 90 days from the date of publication of the final rule. In proposed §122.33(c)(2), operators of regulated small MS4s designated by the NPDES permitting authority on a local basis under §122.32(a)(2) must seek coverage under an NPDES permit within 60 days of notice, unless the NPDES permitting authority specifies a later date.

In order to increase the clarity of today's final rule, EPA has changed the location of some of the above requirements. All application deadlines for both Phase I and Phase II are now listed or referenced in §122.26(e). Section 122.26(e)(1) contains the deadlines for storm water associated with industrial activity. Paragraph (i) has been changed to correct a typographical error. Paragraph (ii) has been revised to reflect the changed application date for "ISTEA" facilities. (See discussion in section I.3, ISTEAs Sources). The application deadline for storm water discharges associated with other construction activity is now in a new §122.26(e)(8). The application deadline for regulated small MS4s *68771 remains in §122.33(c) because this section is written in "readable regulation" format, but it is also described in a new § 122.26(e)(9) .

Under today's rule, permitting authorities are allowed up to 3 years to issue a general permit and MS4s designated under §122.32(a)(1) are allowed up to 3 years and 90 days to submit a permit application. Operators of regulated small MS4s that choose to be a co-permittee with an adjoining MS4 with an existing NPDES storm water permit must apply for a modification of that permit within the same time frame. Several commenters stated that 90 days was not adequate time to submit an NOI. This might be true if facilities did not start developing their storm water program until publication of their general permit. In fact, municipalities should start developing their storm water program upon publication of today's final rule, if they have not already done so. Municipalities that are uncertain if they fall within the urbanized area should ask their permitting authority. EPA believes that municipalities should not automatically take three years and 90 days to develop a program and submit their NOI. Three years is the maximum amount of time to issue a general permit. MS4s that are automatically designated under today's rule may have less than 3 years and 90 days if the permitting authority issues a permit that requires submission of NOIs before that time. EPA encourages States to modify their NPDES program to include storm water and issue their permits as soon as possible. It is important for permitting authorities to keep their municipalities informed of their progress in developing or modifying their NPDES storm water requirements.

EPA recognizes that MS4s brought into the program due to the 2000 Census calculations do not have as much time to develop a program as those already designated from the 1990 Census. However, the official Bureau of the Census urbanized area calculation for the 2000 Census is expected to be published in the Federal Register in the spring of 2002, which should give the potentially affected MS4s adequate time to prepare for compliance under the applicable permit. However, if the publication of this information is delayed, MS4s in newly designated urbanized areas will have 180 days from the time the new designations are published to submit an NOI, consistent with the time frame for other regulated MS4s that are designated after promulgation of the rule.

The proposed application deadline for MS4s designated under §122.32(a)(2) was within 60 days of notice. Many commenters stated that 60 days does not provide adequate time for the preparation of an NOI or permit application. EPA agrees that newly designated MS4s may not be aware that they might be designated since the permitting authority could take several years to develop designation criteria. EPA has decided that the application time frame for these facilities should be consistent with the 180 days allowed for facilities designated under §§122.26(a)(9)(i)(C) and (D). Section 122.33(c)(2) of today's final rule contains the modified time frame of 180 days to apply for coverage.

h. Reevaluation of Rule

The municipal caucus of the Storm Water Phase II FACA Subcommittee asked EPA to demonstrate its commitment to revisit the municipal requirements of today's rule and make changes where necessary after evaluating the storm water

program and researching the effectiveness of municipal BMPs. In §122.37 of today's final rule, EPA commits to revisiting the regulations for the municipal storm water discharge control program after completion of the first two permit terms. EPA intends to use this time to work closely with stakeholders on research efforts. Gathering and analyzing data related to the storm water program, including data regarding the effectiveness of BMPs, is critical to EPA's storm water program evaluation. EPA does not intend to change today's NPDES municipal storm water program until the end of this period, except under the following circumstances: a court decision requires changes; a technical change is necessary for implementation; or the CWA is modified, thereby requiring changes. After careful analysis, EPA might also consider changes from consensus-based stakeholder requests regarding requirements applicable to newly regulated MS4s. EPA will apply the August 1, 1996, Interim Permitting Approach to today's program during this interim period and encourages all permitting authorities to use this approach in municipal storm water permits for newly regulated MS4s and in determining MS4 permit requirements under a TMDL approach. After careful consideration of the data, EPA will make modifications as necessary.

EPA received comments that supported waiting two permit cycles before re-evaluating the rule and other comments that requested re-evaluation much sooner. EPA anticipates two full permit cycles are necessary to obtain enough data to significantly evaluate the rule. The re-evaluation time frame of 13 years from today remains as proposed.

I. Other Designated Storm Water Discharges

1. Discharges Associated with Small Construction Activity

Section 122.26(b)(15) of today's rule designates certain construction activities for regulation as "storm water discharges associated with small construction activity." Specifically, storm water discharges from construction activity equal to or greater than 1 acre and less than 5 acres are automatically designated except in those circumstances where the operator (i.e., person responsible for discharges that might occur) certifies to the permitting authority that one of two specific waiver circumstances (described in section b. below) applies. Sites below one acre may be designated under § 122.26(b)(15)(ii) where necessary to protect water quality.

Today's rule regulates these construction-related storm water sources under CWA section 402(p)(6) to protect water quality rather than under CWA section 402(p)(2). Designation under 402(p)(6) gives States and EPA the flexibility to waive the permit requirement for construction activity that is not likely to impair water quality, and to designate additional sources below one acre that are likely to cause water quality impairment. Thus, the one acre threshold of today's rule is not an absolute threshold like the five acre threshold that applies under the existing storm water rule.

Today's rule regulating certain storm water discharges from construction activity disturbing less than 5 acres is consistent with the 9th Circuit remand in *NRDC v. EPA*, 966 F.2d 1292 (9th Cir. 1992). In that case, the court remanded portions of the existing storm water regulations related to discharges from construction sites. The existing Phase I regulations define "storm water discharges associated with industrial activity" to include storm water discharges from construction sites disturbing 5 acres or more of total land area (see 40 CFR 122.26(b)(14)(x)). In its decision, the court concluded that the 5-acre threshold was improper because the Agency had failed to identify information "to support its perception that construction activities on less than 5 acres are non-industrial in nature" (966 F.2d at 1306). The court remanded the exemption to EPA for further proceedings (966 F.2d at 1310). EPA's objectives in today's action include an effort to (1) address the 9th Circuit *68772 remand to reconsider regulation of storm water discharges from construction activities that disturb less than 5 acres of land, (2) address water quality concerns associated with such activities, and (3) balance conflicting recommendations and concerns of stakeholders in the regulation of additional construction activity.

EPA responded to the Ninth Circuit's decision by designating discharges from construction activities that disturb between

1 and 5 acres as "discharges associated with small construction activity" under CWA section 402(p)(6), rather than as "discharges associated with industrial activity" under CWA section 402(p)(2)(B). Although a size criterion alone may be an indicator of whether runoff from construction sites between 1 and 5 acres is "associated with industrial activity," the Agency is instead relying on a size threshold in tandem with provisions that allow for designations and waivers based on potential for "predicted water quality impairments" to regulate construction sites between 1 and 5 acres under CWA section 402(p)(6). This approach was chosen by the Agency for the sake of simplicity and certainty and, most importantly, to protect water quality consistent with the mandate of CWA section 402(p)(6). Today's rule also includes extended application deadlines for this new category of dischargers under the authority of CWA section 402(p)(6) (see §122.26(e)(8) of today's rule).

In today's rule, EPA is regulating storm water discharges from additional construction sites to better protect the Nation's waters, while remaining sensitive to a concern that the Agency should not regulate discharges from construction sites that might not or do not have adverse water quality impacts. EPA believes that today's rule will successfully accomplish this objective by establishing a 1-acre threshold nationwide that includes the flexibility to allow the permitting authority to both waive requirements for discharges from sites that are not expected to cause adverse water quality impacts and to designate discharges from sites below 1-acre based on adverse water quality impacts.

In addition to the diminishing water quality benefits of regulating all sites below one acre, the Agency relied on practical considerations in establishing a one acre threshold and not setting a lower threshold. Regardless of the threshold established by EPA, a NPDES permit can only be required if a construction site has a point source discharge. A point source discharge means that pollutants are added to waters of the United States through a discernible, confined, discrete conveyance. "Sheet flow" runoff from a small construction site would not result in a point source discharge unless and until it channelized. As the amount of disturbed land surface decreases, precipitation is less likely to channelize and create a "point source" discharge (assuming the absence of steep slopes or other factors that lead to increased channelization). Categorical designation of very small sites may create confusion about applicability of the NPDES permitting program to those sites. EPA's one acre threshold reflects, in part, the need to recognize that smaller sites are less likely to result in point source discharges. Of course, the NPDES permitting authority could designate smaller sites (below one acre, assuming point source discharges occur from the smaller designated sites) for regulation if a watershed or other local assessment indicated the need to do so. The Phase II rule includes this designation authority at 40 CFR 122.26(a)(9)(i)(D) and (b)(15)(ii).

The one acre threshold also provides an administrative tool for more easily identifying those sites that are identified for coverage by the rule (but may receive a waiver) and those that are not automatically covered (but may be designated for inclusion). Although all construction sites less than five acres could have a significant water quality impact cumulatively, EPA is automatically designating for permit coverage only those storm water discharges from construction sites that disturb land equal to or greater than one acre. Categorical regulation of discharges from construction below this one acre threshold would overwhelm the resources of permitting authorities and might not yield corresponding water quality benefits. Construction activities that disturb less than one acre make up, in total, a very small percentage of the total land disturbance from construction nationwide. The one acre threshold is reasonable for accomplishing the water quality goals of CWA section 402(p)(6) because it results in 97.5% of the total acreage disturbed by construction being designated for coverage by the NPDES storm water program, while excluding from automatic coverage the numerous smaller sites that represent 24.7% of the total number of construction sites.

Some commenters believed that EPA has not adequately identified water quality problems associated with storm water discharges from construction activity disturbing less than five acres. Other commenters believed that storm water discharges from small construction activity is a significant water quality problem nationwide. Section I.B.3, Construction

Site Runoff, provides a detailed discussion of adverse water quality impacts resulting from construction site storm water discharges. EPA is regulating storm water discharges from construction activity disturbing between 1 and 5 acres because the cumulative impact of many sources, and not just a single identified source, is typically the cause for water quality impairments, particularly for sediment-related water quality standards.

Several commenters requested that EPA regulate discharges from small construction activity as "discharges associated with industrial activity" under CWA 402(p)(4) and not, as proposed, as "storm water discharges associated with other activity" under CWA 402(p)(6). EPA is regulating discharges from small construction sites as "small construction activity" under the authority of CWA section 402(p)(6), rather than section 402(p)(4), to ensure that regulation of these sources is water quality-sensitive. CWA section 402(p)(6) affords the opportunity for designations and waivers of sources based on potential for "predicted water quality impairments." Regulation of storm water "associated with industrial activity" does not necessarily focus regulation to protect water quality.

a. Scope

The definition of "storm water discharges associated with small construction activity" includes discharges from construction activities, such as clearing, grading, and excavating activities, that result in the disturbance of equal to or greater than 1 acre and less than 5 acres (see §122.26(b)(15)(i)). Such activities could include: road building; construction of residential houses, office buildings, or industrial buildings; or demolition activity. The definition of "storm water discharges associated with small construction activity" also includes any other construction activity, regardless of size, designated based on the potential for contribution to a violation of a water quality standard or for significant contribution of pollutants to waters of the United States (§122.26(b)(15)(ii)). This designation is made by the Director, or in States with approved NPDES programs, either the Director or the EPA Regional Administrator.

For the purposes of today's rule, the definition of "storm water discharges associated with small construction activity" includes discharges from activities disturbing less than 1 acre if that construction activity is part of a "larger common plan of development or sale" with a planned disturbance of equal to or greater than 1 acre of land. A "larger common plan of development or sale" means a contiguous area where multiple separate and distinct construction activities are planned to occur at different times on different schedules under one plan, e.g., a housing development of five 1/4 acre lots (§122.26(b)(15)(i)).

In addition to the regulatory text for smaller construction, the Agency is also revising the existing text of §122.26(b)(14)(x) to clarify EPA's intention regarding construction projects involving a larger common plan of development or sale ultimately disturbing 5 or more acres. Operators of such sites are required to seek coverage under an NPDES permit regardless of the number of lots in the larger plan because designation for permit coverage is based on the total amount of land area to be disturbed under the common plan. This designation attempts to address the potential cumulative effects of numerous construction activities concentrated in a given area.

Several commenters asked that EPA allow the permitting authority to set the appropriate size threshold based on water quality studies. While EPA agrees that location-specific water quality studies provide an ideal information base from which to make regulatory decisions, today's rule establishes a default standard for regulation in the absence of location-specific studies. The rule does allow for deviation from the default standard through additional designations and waivers, however, when supported by location-specific water quality information. The rule codifies the ability of permitting authorities to provide waivers for sites greater than or equal to one acre (the default standard) and designate additional discharges from small sites below one acre when location-specific information suggests that the default 1 acre standard is either unnecessary (waivers) or too limited (designations) to protect water quality.

Some commenters wanted EPA to base the regulation of storm water discharges from construction sites not only on size, but also on the duration and intensity of activity occurring on the site. EPA believes that a national 1-acre threshold, in combination with waivers and additional designations, is the most effective and simplest way to address adverse water quality impacts from storm water from small construction sites. Moreover, as discussed below, the waiver for rainfall erosivity does account for projects of limited duration. EPA believes, however, that the intensity of activity occurring on-site would be a very difficult condition to quantify.

Many commenters requested that EPA maintain the 5 acre threshold from the existing regulations, which include opportunities for site-specific designation, as the regulatory scope for regulating storm water from construction sites, i.e., that the Agency not automatically regulate storm water discharges from sites less than 5 acres. Several commenters wanted construction requirements to be applied to sites smaller than 1 acre, while some commenters suggested alternative thresholds of 2 or 3 acres. The rest of the commenters supported the 1 acre threshold. None of the commenters presented any data or rationales to support a specific size threshold.

EPA examined alternative size thresholds, including 0.5 acre, 1 acre, 2 acres and 5 acres. EPA had difficulty evaluating the alternative size thresholds because, while directly proportional to the size of the disturbed site, the water quality threat posed by discharges from construction sites of differing sizes varies nationwide, depending on the local climatological, geological, geographical, and hydrological influences. In order to ensure improvements in water quality nationwide, however, today's rule does not allow various permitting authorities to establish different size thresholds except based on the waiver and designation provisions of the rule. EPA believes that the water quality impact from small construction sites is as high as or higher than the impact from larger sites on a per acre basis. By selecting the 1 acre size threshold and coupling it with waivers and additional designations, EPA is seeking to standardize improvement of water quality on a national basis while providing permitting authorities with the opportunity to designate those unregulated activities causing water quality impairments regardless of site size, as well as to waive requirements when information demonstrates that regulation is unnecessary.

EPA recognizes that the size criterion alone may not be the most ideal predictor of the need for regulation, but effective protection of water quality depends as much on simplicity in implementation as it does on the scientific information underlying the regulatory criteria. The default size criterion of 1 acre will ensure protection against adverse water quality impacts from storm water from small construction sites while not overburdening the resources of permitting authorities and the construction industry to implement the program to protect water quality in the first place.

One commenter stated a need to clarify whether routine road maintenance is considered construction activity for the purpose of today's rule. The NPDES general permit for discharges from construction sites larger than 5 acres defined "commencement of construction" as the initial disturbance of soils associated with clearing, grading, or excavating activities or other construction activities (63 FR 7913). For construction sites disturbing less than 5 acres, EPA does not consider construction activity to include routine maintenance performed to maintain the original line and grade, hydraulic capacity, or original purpose of the facility.

Two commenters believed that the Multi-Sector General Permit for storm water discharges from industrial activities (MSGP) (60 FR 50804) already applies to storm water discharges from construction activities at oil and gas exploration and production sites and asked for a clarification on this issue. Commenters also requested a single general permit to authorize both industrial storm water discharges and construction site discharges which occur at the same industrial site.

Currently, when construction activity disturbing more than 5 acres occurs on an industrial site covered by the MSGP, authorization under a separate NPDES construction permit is needed because the MSGP does not include the

"construction" industrial sector. While the MSGP does address sediment and erosion control, it is not as specific as the NPDES general permit for storm water discharges from construction activities disturbing more than 5 acres. Though permitting authorities could conceivably develop a single general permit to authorize storm water discharges associated with construction activity at these industrial facilities, the commenter's request is not addressed by today's rulemaking. When today's rule is implemented through general permits (to be issued later), the permitting authority will have discretion whether or not to incorporate the permit requirements for both the industrial storm water discharges and construction site storm water discharges into a single general permit. This type of request should be addressed to the permitting authority.

One commenter suggested that discharges from small construction sites should be regulated through a "self-implementing rule" approach. While today's rule is not a self-implementing rule, it does add §122.28(b)(2)(v), which *68774 gives the permitting authority the discretion to authorize a construction general permit for sites less than 5 acres without submitting a notice of intent. Such non-registration general permits function similarly to self-implementing rules, but are, in fact, permits. Today's rule will be implemented through NPDES permits rather than self-implementing regulations to capitalize on the compliance, tracking, enforcement, and public participation associated with NPDES permits (see discussion in section II.C).

Other commenters believed that only the permitting authority should regulate construction site storm water discharges (under a NPDES permit) and that a small MS4 operator's regulation of storm water discharges associated with construction (under the small MS4 NPDES storm water program) is redundant. EPA disagrees that control measure implementation by the NPDES authority and the small MS4 operator is redundant. To the extent the two efforts overlap, today's rule provides for consolidation and coordination of substantive requirements via incorporation by reference permitting. Small MS4s operators may choose to impose more prescriptive requirements than an NPDES permitting authority based on localized water quality needs. In those cases, EPA intends that the substantive requirements from the small MS4 program should apply as the NPDES permit requirements for the construction site discharger. In cases where a small MS4 program does not prioritize and focus on storm water from construction sites (beyond the small MS4 minimum control measure in today's rule, which does not require the small MS4 operator to control construction site discharges in a manner as prescriptive as is expected for discharges regulated under NPDES permits), the Agency intends that the NPDES general permit will provide the substantive standards applicable to the construction site discharge. EPA does anticipate, however, that implementation of MS4 programs to address construction site runoff within their jurisdiction will enhance overall NPDES compliance by construction site dischargers. EPA also notes that under §122.35(b), the permitting authority may recognize its own program to control storm water discharges from construction sites in lieu of requiring such a program in an MS4's NPDES permit, provided that the permitting authority's program satisfies the requirements of §122.34(b)(4), including, for example, procedures for site plan reviews and consideration of information submitted by the public on individual construction sites in each jurisdiction required to be covered by the program.

b. Waivers

Under §122.26(b)(15)(i) of today's rule, NPDES permitting authorities may waive today's requirement for construction site operators to obtain a permit in two circumstances. The first waiver is intended to apply where little or no rainfall is expected during the period of construction. The second waiver may be granted when a TMDL or equivalent analysis indicates that controls on construction site discharges are not needed to protect water quality.

The first waiver is based on "low predicted rainfall erosivity" which can be found using tables of rainfall-runoff erosivity (R) values published for each region in the U.S. R factors are published in the U.S. Department of Agriculture (USDA) Agricultural Handbook 703 (Renard, K.G., Foster, G.R., Weesies, G.A., McCool, D.K., and D.C. Yoder. 1997. Predicting Soil Erosion by Water: A Guide to Conservation Planning with the Revised Universal Soil Loss Equation (RUSLE).

U.S. Department of Agriculture Handbook 703). The R factor varies based on the time during the year when construction activity occurs, where in the country it occurs, and how long the construction activity lasts. The permitting authority may determine, using Handbook 703, which times of year, if any, the waiver opportunity is available for construction activity. EPA will provide assistance either through computer programs or the World Wide Web on how to determine whether this waiver applies for a particular geographic area and time period. Application of this waiver for regulatory purposes will be determined by the authorized NPDES authority. This waiver is discussed further in the following section titled Rain-fall-Erosivity Waiver.

The second waiver is based on a consideration of ambient water quality. This waiver is available after a State or EPA develops and implements TMDLs for the pollutant(s) of concern from storm water discharges associated with construction activity. This waiver is also available for sites discharging to non-impaired waters that do not require TMDLs, when an equivalent analysis has determined allocations for small construction sites for the pollutant(s) of concern or determined that such allocations are not needed to protect water quality based on consideration of existing in-stream concentrations, expected growth in pollutant contributions from all sources, and a margin of safety. The Agency envisions an equivalent analysis that would demonstrate that water quality is not threatened by storm water discharges from small construction activity. This waiver is discussed further below in the sections titled TMDL Waiver and Water Quality Issues.

The proposed rule included a waiver based on "low predicted soil loss." This waiver provision would have been applicable on a case-by-case basis where the annual soil loss rate for the period of construction for a site, using the Revised Universal Soil Loss Equation (RUSLE), would be less than 2 tons/acre/year. The annual soil loss rate of less than 2 tons/acre/year would be calculated through the use of the RUSLE equation, assuming the constants of no ground cover and no runoff controls in place.

Several commenters found the low soil loss waiver too complex and impractical, and stated that expertise is not available at the local level to prepare and evaluate eligibility for the waiver. Another commenter questioned whether two tons/acre/year was an appropriate threshold for predicting adverse water quality impacts. Two other commenters said that RUSLE was never intended to predict off-site impacts and is not an indicator of potential harm to water quality. EPA agrees with the commenters on the difficulty associated with determining and implementing this waiver. Most construction site operators are not familiar with the RUSLE program, and the potential burden on the permitting authority, construction industry, USDA's Natural Resources Conservation Service and conservation districts probably would have been significant. The Agency has not included this waiver in the final rule.

Two commenters asked that EPA allow States the flexibility to develop their own waiver criteria but did not suggest how the Agency (or affected stakeholders) could evaluate the acceptability of alternative State waiver criteria. Therefore, the final rule does not provide for any such alternative waivers. If a State does seek to develop alternate waiver criteria, then EPA procedures afford the opportunity for subsequent actions, for example, under the Project XL Program in EPA's Office of Reinvention, which seeks cleaner, smarter, and cheaper solutions to environmental problems. Many commenters suggested that EPA extend these waivers to existing industrial storm water regulations for construction activity greater than 5 acres. These construction site discharges are *68775 regulated as industrial storm water discharges under CWA 402(p)(2) and are not eligible for such water quality-based waivers.

Two commenters were concerned that waivers would create a potential for significant degradation of small streams. EPA disagrees. If small streams are threatened, the permitting authority would choose not to provide any waivers. In addition, permitting authorities may protect small streams by designating discharges from small construction activity based on the potential for contribution to a violation of a water quality standard or for significant contribution of pollutants to waters of the U.S.

Two commenters asked that the waiver options be eliminated. They felt it would create a gross inequity within the construction community if some projects will not be subject to the requirements of today's rule. While the comments may be valid, EPA disagrees that waivers should be disallowed on this basis. Construction site discharges that qualify for a waiver from permitting requirements are not expected to present a threat to water quality, which is the basis for designation and regulation under today's rule.

A number of commenters suggested additional waivers in cases where new development will result in no additional adverse impacts to water quality as compared to the existing development it replaces. EPA believes these waivers are either unworkable or unnecessary. It would be very difficult for most construction operators to determine, as well as for other stakeholders to verify, on a site-by-site basis, that there is no potential for adverse impact to water quality compared to the replaced development.

Other commenters proposed waivers in cases where a local erosion and sediment control program covers the project or a separate waiver for small linear utility projects. Instead of waivers, today's rule addresses the first suggestion through the qualifying program provision described in the section titled Cross-Referencing State/Local Erosion and Sediment Control Programs below. Today's rule provides waivers for small linear projects in so far as they satisfy conditions for low rainfall erosivity. (See § 122.26(b)(15)(i)(A).)

Other commenters suggested waivers based on distance to water body, existence of vegetated buffer around water body, slope of disturbed land, or if discharging to very large bodies of water. As a result of public outreach, EPA believes that these proposed waivers would be generally unworkable for construction site dischargers and permitting authorities because of the difficulty in applying them to all small sites.

One commenter mentioned that waivers for the R factor (rainfall-erosivity) and soil loss are effluent standards that have not been developed in accordance with sections 301 and 304 of the CWA. EPA disagrees that these sections are relevant to the designation of sources in today's rule. The waiver provisions in this section of the rule are jurisdictional because they affect the scope of the universe of entities subject to the NPDES program. Therefore, the waiver provisions are not themselves substantive control standards implemented through NPDES permits, and thus, not subject to the statutory criteria in sections 301 and 304.

Another commenter stated that waivers would allow exemptions to the technology based requirements and would thus be inconsistent with the two-fold approach of the CWA (a technology based minimum and a water quality based overlay). EPA acknowledges that the CWA does not generally provide for waivers for the Act's technology-based requirements. The waiver provisions do not create exemptions from technology-based standards that apply to NPDES dischargers; they provide exemption from the underlying requirement for an NPDES permit in the first place. Protection of water quality is the reason these smaller sites are designated for regulation under NPDES. The Act's two fold approach imposes more stringent water quality based effluent limitations when technology-based limitations applicable to regulated dischargers are insufficient to meet water quality standards. Under today's rule, water quality protection is the basis for determining which of the unregulated sources should be regulated at all. Thus, today's rule is entirely consistent with the Act's two fold approach.

i. Rainfall-Erosivity Waiver. The rainfall-erosivity waiver under § 122.26(b)(15)(i)(A) is intended to exempt the requirements for a permit when and where negligible rainfall/runoff-erosivity is expected. In the development of the Universal Soil Loss Equation, analysis of data indicated that when factors other than rainfall are held constant, soil loss is directly proportional to a rainfall factor composed of total storm kinetic energy times the maximum 30 minute intensity. The average annual sum of the storm energy and intensity values for an area comprise the R factor—the rainfall erosivity index.

A detailed explanation of the R factor can be found in Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE) (USDA, 1997).

This waiver is time-sensitive and is dependent on when during the year a construction activity takes place, how long it lasts, and the expected rainfall and intensity during that time. R factors vary based on location. EPA anticipates that this waiver opportunity responds to concerns about the requirement for a permit when it is not expected to rain, especially in the arid areas of the U.S. Under today's rule, the permitting authority could waive the requirements for a permit for time periods when the rainfall-erosivity factor ("R" in RUSLE) is less than five during the period of construction. For the purposes of calculating this waiver, the period of construction activity starts at the time of initial disturbance and ends with the time of final stabilization. The operator must submit a written certification to the Director in order to apply for such a waiver. EPA believes that those areas receiving negligible rainfall during certain times of the year are unlikely to have storm events causing discharges that could adversely impact receiving streams. Consequently, BMPs would not be necessary on those smaller sites. This waiver is most applicable to projects of short duration and to the arid regions of the country where the occurrence of rainfall follows a cyclic pattern—between no rain and extremely heavy rain. EPA review of rainfall records for these areas indicates that, during periods of the year when the number of events and quantity of rain are low, storm water discharges from the smaller construction sites regulated under today's rule should be minimal.

Some commenters supported the use of the R factor as a waiver, while others felt that a waiver based on rainfall statistics ignores the fact that it may rain on any given day and it is the cumulative effect of wet weather discharges which cause water quality impairments. A commenter also asked what happens in "El Niño" years when significantly more rainfall than normal occurs. Another commenter also expressed concern that this waiver was not based on a measured water quality impact, but instead on an indicator of potential impact. In response to the previous comments, EPA notes that, under CWA 402(p)(6), sources are designated on their potential for adverse impact. Designation under the section is prospective, not retrospective or remedial only. For that reason, the waivers under today's rule also operate prospectively. EPA wanted to waive requirements for sites with little potential to impair water quality, and the R factor is the most straightforward way to do this. The permitting authority, if electing to use waivers, could always suspend the use of waivers in certain areas or during certain times. In addition, the permitting authority may choose to use a lower R factor threshold than the one set by EPA. Application of this waiver is at the discretion of the permitting authority, subject only to the limitation that R factors cannot exceed 5.

One commenter expressed the need for EPA to provide a justification for the threshold value used for the R factor. None of the commenters included any data to show that EPA's proposed R factor of 2 was either too high or too low. EPA is using the R factor as an indicator of the potential to impact water quality. In an effort to determine which R threshold should be used, EPA conducted additional analysis of the rainfall/runoff erosivity factor for 134 sites across the country. For an R factor threshold of 5, approximately 12% of sites would be waived if the project period lasted 6 months, 27% for 3 months, 47% for 1 month, and 60% of sites would be waived if the project lasted for only 15 days. None of the 134 sites would be waived if the project lasted an entire year. For an R factor threshold of 2, approximately 9% of sites would be waived if the project period lasted 6 months, 15% for 3 months, 31% for 1 month, and 43% for 15 days. For an R factor threshold of 10, approximately 22% of sites would be waived if the project period lasted 6 months, 37% for 3 months, 60% for 1 month, and 78% for 15 days. EPA believes that an R factor of 5 is an adequate threshold to waive requirements for sites because they would not reasonably be expected to impair water quality.

EPA will develop, as part of the tool box described in section II.A.5, guidance materials and computer or web-accessible programs to assist permitting authorities and construction site discharges in determining if any resulting storm water discharges from specific projects are eligible for this waiver.

ii. Water Quality Waiver. The water quality waiver under § 122.26(b)(15)(i)(B) is available where storm water controls are not needed based on a comprehensive, location-specific evaluation of water quality needs. The waiver is available based on either an EPA-approved "total maximum daily load" (TMDL) under section 303(d) of the CWA that addresses the pollutant(s) of concern or, for sites discharging to non-impaired waters that do not require TMDLs, an equivalent analysis that has either determined allocations for small construction sites for the pollutant(s) of concern or determined that such allocations are not needed to protect water quality based on consideration of existing in-stream concentrations, expected growth in pollutant contributions from all sources, and a margin of safety. The pollutants of concern that must be addressed include sediment or a parameter that addresses sediment (such as total suspended solids (TSS), turbidity or siltation) and any other pollutant that has been identified as a cause of impairment of any water body that will receive a discharge from the construction activity. The operator must certify to the NPDES permitting authority that the construction activity will take place, and storm water discharges will occur, within the applicable drainage area evaluated in the TMDLs or equivalent analyses.

Today's rule modifies the approach in the proposed rule. EPA proposed to allow a waiver of permit requirements for small construction if storm water controls were determined to be unnecessary based on "wasteload allocations that are part of 'total maximum daily loads' (TMDLs) that address the pollutants of concern," or "a comprehensive watershed plan, implemented for the water body, that includes the equivalents of TMDLs, and addresses the pollutants of concern."

Commenters asked for clarification of the terms "comprehensive watershed plans" and "equivalent of TMDLs." EPA intended that both terms would include a comprehensive analysis that determines that controls on small construction sites are not needed based on consideration of existing in-stream concentrations, expected growth in pollutant contributions from all sources, and a margin of safety. Today's rule makes this clarification.

One commenter pointed out that there are no water quality standards for suspended solids, the major pollutant expected in discharges from construction activity. The commenter asserted that no waiver would ever be available. Another commenter noted that there are no sediment criteria developed for streams, also making this waiver useless. EPA notes that a number of States and Tribes have water quality standards that address TSS, which are narrative in form, and that may serve as a basis for water quality-based effluent limits. As efforts to identify impairments and improve water quality progress, some States may yet develop water quality standards for suspended solids. Although several TMDLs for sediment and related parameters have been established, EPA does recognize that currently it is extremely difficult to develop TMDLs for sediment. EPA is partially addressing this concern by clarifying in today's rule that the waivers may be based on a TMDL or equivalent analyses for sediment or one of the various pollutant parameters that are a proxy for sediment. These include TSS, turbidity and siltation.

Other commenters noted that this waiver was unattainable if a TMDL or equivalent analysis must be available for every pollutant that could possibly be present in any amount in discharges from small construction sites regardless of whether the pollutant is causing water quality impairment. Commenters asked that EPA identify what constitutes the "pollutants of concern" for which a TMDL or its equivalent must be developed. EPA has revised the proposed rule in response to these concerns.

In order for discharges from construction sites under five acres to qualify for the water quality waiver of today's rule, the construction site operator must demonstrate that storm water controls are not necessary for sediment or a parameter that addresses sediment (such as TSS, turbidity or siltation) and any other pollutant that has been identified as a cause of impairment of any water body that will receive a discharge from the construction activity. Even if the water body is not currently impaired for sediment, today's rule requires an analysis of the potential impacts of sediment because the storm water discharges from the construction activity will be a new source of loading to the water body that could constitute a

new impairment. Because the water body will not necessarily have been included on a "303(d) list" and a TMDL will not necessarily be required, the rule continues to allow an analysis that is the equivalent of a TMDL. The designation of storm water discharges from small construction activity for regulation in today's rule is intended to control pollutants other than sediment. This waiver provision requires a TMDL or equivalent analysis for a pollutant other than gross particulates (i.e., sediment and other particulate-focused pollutant parameters) only if the receiving water is currently impaired for that pollutant.

One commenter expressed the concern that construction operators will not know if they are in a watershed covered by a TMDL. To the extent this is an operator's concern, he or she could contact their NPDES permitting *68777 authority before applying for permit coverage to determine if receiving water is subject to a TMDL. Alternatively, the permitting authority could identify the TMDL (or equivalent analysis) areas in the general permit or another operator-accessible information source.

Another commenter expressed the concern that a TMDL waiver is likely to be ineffective because the TMDL list is submitted only once every 2 years. By the time a water is listed, the activity may have been completed and stabilized. The commenter argued that, if a watershed is impaired due to sediment from construction, then storm water controls will still be needed, because small construction can only be waived when it is not identified as a source of impairment. In response, EPA notes that an analysis that is the equivalent of a TMDL (specifically, equivalent to the component of a TMDL that comprehensively analyses existing ambient conditions against the applicable water quality standards) may also provide a basis for waiver from the default 1 acre designation. Also, even if a water has been identified as impaired for sediment, it is possible that a site or category of sites may receive an allocation that is sufficiently high enough to allow discharges without storm water controls.

c. Permit Process and Administration

The operator of the construction site, as with any operator of a point source discharge, is responsible for obtaining coverage under a NPDES permit as required by §122.21(b). The "operator" of the construction site, as explained in the current NPDES construction general permit, is typically the party or parties that either individually or collectively meet the following two criteria: (1) Operational control over the site specifications, including the ability to make modifications in the specifications; and (2) day-to-day operational control of those activities at the site necessary to ensure compliance with permit conditions (63 FR 7859). If more than one party meets these criteria, then each party involved would typically be a co-permittee with any other operators. The operator could be the owner, the developer, the general contractor, or individual contractor. When responsibility for operational control is shared, all operators must apply.

In today's rule, EPA is not requiring an NOI for NPDES general permits for storm water discharges from construction activities regulated by §122.26(b)(15) if the NPDES permitting authority finds that the use of NOIs would be inappropriate (see §122.28(b)(2)(v)). Under this approach, the NPDES permitting authority will have the discretion to decide whether or not to require NOIs for discharges from construction activity less than 5 acres. Compared to the existing storm water regulation, the permitting authority thus has increased flexibility in program implementation. EPA does recommend the use of NOIs, however because NOIs track permit coverage and provide a useful information source to prioritize inspections or enforcement. Requiring an NOI allows for greater accountability by, and tracking of, dischargers. This simple permit application and reporting mechanism also allows for better outreach to the regulated community, uses an existing and familiar mechanism, and is consistent with the existing requirements for storm water discharges from larger construction activities. Today's rule does not amend the requirement for NOIs in general permits for storm water discharges from construction activity disturbing 5 acres for more. See §122.28(b)(2)(v).

EPA expects that the vast majority of discharges of storm water associated with small construction activity identified in §122.26(b)(15) will be regulated through general permits. In the event that an NPDES permitting authority decides to issue an individual construction permit, however, individual application requirements for these construction site discharges are found at § 122.26(c)(1)(ii). For any discharges of storm water associated with small construction activity identified in §122.26(b)(15) that are not authorized by a general permit, a permit application made pursuant to §122.26(c) must be submitted to the Director by 3 years and 90 days after publication of the final rule.

Some commenters expressed concern that linear construction projects (e.g., roads, highways, pipelines) that cross several jurisdictions will have to comply with multiple sets of requirements from various jurisdictions, including multiple local governments and States. EPA is limited in its options to address these concerns because the Agency cannot issue NPDES permits in States authorized to implement the NPDES program nor preempt other more stringent local and State requirements. EPA believes, however, that the option for incorporating by reference the State, Tribal or local requirements (see discussion in Section II.I.2.d., Cross-Referencing State/Local Erosion and Sediment Control Programs) should limit the administrative burden on the operator responsible for discharges from linear construction projects. If the operator were to implement the most comprehensive of the various requirements for the whole project, it could avoid confusion due to differing requirements for different sections of the project. In addition, linear utility projects, which usually have a shorter project period, are more likely to be eligible for the rainfall erosivity waiver.

One commenter stated there was no reason to delay the application period for regulated storm water discharges from small construction activities. The commenter requested that the newly regulated construction site discharges should be required to seek permit coverage within 90 days, as opposed to 3 years, of the effective date of the rule. The Agency does not accept this request. EPA anticipates that NPDES permitting authorities will need one to two years to develop adequate legal authority to implement a program to address this new category of discharges, as well as to develop and issue general permits. Moreover, to ensure effective implementation to protect water quality, regulatory authorities will need additional time to inform small construction site operators of requirements and provide guidance and training on these requirements.

Finally, EPA received a comment requesting that the three year file retention requirement be deleted for discharges from small construction sites. While EPA recognizes that the three year record retention schedule may be unnecessary for certain construction projects, the Agency has determined it is necessary to retain files after the completion of the project to ensure permit compliance, including applicable construction site stabilization enabling permit termination for such sites.

d. Cross-Referencing State, Tribal or Local Erosion and Sediment Control Programs

In developing the NPDES permit requirements for construction sites less than 5 acres, members of the Storm Water Phase II FACA Subcommittee asked EPA to try to minimize redundancy in the construction permit requirements. In response, today's rule at §122.44(s) provides for incorporation of qualifying State, Tribal or local erosion and sediment control program requirements by reference into the NPDES permit authorizing storm water discharges from construction sites (described under §§122.26(b)(15) and (b)(14)(x)). The incorporation by reference approach applies not only to the newly regulated storm water discharges (from construction activity disturbing between 1 and 5 acres, including designated sites, but *68778 excluding waived sites) but also to discharges from construction activity disturbing 5 or more acres already covered by the existing storm water regulations. For this latter category of discharges from construction activity disturbing 5 or more acres, the incorporation by reference approach requires that the pollutant control requirements from the incorporated program also satisfy the statutory standard for limitations representing application of the best available technology economically achievable (BAT) and best conventional pollutant control technology (BCT).

For permits issued for discharges from small construction activity defined under §122.26(b)(15), a qualifying State, Tribal, or local erosion and sediment control program is one that includes the program elements described under § 122.44(s)(1). These elements include requirements for construction site operators to implement appropriate erosion and sediment control BMPs, requirements to control waste, a requirement to develop a storm water pollution prevention plan, and requirements to submit a site plan for review. A storm water pollution prevention plan includes site descriptions, descriptions of appropriate control measures, copies of approved State, Tribal or local requirements, maintenance procedures, inspection procedures, and identification of non-storm water discharges. The construction site's permit would require it to follow the requirements of the qualifying local program rather than require it to follow two different sets of requirements. If a partially-qualifying program does not have all of the elements described under §122.44(s)(1), then the NPDES permitting authority may still incorporate language in the small construction site discharge's permit that requires the construction site operator to follow the program, but the construction site discharge permit also must incorporate the missing required elements in order to satisfy CWA requirements.

The term "local" refers to the geographic area of applicability, not the form of government that develops and administers the program. Thus, a qualifying federal erosion and control program, such as certain programs developed and administered by the federal Bureau of Land Management, could be a qualifying local program.

As a result of this provision, local requirements will, in effect, provide the substantive construction site erosion and sediment control requirements for the NPDES permit authorization. Therefore, by following one set of erosion and sediment control requirements, construction site operators satisfy both local and NPDES permit requirements without duplicative effort. At the same time, noncompliance with the referenced local requirements will be considered noncompliance with the NPDES permit which is federally enforceable. The NPDES permitting authority will, of course, retain the discretion to decide whether to include the alternative requirements in the general permit. EPA believes that this approach will best balance the need for consideration of specific local requirements and local implementation with the need for federal and citizen oversight, and will extend supplemental NPDES requirements to control storm water discharges from construction sites.

EPA developed the "incorporation by reference" approach based on implementation efforts designed by the State of Michigan. Michigan relies on localities to develop substantive controls for storm water discharges associated with construction activities on a localized basis. Localities, however, are not required to do so. In areas where the local authority does not choose to participate, the State administers the sedimentation and erosion control requirements. The State agency, as the NPDES permitting authority, receives an NOI (termed "notice of coverage" by Michigan) under the general permit and tracks and exercises oversight, as appropriate, over the activity causing the storm water discharge. Michigan's goal under these procedures is to utilize the existing erosion and sediment control program infrastructure authorized under State law for storm water discharge regulation. (See U.S. Environmental Protection Agency, Office of Water, January 7, 1994. Memo: From Michael B. Cook, Director OWEC, to Water Management Division Directors, Regarding the "Approach Taken by Michigan to Regulate Storm Water Discharges from Construction Activities.")

Most commenters supported the general concept of incorporating by reference qualifying programs. Two commenters expressed concern that different local construction requirements will create an impossible regulatory scheme for builders who work in different localities. EPA believes that allowing States to incorporate qualifying programs by reference will minimize the differences for builders who work in different areas of the State. These differences already exist, however, not only for erosion and sediment controls, but also other aspects of construction. In any event, the criteria for qualification for localized programs should provide a certain degree of standardization for various localities' requirements. EPA expects that the new rule for construction and post-construction BMPs being developed under CWA section 304(m) will also encourage standardization of local requirements. (See discussion of this new rulemaking in section II.D.1, Federal

Role of this preamble).

Two commenters requested that an "incorporation by reference" should include permission, in writing, from the qualifying local program administrator because of a perceived extra burden on the referenced program. Any program requirements incorporated by reference in NPDES permits should already apply to construction site dischargers in the applicable area and therefore should not add any additional burden to the referenced program. EPA has left to the discretion of the permitting authority the decision on whether to seek permission from the qualifying program before cross-referencing it in an NPDES permit.

One commenter stated that a qualifying local program should require a SWPPP. The proposed rule defined the qualifying local program as a program that meets the minimum program requirements established in the proposed construction minimum control measure for small MS4s. To ensure consistency in the controls for storm water discharges between the larger, already regulated construction sites and the discharges from smaller sites that will be regulated as a result of today's rule, EPA has made a change to define a qualifying local program as one that includes the elements described in §122.44(s)(1). Section 122.44(s)(1) requires the development and implementation of a storm water pollution prevention plan as a criterion for qualification of local programs for incorporation by reference. As noted above, if a qualifying program does not include all the elements in §122.44(s)(1) then the permitting authority will need to specify the missing elements in order to rely on the incorporation by reference approach.

One commenter asked what happens in regard to the use of qualifying programs when a construction site operator is also the qualifying local program operator. The provision for incorporation by reference applies in this situation also. The local program operator will be required to comply with requirements it has established for others.*68779

e. Alternative Approaches

EPA received a number of comments on alternative permitting approaches. Several commenters supported regulating discharges only from those construction sites within urbanized areas. Other commenters opposed this approach. EPA chose to address storm water discharges from construction sites located both within and outside urbanized areas because of the potential for adverse water quality impact from storm water discharges from smaller sites in all areas. Regulating only those sites within urbanized areas would have excluded a large number of potential contributors to water quality impairment and would not address large areas of new development occurring on the outer fringes of urbanized areas. In fact, designating only small construction discharges within urbanized areas might create a perverse incentive for building only outside urbanized areas. Such an incentive would be inconsistent with the Agency's intention behind designating to protect water quality. The Agency intends that designation to protect water quality in today's rule should be both remedial and preventive.

A number of commenters encouraged EPA to cover municipal construction activities under the small MS4 general permit, instead of issuing a separate NPDES construction permit to these municipal construction projects. Similarly, a number of commenters supported EPA giving industrial facilities the option of having storm water from construction activities on the site covered by the industrial storm water permit. Several other commenters found that combining multiple permit types under one general permit introduced a degree of complexity which was confusing to permittees. Permitting authorities have the option of combining MS4 and construction permits or industrial and construction permits, however, specific requirements for each would still need to be included in the permit issued. EPA agrees that this would probably result in a more complex and confusing permit compared to the existing component permits.

Several commenters supported an alternative for regulated small MS4s where a local qualified program alone, without an NPDES permit, is sufficient to enforce compliance with construction site discharge requirements. On the other hand, one

commenter stated that linking the local construction erosion and sediment control program to the existing NPDES program for storm water from larger construction has driven improvements in many local programs. Another commenter stated that the potential fines under the NPDES program will encourage compliance and will be much stronger than any fines a local program may have. EPA agrees that the NPDES program is the best approach to address water quality impacts from construction sites and provides benefits such as accountability and federal enforcement.

A number of commenters supported issuing one permit for each construction company, instead of a permit for each individual construction activity (also requested for storm water discharges from the larger, already regulated construction sites). Other commenters found that a 'licensing' program for construction site operators would have many problems, including identifying who to permit and tracking information on active sites. EPA is regulating only the storm water discharges associated with construction activity from small sites, not the construction activity itself. Separate NPDES permits (either individual or general permit coverage) for construction site discharges avoid potential problems in tracking sites and operator accountability. Section 122.28(b)(2)(v) gives permitting authorities the option to issue a general permit without requiring an NOI. If an NOI is not required for each activity, permitting authorities could pursue other options such as a company-wide NOI, license instead of an NOI, or another mechanism.

2. Other Sources

In the Storm Water Discharges Potentially Addressed by Phase II of the National Pollutant Discharge Elimination System Storm Water Program, Report to Congress, March 1995, ("Report") submitted by EPA pursuant to CWA section 402(p)(5), EPA examined the remaining unregulated point sources of storm water for the potential to adversely affect water quality. Due to very limited national data on which to estimate pollutant loadings on the basis of discharge categories, the discussion of the extent of unregulated storm water discharges is limited to an analysis of the number and geographic distribution of the unregulated storm water discharges. Therefore, EPA is not designating any additional unregulated point sources of storm water on a nationwide, categorical basis. Instead, the remainder of the sources will be regulated based on case-by-case post-promulgation designations by the NPDES permitting authority.

EPA did, however, evaluate a variety of categories of discharges for potential designation in the Report. EPA's efforts to identify sources and categories of unregulated storm water discharges for potential designation for regulation in today's rule started with an examination of approximately 7.7 million commercial, retail, industrial, and institutional facilities identified as "unregulated." In general, the distribution of these facilities follows the distribution of population, with a large percentage of facilities concentrated within urbanized areas (see page 4-35 of the Report). This examination resulted in identification of two general classes of facilities with the potential for discharging pollutants to waters of the United States through storm water point sources.

The first group (Group A) included sources that are very similar, or identical, to regulated "storm water discharges associated with industrial activity" but that were not included in the existing storm water regulations because EPA used SIC codes in defining the universe of regulated industrial activities. By relying on SIC codes, a classification system created to identify industries rather than environmental impacts from these industries discharges, some types of storm water discharges that might otherwise be considered "industrial" were not included in the existing NPDES storm water program. The second general class of facilities (Group B) was identified on the basis of potential for activities and pollutants that could contribute to storm water contamination.

EPA estimates that Group A has approximately 100,000 facilities. Discharges from facilities in this group, which may be of high priority due to their similarity to regulated storm water discharges from industrial facilities, include, for example, auxiliary facilities or secondary activities (e.g., maintenance of construction equipment and vehicles, local trucking for

an unregulated facility such as a grocery store) and facilities intentionally omitted from existing storm water regulations (e.g., publicly owned treatment works with a design flow of less than 1 million gallons per day, landfills that have not received industrial waste).

Group B consists of nearly one million facilities. EPA organized Group B sources into 18 sectors for the purposes of the Report. The automobile service sector (e.g., gas/service stations, general automobile repair, new and used car dealerships, car and truck rental) makes up more than one-third of the total number of facilities identified in all 18 sectors.

EPA conducted a geographical analysis of the industrial and commercial facilities in Groups A and *68780 B. The geographical analysis shows that the majority are located in urbanized areas (see Section 4.2.2, Geographic Extent of Facilities, in the Report). In general, about 61 percent of Group A facilities and 56 percent of Group B facilities are located in urbanized areas. The analysis also showed that nearly twice as many industrial facilities are found in all urbanized areas as are found in large and medium municipalities alone. Notable exceptions to this generalization included lawn/garden establishments, small unregulated animal feedlots, wholesale livestock, farm and garden machinery repair, bulk petroleum wholesale, farm supplies, lumber and building materials, agricultural chemical dealers, and petroleum pipelines, which can frequently be located in smaller municipalities or rural areas.

In identifying potential categories of sources for designation in today's notice, EPA considered designation of discharges from Group A and Group B facilities. EPA applied three criteria to each potential category in both groups to determine the need for designation: (1) The likelihood for exposure of pollutant sources included in that category, (2) whether such sources were adequately addressed by other environmental programs, and (3) whether sufficient data were available at this time on which to make a determination of potential adverse water quality impacts for the category of sources. As discussed previously, EPA searched for applicable nationwide data on the water quality impacts of such categories of facilities.

By application of the first criterion, the likelihood for exposure, EPA considered the nature of potential pollutant sources in exposed portions of such sites. As precipitation contacts industrial materials or activities, the resultant runoff is likely to mobilize and become contaminated by pollutants. As the size of these exposed areas increases, EPA expects a proportional increase in the pollutant loadings leaving the site. If EPA concluded that a category of sources has a high potential for exposure of raw materials, intermediate products, final products, waste materials, byproducts, industrial machinery, or industrial activity to rainfall, the Agency rated that category of sources as having "high" potential for adverse water quality impact. EPA's application of the first criterion showed that a number of Group A and B sources have a high likelihood of exposure of pollutants.

Through application of the second criterion, EPA assessed the likelihood that pollutant sources are regulated in a comprehensive fashion under other environmental protection programs, such as programs under the Resource Conservation and Recovery Act (RCRA) or the Occupational Health and Safety Act (OSHA). If EPA concluded that the category of sources was sufficiently addressed under another program, the Agency rated that source category as having "low" potential for adverse water quality impact. Application of the second criterion showed that some categories were likely to be adequately addressed by other programs.

After application of the third criterion, availability of nationwide data on the various storm water discharge categories, EPA concluded that available data would not support any such nationwide designations. While such data could exist on a regional or local basis, EPA believes that permitting authorities should have flexibility to regulate only those categories of sources contributing to localized water quality impairments.

EPA received comments requesting designation of additional industrial, commercial and retail sources (e.g. industrial

activity "look-alikes", roads, commercial facilities and institutions, and vehicle maintenance facilities) in the final rule, because the commenters believe that the data exist to support national designation of some of these sources. Other comments were received opposing designation of any additional sources. Today's rule does not designate any additional industrial or commercial category of sources either because EPA currently lacks information indicating a consistent potential for adverse water quality impact or because of EPA's belief that the likelihood of adverse impacts on water quality is low, with some possible exceptions on a more local basis. Since the time the Agency submitted the Report, EPA has continued to seek additional data and has requested available data from the FACA members. If sufficient regional or nationwide data become available in the future, the permitting authority could at that time designate a category of sources or individual sources on a case-by-case basis. Therefore, today's rule encourages control of storm water discharges from Groups A and B through self-initiated, voluntary BMPs, unless the discharge (or category of discharges) is designated for permitting by the permitting authority. See discussion in section I.D., EPA's Reports to Congress.

3. ISTEA Sources

Provisions within the Intermodal Surface Transportation and Efficiency Act (ISTEA) of 1991 temporarily exempted storm water discharges associated with industrial activity that are owned or operated by municipalities serving populations less than 100,000 people (except for airports, power plants, and uncontrolled sanitary landfills) from the need to apply for or obtain a storm water discharge permit (section 1068(c) of ISTEA). Congress extended the NPDES permitting moratorium for these facilities to allow small municipalities additional time to comply with NPDES requirements for certain sources of industrial storm water. The August 7, 1995 storm water final rule (60 FR 40230) further extended this moratorium until August 7, 2001. However, today's rule changes this deadline so that previously exempted industrial facilities owned or operated by municipalities serving populations less than 100,000 people, must now submit an application for a permit within 3 years and 90 days from date of publication of today's rule.

EPA received comments recommending that permit requirements for municipally owned or operated industrial storm water discharges, including those previously exempt under ISTEA, be included in a single NPDES permit for all MS4 storm water discharges. The existing NPDES regulations already provide permitting authorities the ability to issue a single "combination" permit for MS4 discharges. However, if the permitting authorities chose to issue this type of permit, they must make sure that in doing so, they are not creating a double standard for industrial facilities covered under the combination permit versus those covered under separate general or individual permits. In order to avoid this double standard, combination permits would have to contain requirements that are the same or very similar to the requirements found in separate MS4 and industrial permits, i.e., the minimum measures and other necessary requirements of an MS4 permit, and the SWPPP, monitoring and reporting requirements, and other necessary requirements of an industrial permit. If such a combined MS4 general permit were issued, the regulations require that each discharger submit NOIs for their respective discharges, except for discharges from small construction activities. Flexibility exists in developing a combination NOI which could reduce the need to submit duplicative information, e.g. owner/operator name and address. The combination NOI would still need to require specific information for each separate municipally owned or operated industrial location, including *68781 construction projects disturbing 5 or more acres. The regulations at §122.28(b)(2)(ii) list the necessary contents of an NOI, which require: the facility name, facility address, type of facility or discharge and receiving stream for each industrial discharge location. When viewed in its entirety, a combination permit, which by necessity would need to contain all elements of otherwise separate industrial and MS4 permit requirements, and require NOI information for each separate industrial activity, may have few advantages when compared to obtaining separate MS4 and industrial general permit coverage.

In order to allow the permitting authority to issue a single storm water permit for the MS4 and all municipally owned or operated industrial facilities, including those previously exempt under ISTEA, today's rule requires applications for

ISTEA sources within 3 yrs and 90 days from date of publication of today's rule. The permitting authority has the ultimate decision to determine whether or not a single all-encompassing MS4 permit is appropriate.

4. Residual Designation Authority

The NPDES permitting authority's existing designation authority, as well as the petition provisions are being retained. Today's rule contains two provisions related to designation authority at §§122.26(a)(9)(i)(C) and (D). Subsection (C) adds designation authority where storm water controls are needed for the discharge based upon wasteload allocations that are part of TMDLs that address the pollutant(s) of concern. EPA intends that the NPDES permitting authority have discretion in the matter of designations based on TMDLs under subsection (C). Subsection (D) carries forward residual designation authority under former §122.26(g), and has been modified to provide clarification on categorical designation. Under today's rule, EPA and authorized States continue to exercise the authority to designate remaining unregulated discharges composed entirely of storm water for regulation on a case-by-case basis (including §123.35). Individual sources are subject to regulation if EPA or the State, as the case may be, determines that the storm water discharge from the source contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States. This standard is based on the text of section CWA 402(p). In today's rule, EPA believes, as Congress did in drafting section CWA 402(p)(2)(E), that individual instances of storm water discharge might warrant special regulatory attention, but do not fall neatly into a discrete, predetermined category. Today's rule preserves the regulatory authority to subsequently address a source (or category of sources) of storm water discharges of concern on a localized or regional basis. For example, as States and EPA implement TMDLs, permitting authorities may need to designate some point source discharges of storm water on a categorical basis either locally or regionally in order to assure progress toward compliance with water quality standards in the watershed.

EPA received comments asking that §122.26(a)(9)(i)(D) as proposed be modified to include specific language clarifying the permitting authority's ability to designate additional sources on a categorical basis as explained in the preamble to the proposed rule. One comment requested that the designation language include "categories of sources on a Statewide basis." EPA agrees that the intent of the language may not have been clear regarding categorical designation. Today's rule modifies subsection (D) to clarify that the designation authority can be applied within different geographic areas to any single discharge (i.e., a specific facility), or category of discharges that are contributing to a violation of a water quality standard or are significant contributors of pollutants to waters of the United States. The added term "within a geographic area" allows "State-wide" or "watershed-wide" designation within the meaning of the terms.

One commenter questioned the Agency's legal authority to provide for such residual designation authority. The stakeholder argued that the lapse of the October 1, 1994, permitting moratorium under CWA section 402(p)(1) eliminated the significance of the CWA section 402(p)(2) exceptions to the moratorium, including the exception for discharges of storm water determined to be contributing to a violation of a water quality standard or a significant contributor of pollutants under CWA section 402(p)(2)(E). The stakeholder further argued that EPA's authority to designate sources for regulation under CWA section 402(p)(6) is limited to storm water discharges other than those described under CWA section 402(p)(2). Because CWA section 402(p)(2)(E) describes individually designated discharges, the stakeholder concluded that regulations under CWA section 402(p)(6) cannot provide for post-promulgation designation of individual sources. EPA disagrees.

First, as explained previously, EPA anticipates that NPDES permitting authorities may yet determine that individual unregulated point sources of storm water discharges require regulation on a case-by-case basis. This conclusion is consistent with the Congress' recognition of the potential need for such designation under the first phase of storm water regulation as described in CWA section 402(p)(2)(E). Under CWA section 402(p)(2)(E), Congress recognized the need for both

EPA and the State to retain authority to regulate unregulated point sources of storm water under the NPDES permit program. Second, to the extent that CWA section 402(p)(6) requires designation of a "category" of sources, the permitting authority may designate such (as yet unidentified) sources as a category that should be regulated to protect water quality. Though such sources may exist and discharge today, if neither EPA nor the State/Tribal NPDES permitting authority has designated the source for regulation under CWA section 402(p)(2)(E) to date, then CWA section 402(p)(6) provides the authority to designate such sources.

The Agency can designate a category of "not yet identified" sources to be regulated, based on local concerns, even if data do not exist to support nationwide regulation of such sources. EPA does not interpret the language in CWA section 402(p) to preclude States from exercising designation authority under these provisions because such designation (and subsequent regulation of designated sources) is within the "scope" of the NPDES program.

EPA also believes that sources regulated pursuant to a State designation are part of (and regulated under) a federally approved State NPDES program, and thus subject to enforcement under CWA sections 309 and 505. Under existing NPDES State program regulations, State programs that are "greater in scope of coverage" are not part of the federally-approved program. By contrast, any such State regulation of sources in this "reserved category" will be within the scope of the federal program because today's rule recognizes the need for such post promulgation designations of unregulated point sources of storm water. Such regulation will be "more stringent" than the federal program rather than "greater in scope of coverage" (40 CFR 123.1(h)).

EPA does not interpret the congressional direction in CWA section 402(p)(6) to preclude regulation of point sources of storm water that should be regulated to protect water quality. Under CWA section 510, Congress expressly recognized and preserved the authority of States to adopt and enforce *68782 more stringent regulation of point sources, as well as any requirement respecting the control or abatement of pollution. Section 510 applies, "except as expressly provided" in the CWA. CWA section 502(14) does expressly provide affirmative limitations on the regulation of certain pollutant sources through the point source control program, the NPDES permitting program. Section 502(14) excludes agricultural storm water and return flows from irrigated agriculture from the definition of point source, and section 402(l) limits applicability of the section 402 permit program for return flows from irrigated agriculture, as well as for storm water runoff from certain oil, gas, and mining operations. Unlike sections 502(14) and 402(l), EPA does not interpret CWA section 402(p)(6) as an express provision limiting the authority to designate point sources of storm water for regulation on a case-by-case basis after the promulgation of final regulations. Any source of storm water discharge is encouraged to assess its potential for storm water contamination and take preventive measures against contamination. Such proactive actions could result in the avoidance of future regulation.

One comment was received requesting clarification of the term "non-municipal" in §122.26(a)(9)(ii). The commenter is concerned that the term "non-municipal," in this context, implies that municipally owned or operated facilities cannot be designated. The term "non-municipal" in this context refers to the universe of unregulated industrial and commercial facilities that could potentially be designated according to §122.26(a)(9)(i) authority. There is no exemption for municipally owned or operated facilities under these designation provisions.

Finally, EPA received comments and evaluated the proposal under which operators of regulated small, medium, and large MS4s would be responsible for controlling discharges from industrial and other facilities into their systems in lieu of requiring NPDES permit coverage for such facilities. EPA did not adopt this framework due to concerns with administrative and technical burden on the MS4 operators, as well as concerns about such an intergovernmental mandate.

J. Conditional Exclusion for "No Exposure" of Industrial Activities and Materials to Storm Water

1. Background

In 1992, the Ninth Circuit court remanded to EPA for further rulemaking, a portion of the definition of "storm water discharge associated with industrial activity" that excluded the category of industrial activity identified as "light industry" when industrial materials and/or activities were not exposed to storm water. See *NRDC v. EPA*, 966 F.2d 1292, 1305 (9th Cir. 1992). Today's final rule responds to that remand. In the 1990 storm water regulations, EPA excluded the light industry category from the requirement for an NPDES permit if the industrial materials and/or activities were not "exposed" to storm water (see §122.26(b)(14)). The Agency had reasoned that most of the activity at these types of facilities takes place indoors and that emissions from stacks, use of unhooded manufacturing equipment, outside material storage or disposal, and generation of large amounts of dust or particles would be atypical (55 FR 48008, November 16, 1990).

The Ninth Circuit determined that the exemption was arbitrary and capricious for two reasons. First, the court found that EPA had not established a record to support its assumption that light industry that was not exposed to storm water was not "associated with industrial activity," particularly when other types of industrial activity not exposed to storm water remained "associated with industrial activity." The court specifically found that "[t]o exempt these industries from the normal permitting process based on an unsubstantiated assumption about this group of facilities is arbitrary and capricious." Second, the court concluded that the exemption impermissibly "altered the statutory scheme" for permitting because the exemption relied on the unverified judgment of the light industrial facility operator to determine non-applicability of the permit application requirements. In other words, the court was critical that the operator would determine for itself that there was "no exposure" and then simply not apply for a permit without any further action. Without a basis for ensuring the effective operation of the permitting scheme—either that facilities would self-report actual exposure or that EPA would be required to inspect and monitor such facilities—the court vacated and remanded the rule to EPA for further rulemaking.

One of the major concerns expressed by the FACA Committee, was that EPA streamline and reinvent certain troublesome or problematic aspects of the existing permitting program for storm water discharges. One area identified was the mandatory applicability of the permitting program to all industrial facilities, even those "light industrial" activities that are of very low risk or of no risk to storm water contamination. Such dischargers may not have any industrial sources of storm water contamination on the plant site, yet they are still required to apply for an NPDES storm water permit and meet all permitting requirements. Examples of such facilities are a soap manufacturing plant (SIC Code 28) or hazardous waste treatment and disposal facility, where all industrial activities, even loading docks, are inside a building or under a roof.

Although they did not provide a written report, the FACA Committee members advised EPA that the existing storm water program should be revised to allow such facilities to seek an exclusion from the NPDES storm water permitting requirements. The Committee agreed that such an exclusion should also provide a strong incentive for other industrial facilities that conduct industrial activities outdoors to move the activities under cover or into buildings to prevent contamination of rainfall and storm water runoff. The committee believed that such a "no exposure" permit exclusion could be a valuable incentive for storm water pollution prevention.

In today's final rule, the Agency responds to both of the bases for the court's remand. The exclusion from permitting based on "no exposure" applies to all industrial categories listed in the existing storm water regulations except construction. The court's opinion rejected EPA's distinction between light industry and other industry, but it did not preclude an interpretation that treats all "non-exposed" industrial facilities in the same fashion. Presuming that an industrial facility adequately prevents exposure of industrial materials and activities to storm water, today's rule treats discharges from

"non-exposed" industrial facilities in a manner similar to the way Congress intended for discharges from administrative buildings and parking lots. Specifically, permits will not be required for storm water discharges from these facilities on a categorical basis.

To assure that discharges from industrial facilities really are similar to discharges from administrative buildings and parking lots, and to respond to the second basis for the court's remand, the permitting exclusion is "conditional". The person responsible for a point source discharge from a "no exposure" industrial source must meet the conditions of the exclusion, and complete, sign and submit the certification to the permitting authority for tracking and *68783 accountability purposes. EPA believes today's rule, therefore, is fully consistent with the direction provided by the court.

EPA relied upon the "no exposure" concept discussed by the FACA Committee in developing the "no exposure" provisions of today's rule. EPA is deleting the sentence regarding "no exposure" for the facilities in §122.26(b)(14)(xi) and adding a new §122.26(g) titled "Conditional Exclusion for No Exposure of Industrial Activities to Storm Water." The "no exposure" provision will make storm water discharges from all classes of industrial facilities eligible for exclusion, except storm water discharges from regulated construction activities. Regulated construction activities cannot claim "no exposure" because the main pollutants of concern (e.g., sediment) generally cannot entirely be sheltered from storm water.

Today's rule represents a significant expansion in the scope of the "no exposure" provision originally promulgated in the 1990 rule, which was only for storm water discharges from light industry. The intent of today's "no exposure" provision is to provide a simplified method for complying with the CWA to all industrial facilities that are entirely indoors. This includes facilities that are located within a large office building, or at which the only items permanently exposed to precipitation are roofs, parking lots, vegetated areas, and other non-industrial areas or activities.

EPA received several comments related to storm water runoff from parking lots, roof tops, lawns, and other non-industrial areas of an industrial facility. Storm water discharges from these areas, which may contain pollutants or which may result in additional storm water flows, are not directly regulated under the existing storm water permitting program because they are not "storm water discharges associated with industrial activity". Many comments on this issue supported maintaining the exclusion from the existing regulations for storm water permitting for discharges from administrative buildings, parking lots, and other non-industrial areas. Other comments opposed allowing the continued exclusion for discharges from non-industrial areas of the site because discharges from these areas are potentially a significant cause of receiving water impairment. These comments urged that such discharges should not be excluded from NPDES permit coverage. Today's rule does not require permit coverage for discharges from a facility's exposed areas that are separate from industrial activities such as runoff from office buildings and accompanying parking lots, lawns and other non-industrial areas. This approach is consistent with the existing storm water rules which were based on Congress's intent to exclude non-industrial areas such as "parking lots and administrative and employee buildings." 133 Cong. Rec. 985 (1987). EPA also lacks data indicating that discharges from these areas at an industrial facility cause significant receiving water impairments. Therefore, the non-industrial areas at a facility do not need to be assessed as part of the "no exposure" certification.

EPA received comments related to industrial facilities that achieve "no exposure" by constructing large amounts of impervious surfaces, such as roofs, where previously there were pervious or porous surfaces into which storm water could infiltrate. Some commenters made the point that large amounts of impervious area may cause a significant increase in storm water volume flowing off the industrial facility, and thus may cause adverse receiving water impacts simply due to the increased quantity of storm water flow. Some commenters said that storm water discharges from impervious areas at an industrial facility are generally more frequent, and often larger, than discharges from the pre-existing natural surfaces. They believe that these discharges will contain pollutants typical of commercial areas and roads and are an equal threat

to direct human uses of the water and can cause equal damage to aquatic life and its habitat. Other commenters believe that if Congress or EPA addresses the issue of flow, it should be addressed on a broader scale than merely through the "no exposure" exclusion, and that EPA has no authority under any existing legal framework to regulate flow directly. Some commenters stated that developing federal parameters for the control of water quantity, i.e. flow, would result in federal intrusion into land use planning, an authority that they claim is solely within the purview of State governments and their political subdivisions.

EPA is not attempting to regulate flow via the "no exposure" provisions. EPA does agree, however, that increases in impervious surfaces can result in increased runoff volumes from the site which in turn may increase pollutant loading. In addition, the Agency notes that in some States water quality standards include water quality criteria for flow or turbidity. Therefore, in order to provide a minimal amount of information on possible impacts from increased pollutant loading and runoff volume, EPA's "no exposure" certification form (see Appendix 4) asks the discharger to indicate if they have paved or roofed over a formerly exposed, pervious area in order to qualify for the "no exposure" exclusion. If the answer is yes, the discharger must indicate, by choosing from three possible responses, approximately how much impervious area was created to achieve "no exposure". The choices are: (1) less than 1 acre, (2) 1 to 5 acres, and (3) more than 5 acres. This requirement provides additional information that will aid in determining if discharges from the facility are causing adverse receiving water impacts. EPA intends to prevent water quality impacts resulting from increased discharges of pollutants, which may result from increased volume of runoff. In many cases, consideration of the increased flow rate, velocity and energy of storm water discharges, following construction of large amounts of impervious surfaces, must be taken into consideration in order to reduce the discharge of pollutants, to meet water quality standards and to prevent degradation of receiving streams. EPA recommends that dischargers consider these factors when making modifications to their site in order to qualify for the "no exposure" exclusion.

2. Today's Rule

In order to claim relief under the "no exposure" provision, the discharger of an otherwise regulated facility must submit a no exposure certification that incorporates the questions of §122.26(g)(4)(iii) to the NPDES permitting authority once every 5 years. This provision applies across all categories of industrial activity covered by the existing program, except discharges from construction activities.

In addition to submitting a "no exposure" certification every 5 years, the facility must allow the NPDES permitting authority or operator of an MS4 (where there is a storm water discharge to the MS4) to inspect the facility and to make such inspection reports publicly available upon request. Also, upon request, the facility must submit a copy of the "no exposure" certification to the operator of the MS4 into which the facility discharges (if applicable). All "no exposure" certifications must be signed in accordance with the signatory requirements of §122.22. The "no exposure" certification is non-transferable. In the event that the facility operator changes, the new discharger must submit a new "no exposure" certification.*68784

Members of the FACA Committee urged that EPA not allow dischargers certifying "no exposure" to take actions to qualify for this provision that result in a net environmental detriment. In developing a regulatory implementation mechanism, however, EPA found that the phrase "no net environmental detriment," was too imprecise to use within this context. Therefore, today's rule addresses this issue by requiring information that should help the permitting authority to determine whether actions taken to qualify for the exclusion interfere with the attainment or maintenance of water quality standards, including designated uses. Permitting authorities will be able, where necessary, to make a determination by evaluating the activities that changed at the industrial site to achieve "no exposure", and assess whether these changes cause an adverse impact on, or have the reasonable potential to cause an instream excursion of, water quality standards, including

designated uses. EPA anticipates that many efforts to achieve "no exposure" will employ simple good housekeeping and contaminant cleanup activities. Other efforts may involve moving materials and industrial activities indoors into existing buildings or structures.

In very limited cases, industrial operators may make major changes at a site to achieve "no exposure". These efforts may include constructing a new building or cover to eliminate exposure or constructing structures to prevent run-on and storm water contact with industrial materials or activities. Where major changes to achieve "no exposure" increase the impervious area of the site, the facility operator must provide this information on the "no exposure" certification form as discussed above. Using this and other available data and information, permitting authorities should be able to assess whether any major change has resulted in increased pollutant concentrations or loadings, toxicity of the storm water runoff, or a change in natural hydrological patterns that would interfere with the attainment and maintenance of water quality standards, including designated uses or appropriate narrative, chemical, biological, or habitat criteria where such State or Tribal water quality standards exist. In these instances, the facility operator and their NPDES permitting authority should take appropriate actions to ensure that attainment or maintenance of water quality standards can be achieved. The NPDES permitting authority should decide if the facility must obtain coverage under an individual or general permit to ensure that appropriate actions are taken to address adverse water quality impacts.

While the intent of today's "no exposure" provision is to reduce the regulatory burdens on industrial facilities and government agencies, the FACA Committee suggested that the NPDES permitting authority consider a compliance assessment program to ensure that facilities that have availed themselves of this "no exposure" option meet the applicable requirements. Inspections could be conducted at the discretion of the NPDES authority and be coordinated with other facility inspections. EPA expects, however, that the permitting authority will conduct inspections when it becomes aware of potential water quality impacts possibly caused by the facility's storm water discharges or when requested to do so by adversely affected members of the public. The intent of this provision is that the 5 year "no exposure" certification be fully available to, and enforceable by, appropriate federal and State authorities under the CWA. Private citizens can enforce against facilities for discharges of storm water that are inconsistent with a "no exposure" certification if storm water discharges from such facilities are not otherwise permitted and in compliance with applicable requirements.

EPA received comments from owners, operators and representatives of Phase I facilities classified as "light industry" as defined by the regulations at § 122.26(b)(14)(xi). The comments recommended maintaining the approach of the existing regulations which does not require the discharger to submit any supporting documentation to the permitting authority in order to claim the "no exposure" exclusion from permitting. As discussed previously, the "no exposure" concept was developed in response to the Ninth Circuit court's remand of part of the existing rules back to EPA. The court found that EPA cannot rely on the "unverified judgment" of the facility. The comments opposing documentation did not address the "unverified judgment" concern.

Today's rule is a "conditional" exclusion from permitting which requires all categories, including the "light industrial" facilities that have no exposure of materials to storm water, to submit a certification to the permitting authority. Upon receipt of a complete certification, the permitting authority can review the information, or call, or inspect the facility if there are doubts about the facility's "no exposure" claim. Also, if the facility discharges into an MS4, the operator of the MS4 can request a copy of the certification, and can inspect the facility. The public can request a copy of the certification and/or inspection reports. In adopting these conditional "no exposure" provisions, the Agency addressed the Ninth Circuit court's ruling regarding the discharger's unverified judgment.

EPA received one comment requesting clarification on whether the anti-backsliding provisions in the regulations at §122.44(l) apply to industrial facilities that are currently covered under an NPDES storm water permit, and whether such

facilities could qualify for the "no exposure" exclusion under today's rule. The anti-backsliding provisions will not prevent most industrial facilities that can certify "no exposure" under today's rule from qualifying for an exclusion from permitting. The anti-backsliding provisions contain 5 exceptions that allow permits to be renewed, reissued or modified with less stringent conditions. One exception at §122.44(l)(2)(A) allows less stringent conditions if "material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation." Section 122.44(l)(B)(1) also allows less stringent requirements if "information is available which was not available at the time of permit issuance and which would have justified the application of less stringent effluent limitations at the time of permit issuance." Facility's operators who certify "no exposure" and submit the required information once every 5 years will have provided the permitting authority "information that was not available at the time of permit issuance." Also, some facilities may, in order to achieve "no exposure", make "material and substantial alterations or additions to the permitted facility." Therefore, most facilities covered under existing NPDES general permits for storm water (e.g., EPA's Multi-Sector General Permit) will be eligible for the conditional "no exposure" exclusion from permitting without concern about the anti-backsliding provisions. Such dischargers will have met one or both of the anti-backsliding exceptions detailed above. Facilities that are covered under individual permits containing numeric limitations for storm water should consult with their permitting authority to determine whether the anti-backsliding provisions will prevent them from qualifying for the exclusion from permitting (for that discharge point) based on a certification of "no exposure".

*68785 EPA received several comments regarding the timing of when the "no exposure" certification should be submitted. The proposed rule said that the "no exposure" certification notice must be submitted "at the beginning of each permit term or prior to commencing discharges during a permit term." Some commenters interpreted this statement to mean that existing facilities can only submit the certification at the time a permit is being issued or renewed. EPA intended the phrase "at the beginning of each permit term" to mean "once every 5 years" and today's rule reflects this clarification. EPA envisions that the NPDES storm water program will be implemented primarily through general permits which are issued for a 5 year term. Likewise the "no exposure" certification term is 5 years. The NPDES permitting authority will maintain a simple registration list that should impose only a minor administrative burden on the permitting authority. The registration list will allow for tracking of industrial facilities claiming the exclusion. This change allows a facility to submit a "no exposure" certification at any time during the term of the permit, provided that a new certification is submitted every 5 years from the time it is first submitted (assuming that the facility maintains a "no exposure" status). Once a discharger has established that the facility meets the definition of "no exposure", and submits the necessary "no exposure" certification, the discharger must maintain their "no exposure" status. Failure to maintain "no exposure" at their facility could result in the unauthorized discharge of pollutants to waters of the United States and enforcement for violation of the CWA. Where a discharger believes that exposure could occur in the future due to some anticipated change at the facility, the discharger should submit an application and obtain coverage under an NPDES permit prior to such discharge to avoid penalties.

Where EPA is the permitting authority, dischargers may submit a "no exposure" certification at any time after the effective date of today's rule. Where EPA is not the permitting authority, dischargers may not be able to submit the certification until the non-federal permitting authority completes any necessary statutory or regulatory changes to adopt this "no exposure" provision. EPA recommends that the discharger contact the permitting authority for guidance on when the "no exposure" certification should be submitted.

EPA received comments on the proposed rule requirement that the discharger "must comply immediately with all the requirements of the storm water program including applying for and obtaining coverage under an NPDES permit," if changes occur at the facility which cause exposure of industrial activities or materials to storm water. The comments expressed the difficulty of immediate compliance. EPA expects that most facility changes can be anticipated, therefore dis-

chargers should apply for and obtain NPDES permit coverage in advance of changes that result in exposure to industrial activities or materials. Permitting authorities may grant additional time, on a case-by-case basis, for preparation and implementation of a storm water pollution prevention plan.

Finally, today's rule at §122.26(g)(4) includes the information which must be included on the "no exposure" certification. Authorized States, Tribes or U.S. Territories may develop their own form which includes this required information, at a minimum. EPA adopted the requirements (with modification) from the draft "No Exposure Certification Form" published as an appendix to the proposed rule. Modifications were made to the draft form to address comments received and to streamline the required information. EPA included these certification requirements in today's rule in order to preserve its integrity. Dischargers in areas where EPA is the permitting authority should use the "No Exposure Certification" form included in Appendix 4.

3. Definition of "No Exposure"

For purposes of this section, "no exposure" means that all industrial materials or activities are protected by a storm resistant shelter to prevent exposure to rain, snow, snowmelt, and/or runoff. Industrial materials or activities include, but are not limited to, material handling equipment or activities, industrial machinery, raw materials, intermediate products, by-products, final products, or waste products. Material handling activities include the storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, final product or waste product. However, storm resistant shelter is not required for: (1) Drums, barrels, tanks, and similar containers that are tightly sealed, provided those containers are not deteriorated and do not leak; (2) adequately maintained vehicles used in material handling; and (3) final products, other than products that would be mobilized in storm water discharge (e.g., rock salt). Each of these three exceptions to the no exposure definition are discussed in more detail below.

EPA intends the term "storm resistant shelter" to include completely roofed and walled buildings or structures, as well as structures with only a top cover but no side coverings, provided material under the structure is not otherwise subject to any run-on and subsequent runoff of storm water. While the Agency intends that this provision promote permanent "no exposure", EPA understands that certain vehicles could pass between buildings and, during passage, be exposed to rain and snow. Adequately maintained vehicles such as trucks, automobiles, forklifts, or other such general purpose vehicles at the industrial site that are not industrial machinery, and that are not leaking contaminants or are not otherwise a source of industrial pollutants, could be exposed to precipitation or runoff. Such activities alone does not prevent a discharger from being able to certify no exposure under this provision. Similarly, trucks or other vehicles awaiting maintenance at vehicle maintenance facilities, as defined at §122.26(b)(14)(viii), that are not leaking contaminants or are not otherwise a source of industrial pollutants, are not considered exposed.

In addition, EPA recognizes that there are circumstances where permanent "no exposure" of industrial activities or materials is not possible. Under such conditions, materials and activities may be sheltered with temporary covers, such as tarps, between periods of permanent enclosure. The final rule does not specify every such situation. EPA intends that permitting authorities will address this issue on a case-by-case basis. Permitting authorities can determine the circumstances under which temporary structures will or will not meet the requirements of this section. Until permitting authorities specifically determine otherwise, EPA recommends application of the "no exposure" exclusion for temporary sheltering of industrial materials or activities only during facility renovation or construction, provided that the temporary shelter achieves the intent of this section. Moreover, "exposure" that results from a leak in protective covering would only be considered "exposure" if not corrected prior to the next storm water discharge event. EPA received one comment requesting that this allowance for temporary shelter be limited to facility renovation or construction directly related to the industrial activity requiring temporary shelter, and be scheduled to minimize the use of temporary shelter. Another com-

ment suggested placing time limits *68786 on the use of temporary shelter. The commenter did not recommend a specific time period, rather the comment said that renovation in some instances may take years, and that EPA should not allow temporary shelter over prolonged periods. EPA agrees that the use of temporary shelter must be related to the renovation or construction at the site, and be scheduled or designed to minimize the use of temporary shelter. Further, EPA agrees that the use of temporary shelter should be limited in duration, but does not intend to define "temporary" or "prolonged period".

Many final products are intended for outdoor use and pose little risk of storm water contamination, such as new cars. Therefore, final products, except those that can be mobilized in storm water discharge, can be "exposed" and still allow the discharge to certify "no exposure". EPA intends the term "final products" to mean those products that are not used in producing another product. Any product that can be used to make another product is considered an "intermediate product." For example, a facility that makes horse trailers can store the finished trailers outdoors as a final product. The storage of those final products does not prevent eligibility to claim "no exposure". However, any facility that makes parts for the horse trailers (e.g., metal tubing, sheet metal, paint) is not eligible for the "no exposure" exclusion from permitting if those "intermediate products" are stored outdoors (i.e., "exposed").

EPA received comments related to materials in drums, barrels, tanks and similar containers. Some comments objected to the language in the preamble to the proposed rule that would have recommended that the "exposure" determination for drums and barrels be based on the "potential to leak." Those comments said that all drums and barrels have the potential to leak, thereby making certification impossible. They recommended allowing outdoor storage of drums and barrels except for those that "are leaking" at the time of certification. Other comments suggested allowing drums and barrels to be stored outside only if the drums and barrels: are empty; have secondary containment; or there is a spill contingency plan in place. Opposing comments suggested that allowing outdoor exposure of drums and barrels, based on existing integrity and condition, is inconsistent with the "however packaged" proposed rule language, and also would not satisfy the Ninth Circuit remand. The comments point out that the former rule was invalidated by the court in part because it relied on the "unverified judgment" of the light industrial facility operator to determine the non-applicability of the permit requirements, and that allowing the facility operator to determine the condition of their drums and barrels would result in the same flaw.

In response, EPA believes that drums and barrels that are stored outdoors pose little risk of storm water contamination unless they are open, deteriorated or leaking. The Agency has modified today's rule accordingly. EPA intends the term "open" to mean any container that is not tightly sealed and "sealed" to mean banded or otherwise secured and without operational taps or valves. Drums, barrels, tanks, and similar containers may only be stored outdoors under this conditional exclusion. The addition of material to or withdrawing of material from these containers while outside is deemed "exposure". Moving the containers while outside does not create "exposure" provided that the containers are not open, deteriorated or leaking. In order to complete the "no exposure" certification, a facility operator must inspect all drums, barrels, tanks or other containers stored outside to ensure that they are not open, deteriorated, or leaking. EPA recommends that the discharger designate someone at the facility to conduct frequent inspections to verify that the drums, barrels, tanks or other containers remain in a condition such that they are not open, deteriorated or leaking. Drums, barrels, tanks or other containers stored outside that have valves which are used to put material in or take material out of the container, and that have dripped or may drip, are considered to be "leaking" and must be under a storm resistant shelter in order to qualify for the no exposure exclusion. Likewise, leaking pipes containing contaminants exposed to storm water are deemed "exposed." If at any time drums, barrels, tanks or similar containers are opened, deteriorated or leaking, the discharger should take immediate actions to close or replace the container. Any resulting unpermitted discharge would violate the CWA. The Director, the operator of the MS4, or the municipality may inspect the facility to verify that all of the applicable areas meet the "no exposure" conditions as specified in the rule language. In requiring submission of the

conditional "no exposure" certification and allowing the permitting authority and the operator of the MS4 to inspect the facility, today's rule does not rely on the unverified judgment of the facility to determine that the no exposure provision is being met.

~~EPA received several comments related to trash dumpsters that are located outside. The preamble to the proposed rule listed dumpsters in the same grouping as drums and barrels, which based exposure on the "potential to leak". Today's rule distinguishes between dumpsters and drums/barrels. In the Phase I Question and Answer document (volume 1, question 52) the Agency noted that a covered dumpster containing waste material that is kept outside is not considered "exposed" as long as "the container is completely covered and nothing can drain out holes in the bottom, or is lost in loading onto a garbage truck." EPA affirms this approach today. Industrial refuse and industrial trash that is left uncovered is deemed "exposed."~~

For purposes of this provision, particulate matter emissions from roof stacks/vents that are regulated and in compliance under other environmental protection programs, such as air quality control programs, and that do not cause storm water contamination, are considered "not exposed." EPA received comments on the phrase in the draft "no exposure" certification form that asked whether "particulate emissions from roof stacks/vents not otherwise regulated, and in quantities detectable in the storm water outflow," are exposed to precipitation. One comment expressed concern that the phrase "in quantities detectable in the storm water outflow" implies that the facility must conduct monitoring prior to completing the checklist, and must continue to monitor after receiving the no exposure exclusion, in order to be able to verify compliance with the no exposure provision. Another comment said that current measurement technology allows detection of pollutants at levels that may not cause environmental harm. EPA does not intend to require monitoring of runoff from facilities with roof stacks/vents prior to or after completing and submitting the no exposure certification. EPA has thus replaced the phrase "in quantities detectable" with "evident" to convey the message that emissions from some roof stacks/vents have the potential to contaminate storm water discharges in quantities that are considered significant or that cause or contribute to a water quality standards violation. In those instances where the permitting authority determines that particulate emissions from facility roof stacks/vents are a significant contributor of pollutants or contributing to water quality violations, the permitting authority may require the discharger to apply for and obtain coverage under a *68787 permit. Visible deposits of residuals (e.g., particulate matter) near roof or side vents are considered "exposed". Likewise, visible "track out" (i.e., pollutants carried on the tires of vehicles) or windblown raw materials are deemed "exposed."

EPA received a comment requesting an allowance under the "no exposure" provision for industrial facilities with several outfalls at a site where some, but not all of the outfalls drain non-exposed areas. The commenter provided an example of an industrial facility that has 5 outfalls draining different areas of the site, where two of those outfalls drain areas where industrial activities or materials are not exposed to storm water. The comment requested that the facility in this example be allowed to submit a "no exposure" certification in order to be relieved of permitting obligations for discharges from those two outfalls.

EPA agrees, but the comment would be implemented on an outfall-by-outfall basis in the permitting process, not through the "no exposure" exclusion. The "no exposure" provision was developed to allow exclusion from permitting of discharges from entire industrial facilities (except construction), based on a claim of "no exposure" for all areas of the facility where industrial materials or activities occur. Where exposure to industrial materials or activities exist at some but not all areas of the facility, the "no exposure" exclusion from permitting is not allowed because permit coverage is still required for storm water discharges from the exposed areas. Relief from permit requirements for outfalls draining non-exposed areas should be addressed through the permit process, in coordination with the permitting authority. Most NPDES general permits for storm water discharge provide enough flexibility to allow minimal or no requirements for non-exposed areas at industrial facilities. If the permitting authority determines that additional flexibility is needed for this

scenario, the permits could be modified as necessary.

K. Public Involvement/Public Role

The Phase II FACA Subcommittee discussed the appropriate role of the public in successful implementation of a municipal storm water program. EPA believes that an educated and actively involved public is essential to a successful municipal storm water program. An educated public increases program compliance from residents and businesses as they realize their individual and collective responsibility for protecting water resources (e.g., the residents and businesses could be subject to a local ordinance that prohibits dumping used oil down storm sewers). Finally, the program is also more likely to receive public support and participation when the public is actively involved from the program's inception and allowed to participate in the decision making process.

In a time of limited staff and financial resources, public volunteers offer diverse backgrounds and expertise that may be used to plan, develop, and implement a program that is tailored to local needs (e.g., participate in public meetings and other opportunities for input, perform lawful volunteer monitoring, assist in program coordination with other preexisting and related programs, aid in the development and distribution of educational materials, and provide public training activities). The public's participation is also useful in the areas of information dissemination/education and reporting of violators, where large numbers of community members can be more effective than a few regulators.

The public can also petition the NPDES permitting authority to require an NPDES permit for a discharge composed entirely of storm water that contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States. In evaluating such a petition, the NPDES permitting authority is encouraged to consider the set of designation criteria developed for the evaluation of small MS4s located outside of an urbanized area in places with a population of at least 10,000 and a population density of 1,000 or more. Furthermore, any person can protect water bodies by taking civil action under section 505 of the CWA against any person who is alleged to be in violation of an effluent standard or permit condition. If civil action is taken, EPA encourages citizen plaintiffs to resolve any disagreements or concerns directly with the parties involved, either informally or through any available alternative dispute resolution process.

EPA recognizes that public involvement and participation pose challenges. It requires a substantial initial investment of staff and financial resources, which could be very limited. Even with this investment, the public might not be interested in participating. In addition, public participation could slow down the decision making process. However, the benefits are numerous.

EPA encourages members of the public to contact the NPDES permitting authority or local MS4s operator for information on the municipal storm water program and ways to participate. Such information may also be available from local environmental, nonprofit and industry groups.

Some commenters stressed the need to suggest to the public that they have a responsibility to fund the municipal storm water program. While EPA believes it is important that the program be adequately funded, today's rule does not address appropriate mechanisms or levels for such funding.

EPA received comments expressing concern that considerable public involvement requirements could result in increased litigation. EPA is not convinced there is a correlation between meaningful public education programs and any increased probability of litigation.

Finally, EPA received comments stating that the Agency should not encourage volunteer monitoring unless proper pro-

cedures are followed. EPA agrees. EPA encourages only lawful monitoring, i.e., obtaining the necessary approval if there is any question about lawful access to sites. Moreover, as a matter of good practice and to enhance the validity and usefulness of the results, any party, public or private, conducting water quality monitoring is encouraged to use appropriate quality control procedures and approved sampling and analytic methods.

L. Water Quality Issues

1. Water Quality Based Effluent Limits

In addition to technology based requirements, all point source discharges of industrial storm water are subject to more stringent NPDES permitting requirements when necessary to meet water quality standards. CWA sections 402(p)(3)(A) and 301(b)(1)(C). For municipal separate storm sewers, EPA or the State may determine that other permit provisions (e.g. one of the minimum measures) are appropriate to protect water quality and, for discharges to impaired waters, to achieve reasonable further progress toward attainment of water quality standards pending implementation of a TMDL. CWA section 402(p)(3)(B)(iii). See *Defenders of Wildlife, et al. Browner*, No. 98-71080 (9th cir., August 11, 1999). Discharges of storm water also must comply with applicable antidegradation policies and implementation methods to maintain and protect water quality. 40 CFR 131.12. Section 122.34(a) emphasizes this point by specifically noting that a storm water management program designed to reduce the discharge of pollutants from the storm sewer system "to the maximum extent practicable" is also designed to protect water quality. *68788 Permits issued to non-municipal sources of storm water must include water quality-based effluent limits where necessary to meet water quality standards.

Commenters challenged EPA's interpretation of the CWA as requiring water quality-based effluent limits for MS4s when necessary to protect water quality. Commenters asserted that CWA 402(p)(3)(B), which addresses permit requirements for municipal discharges, limits the scope of municipal program requirements to an effective prohibition on non-storm water discharges to a separate storm sewer and to controls which reduce pollutants to the "maximum extent practicable, including management practices, control techniques and system design and engineering methods." They asserted that the final rule should clarify that neither numeric nor narrative water quality-based limits are appropriate or authorized for MS4s.

EPA disagrees that section 402(p)(3) divests permitting authorities of the tools necessary to issue permits to meet water quality standards. Section 402(p)(3)(B)(iii) specifically preserves the authority for EPA or the State to include other provisions determined appropriate to reduce pollutants in order to protect water quality. *Defenders of Wildlife*, slip op. at 11688. Small MS4s regulated under today's rule are designated under CWA 402(p)(6) "to protect water quality."

Commenters argued that water quality standards, particularly numeric criteria, were not designed to address storm water discharges. The episodic nature and magnitude of storm water events, they argue, make it impossible to apply the "end of pipe" compliance assessment approach, for example, in the development of water quality based effluent limits.

EPA's disagrees with the commenters arguments about the inability of water quality criteria to address high flow conditions. Today's final rule does, however, address the concern that numeric effluent limits will necessitate end of pipe treatment and the need to provide a workable alternative.

Today's rule was developed under the approach outlined in the Interim Permitting Policy for Water Quality-Based Effluent Limitations in Storm Water Permits, issued on August 1, 1996. 61 FR 43761 (November 26, 1996) (the "Interim Permitting Policy"). EPA intends to issue NPDES permits consistent with the Interim Permitting Policy, which provides as follows:

In response to recent questions regarding the type of water quality-based effluent limitations that are most appropriate for NPDES storm water permits, EPA is adopting an interim permitting approach for regulating wet weather storm water discharges. Due to the nature of storm water discharges, and the typical lack of information on which to base numeric water quality-based effluent limitations (expressed as concentration and mass), EPA will use an interim permitting approach for NPDES storm water permits.

“The interim permitting approach uses best management practices (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. In cases where adequate information exists to develop more specific conditions or limitations to meet water quality standards, these conditions or limitations are to be incorporated into storm water permits, as necessary and appropriate. This interim permitting approach is not intended to affect those storm water permits that already include appropriately derived numeric water quality-based effluent limitations. Since the interim permitting approach only addresses water quality-based effluent limitations, it also does not affect technology-based effluent limitations, such as those based on effluent limitations guidelines or developed using best professional judgment, that are incorporated into storm water permits.

“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 of 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.

“This interim permitting approach applies only to EPA; however, EPA also encourages authorized States and Tribes to adopt similar policies for storm water permits. This interim permitting approach provides time, where necessary, to more fully assess the range of issues and possible options for the control of storm water discharges for the protection of water quality. This interim permitting approach may be modified as a result of the ongoing Urban Wet Weather Flows Federal Advisory Committee policy dialogue on this subject.”

One commenter challenged the Interim Permitting Policy on a procedural basis, arguing that it was published without opportunity for public notice and comment. In response, EPA notes that the Policy was included verbatim and made available for public comment in the proposal to today's final rule. Prior to that proposal, the Agency defended the application of the Policy on a case-by-case basis in individual permit proceedings. Moreover, the essential elements of the Policy—that narrative effluent limitations are the most appropriate form of effluent limitations for storm water dischargers from municipal sources—was inherent in §122.34(a) of the proposed rule, and was the subject of extensive public comment. In any event, the Policy does not constitute a binding obligation. It is policy, not regulation.

Consistent with the recognition of data needs underlying the Policy, EPA will evaluate the small MS4 storm water regulations after the second round of permit issuance. Section 122.34(e)(2) of today's rule expressly provides that for the interim ten-year period, “EPA strongly recommends that until the evaluation of the storm water program in §122.37, no additional requirements beyond the minimum control measures be imposed on regulated small MS4s without the agreement of the operator of the affected small MS4, except where an approved TMDL or equivalent analysis provides adequate information to develop more specific measures to protect water quality.” This approach addresses the concern for protecting water resources from the threat posed by storm water discharges with the important qualification that there must be adequate information on the watershed or a specific site as a basis for requiring tailored storm water controls beyond the minimum control measures. As indicated, the Interim Permitting Policy has several important limitations—it does not apply to technology-based controls or to sources that already have numeric end of pipe effluent limitations. EPA encour-

ages authorized States and Tribes to adopt policies similar to the Interim Permitting Policy when developing storm water discharge programs. For a discussion of appropriate monitoring activities, see Section H.3.d., Evaluation and Assessment.

Where a water quality analysis indicates there is a need and basis for deriving water quality-based effluent limits in NPDES permits for storm water discharges regulated under today's rule, EPA believes that most of these cases would be satisfied by narrative effluent *68789 limitations that require the implementation of BMPs. NPDES permit limits will in most cases continue to be based on the specific approach outlined in today's rule for the implementation of BMPs as the most appropriate form of effluent limitation to satisfy technology and water quality-based requirements. See §122.34(a). For storm water management plans with existing BMPs, this may require further tailoring of BMPs to address the pollutant(s) of concern, the nature of the discharge and the receiving water. If the permitting authority determines that, through implementation of appropriate BMPs required by the NPDES storm water permit, the discharge has the necessary controls to provide for attainment of water quality standards, additional controls are not needed in the permit. Conversely, if a discharger (MS4, industrial or construction) fails to adopt and implement adequate BMPs, the permittee and/or the permitting authority should consider a different mix of BMPs or more specific conditions to ensure water quality protection.

Some commenters observed that there was no evidence from the experience of storm water dischargers regulated under the existing NPDES storm water program, or from studies or reports that allegedly support EPA's position, that implementation of BMPs to satisfy the six minimum control measures would meet applicable water quality standards for a regulated small MS4. In response, EPA acknowledges that the six minimum measures are intended to implement the statutory requirement to control discharges to the maximum extent practicable, and they may not result in the attainment of water quality standards in all cases. The control measures do, however, focus on and address well-documented threats to water quality associated with storm water discharges. Based on the collective expertise of the FACA Sub-committee, EPA believes that implementation of the six minimum measures will, for most regulated small MS4s, be adequate to protect water quality, and for other regulated small MS4s will substantially reduce the adverse impacts of their discharges on water quality.

Some commenters asserted that analyses of existing water quality criteria suggest that numeric criteria for aquatic life may be overprotective if applied to storm water discharges. These comments maintained that an approach that prohibits exceedance of applicable water quality criteria is unworkable. Various commenters recommended wet weather specific criteria, variances to the criteria during wet weather events, and seasonal designated uses. Other commenters noted that water quality-based effluent limits in NPDES permits have traditionally been developed based on dry weather flow conditions (e.g., assuming critical low-flow conditions in the receiving water to ensure protection of aquatic life and human health). Wet weather discharges, however, typically occur under high-flow conditions in the receiving water. Assumptions regarding mass balance equations and size of mixing zones may also not be pertinent during wet weather.

EPA acknowledges the need to devise a regulatory program that is both flexible enough to accommodate the episodic nature, variability and volume of wet weather discharges and prescriptive enough to ensure protection of the water resource. EPA believes that wet weather discharges can be adequately addressed in the existing regulations through refining designated uses and assigning criteria that are tailored to the level of water quality protection described by the refined designated use.

EPA believes that lack of precision in assigning designated uses and corresponding criteria by States and Tribes, in many cases may result in application of water quality criteria that may not appropriately match the intended condition of the water body. States and Tribes have frequently designated uses without regard to site-specific wet weather conditions. Because certain uses (swimming, for example) might not exist during high-intensity storm events or in the winter, States

may factor such climatic conditions and seasonal uses into their use designations with appropriate analyses. This would acknowledge that a lower level of control, at lower compliance cost, would be appropriate to protect that use. Before modifying any designated use, however, States would need to evaluate the effect of less stringent water quality criteria on protecting other uses, including any threatened or endangered species, drinking water supplies and downstream uses. EPA will further evaluate these issues in the context of the Water Quality Standards Regulation, Advance Notice of Proposed Rule Making (ANPRM), 63 FR, 36742, July 7, 1998.

One of the major themes presented by EPA in the ANPRM is that refinement in use designations and tailoring of water quality criteria to match refined use designations is an important future direction of the water quality standards program. In assigning criteria to protect general use classifications, a State or Tribe must ensure that the criteria are sufficiently protective to safeguard the full range of waters of the State, i.e., criteria would be based on the most sensitive use. This approach has been disputed, especially for aquatic life uses, where evidence suggests that the general use criteria will require controls more stringent than needed to protect the existing or potential aquatic life community for a specific water body. EPA recognizes that there is a growing need to more precisely tailor use descriptions and criteria to match site-specific conditions, ensuring that uses and criteria provide an appropriate level of protection, which, to the extent possible, are not overprotective. EPA is engaged in an ongoing evaluation of its regulations in this area through the ANPRM effort. At the same time, EPA continues to encourage States and Tribes to review the applicability of the designated uses and associated criteria using existing provisions in the water quality standards regulation.

2. Total Maximum Daily Loads and Analysis To Determine the Need for Water Quality-Based Limitations

The development and implementation of total maximum daily loads (TMDLs) provide a link between water quality standards and effluent limitations. CWA section 303(d) requires States to develop TMDLs to provide more stringent water quality-based controls when technology-based controls are inadequate to achieve applicable water quality standards. A TMDL is the sum of the individual wasteload allocations for point sources and load allocations for nonpoint sources, with consideration for natural background conditions. A TMDL quantifies the maximum allowable loading of a pollutant to a water body and allocates this maximum load to contributing point and nonpoint sources so that water quality criteria will not be exceeded and designated uses will be protected. A TMDL also includes a margin of safety to account for uncertainty about the relationship between pollutant loads and water quality.

Today's final rule refers to TMDLs in several provisions. For the purpose of today's rule, EPA relies on the component of the TMDL that evaluates existing conditions and allocates loads. For discharges to waters that are not impaired and for which a TMDL has not been developed, today's rule also refers to an "equivalent analysis." The discussion that follows uses the term "TMDL" for both.

Under revised §122.26(a)(9)(i)(C), the permitting authority may designate *68790 storm water discharges that require NPDES permits based on TMDLs that address the pollutants of concern. For storm water discharges associated with small construction activity, §122.26(b)(15)(i)(B) provides a waiver provision where it may be determined that storm water controls are not needed based on TMDLs that address sediment and any other pollutants of concern. The NPDES permitting authority may waive requirements under the program for certain small MS4s within urbanized areas serving less than 1,000 persons provided that, if the small MS4 discharges any pollutant that has been identified as a cause of impairment of a water body into which it discharges, the discharge is in compliance with a wasteload allocation in a TMDL for the pollutant of concern. The permitting authority may also waive requirements for MS4s in urbanized areas serving between 1,000 and 10,000 persons, if the permitting authority determines that storm water controls are not needed, as provided in §123.35(d)(2). See §122.32(c).

Under CWA section 303(d), States identify which of their water bodies need TMDLs and rank them in order of priority. Generally, once a TMDL has been completed for one or more pollutants in a water body, a wasteload allocation for each point source discharging the pollutant(s) is implemented as an enforceable condition in the NPDES permit. Regulated small MS4s are essentially like other point source discharges for purposes of the TMDL process.

A TMDL and the resulting wasteload allocations for pollutant(s) of concern in a water body may not be available because the water body is not on the State's 303(d) list, the TMDL has not yet been completed, or the TMDL did not include specific pollutants of concern. In these cases, the permitting authority must determine whether point sources discharge pollutant(s) in amounts that cause, have the reasonable potential to cause, or contribute to excursions above State water quality standards, including narrative water quality criteria. This so-called "reasonable potential" analysis is intended to determine whether and for what pollutants water quality based effluent limits are required. The analysis is, in effect, a substitute for a similar determination that would be made as part of a TMDL, where necessary. When "reasonable potential" exists, regulations at §122.44(d) require a water quality-based effluent limit for the pollutant(s) of concern in NPDES permits. The water quality-based effluent limits may be narrative requirements to implement BMPs or, where necessary, may be numeric pollutant effluent limitations.

Commenters, generally from the regulated community, objected that, due to references to the need to develop a program "to protect water quality" and to additional NPDES permit requirements beyond the minimum control measures based on TMDLs or their equivalent, regulated small MS4s will be subject to uncertain permit limitations beyond the six minimum control measures. Commenters also asserted that through the imposition of a wasteload allocation under a TMDL in impaired water bodies, there is a likelihood that unattainable, yet enforceable narrative and numeric standards will be imposed on regulated small MS4s.

As is discussed in the preceding section, NPDES permits must include any more stringent limitations when necessary to meet water quality standards. However, even if a regulated small MS4 is subject to water quality based effluent limits, such limits may be in the form of narrative effluent limitations that require the implementation of BMPs. As discussed earlier, EPA has adopted the Interim Permitting Policy and incorporated it in the development of today's rule to recognize the appropriateness of BMP-based limits developed on a case-by-case basis.

EPA formed a Federal Advisory Committee to provide advice to EPA on identifying water quality-limited water bodies, establishing TMDLs for them as appropriate, and developing appropriate watershed protection programs for these impaired waters in accordance with CWA section 303(d). Operating under the auspices of the National Advisory Council for Environmental Policy and Technology (NACEPT), the committee produced its Report of the Federal Advisory Committee on the Total Maximum Daily Load (TMDL) Program (July 1998). EPA recently published a proposed rule to implement the Report's recommendations (64 FR 46012, August 23, 1999).

3. Anti-Backsliding

In general, the term "anti-backsliding" refers to statutory provisions at CWA sections 303(d)(4) and 402(o) and regulatory provisions at 40 CFR 122.44(l). These provisions prohibit the renewal, reissuance, or modification of an existing NPDES permit that contain effluent limits, permit terms, limitations and conditions, or standards that are less stringent than those established in the previous permit. There are also exceptions to this prohibition known as "antibacksliding exceptions."

The issue of backsliding from prior permit limits, standards, or conditions is not expected to initially apply to most storm water dischargers designated under today's proposal because they generally have not been previously authorized by an NPDES permit. However, the backsliding prohibition would apply if a storm water discharge was previously covered un-

der another NPDES permit. Also, the backsliding prohibition could apply when an NPDES storm water permit is reissued, renewed, or modified. In most cases, however, EPA does not believe that these provisions would restrict revisions to storm water NPDES permits.

One commenter questioned whether, if BMPs implemented by a regulated small MS4 operator fail to produce results in removal of pollutants and the permittee attempts to substitute a more effective BMP, the small MS4 operator could be accused of violating the anti-backsliding provisions and also be exposed to citizen lawsuits. In response, EPA notes that in such circumstances the MS4's permit has not changed and, therefore, the prohibition against backsliding is not applicable. Further, any change in the mix of BMPs that was intended to be more effective at controlling pollutants would not be considered backsliding, even if it did not include all of the previously implemented BMPs.

4. Water Quality-Based Waivers and Designations

Several sections of today's final rule refer to water quality standards in identifying those storm water discharges that are and are not required to be permitted under today's rule. As noted in §122.30 of today's rule, CWA section 402(p)(6) requires the designation of municipal storm water sources that need to be regulated to protect water quality and the establishment of a comprehensive storm water program to regulate these sources. Requirements applicable to certain municipal sources may be waived based on the absence of demonstrable water quality impacts. Section 122.32(c). The section 402(p)(6) mandate to protect water quality also provides the basis for regulating discharges associated with small construction. See also §122.26(b)(15)(i). Further, today's rule carries forward the existing authority for the permitting authority to designate sources of storm water discharges based upon water quality considerations. Section 122.26(a)(9)(i)(C) and (D).

As is discussed above in sections II.H.2.e (for small MS4s) and II.I.1.b.ii *68791 (for small construction), the requirements of today's rule may be waived based on wasteload allocations that are part of "total maximum daily loads" (TMDLs) that address the pollutants of concern or, in the case of small construction and municipalities serving between 1,000 and 10,000 persons, the equivalents of TMDLs. One commenter stated that waivers would allow exemptions to the technology based requirements and would thus be inconsistent with the two-fold approach of the CWA (a technology based minimum and a water quality based overlay). EPA acknowledges that waivers are not allowed for other technology-based requirements under the CWA. A more flexible approach is allowed, however, for sources designated for regulation under 402(p)(6) to protect water quality. For such sources EPA may allow a waiver where it is demonstrated that an individual source does not present the threat to water quality that was the basis for EPA's designation.

III. Cost-Benefit Analysis

EPA has determined that the range of the rule's benefits exceeds the range of regulatory costs. The estimated rule costs range from \$847.6 million to \$981.3 million annually with corresponding estimated monetized annual benefits which range from \$671.5 million to \$1.628 billion, expected to exceed costs.

The rule's cost and benefit estimates are based on an annual comparison of costs and benefits for a representative year (1998) in which the rule is implemented. This differs from the approach used for the proposed rule which projected cost and benefits over three permit terms. EPA has chosen to use the current approach because it determined that the ratio of annual benefits and costs would not change significantly over time. Moreover, because there is not an initial outlay of capital costs with benefits accruing in the future (i.e., benefits and costs are almost immediately at a steady state), it is not necessary to discount costs in order to account for a time differential.

EPA developed detailed estimates of the costs and benefits of complying with each of the incremental requirements im-

posed by the rule. The Agency used two approaches, a national water quality model and national water quality assessment, to estimate the potential benefits of the rule. Both approaches show that the benefits are likely to exceed costs.

These estimates, including descriptions of the methodology and assumptions used, are described in detail in the Economic Analysis of the Final Phase II Rule, which is included in the record of this rule making. Exhibit 3 summarizes costs and benefits associated with the basic elements of today's rule.

Exhibit 3.—Comparison of Annual Compliance Cost and Benefit Estimates[FN1]		
Monetized benefits	National water quality model (millions of 1998 dollars)	National water quality assessment (millions of 1998 dollars)
Municipal Minimum Measures		\$131.0-\$410.2
Controls for Construction Sites		\$540.5-\$686.0
Total Annual Benefits	\$1,628.5	\$671.5-\$1,096.2

Costs	Millions of 1998 dollars[FN2]
Municipal Minimum Measures	\$297.3
Controls/Waivers for Construction Sites	\$545.0-\$678.7
Federal/State Administrative Costs	\$5.3
Total Annual Costs	\$847.6-\$981.31

FN1 National level benefits are not inclusive of all categories of benefits that can be expected to result from the regulation.

FN2 Total may not add due to rounding.

A. Costs

1. Municipal Costs

Initially, to determine municipal costs for the proposed rule, EPA used anticipated expenditure data included in permit applications from a sample of 21 Phase I MS4s. Certain commenters criticized the Agency for using anticipated expenditures because they could be significantly different from the actual expenditures. These commenters suggested that the Agency use the actual cost incurred by the Phase I MS4s. Other comments stated that because the Phase I MS4s, in general, are large municipalities, they may not be representative of the Phase II MS4s for estimating regulatory costs. Finally, one commenter noted that the sample of 21 municipalities used to project cost was relatively small.

To address the concerns of the commenters, EPA utilized a National Association of Flood and Stormwater Management Agencies (NAFSMA) survey of the Phase II community to obtain incremental cost estimates for Phase II municipalities. Using the list of potential Phase II designees published in the Federal Register (63 FR 1616), NAFSMA contacted more than 1,600 jurisdictions. The goal of the survey was to solicit information from those communities about the proposed Phase II NPDES storm water program. Several of the survey questions corresponded directly to the minimum measures required by the Phase II rule. One hundred twenty-one surveys were returned to NAFSMA and were used to develop municipal costs.

Using the NAFSMA information, EPA estimated average annual per household program costs for automatically designated municipalities. EPA also estimated an average annual per household administrative cost for municipalities to ad-

dress application, record keeping, and reporting requirements of the Rule. The total average per household cost of the rule is expected to \$9.16 per household.

To determine potential national level costs for municipalities, EPA multiplied the number of households (32.5 million) by the per household cost (\$9.16). EPA estimates the annual cost of the Phase II municipal program at \$298 million.

As an alternative method, and point of comparison, to the NAFSMA-based approach, EPA reviewed actual expenditures reported from 35 Phase I MS4s. The Agency targeted these 35 Phase I MS4s because they had participated in the NPDES program for *68792 nearly one permit term, were smaller in size and had detailed data reflecting their actual program implementation costs. Of the 35 MS4s, appropriate cost data was only available for 26 of those MS4s. EPA analyzed the expenditure data and identified the relevant expenditures, excluding costs presented in the annual reports unrelated to the requirements of the Rule. The cost range and annual per household program costs of \$9.08 are similar to those found using the NAFSMA survey data.

2. Construction Costs

In order to estimate the rule's construction-related cost on a national level (the soil and erosion controls (SEC) requirements of the rule and the potential impacts of the post-construction municipal measure on construction), EPA estimated a per site cost for sites of one, three, and five acres and multiplied these costs by the total number of estimated Phase II construction starts across these size categories.

To estimate the percentage of starts subject to the soil and erosion control requirements between 1 and 5 acres, with respect to each category of building permits (residential, commercial, etc.), EPA initially used data from Prince George's County (PGC), Maryland, and applied these percentages to national totals. In the proposal, EPA recognized that the PGC data may not be representative of the entire country and requested data that could be used to develop better estimates of the number of construction sites between 1 and 5 acres. EPA did not receive any substantiated national data from commenters.

In view of the unavailability of national data from commenters, EPA made extensive efforts to collect construction site data around the country. The Agency contacted more than 75 municipalities. EPA determined that 14 of the contacted municipalities had useable construction site data. Using data from these 14 municipalities, EPA developed an estimate of the percentage of construction starts on one to five acres. EPA then multiplied this percentage by the number of building permits issued nationwide to determine the total number of construction starts occurring on one to five acres. Finally, to isolate the number of construction starts incrementally regulated by Phase II, EPA subtracted the number of activities regulated under equivalent programs (e.g., areas covered by the Coastal Zone Act Reauthorization Amendments of 1990, and areas covered by equivalent State level soil and erosion control requirements). Ultimately, EPA estimated that 110,223 construction starts would be incrementally covered by the rule annually.

EPA then used standard cost estimates from Building Construction Cost Data and Site Work Landscape Cost Data (R.S. Means, 1997a and 1997b) to estimate construction BMP costs for 27 model sites in a variety of typical site conditions across the United States. The model sites included three different site sizes (one, three and five acres), three slope variations (3%, 7%, and 12%), and three soil erosivity conditions (low, medium, and high). EPA chose BMP combinations appropriate to the model site conditions. Based on the assumption that any combination of site factors is equally likely to occur in a given site, EPA developed average cost of sediment and erosion control for all model sites. EPA estimated that, on average, BMPs for a 1 acre site will cost \$1,206, for a 3 acre site \$4,598 and for a 5 acre site \$8,709.

EPA then estimated administrative costs per construction site for the following elements required under the rule: Submit-

tal of a notice of intent for permit coverage; notification to municipalities; development of a storm water pollution prevention plan; record retention; and submittal of a notice of termination. EPA estimated the average total administrative cost per site to be \$937.

EPA also considered the cost implications of NPDES permit authorities waiving the applicability of requirements to storm water discharges from small construction sites based on two different criteria involving water quality impact and low rainfall. EPA received comments stating that a waiver would require a significant investment in training or acquisition of a consultant. Based on comments received, EPA eliminated one of the waiver conditions involving low soil loss threshold because it necessitated use of the Revised Universal Soil Loss Equation which could require extensive technical expertise.

Based on the opinions of construction industry experts, EPA estimates that 15 percent of the construction sites that would otherwise be covered by today's rule will be eligible to receive waivers. Therefore, the Agency has excluded 15 percent of the construction sites when deriving costs of sediment and erosion control. The average cost for sites to qualify for the waiver is expected to be \$34 per site. The construction cost analysis for the proposed rule did not include any costs for the preparation and submission of waiver applications because EPA believed those costs would be negligible. However, in response to public comments, EPA has estimated these potential costs.

EPA has also estimated the potential costs for construction site operators to implement the post-construction minimum measure. These are costs that may be incurred by construction site operators if the MS4 chooses to meet the post-construction minimum measure by requiring on-site structural, site-by-site control of post-construction runoff. Municipalities may select from an array of structural and non-structural options in implementing this measure, so the potential costs to construction operators is uncertain. Nonetheless, EPA developed average annual BMP costs for sites of one, three, five and seven acres. EPA's analysis accounted for varying levels of imperviousness that characterize residential, commercial, and institutional land uses. Nationwide, these costs are expected to range from \$44 million to \$178 million annually.

Finally, to establish national incremental annual costs for Phase II construction starts, EPA multiplied the total costs of compliance for the chosen site size categories by the total number of Phase II construction starts and added post-construction costs. EPA estimates the annual compliance cost to range from \$545 million to \$678.7 million.

B. Quantitative Benefits

In the Economic Analysis for the proposed rule, a "top-down" approach was used to estimate economic benefits. Under this approach, the combined economic benefits for wet weather programs were estimated first, and then were divided among various water programs on the basis of expert opinion. As a result, the benefits estimates for an individual program were rather uncertain. Moreover, this approach was inconsistent with the approach used to estimate the cost of the proposed storm water rule, which was developed using municipal-based and cost-based data to develop "bottom-up" costs. Therefore, EPA decided to use a "bottom-up" approach for estimating benefits of the Phase II rule. To adequately reflect the quantifiable benefits of the rule, EPA used two different methods: (1) National Water Quality Model and (2) National Water Quality Assessment.

To monetize benefits in both approaches, the Agency applied Carson and Mitchell's (1993) estimates of household willingness-to-pay (WTP) for water quality improvement to estimates of waters impaired by storm water discharges. Carson and Mitchell's 1993 study reports the results of their 1983 national survey of WTP for incremental *68793 improvements in fresh water quality. Carson and Mitchell estimate the WTP for three minimum levels of fresh water quality: boatable, fishable, and sizable. EPA adjusted the WTP amounts to account for inflation, growth in real per capita income, and in-

creased attitudes towards pollution control. The adjusted WTP amounts for improvements in fresh water quality are \$210 for boatable, \$158 for fishable, and \$177 for sizable. A brief summary of the national water quality model and national water quality assessment approaches follow.

1. National Water Quality Model

One approach EPA used to estimate the benefits of the Phase II municipal and construction site controls was the National Water Pollution Control Assessment Model (NWPCAM). NWPCAM estimates benefits of the storm water program at the national level, including the impact on small streams. This model estimates water quality and the resultant use support for the 632,000 miles of rivers and streams in the USEPA Reach File Version 1 (RF1), which covers the continental United States. The model analyzes water quality changes by stream reach. The parameters modeled in the NWPCAM are biological oxygen demand (BOD), total suspended solids (TSS), dissolved oxygen (DO), and fecal coliforms (FC).

The model projects changes in water quality due to the Phase II municipal and construction site controls. To calculate the economic benefits of change in water quality, the number of households in the proximity of the stream reach are determined, by overlaying the model results on the 1990 Census of Populated Places and Minor Civil Divisions, and updating the population to 1998. Economic benefits are calculated using the Carson and Mitchell WTP values. The benefits are separately estimated for local and non-local waters on the basis of WTP values and proximity to water quality changes.

The value of the change in use support for local waters is greater than the value of the non-local waters because of the opportunity to use local waters by the local population. This model assumes that if improvement occurs in waters that are not close to population centers the economic value is lower. Therefore, benefits are estimated for local and non-local waters separately. This assumption is based on Carson and Mitchell's survey which asked respondents to apportion each of their stated WTP values between achieving the water quality goals in their own State and achieving those goals in the nation as a whole. On average, respondents allocated 67% of their values to achieving in-State water quality goals and the remainder to the nation as a whole. Carson and Mitchell argue that for valuing local water quality changes 67% is a reasonable upper bound for the local multiplier and 33% for the non-local water quality changes. For the purposes of this analysis, the locality is defined as urban sites and associated populations linked into the NWPCAM framework. Using this methodology, the total monetized benefits of Phase II control of urban and construction site runoff is estimated to be \$1.628 billion per year. The local and non-local benefits due to Phase II controls are presented in Exhibit 4.

Exhibit 4.—Local and Non-local Benefits Estimates Due to Phase II Controls National Water Quality Model Estimate			
Use support	Local benefits (\$million/yr)	Non-local benefits[FN1] (\$million/yr)	Total benefits (\$million/yr)
Swimming, Fishing, and Boating	306.20	60.60	366.80
Fishing and Boating	395.10	51.90	447.00
Boating	700.10	114.60	814.70
Total	1401.40	227.10	1628.50

FN1 To estimate non-local willingness to pay per household, the 33% of willingness is multiplied by the fraction of previously impaired national waters (in each use category) that attain the beneficial use as a result of the Phase II rule. To estimate the aggregate non-local benefits, non-local willingness to pay is multiplied with the total number of households in the US.

While the numbers of miles that are estimated to change their use support are small, the benefits estimates are quite significant. This is because urban runoff and, to a large extent, construction activity occurs where the people actually reside and the water quality changes mostly occur close to these population centers. NWPCAM indicates that changes in pollution loads have the most effect immediately downstream of pollution changes. As a result, the aggregate WTP is large because large numbers of households in these population centers are associated with the local waters that reflect improvement in designated use support.

2. National Water Quality Assessment

EPA also estimated benefits of the Phase II Storm Water program using the 1998 National Water Quality Inventory (305(b)) Report to Congress, rather than the NWPCAM as a basis for estimating impairment addressed by the rule. The Water Quality Assessment method separately estimates benefits associated with improvements to fresh water, marine water and construction site controls, and then aggregates these separate categories into an estimate of total annual benefits.

a. Municipal Measures

i. Fresh Waters Benefits

In order to develop estimates for the potential value of the municipal measures (except storm water runoff controls for construction sites), EPA applied Carson & Mitchell WTP values to estimated existing and projected future fresh water impairment. Carson & Mitchell did not evaluate marine waters, so only fresh water values were available from their research. Even though the Carson and Mitchell estimates apply to all fresh water, it is not clear how these values would be apportioned among rivers, lakes, and the Great Lakes. The 305(b) data indicate that lakes are the most impaired by urban runoff/storm sewers, followed closely by the Great Lakes, and then rivers. Therefore, EPA applied the WTP values to the categories separately and assumed that the higher resulting value for lakes represents the high end of the range (i.e., assuming that lake impairment is more indicative of national fresh water impairment) and that the lower resulting value for impaired rivers represents the low end of a value range for all fresh waters (i.e., assuming that river impairment is more indicative of national fresh water impairment). In addition, EPA estimated that the post-construction runoff *68794 requirements of the municipal program might result in benefits of at least \$16.8 million annually from avoided future runoff. The post-construction estimate significantly underestimates potential program benefits because it does not account for avoided hydrologic changes and resulting water quality impairment associated with increases in imperviousness from development and redevelopment. Summing the benefits across the water quality use support levels yields an estimate of benefits ranging from approximately \$121.9 million to \$378.2 million per year.

ii. Marine Waters Benefits

In addition to the fresh water benefits captured by the Carson and Mitchell study, EPA anticipates benefits as a result of improvements to marine waters. Sufficient methods have not been developed to quantify national-level benefits for commercial or recreational fishing. EPA used beach closure data and visitation estimates from its Beach Watch Program to estimate potential reductions in marine swimming visits due to storm water runoff contamination events in 1997. The estimated 86,100 trips that did not occur because of beach closures in coastal Phase II communities is a lower bound because it represents only those beaches that report both closures and visitation data. EPA estimates potential swimming benefits from the rule to be at least \$2.1 million annually.

EPA developed an analysis of potential benefits associated with avoided health impacts from exposure to contaminants in storm sewer effluent. Based on a study of incremental illnesses found among people who swam within one yard of storm drains in Santa Monica Bay, EPA estimated a range of incremental illnesses (Haile et al., 1996). Depending on assump-

tions made about number of exposures to contaminants and contaminant concentrations, benefits ranged from \$7.0 million to \$29.9 million annually.

b. Construction Benefits

The major pollutant resulting from construction activities is sediment. However, in addition to sediment, construction activities also yield pollutants such as pesticides, petroleum products, and solvents. Because circumstances will vary considerably from site to site, data is not available with which to develop estimates of benefits for each site and aggregate to obtain a national-level estimate.

In the proposed rule, EPA estimated the combined benefits of all wet weather programs, and then used expert opinions to allocate them to different individual programs. To eliminate the possible overlap between the benefits of the soil and erosion control requirements, municipal measures, and other wet weather storm water programs, EPA chose to use an approach in today's final rule that directly estimates the benefits of soil and erosion requirements.

A survey of North Carolina residents (Paterson et al., 1993) indicated that households are willing to pay for erosion and sediment controls similar to those in today's rule. Based on income and other indicators, the values derived from the study are expected to be similar to values held in the rest of the country. Using the mean value of the willingness to pay of \$25 per household, EPA projects annual benefits of the soil and erosion requirements to range from \$540.5-\$686 million.

c. Summary of Benefits From the National Water Quality Assessment

Total benefits from municipal measures and construction site controls are expected to range from \$671.5 million to \$1.1 billion per year, including benefits of approximately \$13.7 million per year associated with small stream improvements. A summary of the potential benefits is presented in Exhibit 5.

As shown in Exhibit 5, it was not possible to monetize all categories of benefits using the WTP estimates. In particular, benefits for improving marine water quality such as fishing and passive use benefits are not included in the values used to estimate the potential benefits of the municipal minimum measures (excluding construction sites controls), and they are not estimated separately, because information is not currently available.

Exhibit 5.—Potential Annual Benefits of the Phase II Storm Water Rule National Water Quality Assessment Estimate	
Benefit category	Annual WTP
Municipal Minimum Measures[FN1]	
Fresh Water Use and Passive Use[FN2]	\$121.9-\$378.2
Marine Recreational Swimming	\$2.1
Human Health (Marine Waters)	\$7.0-\$29.9
Other Marine Use and Passive Use	([FN+])
Erosion and Sediment Controls for Construction Sites	
Fresh Water and Marine Use and Passive Use[FN3]	\$540.5-\$686
Total Phase II Program	
Total Use & Passive Use (Fresh Water and Marine)	>\$671.5->\$1,096.2

+ = positive benefits expected but not monetized.

FN1 Includes water quality benefit of municipal programs, based on 80% effectiveness of municipal programs.

FN2 Based on research by Carson and Mitchell (1993). Fresh water value only. Does not include commercial fishery, navigation, or diversionary (e.g. municipal drinking water cost savings or risk reductions) benefits. May not fully capture human health risk reduction or ecological values.

FN3 Based on research by Paterson et al. (1993). Although the survey's description of the benefits of reducing soil erosion from construction sites included reduced dredging, avoided flooding, and water storage capacity benefits, these benefit categories may not be fully incorporated in the WTP values. Small streams may account for over 2% of total benefits.

C. Qualitative Benefits

There are additional benefits to storm water control that cannot be quantified or monetized. Thus, the current estimate of monetized benefits may understate the true value of storm water controls because it omits many ways in which society is likely to benefit from reduced storm water pollution, such as improved aesthetic quality of waters, benefits to wildlife and to threatened and endangered species, cultural values, and biodiversity benefits.

A benefit that EPA did not monetize completely is the flood control benefits attributable to municipal storm water controls reducing downstream flooding, although flood control benefits associated with sediment and erosion control are already reflected to some extent in the construction benefits. Similarly, the Agency could not value the benefits from increased property value due to storm water controls reflected in the rule, even though a commenter suggested inclusion of these benefits in the estimates.

Moreover, while a number of commenters requested that EPA include ecological benefits, the Agency was not able to fully monetize these benefits. Urbanization usually increases the amount of sediment, nutrients, metals and other pollutants associated with land disturbance and development. Development usually not only results in a dramatic increase in the volume of water runoff, but also in a substantial decrease in that water's quality due to stream scour, runoff and dispersion of toxic pollutants, and oversiltation. These kinds of secondary benefits could not be fully reflected in the monetized benefits. EPA was able to only monetize the aquatic life support benefits for waters assumed to be impaired. Thus, only the aquatic life support benefits attributable to municipal controls, reflected through human satisfaction, are taken into account.

Reduced nutrient level is another benefit of the storm water control which is not fully captured by the economic analysis. High nutrient levels often lead to eutrophication of the aquatic system. The quality change in ecological sources as the result of storm water controls to reduce pollutants is not fully reflected in the present benefits.

D. National Economic Impact

Finally, the Agency determined that the rule will have minimal impacts on the economy or employment. This is because the final rule regulates small MS4s and construction sites under 5 acres, not the typical industrial plants or other non-construction activities that could directly impact production and thus those sectors of the economy.

Discussions with representatives within the construction industry indicate that construction costs will likely be passed on to buyers, thus not seriously affecting the housing industry directly. One commenter argued that the rule will have a negative employment effect because the builders will build fewer homes requiring less building materials as a result of the

declining demand induced by the cost of the soil and erosion controls. EPA disagrees with this argument because the cost of the controls, as the percentage of the price of a median home, is negligible and will be passed on to final buyers.

Flexibility within the rule allows MS4s to tailor the storm water program requirements to their needs and financial position, minimizing impacts. For sedimentation and erosion controls on construction sites, the rule contemplates application of commonly used BMPs to reduce costs for the construction industry. Thus, the rule attempts to use existing practices to prevent pollution, which should minimize impacts on States, Tribes, municipalities and the construction industry.

Thus, EPA concludes that the effect of the rule, if any, on the national economy will be minimal. The benefits of today's rule more than offset any cost impacts on the national economy.

IV. Regulatory Requirements

A. Paperwork Reduction Act

The Office of Management and Budget (OMB) has approved some of the information collection requirements contained in this final rule (i.e. those found in 40 CFR 122.26(g) and 123.35(b)) under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. and has assigned OMB control number 2040-0211.

The burden and costs described below are for the information collection, reporting, and record keeping requirements for the three year period beginning with the effective date of today's rule. Additional information collection requirements for regulated small MS4s and small construction sites will occur after this initial three year period and will be counted in a subsequent information collection requirement. The total burden of the information collection requirements for the first three years of this rule is estimated at 56,369 hours with a corresponding cost of \$2,151,305 million annually. This burden and cost is for industrial facilities to complete and submit the no exposure certification, for NPDES-authorized States to process and review the no exposure certification, and for the NPDES-authorized States to develop designation criteria and assess additional MS4s outside of urbanized areas. Compliance with the applicable information collection requirements imposed under this rule are mandatory, pursuant to CWA section 402.

Exhibit 6 presents average annual burden and cost estimates for Phase II respondents for the first three years. Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust existing ways for complying with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

Exhibit 6.—Average Annual Burden and Cost Estimates for Phase II Respondents					
Information collection activity	A	B	(A)x(B)=C	D	(C)x(D)=E
	Respondents per year (projected)[FN1]	Burden hours per respondent per year (predicted)	Annual respondent burden hours (projected)	Respondent labor cost (\$/hr) (1998 \$)	Annual Cost (\$) (projected)
Ind. No Expos.					

Facilities:[FN2]					
No Expos. Certi- fication	36,377	1.0	36,377	44.35	1,613,320
Annual Subtotal			<u>36,377</u>		<u>1,613,320</u>
NPDES-Au- thorized States:[FN3]					
Designation of Addit. MS4s[FN4]	15	332.8	4,892	26.91	131,644
No Exp. Cert. Proc. & Rev	30,200	0.5	15,100	26.91	406,341
Annual Subtotal			<u>19,992</u>		<u>537,985</u>
Annual Totals			<u>56,369</u>		<u>2,151,305</u>

FNNNotes:

FN1 Source: U.S. EPA, Office of Wastewater Management. Economic Analysis for the Storm Water Phase II Rule.

FN2 The total number of potential no exposure respondents was divided by 5 to estimate an annual total. It was assumed that the annual number of respondents for the no exposure certification would be spread over the five year period the exclusion applies.

FN3 The number of respondents in each category represents only those respondents located within the 44 NPDES-authorized States and Territories. The burden and cost estimates provided in this section are for the NPDES-authorized States in their role as the permitting authority for municipal designations and industrial no exposure.

FN4 The number of respondents for this activity, 15, represents the number of NPDES-authorized States and Territories that must develop designation criteria and assess small MS4s located outside of an urbanized area for possible Phase II coverage divided by the three year ICR period.

*68796 Given the requirements of today's regulation, EPA believes there will be no capital startup and no operation and maintenance costs associated with information collection requirements of the rule.

The government burden associated with today's rule will impact State, Tribal, and Territorial governments (NPDES-authorized governmental entities) that have storm water program authority, as well as the federal government (i.e., EPA), where it is the NPDES permitting authority. As of March 1999, 43 States and the Virgin Islands had NPDES authority.

The annual burden imposed upon authorized governmental entities (delegated States and the Virgin Islands) and the federal government for the next three years is estimated to be 19,992 hours (\$537,985) and 4,087 hours (\$115,948) respectively, for a total of 24,079 hours (\$653,933). This estimate is based on the average time that governments will expend to carry out the following activities: designate additional MS4s (332.8 hours) and process and review "no exposure" certificates from industrial dischargers (0.5 hour).

Under the existing rule, storm water discharges from light industrial activities identified under §122.26(b)(14)(xi) were exempted from the permit application requirements if they were not exposed to storm water. Today's rule expands the applicability of the "no exposure" exclusion to include all industrial activity regulated under §122.26(b)(14) (except category (x), construction). The "no exposure" provision is applied through the use of a written certification process, thus representing a slight reporting burden increase for "light" industries with "no exposure".

In addition to the information collection, reporting, and record keeping burden for the next three years, today's rule contains information collection requirements that will not begin until three years or more from the effective date of today's rule. These information collection requirements were not included in the information collection request approved by OMB. EPA will submit these burden estimates for OMB approval when it submits ICR 2040-0211 to OMB for renewal in three years. The rule burdens for regulated small MS4s and small construction sites that will be included in the ICR renewal fall into three areas: application for an NPDES permit or submittal of waiver information, record keeping of storm water management activities, and submittal of reports to the permitting authority. There will also be an additional burden for the permitting authority to review this information.

An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR Part 9 and 48 CFR Chapter 15. EPA is amending the table in 40 CFR Part 9 of currently approved ICR control numbers issued by OMB for various regulations to list the first three years of information requirements contained in this final rule.

B. Executive Order 12866

Under Executive Order 12866, [58 FR 51,735 (October 4, 1993)] the Agency must determine whether the regulatory action is "significant" and therefore subject to OMB review and the requirements of the Executive Order. The Order defines "significant regulatory action" as one that is likely to result in a rule that may:

- (1) have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;
- (2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
- (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or
- (4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Pursuant to the terms of Executive Order 12866, it has been determined that this rule is a "significant regulatory action". As such, this action was submitted to OMB for review. Changes made in response to OMB suggestions or recommendations will be documented in the public record.

C. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104-4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with "Federal mandates" that may result in expenditures to State, local, and tribal governments,

in the aggregate, or to the private sector, of \$100 million or more in any one year. Before promulgating an EPA rule for which a *68797 written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective or least burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted.

EPA has determined that today's rule contains a Federal mandate that may result in expenditures of \$100 million or more in any one year for both State, local, and tribal governments, in the aggregate, and the private sector. Accordingly, EPA has prepared under section 202 of the UMRA a written statement which is summarized below.

1. Summary of UMRA Section 202 Written Statement

EPA promulgates today's storm water regulation pursuant to the specific mandate of Clean Water Act section 402(p)(6), as well as sections 301, 308, 402, and 501. (33 U.S.C. sections 1342(p)(6), 1311, 1318, 1342, 1361.) Section 402(p)(6) of the CWA requires that EPA designate sources to be regulated to protect water quality and establish a comprehensive program to regulate those sources.

In the Economic Analysis of the Final Phase II Rule (EA), EPA describes the qualitative and monetized benefits associated with today's rule and then compares the monetized benefits with the estimated costs for the rule. EPA developed detailed estimates of the costs and benefits of complying with each of the incremental requirements imposed by the rule. These estimates, including descriptions of the methodology and assumptions used, are described in detail in the EA. The Agency used two approaches, a national water quality model and national water quality assessment, to estimate the potential benefits of the rule. Both approaches show that the benefits are likely to exceed costs. Exhibit 3 in section III of this preamble summarizes the costs and benefits associated with the basic elements of today's rule.

There are additional benefits to storm water control that cannot be quantified or monetized. Thus, the current estimate of monetized benefits may understate the true value of storm water controls because it omits many ways by which society is likely to benefit from reduced storm water pollution, such as improved aesthetic quality of waters, benefits to wildlife and to threatened and endangered species, cultural values, and biodiversity benefits.

Several commenters asserted that today's rule is an unfunded mandate and that, without funding, the monitoring of the already existing pollution control programs would suffer. In section II.D.3 of the preamble, EPA lists some of the programs that EPA anticipates may provide funds to help develop and, in limited circumstances, implement storm water management programs.

In the EA, EPA reviewed the expected effect of today's rule on the national economy. The Agency determined that the rule will have minimal impacts on the economy or employment. This is because the final rule regulates small MS4s and construction sites under 5 acres, not the typical industrial plants or other non-construction activities that could directly impact production and thus those sectors of the economy.

Discussions with representatives within the construction industry indicate that construction costs will likely be passed on to buyers, thus not seriously affecting the housing industry directly. Flexibility within the rule allows MS4s to tailor the storm water program requirements to their needs and financial position, minimizing impacts. For sedimentation and erosion controls on construction sites, the rule contemplates application of commonly used BMPs to reduce costs for the construction industry. Thus, the rule attempts to use existing practices to prevent pollution, which should minimize im-

pacts on States, Tribes, municipalities and the construction industry.

Thus, EPA concludes that the effect of the rule, if any, on the national economy would be minimal. The benefits of today's rule more than offset any cost impacts on the national economy.

Consistent with the intergovernmental consultation provisions of section 204 of the UMRA and Executive Order 12875, "Enhancing the Intergovernmental Partnership," EPA consulted with the governmental entities affected by this rule.

First, EPA provided States, Tribal and local governments with the opportunity to comment on draft alternative approaches for the proposed rule through publishing a notice requesting information and public comment in the Federal Register on September 9, 1992 (57 FR 41344). This notice presented a full range of regulatory alternatives. At that time, EPA received more than 130 comments, including approximately 43 percent from municipalities and 24 percent from State or Federal agencies. These comments were the genesis of many of the provisions in the today's rule, including reliance on the NPDES program framework (including general permits), providing State and local governments flexibility in selecting additional sources requiring regulation, and focusing on high priority polluters. These comments helped to focus on pollution prevention, watershed-based concerns and BMPs. They also led to certain exemptions for facilities that do not pollute national waters.

In early 1993, EPA, in conjunction with the Rensselaerville Institute, held public and expert meetings to assist in developing and analyzing options for identifying unregulated storm water sources and possible controls. These meetings provided participants an additional opportunity to provide input into the CWA section 402(p)(6) program development process. The final rule addresses several of the key concerns identified in these groups, including provisions that provide flexibility to the States to select sources to be controlled and types of permits to be issued, and flexibility to MS4s in selecting BMPs.

EPA also conducted outreach with representatives of small entities, including small government representatives, in conjunction with the convening of a Small Business Advocacy Review Panel under SBREFA which is discussed in section IV.E. of the preamble.

In addition, EPA established the Urban Wet Weather Flows Advisory Committee under the Federal Advisory Committee Act (FACA). The Urban Wet Weather Flows Advisory Committee, in turn established the Storm Water Phase II Subcommittee. Consistent with FACA, the membership of the Committee and the Storm Water Phase II Subcommittee was balanced among EPA's various outside stakeholder interests, including representatives from State governments, municipal governments (both elected officials and appointed officials) and Tribal governments, as well as industrial and commercial sectors, agriculture, environmental and public interest groups.

In general, municipal and Tribal government representatives supported the NPDES approach in today's rule for the following reasons: It will be uniformly applied on a nationwide basis; it provides flexibility to allow incorporation of State and local programs; it resolves the problem of donut holes that cause water quality impacts in urbanized areas; and it allows co-permitting of small regulated *68798 MS4s with those regulated under the existing storm water program.

In contrast, State representatives sought alternative approaches for State implementation of the storm water program for Phase II sources. State representatives asserted that a non-NPDES alternative approach best facilitated watershed management and avoided duplication and overlapping regulations. These representatives pointed out that there are a variety of State programs—not based on the CWA—implementing effective storm water controls, and that EPA should provide incentives for their implementation and improvement in performance. EPA continues to believe that an NPDES approach is the best approach in order to adequately protect water quality. However, EPA has worked with States on an alternative

approach that provides flexibility within the NPDES framework. The final rule allows States with a watershed permitting approach to phase in permit coverage for MS4s in jurisdictions with a population less than 10,000 and provides two waivers from coverage for small MS4s. This issue is discussed in section II.C of the preamble, Program Framework: NPDES Approach.

Some municipal governments objected that the rule's minimum measures for small MS4s violate the Tenth Amendment insofar as they require the operators of MS4s to regulate third parties according to the "minimum measures" for municipal storm water management programs. EPA disagrees that today's rule is inconsistent with Tenth Amendment principles. Permits issued under today's rule will not compel political subdivisions of States to regulate in their sovereign capacities, but rather to effectively control discharges out of their storm sewer systems in their owner/operator capacities. For MS4s that do not accept this "default" minimum measures-based approach (to control discharges out of the storm sewer system by exercising local powers to control discharges into the storm sewer system), today's rule allows for alternative permits through individual permit applications. EPA made revisions to the rule to allow regulated small MS4s to opt out of the minimum measures approach and instead apply for an individual permit. This issue is discussed in section II.H.3.c.iii of the preamble, Alternative Permit Option/Tenth Amendment.

2. Selection of the Least Costly, Most Cost-Effective or Least Burdensome Alternative That Achieves the Objectives of the Statute

Today's rule evolved over time and incorporated aspects of alternatives that responded to concerns presented by the various stakeholders. A primary characteristic of today's rule is the flexibility it offers both the permitting authority and the regulated sources (small MS4s and small construction sites), by the use of general permits, implementation of BMPs suited to specific locations, and allowing MS4s to develop their own program goals.

In the administrative record supporting the proposed rule, EPA estimated ranges of costs associated with six different options, including a no action option, the proposed option, and four other options that considered various combinations of the following: Covering all the unregulated construction sites below 5 acres, all small MS4s, certain industrial and commercial activities, and all point sources. EPA developed detailed cost estimates for the incremental requirements imposed under the final regulation, and for each of the alternatives, and applied these estimates to the remaining unregulated point sources of storm water. The Agency compared the estimated annual range of costs imposed under today's rule and other major options considered. The range of values for each option included the costs for compliance, including paperwork requirements for the operators of small construction sites, industrial facilities, and MS4s and administrative costs for State and Federal NPDES permitting authorities.

Today's rule reflects the least costly option that achieves the objectives of the statute, thus meeting the requirements of section 205. EPA did not consider "no regulation" to be an "option" because it would not achieve the objectives of CWA section 402(p)(6). A portion of currently unregulated point sources of storm water need to reduce pollutants to protect water quality.

Today's rule is estimated to range in cost from \$847.6 million to \$981.3 million annually, although the cost estimate for the proposed rule was reported as a range of \$138 to \$869 million annually. That range reflected a unit cost range for the municipal minimum measures and a cost range per construction site for soil erosion control. EPA has since revised its cost analysis to allow it to report the current estimate, which is toward the high end of the original cost range. The four other regulatory options considered at proposal involved higher regulatory costs and, therefore, were not selected. These four options and their estimated costs are as follows:

- (1) An option based on the August 7, 1995 direct final rule was estimated to cost between \$2.2 billion and \$78.9 billion

per year.

(2) A "Plan B" option was estimated to cost between \$0.6 billion and \$3.2 billion per year.

(3) An option based on the September 30, 1996 draft proposed rule was estimated to cost between \$0.2 billion and \$3.7 billion per year.

(4) An option based on the February 13, 1997 draft proposed rule, was estimated to cost between \$0.2 billion and \$3.5 billion.

There are three reasons why the costs for these four options exceeded the estimated cost range for the proposed rule. The first two options regulated substantially more municipal governments. The first, third, and fourth options required industrial facilities to apply for permits. Finally, the first three options applied permit requirements to construction sites below 1 acre. Consequently, these options would be more costly than today's rule even with the revised analysis methods used to estimate costs.

3. Effects on Small Governments

Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements. EPA has determined that this rule contains no regulatory requirements that might significantly or uniquely affect small governments. Although today's rule expands the NPDES program (with modifications) to certain MS4s serving populations below 100,000 and although many MS4s are owned by small governments, EPA does not believe today's rule significantly or uniquely affects small governments. As explained in section IV.E. of the preamble, EPA today certifies that the rule will not have a significant impact on small governmental jurisdictions. In addition, the rule will not have a unique impact on small governments because the rule will affect small governments in *68799 to the same extent as (or to a lesser extent than) larger governments that are already covered by the existing storm water rules. Thus, today's rule is not subject to the requirements of section 203 of UMRA.

Notwithstanding this finding, in developing today's rule, EPA provided notice of the requirements to potentially affected small governments; enabled officials of affected small governments to provide meaningful and timely input in the development of regulatory proposals; and informed, educated and advised small governments on compliance with the requirements.

Concerning notice, EPA provided States, local, and Tribal governments with the opportunity to comment on alternative approaches for an early draft of the proposed rule by publishing a notice requesting information and public comment in the Federal Register on September 9, 1992 (57 FR 41344). This notice presented a full range of regulatory alternatives. At that time, EPA received more than 130 comments, including approximately 43 percent from municipalities and 24 percent from State or Federal agencies.

The Agency also provided, through the SBREFA panel process and the FACA process, the opportunity for elected officials of small governments (and their representatives) to meaningfully participate in the development of the rule. Through such participation and exchange, EPA not only notified potentially affected small governments of requirements of the developing rule, but also allowed officials of affected small governments to have meaningful and timely input into

the development of regulatory proposals.

In addition to involving municipalities in the development of the rule, EPA also continues to inform, educate, and advise small governments on compliance with the requirements of today's rule. For example, EPA supported 10 workshops, presented by the American Public Works Association from September 1998 through May 1999, designed to educate local governments on the implementation of the rule. The workshop curriculum included information on a variety of key issues such as anticipated regulatory requirements, agency reporting, best management practices, construction site controls, post construction management for new and redeveloped sites, public education and public involvement strategies, detection and control of illicit discharges, and good housekeeping practices. Moreover, EPA has prepared a series of fact sheets, available on the EPA website at www.epa.gov/owm/sw/toolbox, that explains the rule in detail.

Finally, to assist small governments in implementing the Phase II program, EPA is committed to the following: (1) developing a tool box of implementation strategies; (2) providing written technical assistance, including guidance on developing BMPs and measurable goals; and (3) compiling a comprehensive evaluation of the NPDES municipal storm water Phase II program over the next 13 years.

D. Executive Order 13132

Executive Order 13132, entitled "Federalism" (64 FR 43255, August 10, 1999), requires EPA to develop an accountable process to ensure "meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications." "Policies that have federalism implications" is defined in the Executive Order to include regulations that have "substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government." Under Executive Order 13132, EPA may not issue a regulation that has federalism implications, that imposes substantial direct compliance costs, and that is not required by statute, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by State and local governments, or EPA consults with State and local officials early in the process of developing the proposed regulation. EPA also may not issue a regulation that has federalism implications and that preempts State law unless the Agency consults with State and local officials early in the process of developing the proposed regulation.

If EPA complies by consulting, Executive Order 13132 requires EPA to provide to the Office of Management and Budget (OMB), in a separately identified section of the preamble to the rule, a federalism summary impact statement (FSIS). The FSIS must include a description of the extent of EPA's prior consultation with State and local officials, a summary of the nature of their concerns and the agency's position supporting the need to issue the regulation, and a statement of the extent to which the concerns of State and local officials have been met. For final rules subject to Executive Order 13132, EPA also must submit to OMB a statement from the agency's Federalism Official certifying that EPA has fulfilled the Executive Order's requirements.

EPA has concluded that this final rule may have federalism implications. As discussed above in section IV.C., the rule contains a Federal mandate that may result in the expenditure by State, local and tribal governments, in the aggregate, of \$100 million or more in any one year. Accordingly, the rule may have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. Moreover, the rule will impose substantial direct compliance costs on State or local governments. Accordingly, EPA provides the following FSIS under section 6(b) of Executive Order 13132.

1. Description of the Extent of the Agency's Prior Consultation with State and Local Governments

Although this rule was proposed long before the November 2, 1999 effective date of Executive Order 13132, EPA consulted extensively with affected State and local governments pursuant to the intergovernmental consultation provisions of Executive Order 12875, "Enhancing the Intergovernmental Partnership" (now revoked by Executive Order 13132) and section 204 of UMRA.

First, EPA provided State and local governments the opportunity to comment on draft alternative approaches for the proposed rule through publishing a notice requesting information and public comment in the Federal Register on September 9, 1992 (57 FR 41344). This notice presented a full range of regulatory alternatives. At that time, EPA received more than 130 comments, including approximately 43 percent from municipalities and 24 percent from State or Federal agencies. These comments were the genesis of many of the provisions in the today's rule, including reliance on the NPDES program framework (including general permits), providing State and local governments flexibility in selecting additional sources requiring regulation, and focusing on high priority polluters. These comments helped to focus on pollution prevention, watershed-based concerns and BMPs. They also led to certain exemptions for facilities that do not pollute national waters.

In early 1993, EPA, in conjunction with the Rensselaerville Institute, held public and expert meetings to assist in developing and analyzing options for identifying unregulated storm water sources and possible controls. These meetings provided participants an additional opportunity to provide input into the CWA section 402(p)(6) program *68800 development process. The final rule addresses several of the key concerns identified in these groups, including provisions that provide flexibility to the States to select sources to be controlled and types of permits to be issued, and flexibility to MS4s in selecting BMPs.

EPA also conducted outreach with representatives of small entities, including small governments, in conjunction with the convening of a Small Business Advocacy Review Panel under SBREFA which is discussed in section III.F. of the preamble.

In addition, EPA established the Urban Wet Weather Flows Advisory Committee (FACA), which in turn established the Storm Water Phase II Subcommittee. Consistent with the Federal Advisory Committee Act, the membership of the Committee and the Storm Water Phase II Subcommittee was balanced among EPA's various outside stakeholder interests, including representatives from State governments, municipal governments (both elected officials and appointed officials) and Tribal governments, as well as industrial and commercial sectors, agriculture, environmental and public interest groups.

2. Summary of Nature of State and Local Government Concerns, and Statement of the Extent to Which Those Concerns Have Been Met

In general, municipal government representatives supported the NPDES approach in today's rule for the following reasons: it will be uniformly applied on a nationwide basis; it provides flexibility to allow incorporation of State and local programs; it resolves the problem of donut holes that cause water quality impacts in urbanized areas; and it allows co-permitting of small regulated MS4s with those regulated under the existing storm water program.

In contrast, State representatives sought alternative approaches for State implementation of the storm water program for Phase II sources. State representatives asserted that a non-NPDES alternative approach best facilitated watershed management and avoided duplication and overlapping regulations. These representatives pointed out that there are a variety of State programs—not based on the CWA—implementing effective storm water controls, and that EPA should provide incentives for their implementation and improvement in performance. EPA continues to believe that an NPDES approach is the best approach in order to adequately protect water quality. However, EPA has worked with States on an alternative

approach that provides flexibility within the NPDES framework. The final rule allows States with a watershed permitting approach to phase in permit coverage for MS4s in jurisdictions with a population less than 10,000 and provides two waivers from coverage for small MS4s. This issue is discussed in section II.C of the preamble, Program Framework: NPDES Approach.

Some municipal governments objected that the rule's minimum measures for small MS4s violate the Tenth Amendment insofar as they require the operators of MS4s to regulate third parties according to the "minimum measures" for municipal storm water management programs. EPA disagrees that today's rule is inconsistent with Tenth Amendment principles. Permits issued under today's rule will not compel political subdivisions of States to regulate in their sovereign capacities, but rather to effectively control discharges out of their storm sewer systems in their owner/operator capacities. For MS4s that do not accept this "default" minimum measures-based approach (to control discharges out of the storm sewer system by exercising local powers to control discharges into the storm sewer system), today's rule allows for alternative permits through individual permit applications. EPA made revisions to the rule to allow regulated small MS4s to opt out of the minimum measures approach and instead apply for an individual permit. This issue is discussed in section II.H.3.c.iii of the preamble, Alternative Permit Option/Tenth Amendment.

3. Summary of the Agency's Position Supporting the Need To Issue the Regulation

As discussed more fully in section I.B. above, today's rule is needed because uncontrolled storm water discharges from areas of urban development and construction activity have been shown to have negative impacts on receiving waters by changing the physical, biological, and chemical composition of the water, resulting in an unhealthy environment for aquatic organisms, wildlife, and people. As discussed in section II.C., the NPDES approach in today's rule is needed to ensure uniform application on a nationwide basis, to provide flexibility to allow incorporation of State and local programs, to resolve the problem of donut holes that cause water quality impacts in urbanized areas, and to allow co-permitting of small regulated MS4s with those regulated under the existing storm water program.

The draft final rule was transmitted to OMB on July 6, 1999. Because transmittal occurred before the November 2, 1999 effective date of Executive Order 13132, certification under section 8 of the Executive Order is not required.

E. Regulatory Flexibility Act (RFA), as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), 5 U.S.C. 601 et seq.

The RFA generally requires an Agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations, and small governmental jurisdictions.

For purposes of assessing the impact of today's rule on small entities, small entity is defined as: (1) a building contractor (SIC 15) with up to \$17.0 million in annual revenue; (2) a small governmental jurisdiction that is a government of a city, county, town, school district, or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

After considering the economic impacts of today's final rule on small entities, I certify that this action will not have a significant economic impact on a substantial number of small entities.

Although this final rule will not have a significant economic impact on a substantial number of small entities, EPA nonetheless has tried to reduce the impact of this rule on small entities.

For purposes of evaluating the economic impact of this rule on small governmental jurisdictions, EPA compared annual compliance costs with annual government revenues obtained from the 1992 Census of Governments, using state-specific estimates of annual revenue per capita for municipalities in three population size categories (fewer than 10,000, 10,000-25,000, and 25,000-50,000).

In order to estimate the annual compliance cost for small governmental jurisdictions, EPA used the mean variable municipal cost of \$8.93 per household as calculated in a 1998 study of 121 municipalities conducted by the national Association of Flood and Stormwater Management Agencies (NAFSMA). In addition, EPA used the estimated fixed administrative costs of \$1,545 per municipality for reporting, *68801 recordkeeping, and application requirements for today's rule.

In evaluating the economic impact of this rule on small governmental jurisdictions, EPA determined that compliance costs represent more than 1 percent of estimated revenues for only 10 percent of small governments and more than 3 percent of the revenue for 0.7 percent of these entities. In both absolute and relative terms, EPA does not consider this a significant economic impact on a substantial number of small entities.

EPA normally uses the "sales test" for determining the economic impact on small businesses. Under a sales test, annual compliance costs are compared with the small business's total annual sales. However, the direct application of the sales test is not suitable in this case, because of the uncertainty associated with estimating the number of units an "average" developer/contractor develops or builds in a typical year. For this rule, EPA has approximated the sales test by estimating compliance costs for three sizes of construction sites and comparing them with a representative sale price for three building categories. Although EPA's analysis is not exactly a "sales test," it is similar to the sales test, producing comparable results.

For small building contractors, EPA estimated administrative compliance costs of \$870 per site for applying for coverage, reporting, record keeping, monitoring and preparing a storm water pollution prevention plan. EPA estimated compliance costs for installing soil and erosion controls as ranging from \$1,206 to \$8,709 per site. EPA compliance cost estimates are based on 27 theoretical model construction sites designed to mimic the mostly likely used best management practices around the country.

In evaluating the economic impact on small building contractors, EPA divided the revised compliance costs per construction start by the appropriate homes-to-site ratio for each of the three sizes of construction sites. The average compliance cost per home ranges from approximately \$450 to \$650. EPA concluded that compliance costs are roughly 0.22 to 0.43 percent of both the mean, \$181,300, and median, \$151,000, sale price of a home.

The absence of data to specifically assess annual compliance costs for building contractors as a percentage of annual sales (i.e., a very direct estimate of the impact on potentially affected small businesses) led EPA to perform additional market analysis to examine the ability of potentially affected firms to pass along regulatory costs to buyers for single-family homes constructed subject to today's rule. If the small building contractors covered by the rule are able to pass on the costs of compliance, either completely or partially, to their purchasers, then the rule's impact on these small business entities is significantly reduced. The market analysis shows that demand for homes is not overly sensitive to small changes in price, therefore builders should be able to pass on at least a significant fraction of the compliance costs to buyers.

EPA also assessed the effect of the building contractors' costs on average monthly mortgage rates and on the demand for new homes. Based on that screening analysis, EPA concludes that the costs to building contractors, and the potential changes in housing prices and monthly mortgage payments for single-family home buyers, are not expected to have a

significant impact on the market for single-family houses. In both absolute and relative terms, EPA does not consider this a significant economic impact on a substantial number of small entities.

EPA also certified this rule at proposal. Even though the Agency was not required to, we convened a Small Business Advocacy Review Panel ("Panel") in June 1997. A number of small entity representatives had already been actively involved with EPA through the FACA process, and were, therefore, broadly knowledgeable about the development of the proposed and final rules. Prior to convening the Panel, EPA consulted with the Small Business Administration to identify a group of small entity representatives to advise the Panel. The Agency distributed a briefing package describing its preliminary analysis under the RFA to the small entity representatives (as well as to representatives from OMB and SBA) and conducted two telephone conference calls and an all-day meeting at EPA Headquarters in May of 1997 with small entity representatives. With this preliminary work complete, in June 1997, EPA formally convened the SBREFA Panel, comprising representatives from OMB, SBA, EPA's Office of Water and EPA's Small Business Advocacy Chair. The Panel received written comments from small entity representatives based on their involvement in the earlier meetings, and invited additional comments.

Consistent with requirements of the RFA, the Panel evaluated the assembled materials and small-entity comments on issues related to: (1) a description and the number of small entities that would be regulated; (2) a description of the projected record keeping, reporting and other compliance requirements applicable to small entities; (3) identification of other Federal rules that may duplicate, overlap, or conflict with the proposal to the final rule; and (4) regulatory alternatives that would minimize any significant economic impact of the rule on small entities while accomplishing the stated objectives of the CWA section 402(p)(6).

On August 7, 1997, the Panel provided a Final Report (hereinafter, "Report") to the EPA Administrator. A copy of the Report is included in the docket for the rule. The Panel acknowledged and commended EPA's efforts to work with stakeholders, including small entities, through the FACA process. The SBREFA Panel stated that, because of EPA's extensive outreach and responsiveness in addressing stakeholder concerns, commenters during the SBREFA process raised fewer concerns than might otherwise have been expected. Based on the advice and recommendations of the Panel, today's rule includes a number of provisions designed to minimize any significant impact on small entities. (See Appendix 5).

F. National Technology Transfer And Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 ("NTTAA"), Public Law 104-113, section 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standard bodies. The NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards.

This action does not mandate the use of any particular technical standards, although in designing appropriate BMPs regulated small MS4s and small construction sites are encouraged to use any voluntary consensus standards that may be applicable and appropriate. Because no specific technical standards are included in the rule, section 12(d) of the NTTAA is not applicable.

G. Executive Order 13045

Executive Order 13045: "Protection of Children from Environmental Health Risks and Safety Risks" (62 FR 19885, April 23, 1997) applies to any rule that: (1) Is determined to be "economically *68802 significant" as defined under E.O.

12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the Agency must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency.

This final rule is not subject to E.O. 13045 because it does not concern an environmental health or safety risk that may have a disproportionate effect on children. The rule expands the scope of the existing NPDES permitting program to require small municipalities and small construction sites to regulate their storm water discharges. The rule does not itself, however, establish standards or criteria that would be included in permits for those sources. Such standards or criteria will be developed through other actions, for example, in the establishment of water quality standards or subsequently in the issuance of permits themselves. As such, today's action does not concern an environmental health or safety risk that may have a disproportionate effect on children. To the extent it does address a risk that may have a disproportionate effect on children, expanding the scope of the permitting program will have a corresponding disproportionate benefit to children to protect them from such risk.

H. Executive Order 13084

Under Executive Order 13084, EPA may not issue a regulation that is not required by statute, that significantly or uniquely affects the communities of Indian tribal governments, and that imposes substantial direct compliance costs on those communities, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by the Tribal governments, or EPA consults with those governments. If EPA complies by consulting, Executive Order 13084 requires EPA to provide to the Office of Management and Budget, in a separately identified section of the preamble to the rule, a description of the extent of EPA's prior consultation with representatives of affected Tribal governments, a summary of the nature of their concerns, and a statement supporting the need to issue the regulation. In addition, Executive Order 13084 requires EPA to develop an effective process permitting elected officials and other representatives of Indian Tribal governments "to provide meaningful and timely input in the development of regulatory policies on matters that significantly or uniquely affect their communities."

Today's rule does not significantly or uniquely affect the communities of Indian Tribal governments. Even though the Agency is not required to address Tribes under the Regulatory Flexibility Act, EPA used the same revenue test that was used for municipalities to assess the impact of the rule on communities of Tribal governments and determine that they will not be significantly affected. In addition, the rule will not have a unique impact on the communities of Tribal governments because small municipal governments are also covered by this rule and larger municipal governments are already covered by the existing storm water rules. Accordingly, the requirements of section 3(b) of Executive Order 13084 do not apply to this rule.

I. Congressional Review Act

The Congressional Review Act, 5 U.S.C. section 801 et seq., as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and the Comptroller General of the United States. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the Federal Register. A major rule cannot take effect until 60 days after it is published in the Federal Register. This rule is a "major rule" as defined by 5 U.S.C. 804(2). This rule will be effective on February 7, 2000.

List of Subjects

40 CFR Part 9

Environmental protection, Reporting and recordkeeping requirements.

40 CFR Part 122

Administrative practice and procedure, Confidential business information, Environmental protection, Hazardous substances, Incorporation by reference, Reporting and recordkeeping requirements, Sewage disposal, Waste treatment and disposal, Water pollution control.

40 CFR Part 123

Administrative practice and procedure, Confidential business information, Hazardous materials, Indians—lands, Intergovernmental relations, Penalties, Reporting and recordkeeping requirements, Sewage disposal, Waste treatment and disposal, Water pollution control, Penalties.

40 CFR Part 124

Administrative practice and procedure, Air pollution control, Hazardous waste, Indians—lands, Reporting and recordkeeping requirements, Water pollution control, Water supply.

Dated: October 29, 1999.

Carol M. Browner,

Administrator.

Appendices to the Preamble

Appendix 1 to Preamble—Federally-Recognized American Indian Areas Located Fully or Partially in Bureau of the Census Urbanized Areas

[Based on 1990 Census data]		
State	American Indian Area	Urbanized Area
AZ	Pascua Yacqui Reservation (pt.): Pascua Yacqui Tribe of Arizona	Tucson, AZ (Phase I).
AZ	Salt River Reservation (pt.): Salt River Pima-Maricopa Indian Community of the Salt River Reservation, California	Phoenix, AZ (Phase I).
AZ	San Xavier Reservation (pt.): Tohono O'odham Nation of Arizona (formerly known as the Papago Tribe of the Sells, Gila Bend & San Xavier Reservation)	Tucson, AZ (Phase I).
CA	Augustine Reservation: Augustine Band of Cahuilla Mission of Indians of the Augustine Reservation, CA	Indio- Coachella, CA (Phase I).
CA	Cabazon Reservation: Cabazon Band of	Indio- Coachella, CA (Phase I).

ATTACHMENT 13

Westlaw

West's Ann. Cal. Gov. Code § 17556

Page 1

Effective: October 19, 2010

West's Annotated California Codes Currentness
Government Code (Refs & Annos)
Title 2. Government of the State of California
Division 4. Fiscal Affairs (Refs & Annos)
Part 7. State-Mandated Local Costs (Refs & Annos)
Chapter 4. Identification and Payment of Costs Mandated by the State (Refs & Annos)
Article 1. Commission Procedure (Refs & Annos)
→ § 17556. Findings; costs not mandated upon certain conditions

The commission shall not find costs mandated by the state, as defined in Section 17514, in any claim submitted by a local agency or school district, if, after a hearing, the commission finds any one of the following:

- (a) The claim is submitted by a local agency or school district that requests or previously requested legislative authority for that local agency or school district to implement the program specified in the statute, and that statute imposes costs upon that local agency or school district requesting the legislative authority. A resolution from the governing body or a letter from a delegated representative of the governing body of a local agency or school district that requests authorization for that local agency or school district to implement a given program shall constitute a request within the meaning of this subdivision. This subdivision applies regardless of whether the resolution from the governing body or a letter from a delegated representative of the governing body was adopted or sent prior to or after the date on which the statute or executive order was enacted or issued.
- (b) The statute or executive order affirmed for the state a mandate that has been declared existing law or regulation by action of the courts. This subdivision applies regardless of whether the action of the courts occurred prior to or after the date on which the statute or executive order was enacted or issued.
- (c) The statute or executive order imposes a requirement that is mandated by a federal law or regulation and results in costs mandated by the federal government, unless the statute or executive order mandates costs that exceed the mandate in that federal law or regulation. This subdivision applies regardless of whether the federal law or regulation was enacted or adopted prior to or after the date on which the state statute or executive order was enacted or issued.
- (d) The local agency or school district has the authority to levy service charges, fees, or assessments sufficient to pay for the mandated program or increased level of service. This subdivision applies regardless of whether the authority to levy charges, fees, or assessments was enacted or adopted prior to or after the date on which the statute or executive order was enacted or issued.

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(e) The statute, executive order, or an appropriation in a Budget Act or other bill provides for offsetting savings to local agencies or school districts that result in no net costs to the local agencies or school districts, or includes additional revenue that was specifically intended to fund the costs of the state mandate in an amount sufficient to fund the cost of the state mandate. This subdivision applies regardless of whether a statute, executive order, or appropriation in the Budget Act or other bill that either provides for offsetting savings that result in no net costs or provides for additional revenue specifically intended to fund the costs of the state mandate in an amount sufficient to fund the cost of the state mandate was enacted or adopted prior to or after the date on which the statute or executive order was enacted or issued.

(f) The statute or executive order imposes duties that are necessary to implement, or are expressly included in, a ballot measure approved by the voters in a statewide or local election. This subdivision applies regardless of whether the statute or executive order was enacted or adopted before or after the date on which the ballot measure was approved by the voters.

(g) The statute created a new crime or infraction, eliminated a crime or infraction, or changed the penalty for a crime or infraction, but only for that portion of the statute relating directly to the enforcement of the crime or infraction.

CREDIT(S)

(Added by Stats.1984, c. 1459, § 1. Amended by Stats.1986, c. 879, § 4; Stats.1989, c. 589, § 1; Stats.2004, c. 895 (A.B.2855), § 14; Stats.2005, c. 72 (A.B.138), § 7, eff. July 19, 2005; Stats.2006, c. 538 (S.B.1852), § 279; Stats.2010, c. 719 (S.B.856), § 31, eff. Oct. 19, 2010.)

VALIDITY

A prior version of this section was held unconstitutional as impermissibly broad, in the decision of California School Boards Ass'n v. State (App. 3 Dist. 2009) 90 Cal.Rptr.3d 501, 171 Cal.App.4th 1183.

Current with urgency legislation through Ch. 192 of 2011 Reg.Sess. and Ch. 8 of 2011-2012 1st Ex.Sess

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ATTACHMENT 14

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West's Ann. Cal. Water Code § 13260

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Effective: March 24, 2011

West's Annotated California Codes Currentness

Water Code (Refs & Annos)

Division 7. Water Quality (Refs & Annos)

Chapter 4. Regional Water Quality Control (Refs & Annos)

Article 4. Waste Discharge Requirements (Refs & Annos)

→ § 13260. Reports; actual or proposed waste discharge; fees; regulations; exemptions

(a) Each of the following persons shall file with the appropriate regional board a report of the discharge, containing the information that may be required by the regional board:

(1) A person discharging waste, or proposing to discharge waste, within any region that could affect the quality of the waters of the state, other than into a community sewer system.

(2) A person who is a citizen, domiciliary, or political agency or entity of this state discharging waste, or proposing to discharge waste, outside the boundaries of the state in a manner that could affect the quality of the waters of the state within any region.

(3) A person operating, or proposing to construct, an injection well.

(b) No report of waste discharge need be filed pursuant to subdivision (a) if the requirement is waived pursuant to Section 13269.

(c) Each person subject to subdivision (a) shall file with the appropriate regional board a report of waste discharge relative to any material change or proposed change in the character, location, or volume of the discharge.

(d)(1)(A) Each person who is subject to subdivision (a) or (c) shall submit an annual fee according to a fee schedule established by the state board.

(B) The total amount of annual fees collected pursuant to this section shall equal that amount necessary to recover costs incurred in connection with the issuance, administration, reviewing, monitoring, and enforcement of waste discharge requirements and waivers of waste discharge requirements.

(C) Recoverable costs may include, but are not limited to, costs incurred in reviewing waste discharge reports, prescribing terms of waste discharge requirements and monitoring requirements, enforcing and evaluating com-

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pliance with waste discharge requirements and waiver requirements, conducting surface water and groundwater monitoring and modeling, analyzing laboratory samples, adopting, reviewing, and revising water quality control plans and state policies for water quality control, and reviewing documents prepared for the purpose of regulating the discharge of waste, and administrative costs incurred in connection with carrying out these actions.

(D) In establishing the amount of a fee that may be imposed on a confined animal feeding and holding operation pursuant to this section, including, but not limited to, a dairy farm, the state board shall consider all of the following factors:

(i) The size of the operation.

(ii) Whether the operation has been issued a permit to operate pursuant to Section 1342 of Title 33 of the United States Code.

(iii) Any applicable waste discharge requirement or conditional waiver of a waste discharge requirement.

(iv) The type and amount of discharge from the operation.

(v) The pricing mechanism of the commodity produced.

(vi) Any compliance costs borne by the operation pursuant to state and federal water quality regulations.

(vii) Whether the operation participates in a quality assurance program certified by a regional water quality control board, the state board, or a federal water quality control agency.

(2)(A) Subject to subparagraph (B), the fees collected pursuant to this section shall be deposited in the Waste Discharge Permit Fund, which is hereby created. The money in the fund is available for expenditure by the state board, upon appropriation by the Legislature, solely for the purposes of carrying out this division.

(B)(i) Notwithstanding subparagraph (A), the fees collected pursuant to this section from stormwater dischargers that are subject to a general industrial or construction stormwater permit under the national pollutant discharge elimination system (NPDES) shall be separately accounted for in the Waste Discharge Permit Fund.

(ii) Not less than 50 percent of the money in the Waste Discharge Permit Fund that is separately accounted for pursuant to clause (i) is available, upon appropriation by the Legislature, for expenditure by the regional board with jurisdiction over the permitted industry or construction site that generated the fee to carry out stormwater programs in the region.

(iii) Each regional board that receives money pursuant to clause (ii) shall spend not less than 50 percent of that

money solely on stormwater inspection and regulatory compliance issues associated with industrial and construction stormwater programs.

(3) A person who would be required to pay the annual fee prescribed by paragraph (1) for waste discharge requirements applicable to discharges of solid waste, as defined in Section 40191 of the Public Resources Code, at a waste management unit that is also regulated under Division 30 (commencing with Section 40000) of the Public Resources Code, shall be entitled to a waiver of the annual fee for the discharge of solid waste at the waste management unit imposed by paragraph (1) upon verification by the state board of payment of the fee imposed by Section 48000 of the Public Resources Code, and provided that the fee established pursuant to Section 48000 of the Public Resources Code generates revenues sufficient to fund the programs specified in Section 48004 of the Public Resources Code and the amount appropriated by the Legislature for those purposes is not reduced.

(e) Each person that discharges waste in a manner regulated by this section shall pay an annual fee to the state board. The state board shall establish, by regulation, a timetable for the payment of the annual fee. If the state board or a regional board determines that the discharge will not affect, or have the potential to affect, the quality of the waters of the state, all or part of the annual fee shall be refunded.

(f)(1) The state board shall adopt, by emergency regulations, a schedule of fees authorized under subdivision (d). The total revenue collected each year through annual fees shall be set at an amount equal to the revenue levels set forth in the Budget Act for this activity. The state board shall automatically adjust the annual fees each fiscal year to conform with the revenue levels set forth in the Budget Act for this activity. If the state board determines that the revenue collected during the preceding year was greater than, or less than, the revenue levels set forth in the Budget Act, the state board may further adjust the annual fees to compensate for the over and under collection of revenue.

(2) The emergency regulations adopted pursuant to this subdivision, any amendment thereto, or subsequent adjustments to the annual fees, shall be adopted by the state board in accordance with Chapter 3.5 (commencing with Section 11340) of Part 1 of Division 3 of Title 2 of the Government Code. The adoption of these regulations is an emergency and shall be considered by the Office of Administrative Law as necessary for the immediate preservation of the public peace, health, safety, and general welfare. Notwithstanding Chapter 3.5 (commencing with Section 11340) of Part 1 of Division 3 of Title 2 of the Government Code, any emergency regulations adopted by the state board, or adjustments to the annual fees made by the state board pursuant to this section, shall not be subject to review by the Office of Administrative Law and shall remain in effect until revised by the state board.

(g) The state board shall adopt regulations setting forth reasonable time limits within which the regional board shall determine the adequacy of a report of waste discharge submitted under this section.

(h) Each report submitted under this section shall be sworn to, or submitted under penalty of perjury.

(i) The regulations adopted by the state board pursuant to subdivision (f) shall include a provision that annual

fees shall not be imposed on those who pay fees under the national pollutant discharge elimination system until the time when those fees are again due, at which time the fees shall become due on an annual basis.

(j) A person operating or proposing to construct an oil, gas, or geothermal injection well subject to paragraph (3) of subdivision (a) shall not be required to pay a fee pursuant to subdivision (d) if the injection well is regulated by the Division of Oil and Gas of the Department of Conservation, in lieu of the appropriate California regional water quality control board, pursuant to the memorandum of understanding, entered into between the state board and the Department of Conservation on May 19, 1988. This subdivision shall remain operative until the memorandum of understanding is revoked by the state board or the Department of Conservation.

(k) In addition to the report required by subdivision (a), before a person discharges mining waste, the person shall first submit both of the following to the regional board:

(1) A report on the physical and chemical characteristics of the waste that could affect its potential to cause pollution or contamination. The report shall include the results of all tests required by regulations adopted by the board, any test adopted by the Department of Toxic Substances Control pursuant to Section 25141 of the Health and Safety Code for extractable, persistent, and bioaccumulative toxic substances in a waste or other material, and any other tests that the state board or regional board may require, including, but not limited to, tests needed to determine the acid-generating potential of the mining waste or the extent to which hazardous substances may persist in the waste after disposal.

(2) A report that evaluates the potential of the discharge of the mining waste to produce, over the long term, acid mine drainage, the discharge or leaching of heavy metals, or the release of other hazardous substances.

(l) Except upon the written request of the regional board, a report of waste discharge need not be filed pursuant to subdivision (a) or (c) by a user of recycled water that is being supplied by a supplier or distributor of recycled water for whom a master recycling permit has been issued pursuant to Section 13523.1.

CREDIT(S)

(Added by Stats.1969, c. 482, p. 1063, § 18, operative Jan. 1, 1970. Amended by Stats.1980, c. 656, p. 1834, § 1; Stats.1984, c. 268, § 32.8, eff. June 30, 1984; Stats.1985, c. 653, § 1; Stats.1985, c. 1591, § 4; Stats.1986, c. 31, § 1, eff. March 21, 1986; Stats.1986, c. 1013, § 5, eff. Sept. 23, 1986; Stats.1988, c. 1026, § 1; Stats.1989, c. 627, § 1; Stats.1989, c. 642, § 5; Gov.Reorg.Plan No. 1 of 1991, § 194, eff. July 17, 1991; Stats.1992, c. 211 (A.B.3012), § 2; Stats.1993, c. 656 (A.B.1220), § 57, eff. Oct. 1, 1993; Stats.1995, c. 28 (A.B.1247), § 20; Stats.1997, c. 775 (A.B.1186), § 1; Stats.2002, c. 1124 (A.B.3000), § 56, eff. Sept. 30, 2002; Stats.2003-2004, 1st Ex.Sess., c. 1 (A.B.10), § 3, eff. Oct. 28, 2003; Stats.2011, c. 2 (A.B.95), § 28, eff. March 24, 2011.)

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ATTACHMENT 15

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West's Ann. Cal. Water Code § 13263

Page 1



Effective:[See Text Amendments]

West's Annotated California Codes Currentness
Water Code (Refs & Annos)

Division 7. Water Quality (Refs & Annos)

▣ Chapter 4. Regional Water Quality Control (Refs & Annos)

▣ Article 4. Waste Discharge Requirements (Refs & Annos)

→ § 13263. Discharge requirements; considerations by regional board; review of requirements; notice of requirements; no vested right; master reclamation permit

(a) The regional board, after any necessary hearing, shall prescribe requirements as to the nature of any proposed discharge, existing discharge, or material change in an existing discharge, except discharges into a community sewer system, with relation to the conditions existing in the disposal area or receiving waters upon, or into which, the discharge is made or proposed. 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.

(b) A regional board, in prescribing requirements, need not authorize the utilization of the full waste assimilation capacities of the receiving waters.

(c) The requirements may contain a time schedule, subject to revision in the discretion of the board.

(d) The regional board may prescribe requirements although no discharge report has been filed.

(e) Upon application by any affected person, or on its own motion, the regional board may review and revise requirements. All requirements shall be reviewed periodically.

(f) The regional board shall notify in writing the person making or proposing the discharge or the change therein of the discharge requirements to be met. After receipt of the notice, the person so notified shall provide adequate means to meet the requirements.

(g) No discharge of waste into the waters of the state, whether or not the discharge is made pursuant to waste discharge requirements, shall create a vested right to continue the discharge. All discharges of waste into waters of the state are privileges, not rights.

(h) The regional board may incorporate the requirements prescribed pursuant to this section into a master recyc-

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ling permit for either a supplier or distributor, or both, of recycled water.

(i) The state board or a regional board may prescribe general waste discharge requirements for a category of discharges if the state board or that regional board finds or determines that all of the following criteria apply to the discharges in that category:

(1) The discharges are produced by the same or similar operations.

(2) The discharges involve the same or similar types of waste.

(3) The discharges require the same or similar treatment standards.

(4) The discharges are more appropriately regulated under general discharge requirements than individual discharge requirements.

(j) The state board, after any necessary hearing, may prescribe waste discharge requirements in accordance with this section.

CREDIT(S)

(Added by Stats.1969, c. 482, p. 1063, § 18, operative Jan. 1, 1970. Amended by Stats.1992, c. 211 (A.B.3012), § 3; Stats.1995, c. 28 (A.B.1247), § 21; Stats.1995, c. 421 (S.B.572), § 2.)

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ATTACHMENT 16

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West's Ann. Cal. Water Code § 13274

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Effective: January 1, 2011

West's Annotated California Codes Currentness
Water Code (Refs & Annos)

Division 7. Water Quality (Refs & Annos)

▣ Chapter 4. Regional Water Quality Control (Refs & Annos)

▣ Article 4. Waste Discharge Requirements (Refs & Annos)

→ § 13274. Dewatered, treated, or chemically fixed sewage sludge or other biological solids; general waste discharge requirements; fee; jurisdiction

(a)(1) The state board or a regional board, upon receipt of applications for waste discharge requirements for discharges of dewatered, treated, or chemically fixed sewage sludge and other biological solids, shall prescribe general waste discharge requirements for that sludge and those other solids. General waste discharge requirements shall replace individual waste discharge requirements for sewage sludge and other biological solids, and their prescription shall be considered to be a ministerial action.

(2) The general waste discharge requirements shall set minimum standards for agronomic applications of sewage sludge and other biological solids and the use of that sludge and those other solids as a soil amendment or fertilizer in agriculture, forestry, and surface mining reclamation, and may permit the transportation of that sludge and those other solids and the use of that sludge and those other solids at more than one site. The requirements shall include provisions to mitigate significant environmental impacts, potential soil erosion, odors, the degradation of surface water quality or fish or wildlife habitat, the accidental release of hazardous substances, and any potential hazard to the public health or safety.

(b) The state board or a regional board, in prescribing general waste discharge requirements pursuant to this section, shall comply with Division 13 (commencing with Section 21000) of the Public Resources Code and guidelines adopted pursuant to that division, and shall consult with the State Air Resources Board, the Department of Food and Agriculture, and the Department of Resources Recycling and Recovery.

(c) The state board or a regional board may charge a reasonable fee to cover the costs incurred by the board in the administration of the application process relating to the general waste discharge requirements prescribed pursuant to this section.

(d) Notwithstanding any other law, except as specified in subdivisions (f) to (i), inclusive, general waste discharge requirements prescribed by a regional board pursuant to this section supersede regulations adopted by any other state agency to regulate sewage sludge and other biological solids applied directly to agricultural lands at agronomic rates.

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(e) The state board or a regional board shall review general waste discharge requirements for possible amendment upon the request of any state agency, including, but not limited to, the Department of Food and Agriculture and the State Department of Public Health, if the board determines that the request is based on new information.

(f) This section is not intended to affect the jurisdiction of the Department of Resources Recycling and Recovery to regulate the handling of sewage sludge or other biological solids for composting, deposit in a landfill, or other use.

(g) This section is not intended to affect the jurisdiction of the State Air Resources Board or an air pollution control district or air quality management district to regulate the handling of sewage sludge or other biological solids for incineration.

(h) This section is not intended to affect the jurisdiction of the Department of Food and Agriculture in enforcing Sections 14591 and 14631 of the Food and Agricultural Code and any regulations adopted pursuant to those sections, regarding the handling of sewage sludge and other biological solids sold or used as fertilizer or as a soil amendment.

(i) This section does not restrict the authority of a local government agency to regulate the application of sewage sludge and other biological solids to land within the jurisdiction of that agency, including, but not limited to, the planning authority of the Delta Protection Commission, the resource management plan of which is required to be implemented by local government general plans.

CREDIT(S)

(Added by Stats.1995, c. 613 (S.B.205), § 1. Amended by Stats.1996, c. 124 (A.B.3470), § 154; Stats.1998, c. 485 (A.B.2803), § 162; Stats.2010, c. 288 (S.B.1169), § 23.)

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West's Ann. Cal. Water Code § 13330

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Effective: January 1, 2011

West's Annotated California Codes Currentness
Water Code (Refs & Annos)

Division 7. Water Quality (Refs & Annos)

▣ Chapter 5. Enforcement and Implementation (Refs & Annos)

▣ Article 3. Judicial Review and Enforcement (Refs & Annos)

→ § 13330. Petition for writ of mandate; time limitation; finality of decision or order of board; procedures; Article 7 petitions

(a) Not later than 30 days from the date of service of a copy of a decision or order issued by the state board under this division, other than a decision or order issued pursuant to Article 7 (commencing with Section 13550) of Chapter 7, any aggrieved party may file with the superior court a petition for writ of mandate for review thereof. An aggrieved party must file a petition for reconsideration with the state board to exhaust that party's administrative remedies only if the initial decision or order is issued under authority delegated to an officer or employee of the state board and the state board by regulation has authorized a petition for reconsideration.

(b) A party aggrieved by a final decision or order of a regional board subject to review under Section 13320 may obtain review of the decision or order of the regional board in the superior court by filing in the court a petition for writ of mandate not later than 30 days from the date on which the state board denies review.

(c) The time for filing an action or proceeding subject to Section 21167 of the Public Resources Code for a person who seeks review of the regional board's decision or order under Section 13320, or who seeks reconsideration under a state board regulation authorizing a petition for reconsideration, shall commence upon the state board's completion of that review or reconsideration.

(d) If no aggrieved party petitions for writ of mandate within the time provided by this section, a decision or order of the state board or a regional board shall not be subject to review by any court.

(e) Except as otherwise provided herein, Section 1094.5 of the Code of Civil Procedure shall govern proceedings for which petitions are filed pursuant to this section. For the purposes of subdivision (c) of Section 1094.5 of the Code of Civil Procedure, the court shall exercise its independent judgment on the evidence in any case involving the judicial review of a decision or order of the state board issued under Section 13320, or a decision or order of a regional board for which the state board denies review under Section 13320, other than a decision or order issued under Section 13323.

(f) A party aggrieved by a decision or order issued by the state board under Article 7 (commencing with Section 13550) of Chapter 7 may petition for reconsideration or judicial review in accordance with Chapter 4.

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(commencing with Section 1120) of Part 1 of Division 2.

(g) For purposes of this section, a decision or order includes a final action in an adjudicative proceeding and an action subject to Section 11352 of the Government Code, but does not include an action subject to Section 11353 of the Government Code or the adoption, amendment, or repeal of a regulation under Chapter 3.5 (commencing with Section 11340) of Part 1 of Division 3 of Title 2 of the Government Code.

CREDIT(S)

(Added by Stats.1969, c. 482, p. 1069, § 18, operative Jan. 1, 1970. Amended by Stats.1996, c. 659 (A.B.3036), § 24; Stats.2010, c. 288 (S.B.1169), § 31.)

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Effective:[See Text Amendments]

West's Annotated California Codes Currentness

Water Code (Refs & Annos)

▣ Division 7. Water Quality (Refs & Annos)

▣ Chapter 5.5. Compliance with the Provisions of the Federal Water Pollution Control Act as Amended in 1972 (Refs & Annos)

→ § 13370. Legislative findings and declaration

The Legislature finds and declares as follows:

(a) The Federal Water Pollution Control Act (33 U.S.C. Sec. 1251 et seq.), as amended, provides for permit systems to regulate the discharge of pollutants and dredged or fill material to the navigable waters of the United States and to regulate the use and disposal of sewage sludge.

(b) The Federal Water Pollution Control Act, as amended, provides that permits may be issued by states which are authorized to implement the provisions of that act.

(c) It is in the interest of the people of the state, in order to avoid direct regulation by the federal government of persons already subject to regulation under state law pursuant to this division, to enact this chapter in order to authorize the state to implement the provisions of the Federal Water Pollution Control Act and acts amendatory thereof or supplementary thereto, and federal regulations and guidelines issued pursuant thereto, provided, that the state board shall request federal funding under the Federal Water Pollution Control Act for the purpose of carrying out its responsibilities under this program.

CREDIT(S)

(Added by Stats.1972, c. 1256, p. 2485, § 1, eff. Dec. 19, 1972. Amended by Stats.1978, c. 746, p. 2343, § 1; Stats.1980, c. 676, p. 2028, § 319; Stats.1987, c. 1189, § 1.)

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Effective: January 1, 2004

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Water Code (Refs & Annos)

Division 7. Water Quality (Refs & Annos)

Chapter 5.5. Compliance with the Provisions of the Federal Water Pollution Control Act as Amended in 1972 (Refs & Annos)

→ § 13372. Construction and application of chapter

(a) This chapter shall be construed to ensure consistency with the requirements for state programs implementing the Federal Water Pollution Control Act and acts amendatory thereof or supplementary thereto. To the extent other provisions of this division are consistent with the provisions of this chapter and with the requirements for state programs implementing the Federal Water Pollution Control Act and acts amendatory thereof or supplementary thereto, those provisions apply to actions and procedures provided for in this chapter. The provisions of this chapter shall prevail over other provisions of this division to the extent of any inconsistency. The provisions of this chapter apply only to actions required under the Federal Water Pollution Control Act and acts amendatory thereof or supplementary thereto.

(b) The provisions of Section 13376 requiring the filing of a report for the discharge of dredged or fill material and the provisions of this chapter relating to the issuance of dredged or fill material permits by the state board or a regional board shall be applicable only to discharges for which the state has an approved permit program, in accordance with the provisions of the Federal Water Pollution Control Act, as amended, for the discharge of dredged or fill material.

CREDIT(S)

(Added by Stats.1972, c. 1256, p. 2485, § 1, eff. Dec. 19, 1972. Amended by Stats.1987, c. 1189, § 3; Stats.2003, c. 683 (A.B.897), § 5.)

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West's Annotated California Codes Currentness
Water Code (Refs & Annos)

▣ Division 7. Water Quality (Refs & Annos)

▣ Chapter 5.5. Compliance with the Provisions of the Federal Water Pollution Control Act as Amended in 1972 (Refs & Annos)

→ § 13374. Waste discharge requirements; equivalent to "permits" under federal act

The term "waste discharge requirements" as referred to in this division is the equivalent of the term "permits" as used in the Federal Water Pollution Control Act, as amended.

CREDIT(S)

(Added by Stats. 1972, c. 1256, p. 2485, § 1, eff. Dec. 19, 1972.)

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23 CCR § 2050.5

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Cal. Admin. Code tit. 23, § 2050.5

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Barclays Official California Code of Regulations Currentness

Title 23. Waters

Division 3. State Water Resources Control Board and Regional Water Quality Control Boards

Chapter 6. Review by State Board of Action or Failure to Act by Regional Board

→ § 2050.5. Complete Petitions; Responses; Time Limits.

(a) Upon receipt of a petition that complies with section 2050 the state board may either dismiss the petition pursuant to section 2052, or may provide written notification to the petitioner, informing the discharger (if not the petitioner), the regional board, and other interested persons that they shall have 30 days from the date of mailing such notification to file a response to the petition with the state board. The regional board shall file the administrative record within this 30-day period, including a copy of the tape recording of the regional board action, or a transcript, if available. Responses to petitions and any other submissions shall be served concurrently upon the petitioner, the discharger (if not the petitioner) and the regional board, by any method listed in section 2050(b). Any points and authorities filed in response to the petition shall include citations to documents or the transcript of the regional board hearing where appropriate. The time for filing a response or the administrative record may be extended by the state board. Additional submissions will be allowed only upon written request and at the discretion of the state board.

(b) The state board shall review and act on the petition within 270 days from the date of mailing the notification described in (a), unless a hearing is held by the state board. If a hearing is held, the state board shall act on the petition within 330 days from the date of mailing the notification described in (a), or within 120 days of the close of the hearing, whichever is later. If formal disposition is not made by the state board within these time limits the petition is deemed denied. These time limits may be extended for a period not to exceed 60 days with written agreement from the petitioner. The time limits for formal disposition do not apply while action on a petition is held in abeyance, as provided in section 2050.5(d).

(c) The state board may, on its motion, review a regional board's action or failure to act for any reason, including lack of formal disposition by the state board within the time limits provided in (b).

(d) A petition may be held in abeyance at the request or with the agreement of the petitioner.

(1) A request or agreement to hold a petition in abeyance must be in writing and shall be provided to the state board, the regional board, and the discharger, if not the petitioner.

(2) Petitions may be held in abeyance unless the regional board provides reasonable grounds for objection. For petitions challenging the assessment of administrative civil liability or penalties, written agreement from the regional board is required.

23 CCR § 2050.5

Page 2

Cal. Admin. Code tit. 23, § 2050.5

(3) The time limit for formal disposition shall be tolled during the time a petition is held in abeyance, and shall recommence running when the petition is removed from abeyance.

Note: Authority cited: Section 1058, Water Code. Reference: Section 13320, Water Code.

HISTORY

1. New section filed 3-16-79 as an emergency; effective upon filing (Register 79, No. 11).
2. Certificate of Compliance filed 7-13-79 (Register 79, No. 28).
3. Amendment filed 12-7-81; effective thirtieth day thereafter (Register 81, No. 50).
4. Amendment of section heading and section filed 9-23-2003; operative 10-23-2003 (Register 2003, No. 39).

23 CCR § 2050.5, 23 CA ADC § 2050.5

This database is current through 8/12/11 Register 2011, No. 32

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23 CCR § 2235.2

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Cal. Admin. Code tit. 23, § 2235.2

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Barclays Official California Code of Regulations Currentness

Title 23. Waters

Division 3. State Water Resources Control Board and Regional Water Quality Control Boards

Chapter 9. Waste Discharge Reports and Requirements

Article 3. Waste Discharges from Point Sources to Navigable Waters

→ § 2235.2. Compliance with Regulations of the U.S. Environmental Protection Agency.

Waste discharge requirements for discharge from point sources to navigable waters shall be issued and administered in accordance with the currently applicable federal regulations for the National Pollutant Discharge Elimination System (NPDES) program.

Note: Authority cited: Section 1058, Water Code. Reference: Chapter 5.5 (commencing with Section 13370) of Division 7, Water Code.

23 CCR § 2235.2, 23 CA ADC § 2235.2

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467 U.S. 837, 104 S.Ct. 2778, 21 ERC 1049, 81 L.Ed.2d 694, 14 Env'tl. L. Rep. 20,507
(Cite as: 467 U.S. 837, 104 S.Ct. 2778)

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▷

Supreme Court of the United States
CHEVRON, U.S.A., INC., Petitioner,
v.
NATURAL RESOURCES DEFENSE COUNCIL,
INC., et al.
AMERICAN IRON AND STEEL INSTITUTE, et
al., Petitioners,
v.
NATURAL RESOURCES DEFENSE COUNCIL,
INC., et al.
William D. RUCKELSHAUS, Administrator, En-
vironmental Protection Agency, Petitioner,
v.
NATURAL RESOURCES DEFENSE COUNCIL,
INC., et al.^{FN*}

FN* US Reports Title: Chevron U.S.A.
Inc. v. Natural Resources Defense Council,
Inc.

Nos. 82-1005, 82-1247 and 82-1591.
Argued Feb. 29, 1984.
Decided June 25, 1984.

Rehearing Denied Aug. 16, 1984.

See 468 U.S. 1227, 105 S.Ct. 28, 29.

Petition was filed for review of order of the En-
vironmental Protection Agency. The Court of Ap-
peals, 685 F.2d 718, vacated regulations, and certi-
orari was granted. The Supreme Court, Justice
Stevens, held that Environmental Protection
Agency regulation allowing states to treat all pollu-
tion-emitting devices within same industrial group-
ing as though they were encased within single
"bubble" was based on permissible construction of
term "stationary source" in Clean Air Act Amend-
ments.

Reversed.

West Headnotes

[1] Federal Courts 170B ↪445

170B Federal Courts
170BVII Supreme Court
170BVII(A) In General
170Bk445 k. Appellate Jurisdiction and
Procedure in General. Most Cited Cases
Supreme Court reviews judgments, not opin-
ions.

[2] Statutes 361 ↪219(2)

361 Statutes
361VI Construction and Operation
361VI(A) General Rules of Construction
361k213 Extrinsic Aids to Construction
361k219 Executive Construction
361k219(2) k. Existence of Ambi-
guity. Most Cited Cases

Statutes 361 ↪219(4)

361 Statutes
361VI Construction and Operation
361VI(A) General Rules of Construction
361k213 Extrinsic Aids to Construction
361k219 Executive Construction
361k219(4) k. Erroneous Construc-
tion; Conflict with Statute. Most Cited Cases

When court reviews agency's construction of
statute which it administers, court is confronted
with two questions: whether Congress has directly
spoken on precise question at issue; if statute is si-
lent or ambiguous with respect to specific issue,
question for court is whether agency's answer is
based on permissible construction of statute.

[3] Statutes 361 ↪219(4)

361 Statutes
361VI Construction and Operation
361VI(A) General Rules of Construction
361k213 Extrinsic Aids to Construction
361k219 Executive Construction
361k219(4) k. Erroneous Construc-

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tion; Conflict with Statute. Most Cited Cases
Judiciary is final authority on issues of statutory construction and must reject administrative constructions which are contrary to clear congressional intent.

Considerable weight should be accorded to executive department's construction of statutory scheme it is entrusted to administer.

[4] Statutes 361 ↪ 219(1)

361 Statutes
361VI Construction and Operation
361VI(A) General Rules of Construction
361k213 Extrinsic Aids to Construction
361k219 Executive Construction
361k219(1) k. In General. Most Cited Cases

Court need not conclude that agency's construction of statute which it administered was only one it permissibly could have adopted to uphold construction, or even reading the court would have reached if question initially had arisen in judicial proceeding.

[5] Statutes 361 ↪ 219(1)

361 Statutes
361VI Construction and Operation
361VI(A) General Rules of Construction
361k213 Extrinsic Aids to Construction
361k219 Executive Construction
361k219(1) k. In General. Most Cited Cases

Where legislative delegation to agency on particular question is implicit rather than explicit, court may not substitute its own construction of statutory provision for reasonable interpretation made by administrator of agency.

[6] Statutes 361 ↪ 219(1)

361 Statutes
361VI Construction and Operation
361VI(A) General Rules of Construction
361k213 Extrinsic Aids to Construction
361k219 Executive Construction
361k219(1) k. In General. Most Cited Cases

[7] Environmental Law 149E ↪ 268

149E Environmental Law
149EVI Air Pollution
149Ek266 Particular Sources of Pollution
149Ek268 k. Stationary Sources in General. Most Cited Cases
(Formerly 199k25.6(3.1), 199k25.6(3) Health and Environment)

Environmental Protection Agency regulation allowing states to treat all pollution-emitting devices within same industrial grouping as though they were encased within single "bubble" was based on permissible construction of term "stationary source" in Clean Air Act Amendments. Clean Air Act, §§ 111(a)(3), 172(b)(6), 302(j), as amended, 42 U.S.C.A. §§ 7411(a)(3), 7502(b)(6), 7602(j).

Syllabus ^{FNa1}

FNa1. 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.

The Clean Air Act Amendments of 1977 impose certain requirements on States **2779 that have not achieved the national air quality standards established by the Environmental Protection Agency (EPA) pursuant to earlier legislation, including the requirement that such "nonattainment" States establish a permit program regulating "new or modified major stationary sources" of air pollution. Generally, a permit may not be issued for such sources unless stringent conditions are met. EPA regulations promulgated in 1981 to implement the permit requirement allow a State to adopt a plantwide definition of the term "stationary source," under which an existing plant that contains

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several pollution-emitting devices may install or modify one piece of equipment without meeting the permit conditions if the alteration will not increase the total emissions from the plant, thus allowing a State to treat all of the pollution-emitting devices within the same industrial grouping as though they were encased within a single "bubble." Respondents filed a petition for review in the Court of Appeals, which set aside the regulations embodying the "bubble concept" as contrary to law. Although recognizing that the amended Clean Air Act does not explicitly define what Congress envisioned as a "stationary source" to which the permit program should apply, and that the issue was not squarely addressed in the legislative history, the court concluded that, in view of the purpose of the nonattainment program to improve rather than merely maintain air quality, a plantwide definition was "inappropriate," while stating it was mandatory in programs designed to maintain existing air quality.

Held: The EPA's plantwide definition is a permissible construction of the statutory term "stationary source." Pp. 2781-2793.

(a) With regard to judicial review of an agency's construction of the statute which it administers, if Congress has not directly spoken to the precise question at issue, the question for the court is whether the agency's answer is based on a permissible construction of the statute. Pp. 2781-2783.

(b) Examination of the legislation and its history supports the Court of Appeals' conclusion that Congress did not have a specific intention as to the applicability of the "bubble concept" in these cases. Pp. 2783-2786.

(c) The legislative history of the portion of the 1977 Amendments dealing with nonattainment areas plainly discloses that in the permit program Congress sought to accommodate the conflict between the economic interest in permitting capital improvements to continue and the environmental interest in improving air quality. Pp. 2786-2787.

(d) Prior to the 1977 Amendments, the EPA had used a plantwide definition of the term "source," but in 1980 the EPA ultimately adopted a regulation that, in essence, applied the basic reasoning of the Court of Appeals here, precluding use of the "bubble concept" in nonattainment States' programs designed to enhance air quality. However, when a new administration took office 1981, the EPA, in promulgating the regulations involved here, reevaluated the various arguments that had been advanced in connection with the proper definition of the term "source" and concluded that the term should be given the plantwide definition in nonattainment areas. Pp. 2787-2790.

(e) Parsing the general terms in the text of the amended Clean Air Act—particularly the provisions of §§ 302(j) and 111(a)(3) pertaining to the definition of "source"—does not reveal any actual intent of Congress as to the issue in these cases. To the extent any congressional "intent" can be discerned from the statutory language, it would appear that the listing of overlapping, illustrative terms was intended to enlarge, rather than to confine, the scope of the EPA's power to regulate particular sources in order to effectuate the policies of the Clean Air Act. Similarly, the legislative history is consistent with the view that the EPA should have broad discretion in implementing the policies of the 1977 Amendments. The plantwide definition is fully consistent with the policy of allowing reasonable economic growth, and the EPA has advanced a reasonable explanation for its conclusion that the regulations serve environmental objectives as well. The fact that the EPA has from time to time changed its interpretation of the term "source" does not lead to the conclusion that no deference should be accorded the EPA's interpretation of the statute. An agency, to engage in informed rulemaking, must consider varying interpretations and the wisdom of its policy on a continuing basis. Policy arguments concerning the "bubble concept" should be addressed to legislators or administrators, not to judges. The EPA's interpretation of the statute here represents a reasonable accommodation of

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manifestly competing interests and is entitled to deference. Pp. 2790-2793.

James D. English, Mary-Win O'Brien, and Bernard Kleiman filed a brief for the United Steelworkers of America, AFL-CIO-CLC, as *amicus curiae*.

222 U.S.App.D.C. 268, 685 F.2d 718 (1982), reversed.

Deputy Solicitor General Bator argued the cause for petitioners in all cases. With him on the briefs for petitioner in No. 82-1591 were *Solicitor General Lee, Acting Assistant Attorney General Habicht, Deputy Assistant Attorney General Walker, Mark I. Levy, Anne S. Almy, William F. Pedersen, and Charles S. Carter. Michael H. Salinsky and Kevin M. Fong* filed briefs for petitioner in No. 82-1005. *Robert A. Emmett, David Ferber, Stark Ritchie, Theodore L. Garrett, Patricia A. Barald, Louis E. Tosi, William L. Patberg, Charles F. Lettow, and Barton C. Green* filed briefs for petitioners in No. 82-1247.

*839 *David D. Doniger* argued the cause and filed a brief for respondents.†>>>

† Briefs of *amici curiae* urging reversal were filed for the American Gas Association by *John A. Myler*; for the Mid-America Legal Foundation by *John M. Cannon, Susan W. Wanat, and Ann P. Sheldon*; and for the Pacific Legal Foundation by *Ronald A. Zumbrun and Robin L. Rivett*.

A brief of *amici curiae* urging affirmance was filed for the Commonwealth of Pennsylvania et al. by *LeRoy S. Zimmerman, Attorney General of Pennsylvania, Thomas Y. Au, Duane Woodard, Attorney General of Colorado, Richard L. Griffith, Assistant Attorney General, Joseph I. Lieberman, Attorney General of Connecticut, Robert A. Whitehead, Jr., Assistant Attorney General, James S. Tierney, Attorney General of Maine, Robert Abrams, Attorney General of New York, Marcia J. Cleveland and Mary L. Lyndon, Assistant Attorneys General, Irwin I. Kimmelman, Attorney General of New Jersey, John J. Easton, Jr., Attorney General of Vermont, Merideth Wright, Assistant Attorney General, Bronson C. La Follette, Attorney General of Wisconsin, and Maryann Sumi, Assistant Attorney General.*

Justice STEVENS delivered the opinion of the Court.

In the Clean Air Act Amendments of 1977, Pub.L. 95-95, 91 Stat. 685, Congress enacted certain requirements applicable*840 to States that had not achieved the national air quality standards established by the Environmental Protection Agency (EPA) pursuant to earlier legislation. The amended Clean Air Act required these "nonattainment" States to establish a permit program regulating "new or modified major stationary sources" of air pollution. Generally, a permit may not be issued for a new or modified major stationary source unless several stringent conditions are met.^{FN1} The EPA regulation promulgated to implement this permit requirement allows a State to adopt a plantwide definition of the term "stationary source."^{FN2} Under this definition, an existing plant that contains several pollution-emitting devices may install or modify one piece of equipment without meeting the permit conditions if the alteration will not increase the total emissions from the plant. The question presented by these cases is whether EPA's decision to allow States to treat all of the pollution-emitting devices within the same industrial grouping as though they were encased within a single "bubble" is based on a reasonable construction of the statutory term "stationary source."

FN1. Section 172(b)(6), 42 U.S.C. § 7502(b)(6), provides:

"The plan provisions required by subsection (a) shall—

.....

"(6) require permits for the construction and operation of new or modified major stationary sources in accordance with section 173 (relating to permit requirements)."

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467 U.S. 837, 104 S.Ct. 2778, 21 ERC 1049, 81 L.Ed.2d 694, 14 Env'tl. L. Rep. 20,507
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91 Stat. 747.

FN2. "(i) 'Stationary source' means any building, structure, facility, or installation which emits or may emit any air pollutant subject to regulation under the Act.

"(ii) 'Building, structure, facility, or installation' means all of the pollutant-emitting activities which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control) except the activities of any vessel." 40 CFR §§ 51.18(j)(1)(i) and (ii) (1983).

I.

The EPA regulations containing the plantwide definition of the term stationary source were promulgated on October 14, 1981. 46 Fed.Reg. 50766. Respondents^{FN3} filed a timely petition for review in the United States Court of Appeals for the District of Columbia Circuit pursuant to 42 U.S.C. § 7607(b)(1).^{FN4} The Court of Appeals **2781 set aside the regulations. *Natural Resources Defense Council, Inc. v. Gorsuch*, 222 U.S.App.D.C. 268, 685 F.2d 718 (1982).

FN3. National Resources Defense Council, Inc., Citizens for a Better Environment, Inc., and North Western Ohio Lung Association, Inc.

FN4. Petitioners, Chevron U.S.A. Inc., American Iron and Steel Institute, American Petroleum Institute, Chemical Manufacturers Association, Inc., General Motors Corp., and Rubber Manufacturers Association were granted leave to intervene and argue in support of the regulation.

The court observed that the relevant part of the amended Clean Air Act "does not explicitly define what Congress envisioned as a 'stationary source, to which the permit program ... should apply," and

further stated that the precise issue was not "squarely addressed in the legislative history." *Id.*, at 273, 685 F.2d, at 723. In light of its conclusion that the legislative history bearing on the question was "at best contradictory," it reasoned that "the purposes of the nonattainment program should guide our decision here." *Id.*, at 276, n. 39, 685 F.2d, at 726, n. 39.^{FN5} Based on two of its precedents concerning the applicability of the bubble concept to certain Clean Air Act programs,^{FN6} the court stated that the bubble concept was "mandatory" in programs designed merely to maintain existing air quality, but held that it was "inappropriate" in programs enacted to improve air quality. *Id.*, at 276, 685 F.2d, at 726. Since the purpose of the permit⁸⁴² program—its "raison d'être," in the court's view—was to improve air quality, the court held that the bubble concept was inapplicable in these cases under its prior precedents. *Ibid.* It therefore set aside the regulations embodying the bubble concept as contrary to law. We granted certiorari to review that judgment, 461 U.S. 956, 103 S.Ct. 2427, 77 L.Ed.2d 1314 (1983), and we now reverse.

FN5. The court remarked in this regard:

"We regret, of course, that Congress did not advert specifically to the bubble concept's application to various Clean Air Act programs, and note that a further clarifying statutory directive would facilitate the work of the agency and of the court in their endeavors to serve the legislators' will." 222 U.S.App.D.C., at 276, n. 39, 685 F.2d, at 726, n. 39.

FN6. *Alabama Power Co. v. Costle*, 204 U.S.App.D.C. 51, 636 F.2d 323 (1979); *ASARCO Inc. v. EPA*, 188 U.S.App.D.C. 77, 578 F.2d 319 (1978).

[1] The basic legal error of the Court of Appeals was to adopt a static judicial definition of the term "stationary source" when it had decided that Congress itself had not commanded that definition.

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Respondents do not defend the legal reasoning of the Court of Appeals.^{FN7} Nevertheless, since this Court reviews judgments, not opinions,^{FN8} we must determine whether the Court of Appeals' legal error resulted in an erroneous judgment on the validity of the regulations.

FN7. Respondents argued below that EPA's plantwide definition of "stationary source" is contrary to the terms, legislative history, and purposes of the amended Clean Air Act. The court below rejected respondents' arguments based on the language and legislative history of the Act. It did agree with respondents contention that the regulations were inconsistent with the purposes of the Act, but did not adopt the construction of the statute advanced by respondents here. Respondents rely on the arguments rejected by the Court of Appeals in support of the judgment, and may rely on any ground that finds support in the record. See *Ryerson v. United States*, 312 U.S. 405, 408, 61 S.Ct. 656, 658, 85 L.Ed. 917 (1941); *LeTulle v. Scofield*, 308 U.S. 415, 421, 60 S.Ct. 313, 316, 84 L.Ed. 355 (1940); *Langnes v. Green*, 282 U.S. 531, 533-539, 51 S.Ct. 243, 244-246, 75 L.Ed. 520 (1931).

FN8. E.g., *Black v. Cutter Laboratories*, 351 U.S. 292, 297, 76 S.Ct. 824, 827, 100 L.Ed. 1188 (1956); *J.E. Riley Investment Co. v. Commissioner*, 311 U.S. 55, 59, 61 S.Ct. 95, 97, 85 L.Ed. 36 (1940); *Williams v. Norris*, 12 Wheat. 117, 120, 6 L.Ed. 571 (1827); *McClung v. Silliman*, 6 Wheat. 598, 603, 5 L.Ed. 340 (1821).

II

[2][3][4] When a court reviews an agency's construction of the statute which it administers, it is confronted with two questions. First, always, is the question whether Congress has directly spoken to the precise question at issue. If the intent of Congress is clear, that is the end of the matter; for the

court, *843 as well as the agency, must give effect to the unambiguously expressed intent of Congress.^{FN9} If, however, **2782 the court determines Congress has not directly addressed the precise question at issue, the court does not simply impose its own construction on the statute,^{FN10} as would be necessary in the absence of an administrative interpretation. Rather, if the statute is silent or ambiguous with respect to the specific issue, the question for the court is whether the agency's answer is based on a permissible construction of the statute.^{FN11}

FN9. The judiciary is the final authority on issues of statutory construction and must reject administrative constructions which are contrary to clear congressional intent. See, e.g., *FEC v. Democratic Senatorial Campaign Committee*, 454 U.S. 27, 32, 102 S.Ct. 38, 42, 70 L.Ed.2d 23 (1981); *SEC v. Sloan*, 436 U.S. 103, 117-118, 98 S.Ct. 1702, 1711-1712, 56 L.Ed.2d 148 (1978); *FMC v. Seatrain Lines, Inc.*, 411 U.S. 726, 745-746, 93 S.Ct. 1773, 1784-1785, 36 L.Ed.2d 620 (1973); *Volkswagenwerk v. FMC*, 390 U.S. 261, 272, 88 S.Ct. 929, 935, 19 L.Ed.2d 1090 (1968); *NLRB v. Brown*, 380 U.S. 278, 291, 85 S.Ct. 980, 988, 13 L.Ed.2d 839 (1965); *FTC v. Colgate-Palmolive Co.*, 380 U.S. 374, 385, 85 S.Ct. 1035, 1042, 13 L.Ed.2d 904 (1965); *Social Security Board v. Nierotko*, 327 U.S. 358, 369, 66 S.Ct. 637, 643, 90 L.Ed. 718 (1946); *Burnet v. Chicago Portrait Co.*, 285 U.S. 1, 16, 52 S.Ct. 275, 281, 76 L.Ed. 587 (1932); *Webster v. Luther*, 163 U.S. 331, 342, 16 S.Ct. 963, 967, 41 L.Ed. 179 (1896). If a court, employing traditional tools of statutory construction, ascertains that Congress had an intention on the precise question at issue, that intention is the law and must be given effect.

FN10. See generally, R. Pound, *The Spirit*

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of the Common Law 174-175 (1921).

FN11. The court need not conclude that the agency construction was the only one it permissibly could have adopted to uphold the construction, or even the reading the court would have reached if the question initially had arisen in a judicial proceeding. *FEC v. Democratic Senatorial Campaign Committee*, 454 U.S., at 39, 102 S.Ct., at 46; *Zenith Radio Corp. v. United States*, 437 U.S. 443, 450, 98 S.Ct. 2441, 2445, 57 L.Ed.2d 337 (1978); *Train v. Natural Resources Defense Council, Inc.*, 421 U.S. 60, 75, 95 S.Ct. 1470, 1479, 43 L.Ed.2d 731 (1975); *Udall v. Tallman*, 380 U.S. 1, 16, 85 S.Ct. 792, 801, 13 L.Ed.2d 616 (1965); *Unemployment Compensation Comm'n v. Aragon*, 329 U.S. 143, 153, 67 S.Ct. 245, 250, 91 L.Ed. 136 (1946); *McLaren v. Fleischer*, 256 U.S. 477, 480-481, 41 S.Ct. 577, 577-578, 65 L.Ed. 1052 (1921).

[5] "The power of an administrative agency to administer a congressionally created ... program necessarily requires the formulation of policy and the making of rules to fill any gap left, implicitly or explicitly, by Congress." *Morton v. Ruiz*, 415 U.S. 199, 231, 94 S.Ct. 1055, 1072, 39 L.Ed.2d 270 (1974). If Congress has explicitly left a gap for the agency to fill, there is an express delegation *844 of authority to the agency to elucidate a specific provision of the statute by regulation. Such legislative regulations are given controlling weight unless they are arbitrary, capricious, or manifestly contrary to the statute.^{FN12} Sometimes the legislative delegation to an agency on a particular question is implicit rather than explicit. In such a case, a court may not substitute its own construction of a statutory provision for a reasonable interpretation made by the administrator of an agency.^{FN13}

FN12. See, e.g., *United States v. Morton*, 467 U.S. 822, 834, 104 S.Ct. 2769, 2776, 81 L.Ed.2d 680 (1984) *Schweiker v. Gray*

Panthers, 453 U.S. 34, 44, 101 S.Ct. 2633, 2640, 69 L.Ed.2d 460 (1981); *Batterton v. Francis*, 432 U.S. 416, 424-426, 97 S.Ct. 2399, 2404-2406, 53 L.Ed.2d 448 (1977); *American Telephone & Telegraph Co. v. United States*, 299 U.S. 232, 235-237, 57 S.Ct. 170, 172-173, 81 L.Ed. 142 (1936).

FN13. E.g., *INS v. Jong Ha Wang*, 450 U.S. 139, 144, 101 S.Ct. 1027, 1031, 67 L.Ed.2d 123 (1981); *Train v. Natural Resources Defense Council, Inc.*, 421 U.S., at 87, 95 S.Ct., at 1485.

[6] We have long recognized that considerable weight should be accorded to an executive department's construction of a statutory scheme it is entrusted to administer,^{FN14} and the principle of deference to administrative interpretations.

FN14. *Aluminum Co. of America v. Central Lincoln Peoples' Util. Dist.*, 467 U.S. 380, 389, 104 S.Ct. 2472, 2479-2480, 81 L.Ed.2d 301 (1984); *Blum v. Bacon*, 457 U.S. 132, 141, 102 S.Ct. 2355, 2361, 72 L.Ed.2d 728 (1982); *Union Electric Co. v. EPA*, 427 U.S. 246, 256, 96 S.Ct. 2518, 2525, 49 L.Ed.2d 474 (1976); *Investment Company Institute v. Camp*, 401 U.S. 617, 626-627, 91 S.Ct. 1091, 1097, 28 L.Ed.2d 367 (1971); *Unemployment Compensation Comm'n v. Aragon*, 329 U.S., at 153-154, 67 S.Ct., at 250-251; *NLRB v. Hearst Publications, Inc.*, 322 U.S. 111, 131, 64 S.Ct. 851, 860, 88 L.Ed. 1170 (1944); *McLaren v. Fleischer*, 256 U.S., at 480-481, 41 S.Ct., at 577-578; *Webster v. Luther*, 163 U.S., at 342, 16 S.Ct., at 967; *Brown v. United States*, 113 U.S. 568, 570-571, 5 S.Ct. 648, 649-650, 28 L.Ed. 1079 (1885); *United States v. Moore*, 95 U.S. 760, 763, 24 L.Ed. 588 (1878); *Edwards' Lessee v. Darby*, 12 Wheat. 206, 210, 6 L.Ed. 603 (1827).

"has been consistently followed by this Court

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whenever decision as to the meaning or reach of a statute has involved reconciling conflicting policies, and a full **2783 understanding of the force of the statutory policy in the given situation has depended upon more than ordinary knowledge respecting the matters subjected to agency regulations. See, e.g., *National Broadcasting Co. v. United States*, 319 U.S. 190 [63 S.Ct. 997, 87 L.Ed. 1344]; *Labor Board v. Hearst Publications, Inc.*, 322 U.S. 111 [64 S.Ct. 851, 88 L.Ed. 1170]; *845 *Republic Aviation Corp. v. Labor Board*, 324 U.S. 793 [65 S.Ct. 982, 89 L.Ed. 1372]; *Securities & Exchange Comm'n v. Chenery Corp.*, [332] 322 U.S. 194 [67 S.Ct. 1575, 91 L.Ed. 1995]; *Labor Board v. Seven-Up Bottling Co.*, 344 U.S. 344 [73 S.Ct. 287, 97 L.Ed. 377].

"... If this choice represents a reasonable accommodation of conflicting policies that were committed to the agency's care by the statute, we should not disturb it unless it appears from the statute or its legislative history that the accommodation is not one that Congress would have sanctioned." *United States v. Shimer*, 367 U.S. 374, 382, 383, 81 S.Ct. 1554, 1560, 1561, 6 L.Ed.2d 908 (1961).

Accord Capital Cities Cable, Inc. v. Crisp, 467 U.S. 691, 699-700, 104 S.Ct. 2694, 2700-2701, 81 L.Ed.2d 580 (1984).

In light of these well-settled principles it is clear that the Court of Appeals misconceived the nature of its role in reviewing the regulations at issue. Once it determined, after its own examination of the legislation, that Congress did not actually have an intent regarding the applicability of the bubble concept to the permit program, the question before it was not whether in its view the concept is "inappropriate" in the general context of a program designed to improve air quality, but whether the Administrator's view that it is appropriate in the context of this particular program is a reasonable one. Based on the examination of the legislation and its history which follows, we agree with the Court of Appeals that Congress did not have a specific intention on the applicability of the bubble

concept in these cases, and conclude that the EPA's use of that concept here is a reasonable policy choice for the agency to make.

III

In the 1950's and the 1960's Congress enacted a series of statutes designed to encourage and to assist the States in curtailing air pollution. See generally *Train v. Natural Resources Defense Council, Inc.*, 421 U.S. 60, 63-64, 95 S.Ct. 1470, 1474-1475, 43 L.Ed.2d 731 (1975). The Clean Air Amendments of 1970, Pub.L. 91-604, 84 Stat. 1676, "sharply increased federal authority and responsibility *846 in the continuing effort to combat air pollution," 421 U.S., at 64, 95 S.Ct., at 1474, but continued to assign "primary responsibility for assuring air quality" to the several States, 84 Stat. 1678. Section 109 of the 1970 Amendments directed the EPA to promulgate National Ambient Air Quality Standards (NAAQS's) ^{FN15} and § 110 directed the States to develop plans (SIP's) to implement the standards within specified deadlines. In addition, § 111 provided that major new sources of pollution would be required to conform to technology-based performance standards; the EPA was directed to publish a list of categories of sources of pollution and to establish new source performance standards (NSPS) for each. Section 111(e) prohibited the operation of any new source in violation of a performance standard.

FN15. Primary standards were defined as those whose attainment and maintenance were necessary to protect the public health, and secondary standards were intended to specify a level of air quality that would protect the public welfare.

Section 111(a) defined the terms that are to be used in setting and enforcing standards of performance for new stationary sources. It provided:

"For purposes of this section:

.....

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"(3) The term 'stationary source' means any building, structure, facility, or installation which emits or may emit any air pollutant." 84 Stat. 1683.

**2784 In the 1970 Amendments that definition was not only applicable to the NSPS program required by § 111, but also was made applicable to a requirement of § 110 that each state implementation plan contain a procedure for reviewing the location of any proposed new source and preventing its construction if it would preclude the attainment or maintenance of national air quality standards.^{FN16}

FN16. See §§ 110(a)(2)(D) and 110(a)(4).

In due course, the EPA promulgated NAAQS's, approved SIP's, and adopted detailed regulations governing NSPS's *847 for various categories of equipment. In one of its programs, the EPA used a plantwide definition of the term "stationary source." In 1974, it issued NSPS's for the nonferrous smelting industry that provided that the standards would not apply to the modification of major smelting units if their increased emissions were offset by reductions in other portions of the same plant.^{FN17}

FN17. The Court of Appeals ultimately held that this plantwide approach was prohibited by the 1970 Act, see *ASARCO Inc.*, 188 U.S.App.D.C., at 83-84, 578 F.2d, at 325-327. This decision was rendered after enactment of the 1977 Amendments, and hence the standard was in effect when Congress enacted the 1977 Amendments.

Nonattainment

The 1970 legislation provided for the attainment of primary NAAQS's by 1975. In many areas of the country, particularly the most industrialized States, the statutory goals were not attained.^{FN18} In 1976, the 94th Congress was confronted with this fundamental problem, as well as many others respecting pollution control. As always in this area,

the legislative struggle was basically between interests seeking strict schemes to reduce pollution rapidly to eliminate its social costs and interests advancing the economic concern that strict schemes would retard industrial development with attendant social costs. The 94th Congress, confronting these competing interests, was unable to agree on what response was in the public interest: legislative proposals to deal with nonattainment failed to command the necessary consensus.^{FN19}

FN18. See Report of the National Commission on Air Quality, *To Breathe Clean Air*, 3.3-20 through 3.3-33 (1981).

FN19. Comprehensive bills did pass both Chambers of Congress; the Conference Report was rejected in the Senate. 122 Cong.Rec. 34375-34403, 34405-34418 (1976).

In light of this situation, the EPA published an Emissions Offset Interpretative Ruling in December 1976, see 41 Fed.Reg. 55524, to "fill the gap," as respondents put it, until Congress acted. The Ruling stated that it was intended to *848 address "the issue of whether and to what extent national air quality standards established under the Clean Air Act may restrict or prohibit growth of major new or expanded stationary air pollution sources." *Id.*, at 55524-55525. In general, the Ruling provided that "a major new source may locate in an area with air quality worse than a national standard only if stringent conditions can be met." *Id.*, at 55525. The Ruling gave primary emphasis to the rapid attainment of the statute's environmental goals.^{FN20} Consistent with that emphasis, the construction of every new source in nonattainment areas had to meet the "lowest achievable emission rate" under the current state of the art for that type of facility. See *Ibid.* The 1976 Ruling did not, however, explicitly adopt or reject the "bubble concept."^{FN21}

FN20. For example, it stated:

"Particularly with regard to the primary

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NAAQS's, Congress and the Courts have made clear that economic considerations must be subordinated to NAAQS achievement and maintenance. While the ruling allows for some growth in areas violating a NAAQS if the net effect is to insure further progress toward NAAQS achievement, the Act does not allow economic growth to be accommodated at the expense of the public health." 41 Fed.Reg. 55527 (1976).

FN21. In January 1979, the EPA noted that the 1976 Ruling was ambiguous concerning this issue:

"A number of commenters indicated the need for a more explicit definition of 'source.' Some readers found that it was unclear under the 1976 Ruling whether a plant with a number of different processes and emission points would be considered a single source. The changes set forth below define a source as 'any structure, building, facility, equipment, installation, or operation (or combination thereof) which is located on one or more contiguous or adjacent properties and which is owned or operated by the same person (or by persons under common control.' This definition precludes a large plant from being separated into individual production lines for purposes of determining applicability of the offset requirements." 44 Fed.Reg. 3276.

**2785 IV

The Clean Air Act Amendments of 1977 are a lengthy, detailed, technical, complex, and comprehensive response to a major social issue. A small portion of the statute—91 Stat. *849 745-751 (Part D of Title I of the amended Act, 42 U.S.C. §§ 7501 - 7508)—expressly deals with nonattainment areas. The focal point of this controversy is one phrase in that portion of the Amendments.^{FN22}

FN22. Specifically, the controversy in

these cases involves the meaning of the term "major stationary sources" in § 172(b)(6) of the Act, 42 U.S.C. § 7502(b)(6). The meaning of the term "proposed source" in § 173(2) of the Act, 42 U.S.C. § 7503(2), is not at issue.

Basically, the statute required each State in a nonattainment area to prepare and obtain approval of a new SIP by July 1, 1979. In the interim those States were required to comply with the EPA's interpretative Ruling of December 21, 1976. 91 Stat. 745. The deadline for attainment of the primary NAAQS's was extended until December 31, 1982, and in some cases until December 31, 1987, but the SIP's were required to contain a number of provisions designed to achieve the goals as expeditiously as possible.^{FN23}

FN23. Thus, among other requirements, § 172(b) provided that the SIP's shall—

"(3) require, in the interim, reasonable further progress (as defined in section 171(1)) including such reduction in emissions from existing sources in the area as may be obtained through the adoption, at a minimum, of reasonably available control technology;

"(4) include a comprehensive, accurate, current inventory of actual emissions from all sources (as provided by rule of the Administrator) of each such pollutant for each such area which is revised and resubmitted as frequently as may be necessary to assure that the requirements of paragraph (3) are met and to assess the need for additional reductions to assure attainment of each standard by the date required under paragraph (1);

"(5) expressly identify and quantify the emissions, if any, of any such pollutant which will be allowed to result from the construction and operation of major new or modified stationary sources for each such

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area; ...

.....

“(8) contain emission limitations, schedules of compliance and such other measures as may be necessary to meet the requirements of this section.” 91 Stat. 747.

Section 171(1) provided:

“(1) The term ‘reasonable further progress’ means annual incremental reductions in emissions of the applicable air pollutant (including substantial reductions in the early years following approval or promulgation of plan provisions under this part and section 110(a)(2)(I) and regular reductions thereafter) which are sufficient in the judgment of the Administrator, to provide for attainment of the applicable national ambient air quality standard by the date required in section 172(a).” Id., at 746.

*850 Most significantly for our purposes, the statute provided that each plan shall

“(6) require permits for the construction and operation of new or modified major stationary sources in accordance with section 173....” Id., 747.

Before issuing a permit, § 173 requires (1) the state agency to determine that there will be sufficient emissions reductions in the region to offset the emissions from the new source and also to allow for reasonable further progress toward attainment, or that the increased emissions will not exceed an allowance for growth established pursuant to § 172(b)(5); (2) the applicant to certify that his other sources in the State are in compliance with the SIP, (3) the agency to determine that the applicable SIP is otherwise being implemented, and (4) the proposed source to comply with the lowest achievable emission rate (LAER).^{FN24}

FN24. Section 171(3) provides:

“(3) The term ‘lowest achievable emission rate’ means for any source, that rate of emissions which reflects—

“(A) the most stringent emission limitation which is contained in the implementation plan of any State for such class or category of source, unless the owner or operator of the proposed source demonstrates that such limitations are not achievable, or

“(B) the most stringent emission limitation which is achieved in practice by such class or category of source, whichever is more stringent. “In no event shall the application of this term permit a proposed new or modified source to emit any pollutant in excess of the amount allowable under applicable new source standards of performance.”

The LAER requirement is defined in terms that make it even more stringent than the applicable new source performance standard developed under § 111 of the Act, as amended by the 1970 statute.

**2786. *851. The 1977 Amendments contain no specific reference to the “bubble concept.” Nor do they contain a specific definition of the term “stationary source,” though they did not disturb the definition of “stationary source” contained in § 111(a)(3), applicable by the terms of the Act to the NSPS program. Section 302(j), however, defines the term “major stationary source” as follows:

“(j) Except as otherwise expressly provided, the terms ‘major stationary source’ and ‘major emitting facility’ mean any stationary facility or source of air pollutants which directly emits, or has the potential to emit, one hundred tons per year or more of any air pollutant (including any major emitting facility or source of fugitive emissions of any such pollutant, as determined by rule by the Administrator).” 91 Stat. 770.

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V

The legislative history of the portion of the 1977 Amendments dealing with nonattainment areas does not contain any specific comment on the "bubble concept" or the question whether a plantwide definition of a stationary source is permissible under the permit program. It does, however, plainly disclose that in the permit program Congress sought to accommodate the conflict between the economic interest in permitting capital improvements to continue and the environmental interest in improving air quality. Indeed, the House Committee Report identified the economic interest as one of the "two main purposes" of this section of the bill. It stated:

"Section 117 of the bill, adopted during full committee markup establishes a new section 127 of the Clean Air Act. The section has two main purposes: (1) to allow reasonable economic growth to continue in an area while making reasonable further progress to assure attainment of the standards by a fixed date; and (2) to allow *852 States greater flexibility for the former purpose than EPA's present interpretative regulations afford.

"The new provision allows States with nonattainment areas to pursue one of two options. First, the State may proceed under EPA's present 'tradeoff' or 'offset' ruling. The Administrator is authorized, moreover, to modify or amend that ruling in accordance with the intent and purposes of this section.

"The State's second option would be to revise its implementation plan in accordance with this new provision." H.R.Rep. No. 95-294, p. 211 (1977), U.S.Code Cong. & Admin.News 1977, pp. 1077, 1290.^{FN25}

FN25. During the floor debates Congressman Waxman remarked that the legislation struck

"a proper balance between environmental

controls and economic growth in the dirty air areas of America.... There is no other single issue which more clearly poses the conflict between pollution control and new jobs. We have determined that neither need be compromised....

"This is a fair and balanced approach, which will not undermine our economic vitality, or impede achievement of our ultimate environmental objectives." 123 Cong.Rec. 27076 (1977).

The second "main purpose" of the provision—allowing the States "greater flexibility" than the EPA's interpretative Ruling—as well as the reference to the EPA's authority to amend its Ruling in accordance with the intent of the section, is entirely consistent with the view that Congress did not intend to freeze the definition of "source" contained in the existing regulation into a rigid statutory requirement.

The portion of the Senate Committee Report dealing with nonattainment areas states generally that it was intended to "supersede the EPA administrative approach," and that expansion should be permitted if a State could "demonstrate that these facilities can be accommodated within its overall plan to provide for attainment of air quality standards." S.Rep. No. 95-127, **2787 p. 55 (1977). The Senate Report notes the value of "case-by-case review of each new or modified major source of pollution that seeks to locate in a region exceeding an ambient standard," explaining that such a review "requires matching reductions from existing sources against *853 emissions expected from the new source in order to assure that introduction of the new source will not prevent attainment of the applicable standard by the statutory deadline." Ibid. This description of a case-by-case approach to plant additions, which emphasizes the net consequences of the construction or modification of a new source, as well as its impact on the overall achievement of the national standards, was not, however, addressed

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to the precise issue raised by these cases.

Senator Muskie made the following remarks:

"I should note that the test for determining whether a new or modified source is subject to the EPA interpretative regulation [the Offset Ruling]—and to the permit requirements of the revised implementation plans under the conference bill—is whether the source will emit a pollutant into an area which is exceeding a national ambient air quality standard for that pollutant—or precursor. Thus, a new source is still subject to such requirements as 'lowest achievable emission rate' even if it is constructed as a replacement for an older facility resulting in a net reduction from previous emission levels.

"A source—including an existing facility ordered to convert to coal—is subject to all the nonattainment requirements as a modified source if it makes any physical change which increases the amount of any air pollutant for which the standards in the area are exceeded." 123 Cong.Rec. 26847 (1977).

VI

As previously noted, prior to the 1977 Amendments, the EPA had adhered to a plantwide definition of the term "source" under a NSPS program. After adoption of the 1977 Amendments, proposals for a plantwide definition were considered in at least three formal proceedings.

In January 1979, the EPA considered the question whether the same restriction on new construction in nonattainment areas that had been included in its December 1976 Ruling *854 should be required in the revised SIP's that were scheduled to go into effect in July 1979. After noting that the 1976 Ruling was ambiguous on the question "whether a plant with a number of different processes and emission points would be considered a single source," 44 Fed.Reg. 3276 (1979), the EPA, in effect, provided a bifurcated answer to that question. In those areas that did not have a revised SIP

in effect by July 1979, the EPA rejected the plantwide definition; on the other hand, it expressly concluded that the plantwide approach would be permissible in certain circumstances if authorized by an approved SIP. It stated:

"Where a state implementation plan is revised and implemented to satisfy the requirements of Part D, including the reasonable further progress requirement, the plan requirements for major modifications may exempt modifications of existing facilities that are accompanied by intrasource offsets so that there is no net increase in emissions. The agency endorses such exemptions, which would provide greater flexibility to sources to effectively manage their air emissions at least cost." Ibid.^{FN26}

FN26. In the same Ruling, the EPA added:

"The above exemption is permitted under the SIP because, to be approved under Part D, plan revisions due by January 1979 must contain adopted measures assuring that reasonable further progress will be made. Furthermore, in most circumstances, the measures adopted by January 1979 must be sufficient to actually provide for attainment of the standards by the dates required under the Act, and in all circumstances measures adopted by 1982 must provide for attainment. See Section 172 of the Act and 43 FR 21673-21677 (May 19, 1978). Also, Congress intended under Section 173 of the Act that States would have some latitude to depart from the strict requirements of this Ruling when the State plan is revised and is being carried out in accordance with Part D. Under a Part D plan, therefore, there is less need to subject a modification of an existing facility to LAER and other stringent requirements if the modification is accompanied by sufficient intrasource offsets so that there is no net increase in emissions." 44 Fed.Reg. 3277 (1979).

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****2788 *855** In April, and again in September 1979, the EPA published additional comments in which it indicated that revised SIP's could adopt the plantwide definition of source in nonattainment areas in certain circumstances. See *id.*, at 20372, 20379, 51924, 51951, 51958. On the latter occasion, the EPA made a formal rulemaking proposal that would have permitted the use of the "bubble concept" for new installations within a plant as well as for modifications of existing units. It explained:

" 'Bubble' Exemption: The use of offsets inside the same source is called the 'bubble.' EPA proposes use of the definition of 'source' (see above) to limit the use of the bubble under nonattainment requirements in the following respects:

"i. Part D SIPs that include all requirements needed to assure reasonable further progress and attainment by the deadline under section 172 and that are being carried out need not restrict the use of a plantwide bubble, the same as under the PSD proposal.

"ii. Part D SIPs that do not meet the requirements specified must limit use of the bubble by including a definition of 'installation' as an identifiable piece of process equipment."^{FN27}

FN27. *Id.*, at 51926. Later in that Ruling, the EPA added:

"However, EPA believes that complete Part D SIPs, which contain adopted and enforceable requirements sufficient to assure attainment, may apply the approach proposed above for PSD, with plant-wide review but no review of individual pieces of equipment. Use of only a plant-wide definition of source will permit plant-wide offsets for avoiding NSR of new or modified pieces of equipment. However, this is only appropriate once a SIP is adopted that will assure the reductions in existing emissions necessary for attainment. See 44 FR

3276 col. 3 (January 16, 1979). If the level of emissions allowed in the SIP is low enough to assure reasonable further progress and attainment, new construction or modifications with enough offset credit to prevent an emission increase should not jeopardize attainment." *Id.*, at 51933.

***856** Significantly, the EPA expressly noted that the word "source" might be given a plantwide definition for some purposes and a narrower definition for other purposes. It wrote:

"Source means any building structure, facility, or installation which emits or may emit any regulated pollutant. 'Building, structure, facility or installation' means plant in PSD areas and in nonattainment areas except where the growth prohibitions would apply or where no adequate SIP exists or is being carried out." *Id.*, at 51925.^{FN28}

FN28. In its explanation of why the use of the "bubble concept" was especially appropriate in preventing significant deterioration (PSD) in clean air areas, the EPA stated: "In addition, application of the bubble on a plant-wide basis encourages voluntary upgrading of equipment, and growth in productive capacity." *Id.*, at 51932.

The EPA's summary of its proposed Ruling discloses a flexible rather than rigid definition of the term "source" to implement various policies and programs:

"In summary, EPA is proposing two different ways to define source for different kinds of NSR programs:

"(1) For PSD and complete Part D SIPs, review would apply only to plants, with an unrestricted plant-wide bubble.

"(2) For the offset ruling, restrictions on construction, and incomplete Part D SIPs, review

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would apply to both plants and individual pieces of process equipment, causing the plant-wide bubble not to apply for new and modified major pieces of equipment.

"In addition, for the restrictions on construction, EPA is proposing to define 'major modification' so as to prohibit the bubble entirely. Finally, an alternative discussed but not favored is to have only pieces of process equipment reviewed, resulting in no plant-wide bubble and allowing minor pieces of equipment to escape**2789 NSR *857 regardless of whether they are within a major plant." *Id.*, at 51934.

In August 1980, however, the EPA adopted a regulation that, in essence, applied the basic reasoning of the Court of Appeals in these cases. The EPA took particular note of the two then-recent Court of Appeals decisions, which had created the bright-line rule that the "bubble concept" should be employed in a program designed to maintain air quality but not in one designed to enhance air quality. Relying heavily on those cases,^{FN29} EPA adopted a dual definition of "source" for nonattainment areas that required a permit whenever a change in either the entire plant, or one of its components, would result in a significant increase in emissions even if the increase was completely offset by reductions elsewhere in the plant. The EPA expressed the opinion that this interpretation was "more consistent with congressional intent" than the plantwide definition because it "would bring in more sources or modifications for review," 45 Fed.Reg. 52697 (1980), but its primary legal analysis was predicated on the two Court of Appeals decisions.

FN29. "The dual definition also is consistent with Alabama Power and ASARCO. Alabama Power held that EPA had broad discretion to define the constituent terms of 'source' so as best to effectuate the purposes of the statute. Different definitions of 'source' can therefore be used for different sections of the statute....

"Moreover, Alabama Power and ASARCO taken together suggest that there is a distinction between Clean Air Act programs designed to enhance air quality and those designed only to maintain air quality....

.....

"Promulgation of the dual definition follows the mandate of Alabama Power, which held that, while EPA could not define 'source' as a combination of sources, EPA had broad discretion to define 'building,' 'structure,' 'facility,' and 'installation' so as to best accomplish the purposes of the Act." 45 Fed.Reg. 52697 (1980).

In 1981 a new administration took office and initiated a "Government-wide reexamination of regulatory burdens and complexities." 46 Fed.Reg. 16281. In the context of that *858 review, the EPA reevaluated the various arguments that had been advanced in connection with the proper definition of the term "source" and concluded that the term should be given the same definition in both nonattainment areas and PSD areas.

In explaining its conclusion, the EPA first noted that the definitional issue was not squarely addressed in either the statute or its legislative history and therefore that the issue involved an agency "judgment as how to best carry out the Act." *Ibid.* It then set forth several reasons for concluding that the plantwide definition was more appropriate. It pointed out that the dual definition "can act as a disincentive to new investment and modernization by discouraging modifications to existing facilities" and "can actually retard progress in air pollution control by discouraging replacement of older, dirtier processes or pieces of equipment with new, cleaner ones." *Ibid.* Moreover, the new definition "would simplify EPA's rules by using the same definition of 'source' for PSD, nonattainment new source review and the construction moratorium. This reduces confusion and inconsistency." *Ibid.*

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Finally, the agency explained that additional requirements that remained in place would accomplish the fundamental purposes of achieving attainment with NAAQS's as expeditiously as possible. ^{FN30} These conclusions were ~~**2790~~ expressed ~~*859~~ in a proposed rulemaking in August 1981 that was formally promulgated in October. See *id.*, at 50766.

FN30. It stated:

"5. States will remain subject to the requirement that for all nonattainment areas they demonstrate attainment of NAAQS as expeditiously as practicable and show reasonable further progress toward such attainment. Thus, the proposed change in the mandatory scope of nonattainment new source review should not interfere with the fundamental purpose of Part D of the Act.

"6. New Source Performance Standards (NSPS) will continue to apply to many new or modified facilities and will assure use of the most up-to-date pollution control techniques regardless of the applicability of nonattainment area new source review.

"7. In order to avoid nonattainment area new source review, a major plant undergoing modification must show that it will not experience a significant net increase in emissions. Where overall emissions increase significantly, review will continue to be required." 46 Fed.Reg. 16281 (1981).

VII

[7] In this Court respondents expressly reject the basic rationale of the Court of Appeals' decision. That court viewed the statutory definition of the term "source" as sufficiently flexible to cover either a plantwide definition, a narrower definition covering each unit within a plant, or a dual definition that could apply to both the entire "bubble" and its components. It interpreted the policies of the

statute, however, to mandate the plantwide definition in programs designed to maintain clean air and to forbid it in programs designed to improve air quality. Respondents place a fundamentally different construction on the statute. They contend that the text of the Act requires the EPA to use a dual definition—if either a component of a plant, or the plant as a whole, emits over 100 tons of pollutant, it is a major stationary source. They thus contend that the EPA rules adopted in 1980, insofar as they apply to the maintenance of the quality of clean air, as well as the 1981 rules which apply to nonattainment areas, violate the statute.^{FN31}

FN31. "What EPA may not do, however, is define all four terms to mean only plants. In the 1980 PSD rules, EPA did just that. EPA compounded the mistake in the 1981 rules here under review, in which it abandoned the dual definition." Brief for Respondents 29, n. 56.

Statutory Language

The definition of the term "stationary source" in § 111(a)(3) refers to "any building, structure, facility, or installation" which emits air pollution. See *supra*, at 2784. This definition is applicable only to the NSPS program by the express terms of the statute; the text of the statute does not make this definition^{*860} applicable to the permit program. Petitioners therefore maintain that there is no statutory language even relevant to ascertaining the meaning of stationary source in the permit program aside from § 302(j), which defines the term "major stationary source." See *supra*, at 2786. We disagree with petitioners on this point.

The definition in § 302(j) tells us what the word "major" means—a source must emit at least 100 tons of pollution to qualify—but it sheds virtually no light on the meaning of the term "stationary source." It does equate a source with a facility—a "major emitting facility" and a "major stationary source" are synonymous under § 302(j). The ordinary meaning of the term "facility" is some collection of integrated elements which has been de-

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signed and constructed to achieve some purpose. Moreover, it is certainly no affront to common English usage to take a reference to a major facility or a major source to connote an entire plant as opposed to its constituent parts. Basically, however, the language of § 302(j) simply does not compel any given interpretation of the term "source."

Respondents recognize that, and hence point to § 111(a)(3). Although the definition in that section is not literally applicable to the permit program, it sheds as much light on the meaning of the word "source" as anything in the statute.^{FN32} As respondents point out, use of the words "building, structure, facility, or installation," as the definition of source, could be read to impose the permit conditions on an individual building that is a part of a plant.^{FN33} A "word may have a character of its own not to be submerged by its association." *861 *Russell Motor Car Co. v. United States*, 261 U.S. 514, 519, 43 S.Ct. 428, 429, 67 L.Ed. 778 (1923). On the other hand, the meaning of a word must be ascertained in the context of achieving particular objectives, and the words associated with it may **2791 indicate that the true meaning of the series is to convey a common idea. The language may reasonably be interpreted to impose the requirement on any discrete, but integrated, operation which pollutes. This gives meaning to all of the terms—a single building, not part of a larger operation, would be covered if it emits more than 100 tons of pollution, as would any facility, structure, or installation. Indeed, the language itself implies a "bubble concept" of sorts: each enumerated item would seem to be treated as if it were encased in a bubble. While respondents insist that each of these terms must be given a discrete meaning, they also argue that § 111(a)(3) defines "source" as that term is used in § 302(j). The latter section, however, equates a source with a facility, whereas the former defines "source" as a facility, among other items.

FN32. We note that the EPA in fact adopted the language of that definition in its regulations under the permit program. 40

CFR §§ 51.18(j)(1)(i), (ii) (1983).

FN33. Since the regulations give the States the option to define an individual unit as a source, see 40 CFR § 51.18(j)(1) (1983), petitioners do not dispute that the terms can be read as respondents suggest.

We are not persuaded that parsing of general terms in the text of the statute will reveal an actual intent of Congress.^{FN34} *862 We know full well that this language is not dispositive; the terms are overlapping and the language is not precisely directed to the question of the applicability of a given term in the context of a larger operation. To the extent any congressional "intent" can be discerned from this language, it would appear that the listing of overlapping, illustrative terms was intended to enlarge, rather than to confine, the scope of the agency's power to regulate particular sources in order to effectuate the policies of the Act.

FN34. The argument based on the text of § 173, which defines the permit requirements for nonattainment areas, is a classic example of circular reasoning. One of the permit requirements is that "the proposed source is required to comply with the lowest achievable emission rate" (LAER). Although a State may submit a revised SIP that provides for the waiver of another requirement—the "offset condition"—the SIP may not provide for a waiver of the LAER condition for any proposed source. Respondents argue that the plantwide definition of the term "source" makes it unnecessary for newly constructed units within the plant to satisfy the LAER requirement if their emissions are offset by the reductions achieved by the retirement of older equipment. Thus, according to respondents, the plantwide definition allows what the statute explicitly prohibits—the waiver of the LAER requirement for the newly constructed units. But this argument proves nothing because the statute does not

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prohibit the waiver unless the proposed new unit is indeed subject to the permit program. If it is not, the statute does not impose the LAER requirement at all and there is no need to reach any waiver question. In other words, § 173 of the statute merely deals with the consequences of the definition of the term "source" and does not define the term.

Legislative History

In addition, respondents argue that the legislative history and policies of the Act foreclose the plantwide definition, and that the EPA's interpretation is not entitled to deference because it represents a sharp break with prior interpretations of the Act.

Based on our examination of the legislative history, we agree with the Court of Appeals that it is unilluminating. The general remarks pointed to by respondents "were obviously not made with this narrow issue in mind and they cannot be said to demonstrate a Congressional desire...." *Jewell Ridge Coal Corp. v. Mine Workers*, 325 U.S. 161, 168-169, 65 S.Ct. 1063, 1067-1068, 89 L.Ed. 1534 (1945). Respondents' argument based on the legislative history relies heavily on Senator Muskie's observation that a new source is subject to the LAER requirement.^{FN35} But the full statement is ambiguous and like the text of § 173 itself, this comment does not tell us what a new source is, much less that it is to have an inflexible definition. We find that the legislative history as a whole is silent on the precise issue before us. It is, however, consistent with the view that the EPA should have broad discretion in implementing the policies of the 1977 Amendments.

FN35. See *supra*, at 2787. We note that Senator Muskie was not critical of the EPA's use of the "bubble concept" in one NSPS program prior to the 1977 amendments. See *ibid*.

*863 More importantly, that history plainly

identifies the policy concerns that motivated the enactment; the plantwide definition is fully consistent with one of those concerns**2792—the allowance of reasonable economic growth—and, whether or not we believe it most effectively implements the other, we must recognize that the EPA has advanced a reasonable explanation for its conclusion that the regulations serve the environmental objectives as well. See *supra*, at 2789-2790, and n. 29; see also *supra*, at 2788, n. 27. Indeed, its reasoning is supported by the public record developed in the rulemaking process,^{FN36} as well as by certain private studies.^{FN37}

FN36. See, for example, the statement of the New York State Department of Environmental Conservation, pointing out that denying a source owner flexibility in selecting options made it "simpler and cheaper to operate old, more polluting sources than to trade up...." App. 128-129.

FN37. "Economists have proposed that economic incentives be substituted for the cumbersome administrative-legal framework. The objective is to make the profit and cost incentives that work so well in the marketplace work for pollution control... [The 'bubble' or 'netting' concept] is a first attempt in this direction. By giving a plant manager flexibility to find the places and processes within a plant that control emissions most cheaply, pollution control can be achieved more quickly and cheaply." L. Lave & G. Omenn, *Cleaning Air: Reforming the Clean Air Act* 28 (1981) (footnote omitted).

Our review of the EPA's varying interpretations of the word "source"—both before and after the 1977 Amendments—convinces us that the agency primarily responsible for administering this important legislation has consistently interpreted it flexibly—not in a sterile textual vacuum, but in the context of implementing policy decisions in a technical and complex arena. The fact that the agency

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has from time to time changed its interpretation of the term "source" does not, as respondents argue, lead us to conclude that no deference should be accorded the agency's interpretation of the statute. An initial agency interpretation is not instantly carved in stone. On the contrary, the agency, to engage in informed rulemaking, must consider varying interpretations *864 and the wisdom of its policy on a continuing basis. Moreover, the fact that the agency has adopted different definitions in different contexts adds force to the argument that the definition itself is flexible, particularly since Congress has never indicated any disapproval of a flexible reading of the statute.

Significantly, it was not the agency in 1980, but rather the Court of Appeals that read the statute inflexibly to command a plantwide definition for programs designed to maintain clean air and to forbid such a definition for programs designed to improve air quality. The distinction the court drew may well be a sensible one, but our labored review of the problem has surely disclosed that it is not a distinction that Congress ever articulated itself, or one that the EPA found in the statute before the courts began to review the legislative work product. We conclude that it was the Court of Appeals, rather than Congress or any of the decisionmakers who are authorized by Congress to administer this legislation, that was primarily responsible for the 1980 position taken by the agency.

Policy

The arguments over policy that are advanced in the parties' briefs create the impression that respondents are now waging in a judicial forum a specific policy battle which they ultimately lost in the agency and in the 32 jurisdictions opting for the "bubble concept," but one which was never waged in the Congress. Such policy arguments are more properly addressed to legislators or administrators, not to judges.^{FN38}

FN38. Respondents point out if a brand new factory that will emit over 100 tons of pollutants is constructed in a nonattain-

ment area, that plant must obtain a permit pursuant to § 172(b)(6) and in order to do so, it must satisfy the § 173 conditions, including the LAER requirement. Respondents argue if an old plant containing several large emitting units is to be modernized by the replacement of one or more units emitting over 100 tons of pollutant with a new unit emitting less—but still more than 100 tons—the result should be no different simply because "it happens to be built not at a new site, but within a pre-existing plant." Brief for Respondents 4.

*865 In these cases, the Administrator's interpretation represents a reasonable accommodation of manifestly competing interests and is entitled to deference: the regulatory scheme is technical and complex,^{FN39} the agency considered the matter in a detailed and reasoned fashion,^{FN40} and the decision involves reconciling conflicting policies.^{FN41} Congress intended to accommodate both interests, but did not do so itself on the level of specificity presented by these cases. Perhaps that body consciously desired the Administrator to strike the balance at this level, thinking that those with great expertise and charged with responsibility for administering the provision would be in a better position to do so; perhaps it simply did not consider the question at this level; and perhaps Congress was unable to forge a coalition on either side of the question, and those on each side decided to take their chances with the scheme devised by the agency. For judicial purposes, it matters not which of these things occurred.

FN39. See e.g., *Aluminum Co. of America v. Central Lincoln Peoples' Util. Dist.*, 467 U.S., at 390, 104 S.Ct., at 2480 (1984).

FN40. See *SEC v. Sloan*, 436 U.S., at 117, 98 S.Ct., at 1711; *Adamo Wrecking Co. v. United States*, 434 U.S. 275, 287, n. 5, 98 S.Ct. 566, 574, n. 5, 54 L.Ed.2d 538 (1978); *Skidmore v. Swift & Co.*, 323 U.S. 134, 140, 65 S.Ct. 161, 164, 89 L.Ed. 124

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(1944).

FN41. See *Capital Cities Cable, Inc. v. Crisp*, 467 U.S. at 699–700, 104 S.Ct. at 2700–2701; *United States v. Shimer*, 367 U.S. 374, 382, 81 S.Ct. 1554, 1560, 6 L.Ed.2d 908 (1961).

Judges are not experts in the field, and are not part of either political branch of the Government. Courts must, in some cases, reconcile competing political interests, but not on the basis of the judges' personal policy preferences. In contrast, an agency to which Congress has delegated policy-making responsibilities may, within the limits of that delegation, properly rely upon the incumbent administration's views of wise policy to inform its judgments. While agencies are not directly accountable to the people, the Chief Executive is, and it is entirely appropriate for this political branch of the Government to make such policy choices—resolving the competing interests which Congress itself either inadvertently did not resolve, or intentionally left to be resolved by the *866 agency charged with the administration of the statute in light of everyday realities.

When a challenge to an agency construction of a statutory provision, fairly conceptualized, really centers on the wisdom of the agency's policy, rather than whether it is a reasonable choice within a gap left open by Congress, the challenge must fail. In such a case, federal judges—who have no constituency—have a duty to respect legitimate policy choices made by those who do. The responsibilities for assessing the wisdom of such policy choices and resolving the struggle between competing views of the public interest are not judicial ones: "Our Constitution vests such responsibilities in the political branches." *TVA v. Hill*, 437 U.S. 153, 195, 98 S.Ct. 2279, 2302, 57 L.Ed.2d 117 (1978).

We hold that the EPA's definition of the term "source" is a permissible construction of the statute which seeks to accommodate progress in reducing air pollution with economic growth. "The Regula-

tions which the Administrator has adopted provide what the agency could allowably view as ... [an] effective reconciliation of these twofold ends...." *United States v. Shimer*, 367 U.S., at 383, 81 S.Ct., at 1560.

The judgment of the Court of Appeals is reversed.

It is so ordered.

Justice MARSHALL and Justice REHNQUIST took no part in the consideration or decision of these cases.
Justice O'CONNOR took no part in the decision of these cases.

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END OF DOCUMENT

ATTACHMENT 24

Westlaw

114 S.Ct. 1900

511 U.S. 700, 152 P.U.R.4th 190, 114 S.Ct. 1900, 38 ERC 1593, 128 L.Ed.2d 716, 62 USLW 4408, Util. L. Rep. P 13,988, 24 Env'tl. L. Rep. 20,945

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Supreme Court of the United States

PUD NO. 1 OF JEFFERSON COUNTY and City
of Tacoma, Petitioners

v.

WASHINGTON DEPARTMENT OF ECOLOGY
et al.

No. 92-1911.

Argued Feb. 23, 1994.

Decided May 31, 1994.

City and local utility district appealed Washington State Department of Ecology's imposition of minimum stream flow rates as part of certification requirements under Federal Clean Water Act for building hydroelectric power plant. The Pollution Control Hearings Board reversed flow rate set by Department, and parties cross-appealed. The Superior Court, Thurston County, Carol A. Fuller, J., ruled that Department was not preempted from setting minimum stream flows. City moved for direct review. The Supreme Court, 121 Wash.2d 179, 849 P.2d 646, affirmed. On petition for certiorari, the Supreme Court of the United States, Justice O'Connor, held that: (1) states could condition certification of project on any limitations necessary to ensure compliance with state water quality standards or other appropriate requirements of state law; (2) minimum flow condition was appropriate requirement of state law; and (3) state's authority to impose minimum flow requirements would not be limited on theory that it interfered with Federal Energy Regulatory Commission's authority to license hydroelectric projects.

Affirmed.

Justice Stevens filed a concurring opinion.

Justice Thomas filed a dissenting opinion in which Justice Scalia joined.

West Headnotes

[1] Environmental Law 149E ↪197

149E Environmental Law

149EV Water Pollution

149Ek194 Permits and Certifications

149Ek197 k. Conditions and limitations.

Most Cited Cases

(Formerly 199k25.7(21.1) Health and Environment)

States 360 ↪18.31

360 States

360I Political Status and Relations

360I(B) Federal Supremacy; Preemption

360k18.31 k. Environment; nuclear projects. Most Cited Cases

Clean Water Act provision, requiring that project certification set forth effluent limitations and other limitations necessary to assure that any applicant will comply with provisions of Act and appropriate state law requirement, allowed state to impose "other limitations" on project in general to assure compliance with Clean Water Act provisions and appropriate state law requirements; state's ability to impose water quality limitations did not have to be specifically tied to a "discharge." Federal Water Pollution Control Act Amendments of 1972, § 401(a, d), as amended, 33 U.S.C.A. § 1341(a, d).

[2] Environmental Law 149E ↪196

149E Environmental Law

149EV Water Pollution

149Ek194 Permits and Certifications

149Ek196 k. Discharge of pollutants.

Most Cited Cases

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Clean Water Act provision requiring that project certification set forth effluent limitations and other limitations necessary to assure that applicant's compliance with provisions of the Act and appropriate state law requirements is most reason-

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ably read as authorizing additional conditions and limitations on activity as a whole once threshold condition, the existence of a discharge, was satisfied. Federal Water Pollution Control Act Amendments of 1972, § 401(a, d), as amended, 33 U.S.C.A. § 1341(a, d).

[3] Environmental Law 149E ↪ 197

149E Environmental Law

149EV Water Pollution

149Ek194 Permits and Certifications

149Ek197 k. Conditions and limitations.

Most Cited Cases

(Formerly 199k25.7(21.1) Health and Environment)

Statutes 361 ↪ 219(6.1)

361 Statutes

361VI Construction and Operation

361VI(A) General Rules of Construction

361k213 Extrinsic Aids to Construction

361k219 Executive Construction

361k219(6) Particular Federal Statutes

utes

361k219(6.1) k. In general.

Most Cited Cases

Environmental Protection Agency (EPA) conclusion that "activities" of hydroelectric project applicant, not merely "discharges," had to comply with state water quality standards was reasonable interpretation of Clean Water Act project certification provisions, and was entitled to deference. Federal Water Pollution Control Act Amendments of 1972, § 401, as amended, 33 U.S.C.A. § 1341.

[4] Environmental Law 149E ↪ 196

149E Environmental Law

149EV Water Pollution

149Ek194 Permits and Certifications

149Ek196 k. Discharge of pollutants.

Most Cited Cases

(Formerly 199k25.7(21.1) Health and Environment)

States 360 ↪ 18.31

360 States

360I Political Status and Relations

360I(B) Federal Supremacy; Preemption

360k18.31 k. Environment; nuclear

projects. Most Cited Cases

State's authority under Clean Water Act to place restrictions on hydroelectric project activity as a whole was not unbounded; state could only ensure that project complied with applicable effluent limitations and other appropriate state law requirements. Federal Water Pollution Control Act Amendments of 1972, § 401(d), as amended, 33 U.S.C.A. § 1341(d).

[5] Environmental Law 149E ↪ 196

149E Environmental Law

149EV Water Pollution

149Ek194 Permits and Certifications

149Ek196 k. Discharge of pollutants.

Most Cited Cases

(Formerly 199k25.7(13.1) Health and Environment)

States 360 ↪ 18.31

360 States

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360k18.31 k. Environment; nuclear

projects. Most Cited Cases

Ensuring compliance with state water quality standards adopted pursuant to Clean Water Act was a proper function of water quality certification required under Act before federal license or permit could be issued for activity that could result in discharge into intrastate navigable waters; state water quality standards adopted pursuant to Act were among the "other limitations" with which state could ensure compliance through certification process. Federal Water Pollution Control Act Amendments of 1972, §§ 303, 401(d), as amended, 33 U.S.C.A. §§ 1313, 1341(d).

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511 U.S. 700, 152 P.U.R.4th 190, 114 S.Ct. 1900, 38 ERC 1593, 128 L.Ed.2d 716, 62 USLW 4408, Util. L. Rep. P
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[6] Environmental Law 149E ↪197

149E Environmental Law
149EV Water Pollution

149Ek194 Permits and Certifications

149Ek197 k. Conditions and limitations.

Most Cited Cases

(Formerly 199k25.7(21.1) Health and Environ-
ment)

State could impose minimum flow condition as condition for water quality certification for hydroelectric project under Clean Water Act provision allowing states to condition certification upon any limitations necessary to ensure compliance with state water quality standards or any other "appropriate requirement of State law"; designated use of river as fish habitat directly reflected Act's goal in maintaining chemical, physical and biological integrity of navigable waters and Act required that, in adopting water quality standards, state take into consideration use of waters for propagation of fish and wildlife. Federal Water Pollution Control Act Amendments of 1972, §§ 101(a), 303(c)(2)(A), 401, 502(19), as amended, 33 U.S.C.A. §§ 1251(a), 1313(c)(2)(A), 1341, 1362(19).

[7] Environmental Law 149E ↪197

149E Environmental Law
149EV Water Pollution

149Ek194 Permits and Certifications

149Ek197 k. Conditions and limitations.

Most Cited Cases

(Formerly 199k25.7(21.1) Health and Environ-
ment)

Clean Water Act provision requiring state to institute comprehensive standards establishing water quality goals for intrastate waters, consisting of designated uses of navigable waters involved and water quality criteria for those waters based on those uses, requires that a project for which water quality certification is required be consistent with both designated use and water quality criteria; project that does not comply with designated use of water does not comply with applicable water quality standards. Federal Water Pollution Control Act

Amendments of 1972, §§ 303(c)(2)(A), 401, as amended, 33 U.S.C.A. §§ 1313(c)(2)(A), 1341.

[8] Environmental Law 149E ↪197

149E Environmental Law
149EV Water Pollution

149Ek194 Permits and Certifications

149Ek197 k. Conditions and limitations.

Most Cited Cases

(Formerly 199k25.7(21.1) Health and Environ-
ment)

For purposes of state Clean Water Act water quality certification provisions, certification requirement that applicant operate hydroelectric project consistent with state water quality standards, that is, consistently with designated uses of water body and water quality criteria, is both a "limitation" to ensure "compliance with * * * limitations" imposed under state water quality standards provision and an "appropriate" requirement of state law. Federal Water Pollution Control Act Amendments of 1972, §§ 303, 401(d), as amended, 33 U.S.C.A. §§ 1313, 1341(d).

[9] Environmental Law 149E ↪189

149E Environmental Law
149EV Water Pollution

149Ek187 Water Quality Standards or Plans

149Ek189 k. Classification of waters; des-
ignated uses. Most Cited Cases

(Formerly 199k25.7(17.1) Health and Environ-
ment)

Environmental Law 149E ↪190

149E Environmental Law
149EV Water Pollution

149Ek187 Water Quality Standards or Plans

149Ek190 k. Particular water quality
standards and criteria. Most Cited Cases

(Formerly 199k25.7(17.1) Health and Environ-
ment)

Clean Water Act water quality standards provi-
sions contemplated enforcement of water use re-

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quirements as well as more specific and objective "criteria" contained in state water quality standards, given open ended nature of criteria themselves and in light of fact that Act permitted enforcement of broad narrative criteria based on qualities such as "aesthetics." Federal Water Pollution Control Act Amendments of 1972, §§ 303, 401(d), as amended, 33 U.S.C.A. §§ 1313, 1341(d).

[10] Environmental Law 149E ↪189

149E Environmental Law

149EV Water Pollution

149Ek187 Water Quality Standards or Plans

149Ek189 k. Classification of waters; designated uses. Most Cited Cases

(Formerly 199k25.7(2) Health and Environment)

Environmental Law 149E ↪190

149E Environmental Law

149EV Water Pollution

149Ek187 Water Quality Standards or Plans

149Ek190 k. Particular water quality standards and criteria. Most Cited Cases

(Formerly 199k25.7(2) Health and Environment)

Under Clean Water Act, state's reliance on both "use designations" and "criteria to protect water quality" was not anomalous; specific numerical limitations embodied in criteria were convenient enforcement mechanism for identifying minimum water conditions which would generally achieve requisite water quality, while complementary requirement that activities also comport with designated uses enabled state to ensure that each "activity," even if unforeseen by criteria, would be consistent with specific uses and attributes of particular body of water. Federal Water Pollution Control Act Amendments of 1972, §§ 303, 401(d), as amended, 33 U.S.C.A. §§ 1313, 1341(d).

[11] Environmental Law 149E ↪188

149E Environmental Law

149EV Water Pollution

149Ek187 Water Quality Standards or Plans

149Ek188 k. In general. Most Cited Cases
(Formerly 199k25.7(3) Health and Environment)

Clean Water Act provisions governing state's obligation to institute state water quality standards did not restrict states to enforcement of only criteria component of water quality standards, which would, in essence, require states to study to level of great specificity each individual body of water to ensure that criteria applicable to that water were sufficiently detailed and individualized to fully protect water's designated uses. Federal Water Pollution Control Act Amendments of 1972, §§ 303, 401(d), as amended, 33 U.S.C.A. §§ 1313, 1341(d).

[12] Environmental Law 149E ↪197

149E Environmental Law

149EV Water Pollution

149Ek194 Permits and Certifications

149Ek197 k. Conditions and limitations.
Most Cited Cases

(Formerly 199k25.7(21.1) Health and Environment)

State's imposition of minimum stream flow condition of water quality certification for proposed hydroelectric project was proper application of state and federal antidegradation regulations, as it ensured that existing instream water use would be maintained and protected as required under federal regulations implementing Clean Water Act provisions requiring states to provide water quality certification standards. Federal Water Pollution Control Act Amendments of 1972, §§ 303, 401(d), as amended, 33 U.S.C.A. §§ 1313, 1341(d).

[13] Environmental Law 149E ↪196

149E Environmental Law

149EV Water Pollution

149Ek194 Permits and Certifications

149Ek196 k. Discharge of pollutants.
Most Cited Cases

(Formerly 199k25.7(21.1) Health and Environment)

Clean Water Act provisions governing water quality certification requirements for hydroelectric

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projects allows regulation by states of water "quantity" as well as water "quality"; in many cases quantity is closely related to water quality, as sufficient lowering of quantity could destroy all designated uses of body of water, and Act recognizes that reduced stream flow could constitute water pollution. Federal Water Pollution Control Act Amendments of 1972, §§ 304(f), 502(19), as amended, 33 U.S.C.A. §§ 1314(f), 1362(19).

[14] Environmental Law 149E ↪171

149E Environmental Law

149EV Water Pollution

149Ek169 Concurrent and Conflicting Statutes or Regulations

149Ek171 k. Federal preemption. Most Cited Cases

(Formerly 199k25.7(3) Health and Environment)

Clean Water Act sections providing that state's authority to allocate quantities of water within its jurisdiction could not be superseded, abrogated, or otherwise impaired by the Act and that nothing in the Act could be construed as impairing or affecting state's right or jurisdiction with respect to state's waters, did not exclude water quantity issues from direct regulation under federally controlled water quality standards authorized in Clean Water Act; sections preserved state's authority to allocate water quantity as between users, but did not limit scope of water pollution controls that could be imposed on users who had obtained, pursuant to state law, water allocation. Federal Water Pollution Control Act Amendments of 1972, §§ 101(g), 510(2), as amended, 33 U.S.C.A. §§ 1251(g), 1370(2).

[15] Environmental Law 149E ↪197

149E Environmental Law

149EV Water Pollution

149Ek194 Permits and Certifications

149Ek197 k. Conditions and limitations.

Most Cited Cases

(Formerly 199k25.7(21.1) Health and Environment)

States 360 ↪18.31

360 States

360I Political Status and Relations

360I(B) Federal Supremacy; Preemption

360k18.31 k. Environment; nuclear

projects. Most Cited Cases

State's authority to impose minimum flow requirement as condition of water quality certification required under Clean Water Act is not limited on theory that it interfered with Federal Energy Regulatory Commission's (FERC) licensing authority under the Federal Power Act; FERC had not yet acted on hydroelectric power project license application and it was possible that FERC would eventually deny application, or that any FERC license would contain same conditions as state certification under Clean Water Act standards. Federal Water Pollution Control Act Amendments of 1972, §§ 303, 401(d), as amended, 33 U.S.C.A. §§ 1313, 1341(d); Federal Power Act, §§ 1 et seq., 321, as amended, 16 U.S.C.A. §§ 792 et seq., 791a.

[16] Environmental Law 149E ↪120

149E Environmental Law

149EIV Water, Wetlands, and Waterfront Conservation

149Ek119 Concurrent and Conflicting Statutes or Regulations

149Ek120 k. In general. Most Cited Cases

Environmental Law 149E ↪196

149E Environmental Law

149EV Water Pollution

149Ek194 Permits and Certifications

149Ek196 k. Discharge of pollutants.

Most Cited Cases

(Formerly 199k25.7(13.1) Health and Environment)

Water Law 405 ↪2696

405 Water Law

405XV Navigable Waters

405XV(C) Lands Under Water

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405XV(C)3 Reclamation and Improvement

405k2695 Permits and Application Therefor

405k2696 k. In general. Most Cited Cases

(Formerly 270k38 Navigable Waters)

Requirement for state water quality certification before federal license or permit could be issued for activities that could result in discharges into navigable waters applied not only to applications for licenses from Federal Energy Regulatory Commission (FERC), but to all federal licenses and permits for activities which could result in discharge into United States navigable waters, including licenses obtained pursuant to Rivers and Harbors Appropriation Act and permits obtained from Army Corps of Engineers for discharge of dredged or fill material. Federal Water Pollution Control Act Amendments of 1972, §§ 401, 403, 404(a, e), as amended, 33 U.S.C.A. §§ 1341, 1343, 1344(a, e).

****1903 Syllabus** ^{FN*}

FN* 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.

***700** Section 303 of the Clean Water Act requires each State, subject to federal approval, to institute comprehensive standards establishing water quality goals for all intrastate waters, and requires that such standards "consist of the designated uses of the navigable waters involved and the water quality criteria for such waters based upon such uses." Under Environmental Protection Agency (EPA) regulations, the standards must also include an antidegradation policy to ensure that "[e]xisting instream water uses and the level of water quality necessary to protect [those] uses [are] maintained and protected." States are required by § 401 of the Act to provide a water quality certification before a federal license or permit can be issued for any

activity that may result in a discharge into intrastate navigable waters. As relevant here, the certification must "set forth any effluent limitations and other limitations ... necessary to assure that any applicant" will comply with various provisions of the Act and "any other appropriate" state law requirement. § 401(d). Under Washington's comprehensive water quality standards, characteristic uses of waters classified as Class AA include fish migration, rearing, and spawning. Petitioners, a city and a local utility district, want to build a hydroelectric project on the Dosewallips ****1904** River, a Class AA water, which would reduce the water flow in the relevant part of the river to a minimal residual flow of between 65 and 155 cubic feet per second (cfs). In order to protect the river's fishery, respondent state environmental agency issued a § 401 certification imposing, among other things, a minimum stream flow requirement of between 100 and 200 cfs. A state administrative appeals board ruled that the certification condition exceeded respondent's authority under state law, but the State Superior Court reversed. The State Supreme Court affirmed, holding that the antidegradation provisions of the State's water quality standards require the imposition of minimum stream flows, and that § 401 authorized the stream flow condition and conferred on States power to consider all state action related to water quality in imposing conditions on § 401 certificates.

Held: Washington's minimum stream flow requirement is a permissible condition of a § 401 certification. Pp. 1908-1914.

***701 a)** A State may impose conditions on certifications insofar as necessary to enforce a designated use contained in the State's water quality standard. Petitioners' claim that the State may only impose water quality limitations specifically tied to a "discharge" is contradicted by § 401(d)'s reference to an applicant's compliance, which allows a State to impose "other limitations" on a project. This view is consistent with EPA regulations providing that activities-not merely discharges-must comply with state water quality standards, a

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reasonable interpretation of § 401 which is entitled to deference. State standards adopted pursuant to § 303 are among the "other limitations" with which a State may ensure compliance through the § 401 certification process. Although § 303 is not specifically listed in § 401(d), the statute allows States to impose limitations to ensure compliance with § 301 of the Act, and § 301 in turn incorporates § 303 by reference. EPA's view supports this interpretation. Such limitations are also permitted by § 401(d)'s reference to "any other appropriate" state law requirement. Pp. 1908-1910.

(b) Washington's requirement is a limitation necessary to enforce the designated use of the river as a fish habitat. Petitioners err in asserting that § 303 requires States to protect such uses solely through implementation of specific numerical "criteria." The section's language makes it plain that water quality standards contain two components and is most naturally read to require that a project be consistent with both: the designated use and the water quality criteria. EPA has not interpreted § 303 to require the States to protect designated uses exclusively through enforcement of numerical criteria. Moreover, the Act permits enforcement of broad, narrative criteria based on, for example, "aesthetics." There is no anomaly in the State's reliance on both use designations and criteria to protect water quality. Rather, it is petitioners' reading that leads to an unreasonable interpretation of the Act, since specified criteria cannot reasonably be expected to anticipate all the water quality issues arising from every activity that can affect a State's hundreds of individual water bodies. Washington's requirement also is a proper application of the state and federal antidegradation regulations, as it ensures that an existing instream water use will be "maintained and protected." Pp. 1910-1912.

(c) Petitioners' assertion that the Act is only concerned with water quality, not quantity, makes an artificial distinction, since a sufficient lowering of quantity could destroy all of a river's designated uses, and since the Act recognizes that reduced

stream flow can constitute water pollution. Moreover, §§ 101(g) and 510(2) of the Act do not limit the scope of water pollution controls that may be imposed on users who have obtained, pursuant to state law, a water allocation. Those provisions preserve each State's authority to allocate water quantity as between *702 users, but the § 401 certification does not purport to determine petitioners' proprietary right to the river's water. In addition, the Court is unwilling to read implied limitations into § 401 based on petitioners' claim that a conflict exists between the condition's imposition and the Federal Energy Regulatory Commission's authority to license hydroelectric**1905 projects under the Federal Power Act, since FERC has not yet acted on petitioners' license application and since § 401's certification requirement also applies to other statutes and regulatory schemes. Pp. 1912-1914.

121 Wash.2d 179, 849 P.2d 646 (1992), affirmed.

O'CONNOR, J., delivered the opinion of the Court, in which REHNQUIST, C.J., and BLACKMUN, STEVENS, KENNEDY, SOUTER, and GINSBURG, JJ., joined. STEVENS, J., filed a concurring opinion, *post*, p. 1914. THOMAS, J., filed a dissenting opinion, in which SCALIA, J., joined, *post*, p. 1915.

Howard E. Shapiro, Washington, DC, for petitioners.

Christine O. Gregoire, Olympia, WA, for respondents.

Lawrence G. Wallace, Washington, DC, for the U.S. as amicus curiae, by special leave of the Court.

For U.S. Supreme Court briefs, see: 1993 WL 632338 (Pet.Brief) 1993 WL 632337 (Resp.Brief) 1994 WL 131622 (Reply.Brief)

*703 Justice O'CONNOR delivered the opinion of the Court.

Petitioners, a city and a local utility district,

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want to build a hydroelectric project on the Dosewallips River in Washington State. We must decide whether respondent state environmental agency (hereinafter respondent) properly conditioned a permit for the project on the maintenance of specific minimum stream flows to protect salmon and steelhead runs.

*704 I

This case involves the complex statutory and regulatory scheme that governs our Nation's waters, a scheme that implicates both federal and state administrative responsibilities. The Federal Water Pollution Control Act, commonly known as the Clean Water Act, 86 Stat. 816, as amended, 33 U.S.C. § 1251 *et seq.*, is a comprehensive water quality statute designed to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." § 1251(a). The Act also seeks to attain "water quality which provides for the protection and propagation of fish, shellfish, and wildlife." § 1251(a)(2).

To achieve these ambitious goals, the Clean Water Act establishes distinct roles for the Federal and State Governments. Under the Act, the Administrator of the Environmental Protection Agency (EPA) is required, among other things, to establish and enforce technology-based limitations on individual discharges into the country's navigable waters from point sources. See §§ 1311, 1314. Section 303 of the Act also requires each State, subject to federal approval, to institute comprehensive water quality standards establishing water quality goals for all intrastate waters. §§ 1311(b)(1)(C), 1313. These state water quality standards provide "a supplementary basis ... 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).

A state water quality standard "shall consist of the designated uses of the navigable waters in-

involved and the water quality criteria for such waters based upon such uses." 33 U.S.C. § 1313(c)(2)(A). In setting standards, the State must comply with the following broad requirements:

"Such standards shall be such as to protect the public health or welfare, enhance the quality of water and *705 serve the purposes of this chapter. Such standards shall be established taking into consideration their use and value for public water supplies, propagation of fish and wildlife, recreational [and other purposes.]" *Ibid.*

See also § 1251(a)(2).

A 1987 amendment to the Clean Water Act makes clear that § 303 also contains an "antidegradation policy"—that is, a policy requiring **1906 that state standards be sufficient to maintain existing beneficial uses of navigable waters, preventing their further degradation. Specifically, the Act permits the revision of certain effluent limitations or water quality standards "only if such revision is subject to and consistent with the antidegradation policy established under this section." § 1313(d)(4)(B). Accordingly, EPA's regulations implementing the Act require that state water quality standards include "a statewide antidegradation policy" to ensure that "[e]xisting instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected." 40 CFR § 131.12 (1993). At a minimum, state water quality standards must satisfy these conditions. The Act also allows States to impose more stringent water quality controls. See 33 U.S.C. §§ 1311(b)(1)(C), 1370. See also 40 CFR § 131.4(a) (1993) ("As recognized by section 510 of the Clean Water Act [33 U.S.C. § 1370], States may develop water quality standards more stringent than required by this regulation").

The State of Washington has adopted comprehensive water quality standards intended to regulate all of the State's navigable waters. See Washington Administrative Code (WAC) 173-201-010 to 173-201-120 (1986). The State created an inventory

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of all the State's waters, and divided the waters into five classes. 173-201-045. Each individual fresh surface water of the State is placed into one of these classes. 173-201-080. The Dosewallips River is classified AA, extraordinary. 173-201-080(32). The water quality *706 standard for Class AA waters is set forth at 173-201-045(1). The standard identifies the designated uses of Class AA waters as well as the criteria applicable to such waters.^{FN1}

FN1. WAC 173-201-045(1) (1986) provides in pertinent part:

“(1) Class AA (extraordinary).

“(a) General characteristic. Water quality of this class shall markedly and uniformly exceed the requirements for all or substantially all uses.

“(b) Characteristic uses. Characteristic uses shall include, but not be limited to, the following:

“(i) Water supply (domestic, industrial, agricultural).

“(ii) Stock watering.

“(iii) Fish and shellfish:

Salmonid migration, rearing, spawning, and harvesting.

Other fish migration, rearing, spawning, and harvesting.

.....

“(iv) Wildlife habitat.

“(v) Recreation (primary contact recreation, sport fishing, boating, and aesthetic enjoyment).

“(vi) Commerce and navigation.

“(c) Water quality criteria

“(i) Fecal coliform organisms.

“(A) Freshwater-fecal coliform organisms shall not exceed a geometric mean value of 50 organisms/100 mL, with not more than 10 percent of samples exceeding 100 organisms/100 mL.

“(B) Marine water-fecal coliform organisms shall not exceed a geometric mean value of 14 organisms/100 mL, with not more than 10 percent of samples exceeding 43 organisms/100 mL.

“(ii) Dissolved oxygen [shall exceed specific amounts].

.....

“(iii) Total dissolved gas shall not exceed 110 percent of saturation at any point of sample collection.

“(vi) Temperature shall not exceed [certain levels].

.....

“(v) pH shall be within [a specified range].

“(vi) Turbidity shall not exceed [specific levels].

“(vii) Toxic, radioactive, or deleterious material concentrations shall be less than those which may affect public health, the natural aquatic environment, or the desirability of the water for any use.

“(viii) Aesthetic values shall not be impaired by the presence of materials or their effects, excluding those of natural origin, which offend the senses of sight, smell, touch, or taste.”

*707 In addition to these specific standards applicable to Class AA waters, the State has adopted a

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statewide antidegradation policy. That policy provides:

“(a) Existing beneficial uses shall be maintained and protected and no further degradation which would interfere with or become injurious to existing beneficial uses will be allowed.

“(b) No degradation will be allowed of waters lying in national parks, national recreation areas, national wildlife refuges, national scenic rivers, and other areas of national ecological importance.

.....

“(f) In no case, will any degradation of water quality be allowed if this degradation interferes with or becomes injurious to existing water uses and causes long-term **1907 and irreparable harm to the environment.” 173-201-035(8).

As required by the Act, EPA reviewed and approved the State's water quality standards. See 33 U.S.C. § 1313(c)(3); 42 Fed.Reg. 56792 (1977). Upon approval by EPA, the state standard became “the water quality standard for the applicable waters of that State.” 33 U.S.C. § 1313(c)(3).

States are responsible for enforcing water quality standards on intrastate waters. § 1319(a). In addition to these primary enforcement responsibilities, § 401 of the Act requires States to provide a water quality certification before a federal license or permit can be issued for activities that may result in any discharge into intrastate navigable waters. 33 U.S.C. § 1341. Specifically, § 401 requires an applicant for a federal license or permit to conduct any activity “which may result in any discharge into the navigable waters” to obtain from the State a certification “that any such discharge will comply with the applicable provisions of sections [1311, 1312, 1313, 1316, and 1317 of this title].” 33 U.S.C. § 1341(a). Section 401(d) further provides that “[a]ny certification*708 ... shall set forth any effluent limitations and other limitations, and monitoring requirements necessary to assure that any

applicant ... will comply with any applicable effluent limitations and other limitations, under section [1311 or 1312 of this title] ... and with any other appropriate requirement of State law set forth in such certification.” 33 U.S.C. § 1341(d). The limitations included in the certification become a condition on any federal license. *Ibid.*^{FN2}

FN2. Section 401, as set forth in 33 U.S.C. § 1341, provides in relevant part:

“(a) Compliance with applicable requirements; application; procedures; license suspension

“(1) Any 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, shall provide the licensing or permitting agency a certification from the State ... that any such discharge will comply with the applicable provisions of sections 1311, 1312, 1313, 1316, and 1317 of this title.

“(d) Limitations and monitoring requirements of certification

“Any certification provided under this section shall set forth any effluent limitations and other limitations, and monitoring requirements necessary to assure that any applicant for a Federal license or permit will comply with any applicable effluent limitations and other limitations, under section 1311 or 1312 of this title, standard of performance under section 1316 of this title, or prohibition, effluent standard, or pretreatment standard under section 1317 of this title, and with any other appropriate requirement of State law set forth in such certification,

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and shall become a condition on any Federal license or permit subject to the provisions of this section.”

of conditions on the project, including a minimum stream flow requirement of between 100 and 200 cfs depending on the season.

II

Petitioners propose to build the Elkhorn Hydroelectric Project on the Dosewallips River. If constructed as presently planned, the facility would be located just outside the Olympic National Park on federally owned land within the Olympic National Forest. The project would divert water from a 1.2-mile reach of the river (the bypass reach), run the *709 water through turbines to generate electricity and then return the water to the river below the bypass reach. Under the Federal Power Act (FPA), 41 Stat. 1063, as amended, 16 U.S.C. § 791a *et seq.*, the Federal Energy Regulatory Commission (FERC) has authority to license new hydroelectric facilities. As a result, petitioners must get a FERC license to build or operate the Elkhorn Project. Because a federal license is required, and because the project may result in discharges into the Dosewallips River, petitioners are also required to obtain state certification of the project pursuant to § 401 of the Clean Water Act, 33 U.S.C. § 1341.

The water flow in the bypass reach, which is currently undiminished by appropriation, ranges seasonally between 149 and 738 cubic feet per second (cfs). The Dosewallips supports two species of salmon, coho and chinook, as well as steelhead trout. As originally proposed, the project was to include a diversion dam which would completely block **1908 the river and channel approximately 75% of the river's water into a tunnel alongside the streambed. About 25% of the water would remain in the bypass reach, but would be returned to the original riverbed through sluice gates or a fish ladder. Depending on the season, this would leave a residual minimum flow of between 65 and 155 cfs in the river. Respondent undertook a study to determine the minimum stream flows necessary to protect the salmon and steelhead fishery in the bypass reach. On June 11, 1986, respondent issued a § 401 water quality certification imposing a variety

A state administrative appeals board determined that the minimum flow requirement was intended to enhance, not merely maintain, the fishery, and that the certification condition therefore exceeded respondent's authority under state law. App. to Pet. for Cert. 55a-57a. On appeal, the *710 State Superior Court concluded that respondent could require compliance with the minimum flow conditions. *Id.*, at 29a-45a. The Superior Court also found that respondent had imposed the minimum flow requirement to protect and preserve the fishery, not to improve it, and that this requirement was authorized by state law. *Id.*, at 34a.

The Washington Supreme Court held that the antidegradation provisions of the State's water quality standards require the imposition of minimum stream flows. 121 Wash.2d 179, 186-187, 849 P.2d 646, 650 (1993). The court also found that § 401(d), which allows States to impose conditions based upon several enumerated sections of the Clean Water Act and “any other appropriate requirement of State law,” 33 U.S.C. § 1341(d), authorized the stream flow condition. Relying on this language and the broad purposes of the Clean Water Act, the court concluded that § 401(d) confers on States power to “consider all state action related to water quality in imposing conditions on section 401 certificates.” 121 Wash.2d, at 192, 849 P.2d, at 652. We granted certiorari, 510 U.S. 810, 114 S.Ct. 55, 126 L.Ed.2d 25 (1993), to resolve a conflict among the state courts of last resort. See 121 Wash.2d 179, 849 P.2d 646 (1993); *Georgia Pacific Corp. v. Dept. of Environmental Conservation*, 159 Vt. 639, 628 A.2d 944 (1992) (table); *Power Authority of New York v. Williams*, 60 N.Y.2d 315, 469 N.Y.S.2d 620, 457 N.E.2d 726 (1983). We now affirm.

III

The principal dispute in this case concerns whether the minimum stream flow requirement that

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the State imposed on the Elkhorn Project is a permissible condition of a § 401 certification under the Clean Water Act. To resolve this dispute we must first determine the scope of the State's authority under § 401. We must then determine whether the limitation at issue here, the requirement that petitioners maintain minimum stream flows, falls within the scope of that authority.

*711 A

There is no dispute that petitioners were required to obtain a certification from the State pursuant to § 401. Petitioners concede that, at a minimum, the project will result in two possible discharges—the release of dredged and fill material during the construction of the project, and the discharge of water at the end of the tailrace after the water has been used to generate electricity. Brief for Petitioners 27-28. Petitioners contend, however, that the minimum stream flow requirement imposed by the State was unrelated to these specific discharges, and that as a consequence, the State lacked the authority under § 401 to condition its certification on maintenance of stream flows sufficient to protect the Dosewallips fishery.

[1][2] If § 401 consisted solely of subsection (a), which refers to a state certification that a “discharge” will comply with certain provisions of the Act, petitioners' assessment of the scope of the State's certification authority would have considerable force. Section 401, however, also contains subsection (d), which expands the State's authority to impose conditions on the certification of a **1909 project. Section 401(d) provides that any certification shall set forth “any effluent limitations and other limitations ... necessary to assure that *any applicant*” will comply with various provisions of the Act and appropriate state law requirements. 33 U.S.C. § 1341(d) (emphasis added). The language of this subsection contradicts petitioners' claim that the State may only impose water quality limitations specifically tied to a “discharge.” The text refers to the compliance of the applicant, not the discharge. Section 401(d) thus allows the State to impose

“other limitations” on the project in general to assure compliance with various provisions of the Clean Water Act and with “any other appropriate requirement of State law.” Although the dissent asserts that this interpretation of § 401(d) renders § 401(a)(1) superfluous, *post*, at 1916, we see no such anomaly. Section 401(a)(1) identifies the category of activities *712 subject to certification—namely, those with discharges. And § 401(d) is most reasonably read as authorizing additional conditions and limitations on the activity as a whole once the threshold condition, the existence of a discharge, is satisfied.

[3] Our view of the statute is consistent with EPA's regulations implementing § 401. The regulations expressly interpret § 401 as requiring the State to find that “there is a reasonable assurance that the *activity* will be conducted in a manner which will not violate applicable water quality standards.” 40 CFR § 121.2(a)(3) (1993) (emphasis added). See also EPA, *Wetlands and 401 Certification* 23 (Apr.1989) (“In 401(d), the Congress has given the States the authority to place any conditions on a water quality certification that are necessary to assure that the applicant will comply with effluent limitations, water quality standards, ... and with “any other appropriate requirement of State law.”). EPA's conclusion that *activities*—not merely discharges—must comply with state water quality standards is a reasonable interpretation of § 401, and is entitled to deference. See, e.g., *Arkansas v. Oklahoma*, 503 U.S. 91, 110, 112 S.Ct. 1046, 1059, 117 L.Ed.2d 239 (1992); *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).

[4] Although § 401(d) authorizes the State to place restrictions on the activity as a whole, that authority is not unbounded. The State can only ensure that the project complies with “any applicable effluent limitations and other limitations, under [33 U.S.C. §§ 1311, 1312]” or certain other provisions of the Act, “and with any other appropriate requirement of State law.” 33 U.S.C. § 1341(d). The State

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asserts that the minimum stream flow requirement was imposed to ensure compliance with the state water quality standards adopted pursuant to § 303 of the Clean Water Act, 33 U.S.C. § 1313.

[5] We agree with the State that ensuring compliance with § 303 is a proper function of the § 401 certification. Although § 303 is not one of the statutory provisions listed in § 401(d), *713 the statute allows States to impose limitations to ensure compliance with § 301 of the Act, 33 U.S.C. § 1311. Section 301 in turn incorporates § 303 by reference. See 33 U.S.C. § 1311(b)(1)(C); see also H.R.Conf.Rep. No. 95-830, p. 96 (1977), U.S. Code Cong. & Admin. News 1977, pp. 4326, 4471 ("Section 303 is always included by reference where section 301 is listed"). As a consequence, state water quality standards adopted pursuant to § 303 are among the "other limitations" with which a State may ensure compliance through the § 401 certification process. This interpretation is consistent with EPA's view of the statute. See 40 CFR § 121.2(a)(3) (1992); EPA, Wetlands and 401 Certification, *supra*. Moreover, limitations to assure compliance with state water quality standards are also permitted by § 401(d)'s reference to "any other appropriate requirement of State law." We do not speculate on what additional state laws, if any, might be incorporated by this language.^{FN3} **1910 But at a minimum, limitations imposed pursuant to state water quality standards adopted pursuant to § 303 are "appropriate" requirements of state law. Indeed, petitioners appear to agree that the State's authority under § 401 includes limitations designed to ensure compliance with state water quality standards. Brief for Petitioners 9, 21.

FN3. The dissent asserts that § 301 is concerned solely with discharges, not broader water quality standards. *Post*, at 1918, n. 2. Although § 301 does make certain discharges unlawful, see 33 U.S.C. § 1311(a), it also contains a broad enabling provision which requires States to take certain actions, to wit: "In order to carry out the ob-

jective of this chapter [viz. the chemical, physical, and biological integrity of the Nation's water] there shall be achieved ... 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...." 33 U.S.C. § 1311(b)(1)(C). This provision of § 301 expressly refers to state water quality standards, and is not limited to discharges.

B

[6] Having concluded that, pursuant to § 401, States may condition certification upon any limitations necessary to ensure *714 compliance with state water quality standards or any other "appropriate requirement of State law," we consider whether the minimum flow condition is such a limitation. Under § 303, state water quality standards must "consist of the designated uses of the navigable waters involved and the water quality criteria for such waters based upon such uses." 33 U.S.C. § 1313(c)(2)(A). In imposing the minimum stream flow requirement, the State determined that construction and operation of the project as planned would be inconsistent with one of the designated uses of Class AA water, namely, "[s]almonid [and other fish] migration, rearing, spawning, and harvesting." App. to Pet. for Cert. 83a-84a. The designated use of the river as a fish habitat directly reflects the Clean Water Act's goal of maintaining the "chemical, physical, and biological integrity of the Nation's waters." 33 U.S.C. § 1251(a). Indeed, the Act defines pollution as "the man-made or man induced alteration of the chemical, physical, biological, and radiological integrity of water." § 1362(19). Moreover, the Act expressly requires that, in adopting water quality standards, the State must take into consideration the use of waters for "propagation of fish and wildlife." § 1313(c)(2)(A).

[7] Petitioners assert, however, that § 303 requires the State to protect designated uses solely through implementation of specific "criteria." Ac-

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According to petitioners, the State may not require them to operate their dam in a manner consistent with a designated "use"; instead, say petitioners, under § 303 the State may only require that the project comply with specific numerical "criteria."

We disagree with petitioners' interpretation of the language of § 303(c)(2)(A). Under the statute, a water quality standard must "consist of the designated uses of the navigable waters involved and the water quality criteria for such waters based upon such uses." 33 U.S.C. § 1313(c)(2)(A) (emphasis added). The text makes it plain that water quality standards contain two components. We think the language*715 of § 303 is most naturally read to require that a project be consistent with both components, namely, the designated use and the water quality criteria. Accordingly, under the literal terms of the statute, a project that does not comply with a designated use of the water does not comply with the applicable water quality standards.

[8] Consequently, pursuant to § 401(d) the State may require that a permit applicant comply with both the designated uses and the water quality criteria of the state standards. In granting certification pursuant to § 401(d), the State "shall set forth any ... limitations ... necessary to assure that [the applicant] will comply with any ... limitations under [§ 303] ... and with any other appropriate requirement of State law." A certification requirement that an applicant operate the project consistently with state water quality standards-*i.e.*, consistently with the designated uses of the water body and the water quality criteria-is both a "limitation" to assure "compl[iance] with ... **1911 limitations" imposed under § 303, and an "appropriate" requirement of state law.

EPA has not interpreted § 303 to require the States to protect designated uses exclusively through enforcement of numerical criteria. In its regulations governing state water quality standards, EPA defines criteria as "elements of State water quality standards, expressed as constituent concentrations, levels, or narrative statements, represent-

ing a quality of water that supports a particular use." 40 CFR § 131.3(b) (1993) (emphasis added). The regulations further provide that "[w]hen criteria are met, water quality will generally protect the designated use." *Ibid.* (emphasis added). Thus, the EPA regulations implicitly recognize that in some circumstances, criteria alone are insufficient to protect a designated use.

[9] Petitioners also appear to argue that use requirements are too open ended, and that the Act only contemplates enforcement of the more specific and objective "criteria." But this argument is belied by the open-ended nature of the criteria *716 themselves. As the Solicitor General points out, even "criteria" are often expressed in broad, narrative terms, such as "there shall be no discharge of toxic pollutants in toxic amounts." Brief for United States as *Amicus Curiae* 18. See *American Paper Institute, Inc. v. EPA*, 996 F.2d 346, 349 (CA DC 1993). In fact, under the Clean Water Act, only one class of criteria, those governing "toxic pollutants listed pursuant to section 1317(a)(1)," need be rendered in numerical form. See 33 U.S.C. § 1313(c)(2)(B); 40 CFR § 131.11(b)(2) (1993).

Washington's Class AA water quality standards are typical in that they contain several open-ended criteria which, like the use designation of the river as a fishery, must be translated into specific limitations for individual projects. For example, the standards state that "[t]oxic, radioactive, or deleterious material concentrations shall be less than those which may affect public health, the natural aquatic environment, or the desirability of the water for any use." WAC 173-201-045(1)(c)(vii) (1986). Similarly, the state standards specify that "[a]esthetic values shall not be impaired by the presence of materials or their effects, excluding those of natural origin, which offend the senses of sight, smell, touch, or taste." 173-201-045(1)(c)(viii). We think petitioners' attempt to distinguish between uses and criteria loses much of its force in light of the fact that the Act permits enforcement of broad, narrative criteria based on, for example, "aesthetics."

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[10] Petitioners further argue that enforcement of water quality standards through use designations renders the water quality criteria component of the standards irrelevant. We see no anomaly, however, in the State's reliance on both use designations and criteria to protect water quality. The specific numerical limitations embodied in the criteria are a convenient enforcement mechanism for identifying minimum water conditions which will generally achieve the requisite water quality. And, in most circumstances, satisfying the criteria will, as EPA recognizes, be sufficient to maintain the *717 designated use. See 40 CFR § 131.3(b) (1993). Water quality standards, however, apply to an entire class of water, a class which contains numerous individual water bodies. For example, in the State of Washington, the Class AA water quality standard applies to 81 specified fresh surface waters, as well as to all "surface waters lying within the mountainous regions of the state assigned to national parks, national forests, and/or wilderness areas," all "lakes and their feeder streams within the state," and all "unclassified surface waters that are tributaries to Class AA waters." WAC 173-201-070 (1986). While enforcement of criteria will in general protect the uses of these diverse waters, a complementary requirement that activities also comport with designated uses enables the States to ensure that each activity—even if not foreseen by the criteria—will be consistent with the specific uses and attributes of a particular body of water.

[11] Under petitioners' interpretation of the statute, however, if a particular criterion, such as turbidity, were missing from the list **1912 contained in an individual state water quality standard, or even if an existing turbidity criterion were insufficient to protect a particular species of fish in a particular river, the State would nonetheless be forced to allow activities inconsistent with the existing or designated uses. We think petitioners' reading leads to an unreasonable interpretation of the Act. The criteria components of state water quality standards attempt to identify, for all the water bodies in a given class, water quality require-

ments generally sufficient to protect designated uses. These criteria, however, cannot reasonably be expected to anticipate all the water quality issues arising from every activity that can affect the State's hundreds of individual water bodies. Requiring the States to enforce only the criteria component of their water quality standards would in essence require the States to study to a level of great specificity each individual surface water to ensure that the criteria applicable to that water are sufficiently detailed and individualized to fully protect the *718 water's designated uses. Given that there is no textual support for imposing this requirement, we are loath to attribute to Congress an intent to impose this heavy regulatory burden on the States.

The State also justified its minimum stream flow⁶ as necessary to implement the "antidegradation policy" of § 303, 33 U.S.C. § 1313(d)(4)(B). When the Clean Water Act was enacted in 1972, the water quality standards of all 50 States had antidegradation provisions. These provisions were required by federal law. See U.S. Dept. of Interior, Federal Water Pollution Control Administration, Compendium of Department of Interior Statements on Non-degradation of Interstate Waters 1-2 (Aug. 1968); see also Hines, A Decade of Nondegradation Policy in Congress and the Courts: The Erratic Pursuit of Clean Air and Clean Water, 62 Iowa L.Rev. 643, 658-660 (1977). By providing in 1972 that existing state water quality standards would remain in force until revised, the Clean Water Act ensured that the States would continue their antidegradation programs. See 33 U.S.C. § 1313(a). EPA has consistently required that revised state standards incorporate an antidegradation policy. And, in 1987, Congress explicitly recognized the existence of an "antidegradation policy established under [§ 303]." § 1313(d)(4)(B).

[12] EPA has promulgated regulations implementing § 303's antidegradation policy, a phrase that is not defined elsewhere in the Act. These regulations require States to "develop and adopt a statewide antidegradation policy and identify the

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methods for implementing such policy." 40 CFR § 131.12 (1993). These "implementation methods shall, at a minimum, be consistent with the ... [e]xisting instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected." *Ibid.* EPA has explained that under its antidegradation regulation, "no activity is allowable ... which could partially or completely eliminate any existing use." EPA, Questions and *719 Answers on Antidegradation 3 (Aug. 1985). Thus, States must implement their antidegradation policy in a manner "consistent" with existing uses of the stream. The State of Washington's antidegradation policy in turn provides that "[e]xisting beneficial uses shall be maintained and protected and no further degradation which would interfere with or become injurious to existing beneficial uses will be allowed." WAC 173-201-035(8)(a) (1986). The State concluded that the reduced stream flows would have just the effect prohibited by this policy. The Solicitor General, representing EPA, asserts, Brief for United States as *Amicus Curiae* 18-21, and we agree, that the State's minimum stream flow condition is a proper application of the state and federal antidegradation regulations, as it ensures that an "existing instream water us. [e]" will be "maintained and protected." 40 CFR § 131.12(a)(1) (1993).

[13] Petitioners also assert more generally that the Clean Water Act is only concerned with water "quality," and does not allow the regulation of water "quantity." This is an artificial distinction. In many cases, water quantity is closely related to water quality; a sufficient lowering of the **1913 water quantity in a body of water could destroy all of its designated uses, be it for drinking water, recreation, navigation or, as here, as a fishery. In any event, there is recognition in the Clean Water Act itself that reduced stream flow, *i.e.*, diminishment of water quantity, can constitute water pollution. First, the Act's definition of pollution as "the man-made or man induced alteration of the chemical, physical, biological, and radiological integrity of water" encompasses the effects of reduced water

quantity. 33 U.S.C. § 1362(19). This broad conception of pollution—one which expressly evinces Congress' concern with the physical and biological integrity of water—refutes petitioners' assertion that the Act draws a sharp distinction between the regulation of water "quantity" and water "quality." Moreover, § 304 of the Act expressly recognizes that water "pollution" may result from "changes *720 in the movement, flow, or circulation of any navigable waters ..., including changes caused by the construction of dams." 33 U.S.C. § 1314(f). This concern with the flowage effects of dams and other diversions is also embodied in the EPA regulations, which expressly require existing dams to be operated to attain designated uses. 40 CFR § 131.10(g)(4) (1992).

[14] Petitioners assert that two other provisions of the Clean Water Act, §§ 101(g) and 510(2), 33 U.S.C. §§ 1251(g) and 1370(2), exclude the regulation of water quantity from the coverage of the Act. Section 101(g) provides "that the authority of each State to allocate quantities of water within its jurisdiction shall not be superseded, abrogated or otherwise impaired by this chapter." 33 U.S.C. § 1251(g). Similarly, § 510(2) provides that nothing in the Act shall "be construed as impairing or in any manner affecting any right or jurisdiction of the States with respect to the waters ... of such States." 33 U.S.C. § 1370. In petitioners' view, these provisions exclude "water quantity issues from direct regulation under the federally controlled water quality standards authorized in § 303." Brief for Petitioners 39 (emphasis deleted).

This language gives the States authority to allocate water rights; we therefore find it peculiar that petitioners argue that it prevents the State from regulating stream flow. In any event, we read these provisions more narrowly than petitioners. Sections 101(g) and 510(2) preserve the authority of each State to allocate water quantity as between users; they do not limit the scope of water pollution controls that may be imposed on users who have obtained, pursuant to state law, a water allocation. In

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California v. FERC, 495 U.S. 490, 498, 110 S.Ct. 2024, 2029, 109 L.Ed.2d 474 (1990), construing an analogous provision of the Federal Power Act,^{FN4} we explained that "minimum stream *721 flow requirements neither reflect nor establish 'proprietary rights' " to water. Cf. *First Iowa Hydro-Electric Cooperative v. FPC*, 328 U.S. 152, 176, and n. 20, 66 S.Ct. 906, 917, and n. 20, 90 L.Ed. 1143 (1946). Moreover, the certification itself does not purport to determine petitioners' proprietary right to the water of the Dosewallips. In fact, the certification expressly states that a "State Water Right Permit (Chapters 90.03.250 RCW and 508-12 WAC) must be obtained prior to commencing construction of the project." App. to Pet. for Cert. 83a. The certification merely determines the nature of the use to which that proprietary right may be put under the Clean Water Act, if and when it is obtained from the State. Our view is reinforced by the legislative history of the 1977 amendment to the Clean Water Act adding § 101(g). See 3 Legislative History of the Clean Water Act of 1977 (Committee Print compiled for the Committee on Environment and Public Works by the Library of Congress), Ser. No. 95-14, p. 532 (1978) ("The requirements [of the Act] may incidentally affect individual water rights.... **1914 It is not the purpose of this amendment to prohibit those incidental effects. It is the purpose of this amendment to insure that State allocation systems are not subverted, and that effects on individual rights, if any, are prompted by legitimate and necessary water quality considerations").

FN4. The relevant text of the Federal Power Act provides that "nothing herein contained shall be construed as affecting or intending to affect or in any way to interfere with the laws of the respective States relating to the control, appropriation, use, or distribution of water used in irrigation or for municipal or other uses, or any vested right acquired therein." 41 Stat. 1077, 16 U.S.C. § 821.

IV

[15] Petitioners contend that we should limit the State's authority to impose minimum flow requirements because FERC has comprehensive authority to license hydroelectric projects pursuant to the FPA, 16 U.S.C. § 791a *et seq.* In petitioners' view, the minimum flow requirement imposed here interferes with FERC's authority under the FPA.

*722 The FPA empowers FERC to issue licenses for projects "necessary or convenient ... for the development, transmission, and utilization of power across, along, from, or in any of the streams ... over which Congress has jurisdiction." § 797(e). The FPA also requires FERC to consider a project's effect on fish and wildlife. §§ 797(e), 803(a)(1). In *California v. FERC*, *supra*, we held that the California Water Resources Control Board, acting pursuant to state law, could not impose a minimum stream flow which conflicted with minimum stream flows contained in a FERC license. We concluded that the FPA did not "save" to the States this authority. *Id.*, at 498.

No such conflict with any FERC licensing activity is presented here. FERC has not yet acted on petitioners' license application, and it is possible that FERC will eventually deny petitioners' application altogether. Alternatively, it is quite possible, given that FERC is required to give equal consideration to the protection of fish habitat when deciding whether to issue a license, that any FERC license would contain the same conditions as the state § 401 certification. Indeed, at oral argument the Deputy Solicitor General stated that both EPA and FERC were represented in this proceeding, and that the Government has no objection to the stream flow condition contained in the § 401 certification. Tr. of Oral Arg. 43-44.

[16] Finally, the requirement for a state certification applies not only to applications for licenses from FERC, but to all federal licenses and permits for activities which may result in a discharge into the Nation's navigable waters. For example, a permit from the Army Corps of Engineers is required for the installation of any structure in the navigable

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waters which may interfere with navigation, including piers, docks, and ramps. Rivers and Harbors Appropriation Act of 1899, 30 Stat. 1151, § 10, 33 U.S.C. § 403. Similarly, a permit must be obtained from the Army Corps of Engineers *723 for the discharge of dredged or fill material, and from the Secretary of the Interior or Agriculture for the construction of reservoirs, canals, and other water storage systems on federal land. See 33 U.S.C. §§ 1344(a), (e); 43 U.S.C. § 1761 (1988 ed. and Supp. IV). We assume that a § 401 certification would also be required for some licenses obtained pursuant to these statutes. Because § 401's certification requirement applies to other statutes and regulatory schemes, and because any conflict with FERC's authority under the FPA is hypothetical, we are unwilling to read implied limitations into § 401. If FERC issues a license containing a stream flow condition with which petitioners disagree, they may pursue judicial remedies at that time. Cf. *Escondido Mut. Water Co. v. La Jolla Band of Mission Indians*, 466 U.S. 765, 778, n. 20, 104 S.Ct. 2105, 2113, n. 20, 80 L.Ed.2d 753 (1984).

In summary, we hold that the State may include minimum stream flow requirements in a certification issued pursuant to § 401 of the Clean Water Act insofar as necessary to enforce a designated use contained in a state water quality standard. The judgment of the Supreme Court of Washington, accordingly, is affirmed.

So ordered.

Justice STEVENS, concurring.

While I agree fully with the thorough analysis in the Court's opinion, I add this comment**1915 for emphasis. For judges who find it unnecessary to go behind the statutory text to discern the intent of Congress, this is (or should be) an easy case. Not a single sentence, phrase, or word in the Clean Water Act purports to place any constraint on a State's power to regulate the quality of its own waters more stringently than federal law might require. In fact, the Act explicitly recognizes States' ability to impose stricter standards. See, e.g., § 301(b)(1)(C),

33 U.S.C. § 1311(b)(1)(C).

*724 Justice THOMAS, with whom Justice SCALIA joins, dissenting.

The Court today holds that a State, pursuant to § 401 of the Clean Water Act, may condition the certification necessary to obtain a federal license for a proposed hydroelectric project upon the maintenance of a minimum flow rate in the river to be utilized by the project. In my view, the Court makes three fundamental errors. First, it adopts an interpretation that fails adequately to harmonize the subsections of § 401. Second, it places no meaningful limitation on a State's authority under § 401 to impose conditions on certification. Third, it gives little or no consideration to the fact that its interpretation of § 401 will significantly disrupt the carefully crafted federal-state balance embodied in the Federal Power Act. Accordingly, I dissent.

I
A

Section 401(a)(1) of the Federal Water Pollution Control Act, otherwise known as the Clean Water Act (CWA or Act), 33 U.S.C. § 1251 *et seq.*, provides that “[a]ny applicant for a Federal license or permit to conduct any activity ..., which may result in any discharge into the navigable waters, shall provide the licensing or permitting agency a certification from the State in which the discharge originates ... that any such discharge will comply with ... applicable provisions of [the CWA].” 33 U.S.C. § 1341(a)(1). The terms of § 401(a)(1) make clear that the purpose of the certification process is to ensure that discharges from a project will meet the requirements of the CWA. Indeed, a State's authority under § 401(a)(1) is limited to certifying that “any discharge” that “may result” from “any activity,” such as petitioners' proposed hydroelectric project, will “comply” with the enumerated provisions of the CWA; if the discharge will fail to comply, the State may “den[y]” the certification. *Ibid.* In addition, under § 401(d), a State may place conditions on a *725 § 401 certification, including “effluent limitations and other limitations, and monitoring re-

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quirements," that may be necessary to ensure compliance with various provisions of the CWA and with "any other appropriate requirement of State law." § 1341(d).

The minimum stream flow condition imposed by respondents in this case has no relation to any possible "discharge" that might "result" from petitioners' proposed project. The term "discharge" is not defined in the CWA, but its plain and ordinary meaning suggests "a flowing or issuing out," or "something that is emitted." Webster's Ninth New Collegiate Dictionary 360 (1991). Cf. 33 U.S.C. § 1362(16) ("The term 'discharge' when used without qualification includes a discharge of a pollutant, and a discharge of pollutants"). A minimum stream flow requirement, by contrast, is a limitation on the amount of water the project can take in or divert from the river. See *ante*, at 1908. That is, a minimum stream flow requirement is a limitation on intake—the opposite of discharge. Imposition of such a requirement would thus appear to be beyond a State's authority as it is defined by § 401(a)(1).

The Court remarks that this reading of § 401(a)(1) would have "considerable force," *ante*, at 1908, were it not for what the Court understands to be the expansive terms of § 401(d). That subsection, as set forth in 33 U.S.C. § 1341(d), provides:

"Any certification provided under this section shall set forth any effluent limitations and other limitations, and monitoring requirements necessary to assure that *any applicant* for a Federal license or permit **1916 will comply with any applicable effluent limitations and other limitations, under section 1311 or 1312 of this title, standard of performance under section 1316 of this title, or prohibition, effluent standard, or pretreatment standard under section 1317 of this title, and with any other appropriate requirement of State law set forth in such certification, and shall become a condition on any Federal*726 license or permit subject to the provisions of this section." (Emphasis added).

According to the Court, the fact that § 401(d) refers to an "applicant," rather than a "discharge," complying with various provisions of the Act "contradicts petitioners' claim that the State may only impose water quality limitations specifically tied to a 'discharge.'" *Ante*, at 1909. In the Court's view, § 401(d)'s reference to an applicant's compliance "expands" a State's authority beyond the limits set out in § 401(a)(1), *ibid.*, thereby permitting the State in its certification process to scrutinize the applicant's proposed "activity as a whole," not just the discharges that may result from the activity, *ante*, at 1909. The Court concludes that this broader authority allows a State to impose conditions on a § 401 certification that are unrelated to discharges. *Ante*, at 1908-1909.

While the Court's interpretation seems plausible at first glance, it ultimately must fail. If, as the Court asserts, § 401(d) permits States to impose conditions unrelated to discharges in § 401 certifications, Congress' careful focus on discharges in § 401(a)(1)—the provision that describes the scope and function of the certification process—was wasted effort. The power to set conditions that are unrelated to discharges is, of course, nothing but a conditional power to deny certification for reasons unrelated to discharges. Permitting States to impose conditions unrelated to discharges, then, effectively eliminates the constraints of § 401(a)(1).

Subsections 401(a)(1) and (d) can easily be reconciled to avoid this problem. To ascertain the nature of the conditions permissible under § 401(d), § 401 must be read as a whole. See *United Sav. Assn. of Tex. v. Timbers of Inwood Forest Associates, Ltd.*, 484 U.S. 365, 371, 108 S.Ct. 626, 630, 98 L.Ed.2d 740 (1988) (statutory interpretation is a "holistic endeavor"). As noted above, § 401(a)(1) limits a State's authority in the certification process to addressing concerns related to discharges and to ensuring that any discharge resulting from a project will comply with specified provisions of the Act. It is reasonable *727 to infer that the conditions a State is permitted to impose on certification must

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relate to the very purpose the certification process is designed to serve. Thus, while § 401(d) permits a State to place conditions on a certification to ensure compliance of the "applicant," those conditions must still be related to discharges. In my view, this interpretation best harmonizes the subsections of § 401. Indeed, any broader interpretation of § 401(d) would permit that subsection to swallow § 401(a)(1).

The text of § 401(d) similarly suggests that the conditions it authorizes must be related to discharges. The Court attaches critical weight to the fact that § 401(d) speaks of the compliance of an "applicant," but that reference, in and of itself, says little about the nature of the conditions that may be imposed under § 401(d). Rather, because § 401(d) conditions can be imposed only to ensure compliance with specified provisions of law—that is, with "applicable effluent limitations and other limitations, under section 1311 or 1312 of this title, standard[s] of performance under section 1316 of this title, ... prohibition[s], effluent standard[s], or pretreatment standard[s] under section 1317 of this title, [or] ... any other appropriate requirement[s] of State law"—one should logically turn to those provisions for guidance in determining the nature, scope, and purpose of § 401(d) conditions. Each of the four identified CWA provisions describes discharge-related limitations. See § 1311 (making it unlawful to discharge any pollutant except in compliance with enumerated provisions of the Act); § 1312 (establishing effluent limitations on point source discharges); § 1316 (setting national standards of performance**1917 for the control of discharges); and § 1317 (setting pretreatment effluent standards and prohibiting the discharge of certain effluents except in compliance with standards).

The final term on the list—"appropriate requirement[s] of State law"—appears to be more general in scope. Because *728 this reference follows a list of more limited provisions that specifically address discharges, however, the principle *ejusdem generis* would suggest that the general reference to

"appropriate" requirements of state law is most reasonably construed to extend only to provisions that, like the other provisions in the list, impose discharge-related restrictions. Cf. *Cleveland v. United States*, 329 U.S. 14, 18, 67 S.Ct. 13, 15-16, 91 L.Ed. 12 (1946) ("Under the *ejusdem generis* rule of construction the general words are confined to the class and may not be used to enlarge it"); *Arcadia v. Ohio Power Co.*, 498 U.S. 73, 84, 111 S.Ct. 415, 421-422, 112 L.Ed.2d 374 (1990). In sum, the text and structure of § 401 indicate that a State may impose under § 401(d) only those conditions that are related to discharges.

B

The Court adopts its expansive reading of § 401(d) based at least in part upon deference to the "conclusion" of the Environmental Protection Agency (EPA) that § 401(d) is not limited to requirements relating to discharges. *Ante*, at 1909. The agency regulation to which the Court defers is 40 CFR § 121.2(a)(3) (1993), which provides that the certification shall contain "[a] statement that there is a reasonable assurance that the activity will be conducted in a manner which will not violate applicable water quality standards." *Ante*, at 1909. According to the Court, "EPA's conclusion that activities—not merely discharges—must comply with state water quality standards ... is entitled to deference" under *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). *Ante*, at 1909.

As a preliminary matter, the Court appears to resort to deference under *Chevron* without establishing through an initial examination of the statute that the text of the section is ambiguous. See *Chevron, supra*, at 842-843, 104 S.Ct., at 2781-2182. More importantly, the Court invokes *Chevron* deference to support its interpretation even though the Government does not seek *729 deference for the EPA's regulation in this case. ^{FN1} That the Government itself has not contended that an agency interpretation exists reconciling the scope of the conditioning authority under § 401(d) with the terms of §

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401(a)(1) should suggest to the Court that there is no "agenc[y] construction" directly addressing the question. *Chevron, supra*, at 842, 104 S.Ct., at 2781.

FN1. The Government, appearing as *amicus curiae* "supporting affirmance," instead approaches the question presented by assuming, *arguendo*, that petitioners' construction of § 401 is correct: "Even if a condition imposed under Section 401(d) were valid only if it assured that a 'discharge' will comply with the State's water quality standards, the [minimum flow condition set by respondents] satisfies that test." Brief for United States as *Amicus Curiae* 11.

In fact, the regulation to which the Court defers is hardly a definitive construction of the scope of § 401(d). On the contrary, the EPA's position on the question whether conditions under § 401(d) must be related to discharges is far from clear. Indeed, the only EPA regulation that specifically addresses the "conditions" that may appear in § 401 certifications speaks exclusively in terms of limiting discharges. According to the EPA, a § 401 certification shall contain "[a] statement of any conditions which the certifying agency deems necessary or desirable with respect to the discharge of the activity." 40 CFR § 121.2(a)(4) (1993) (emphases added). In my view, § 121.2(a)(4) should, at the very least, give the Court pause before it resorts to *Chevron* deference in this case.

II

The Washington Supreme Court held that the State's water quality standards, promulgated pursuant to § 303 of the Act, 33 U.S.C. § 1313, were "appropriate" requirements of state law under § 401(d), and sustained the stream flow condition imposed by respondents as necessary to ensure compliance with a "use" of the river as specified in those standards. As an alternative to their argument that § 401(d) conditions must be discharge related, petitioners assert that the state court erred

when it sustained the stream flow condition under the "use" component of the State's water quality standards without reference to the corresponding "water quality criteria" contained in those standards. As explained above, petitioners' argument with regard to the scope of a State's authority to impose conditions under § 401(d) is correct. I also find petitioners' alternative argument persuasive. Not only does the Court err in rejecting that § 303 argument, in the process of doing so it essentially removes all limitations on a State's conditioning authority under § 401.

The Court states that, "at a minimum, limitations imposed pursuant to state water quality standards adopted pursuant to § 303 are 'appropriate' requirements of state law" under § 401(d). *Ante*, at 1910.^{FN2} A water quality standard promulgated pursuant to § 303 must "consist of the designated uses of the navigable waters involved and the water quality criteria for such waters based upon such uses." 33 U.S.C. § 1313(c)(2)(A). The Court asserts that this language "is most naturally read to require that a project be consistent with both components, namely, the designated use and the water quality criteria." *Ante*, at 1910. In the Court's view, then, the "use" of a body of water is independently enforceable through § 401(d) without reference to the corresponding criteria. *Ibid*.

FN2. In the Court's view, § 303 water quality standards come into play under § 401(d) either as "appropriate" requirements of state law or through § 301 of the Act, which, according to the Court, "incorporates § 303 by reference." *Ante*, at 1909 (citations omitted). The Court notes that through § 303, "the statute allows States to impose limitations to ensure compliance with § 301 of the Act." *Ibid*. Yet § 301 makes unlawful only "the [unauthorized] discharge of any pollutant by any person." 33 U.S.C. § 1311(a) (emphasis added); cf. *supra*, at 1916. Thus, the Court's reliance on § 301 as a source of

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authority to impose conditions unrelated to discharges is misplaced.

the uses the State has chosen. In short, once a State is allowed to impose conditions on § 401 certifications to protect "uses" in the abstract, § 401(d) is limitless.

The Court's reading strikes me as contrary to common sense. It is difficult to see how compliance with a "use" of a body of water could be enforced without reference to the *731 corresponding criteria. In this case, for example, the applicable "use" is contained in the following regulation: "Characteristic uses shall include, but not be limited to, ... [s]almonid migration, rearing, spawning, and harvesting." Wash.Admin.Code (WAC) 173-201-045(1)(b)(iii) (1986). The corresponding criteria, by contrast, include measurable factors such as quantities of fecal coliform organisms and dissolved gases in the water. 173-201-045(1)(c)(i) and (ii).^{FN3} Although the Act does not further address (at least not expressly) the link between "uses" and "criteria," the regulations promulgated under § 303 make clear that a "use" is an aspirational goal to be attained through compliance with corresponding "criteria." Those regulations suggest that "uses" are to be "achieved and protected," and that "water quality criteria" are to be adopted to "protect the designated use[s]." 40 CFR §§ 131.10(a), 131.11(a)(1) (1993).

To illustrate, while respondents in this case focused only on the "use" of the Dosewallips River as a fish habitat, this particular river has a number of other "[c]haracteristic uses," *732 including "[r]ecreation (primary contact recreation, sport fishing, boating, and aesthetic enjoyment)." WAC 173-201-045(1)(b)(v) (1986). Under the Court's interpretation, respondents could have imposed any number of conditions related to recreation, including conditions that have little relation to water quality. In *Town of Summersville*, 60 FERC ¶ 61,291, p. 61,990 (1992), for instance, the state agency required the applicant to "construct ... access roads and paths, low water stepping stone bridges, ... a boat launching facility ..., and a residence and storage building." These conditions presumably would be sustained under the approach the Court adopts today.^{FN4} In the end, it is difficult to conceive of a condition that would fall outside a State's § 401(d) authority under the Court's approach.

FN3. Respondents concede that petitioners' project "will likely not violate any of Washington's water quality criteria." Brief for Respondents 24.

FN4. Indeed, as the § 401 certification stated in this case, the flow levels imposed by respondents are "in excess of those required to maintain water quality in the by-pass region," App. to Pet. for Cert. 83a, and therefore conditions not related to water quality must, in the Court's view, be permitted.

The problematic consequences of decoupling "uses" and "criteria" become clear once the Court's interpretation of § 303 is read in the context of § 401. In the Court's view, a State may condition the § 401 certification "upon any limitations necessary to ensure compliance" with the "uses of the water body." *Ante*, at 1909-1910 (emphasis added). Under the Court's interpretation, then, state environmental agencies may pursue, through § 401, their water goals in any way they choose; the conditions imposed on certifications need not relate to discharges, nor to water quality criteria, nor to any objective or quantifiable standard, so long as they tend to **1919 make the water more suitable for

III

The Court's interpretation of § 401 significantly disrupts the careful balance between state and federal interests that Congress struck in the Federal Power Act (FPA), 16 U.S.C. § 791a *et seq.* Section 4(e) of the FPA authorizes the Federal Energy Regulatory Commission (FERC) to issue licenses for projects "necessary or convenient ... for the development, transmission, and utilization of power across, along, from, or in any of the streams ... over which Congress has jurisdiction." 16 U.S.C. §

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797(e). In the licensing process, FERC must balance a number of considerations: “[I]n addition to the power and development purposes for which licenses are issued, [FERC] shall give equal consideration to the purposes of energy conservation, the protection, mitigation of damage to, and enhancement of, fish and wildlife (including related spawning grounds and habitat), the protection of recreational*733 opportunities, and the preservation of other aspects of environmental quality.” *Ibid.* Section 10(a) empowers FERC to impose on a license such conditions, including minimum stream flow requirements, as it deems best suited for power development and other public uses of the waters. See 16 U.S.C. § 803(a); *California v. FERC*, 495 U.S. 490, 494-495, 506, 110 S.Ct. 2024, 2027, 109 L.Ed.2d 474 (1990).

In *California v. FERC*, the Court emphasized FERC's exclusive authority to set the stream flow levels to be maintained by federally licensed hydroelectric projects. California, in order “to protect [a] stream's fish,” had imposed flow rates on a federally licensed project that were significantly higher than the flow rates established by FERC. *Id.*, at 493, 110 S.Ct., at 2027. In concluding that California lacked authority to impose such flow rates, we stated:

“As Congress directed in FPA § 10(a), FERC set the conditions of the [project] license, including the minimum stream flow, after considering which requirements would best protect wildlife and ensure that the project would be economically feasible, and thus further power development. Allowing California to impose significantly higher minimum stream flow requirements would disturb and conflict with the balance embodied in that considered federal agency determination. FERC has indicated that the California requirements interfere with its comprehensive planning authority, and we agree that allowing California to impose the challenged requirements would be contrary to congressional intent regarding the Commission's licensing authority and would con-

stitute a veto of the project that was approved and licensed by **1920 FERC.” *Id.*, at 506-507, 110 S.Ct., at 2033-2034 (citations and internal quotation marks omitted).

California v. FERC reaffirmed our decision in *First Iowa Hydro-Electric Cooperative v. FPC*, 328 U.S. 152, 164, 66 S.Ct. 906, 911-912, 90 L.Ed. 1143 (1946), in which we warned against “vest[ing] in [state authorities] *734 a veto power” over federal hydroelectric projects. Such authority, we concluded, could “destroy the effectiveness” of the FPA and “subordinate to the control of the State the ‘comprehensive’ planning” with which the administering federal agency (at that time the Federal Power Commission) was charged. *Ibid.*

Today, the Court gives the States precisely the veto power over hydroelectric projects that we determined in *California v. FERC* and *First Iowa* they did not possess. As the language of § 401(d) expressly states, any condition placed in a § 401 certification, including, in the Court's view, a stream flow requirement, “shall become a condition on any Federal license or permit.” 33 U.S.C. § 1341(d) (emphasis added). Any condition imposed by a State under § 401(d) thus becomes a “ter[m] ... of the license as a matter of law.” *Department of Interior v. FERC*, 952 F.2d 538, 548 (CA10 1992) (citation and internal quotation marks omitted), regardless of whether FERC favors the limitation. Because of § 401(d)'s mandatory language, federal courts have uniformly held that FERC has no power to alter or review § 401 conditions, and that the proper forum for review of those conditions is state court.^{FN5} Section 401(d) conditions imposed by States are *735 therefore binding on FERC. Under the Court's interpretation, then, it appears that the mistake of the State in *California v. FERC* was not that it had trespassed into territory exclusively reserved to FERC; rather, it simply had not hit upon the proper device—that is, the § 401 certification—through which to achieve its objectives.

FN5. See, e.g., *Keating v. FERC*, 927 F.2d 616, 622 (CA10 1991) (federal review in-

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appropriate because a decision to grant or deny § 401 certification "presumably turns on questions of substantive state environmental law—an area that Congress expressly intended to reserve to the states and concerning which federal agencies have little competence"); *Department of Interior v. FERC*, 952 F.2d, at 548; *United States v. Marathon Development Corp.*, 867 F.2d 96, 102 (CA1 1989); *Proffitt v. Rohm & Haas*, 850 F.2d 1007, 1009 (CA3 1988). FERC has taken a similar position. See *Town of Summersville*, 60 FERC ¶ 61,291, p. 61,990 (1992) ("[S]ince pursuant to Section 401(d) ... all of the conditions in the water quality certification must become conditions in the license, review of the appropriateness of the conditions is within the purview of state courts and not the Commission. The only alternatives available to the Commission are either to issue a license with the conditions included or to deny" the application altogether); accord, *Central Maine Power Co.*, 52 FERC ¶ 61,033, pp. 61,172-61,173 (1990).

Although the Court notes in passing that "[t]he limitations included in the certification become a condition on any federal license," *ante*, at 1907, it does not acknowledge or discuss the shift of power from FERC to the States that is accomplished by its decision. Indeed, the Court merely notes that "any conflict with FERC's authority under the FPA" in this case is "hypothetical" at this stage, *ante*, at 1914, because "FERC has not yet acted on petitioners' license application," *ante*, at 1914. We are assured that "it is quite possible ... that any FERC license would contain the same conditions as the state § 401 certification." *Ibid*.

The Court's observations simply miss the point. Even if FERC might have no objection to the stream flow condition established by respondents *in this case*, such a happy coincidence will likely prove to be the exception, rather than the rule. In is-

suing licenses, FERC must balance the *Nation's* power needs together with the need for energy conservation, irrigation, flood control, fish and wildlife protection, and recreation. 16 U.S.C. § 797(e). State environmental agencies, by contrast, need only consider parochial environmental interests. Cf., e.g., Wash.Rev.Code § 90.54.010(2) (1992) (goal of State's water policy is to "insure that waters of the state are protected and fully utilized for the greatest benefit to the people of the state of Washington"). As a result, it is likely that conflicts will arise between a **1921 FERC-established stream flow level and a state-imposed level.

Moreover, the Court ignores the fact that its decision nullifies the congressionally mandated process for resolving such state-federal disputes when they develop. Section 10(j)(1) of the FPA, 16 U.S.C. § 803(j)(1), which was added as part *736 of the Electric Consumers Protection Act of 1986 (ECPA), 100 Stat. 1244, provides that every FERC license must include conditions to "protect, mitigate damag[e] to, and enhance" fish and wildlife, including "related spawning grounds and habitat," and that such conditions "shall be based on recommendations" received from various agencies, including state fish and wildlife agencies. If FERC believes that a recommendation from a state agency is inconsistent with the FPA—that is, inconsistent with what FERC views as the proper balance between the Nation's power needs and environmental concerns—it must "attempt to resolve any such inconsistency, giving due weight to the recommendations, expertise, and statutory responsibilities" of the state agency. § 803(j)(2). If, after such an attempt, FERC "does not adopt in whole or in part a recommendation of any [state] agency," it must publish its reasons for rejecting that recommendation. *Ibid*. After today's decision, these procedures are a dead letter with regard to stream flow levels, because a State's "recommendation" concerning stream flow "shall" be included in the license when it is imposed as a condition under § 401(d).

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More fundamentally, the 1986 amendments to the FPA simply make no sense in the stream flow context if, in fact, the States already possessed the authority to establish minimum stream flow levels under § 401(d) of the CWA, which was enacted years before those amendments. Through the ECPA, Congress strengthened the role of the States in establishing FERC conditions, but it did not make that authority paramount. Indeed, although Congress could have vested in the States the final authority to set stream flow conditions, it instead left that authority with FERC. See *California v. FERC*, 495 U.S., at 499, 110 S.Ct., at 2029-2030. As the Ninth Circuit observed in the course of rejecting California's effort to give *California v. FERC* a narrow reading, "[t]here would be no point in Congress requiring [FERC] to consider the state agency recommendations on environmental matters and *737 make its own decisions about which to accept, if the state agencies had the power to impose the requirements themselves." *Sayles Hydro Associates v. Maughan*, 985 F.2d 451, 456 (1993).

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Given the connection between § 401 and federal hydroelectric licensing, it is remarkable that the Court does not at least attempt to fit its interpretation of § 401 into the larger statutory framework governing the licensing process. At the very least, the significant impact the Court's ruling is likely to have on that process should compel the Court to undertake a closer examination of § 401 to ensure that the result it reaches was mandated by Congress.

IV

Because the Court today fundamentally alters the federal-state balance Congress carefully crafted in the FPA, and because such a result is neither mandated nor supported by the text of § 401, I respectfully dissent.

U.S. Wash., 1994.

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ATTACHMENT 25

Westlaw

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(Cite as: 191 F.3d 1159)

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United States Court of Appeals,
Ninth Circuit.

DEFENDERS OF WILDLIFE and The Sierra Club,
Petitioners,

v.

Carol M. BROWNER, in her official capacity as
Administrator of the United States Environmental
Protection Agency, Respondent.

City of Tempe, Arizona; City of Tucson, Arizona;
City of Mesa, Arizona; Pima County, Arizona; and
City of Phoenix, Arizona, Intervenors-Respondents.

No. 98-71080.

Argued and Submitted Aug. 11, 1999.

Decided Sept. 15, 1999.

Environmental organizations sought review of Environmental Protection Agency (EPA) decision to issue National Pollution Discharge Elimination System (NPDES) permits to five municipalities, for their separate storm sewers, without requiring numeric limitations to ensure compliance with state water-quality standards. The Court of Appeals, Graber, Circuit Judge, held that: (1) organizations had standing; (2) municipal storm-sewer discharges did not have to strictly comply with state water-quality standards; but (3) EPA had discretion to require that municipal discharges comply with such standards.

Petition denied.

West Headnotes

[1] Environmental Law 149E ↪651

149E Environmental Law

149EXIII Judicial Review or Intervention

149Ek649 Persons Entitled to Sue or Seek
Review; Standing

149Ek651 k. Cognizable Interests and In-
juries, in General. Most Cited Cases
(Formerly 199k25.15(4.1) Health and Environ-

ment)

For purpose of statute authorizing any inter-
ested person to seek judicial review of Environ-
mental Protection Agency (EPA) decision issuing
or denying any National Pollution Discharge Elim-
ination System (NPDES) permit, "any interested
person" means any person that satisfies the injury-
in-fact requirement for Article III standing.
U.S.C.A. Const. Art. 3, § 2, cl. 1; Federal Water
Pollution Control Act Amendments of 1972, §
509(b)(1)(F), 33 U.S.C.A. § 1369(b)(1)(F).

[2] Environmental Law 149E ↪652

149E Environmental Law

149EXIII Judicial Review or Intervention

149Ek649 Persons Entitled to Sue or Seek
Review; Standing

149Ek652 k. Organizations, Associations,
and Other Groups. Most Cited Cases

(Formerly 199k25.15(4.1) Health and Environ-
ment)

Environmental organizations had standing to
seek judicial review of Environmental Protection
Agency (EPA) decision to issue National Pollution
Discharge Elimination System (NPDES) permits
for municipalities' storm sewers based on allegation
that organizations' members used and enjoyed eco-
systems affected by storm water discharges and
sources thereof governed by the permits. U.S.C.A.
Const. Art. 3, § 2, cl. 1; Federal Water Pollution
Control Act Amendments of 1972, § 509(b)(1)(F),
33 U.S.C.A. § 1369(b)(1)(F).

[3] Environmental Law 149E ↪220

149E Environmental Law

149EV Water Pollution

149Ek215 Administrative Agencies and Pro-
ceedings

149Ek220 k. Permit and Certification Pro-
ceedings. Most Cited Cases

(Formerly 199k25.7(13.1), 199k25.7(11) Health
and Environment)

191 F.3d 1159, 30 Env'tl. L. Rep. 20,116, 99 Cal. Daily Op. Serv. 7618, 1999 Daily Journal D.A.R. 9661, 1999 Daily Journal D.A.R. 12,369
(Cite as: 191 F.3d 1159)

Although best practicable control technology (BPT) requirement for National Pollution Discharge Elimination System (NPDES) permits takes into account issues of practicability, the Environmental Protection Agency (EPA) also is under a specific obligation to require that level of effluent control which is needed to implement existing water quality standards without regard to the limits of practicability. Federal Water Pollution Control Act Amendments of 1972, §§ 301(b)(1)(A, C), 402(a)(1), 33 U.S.C.A. §§ 1311(b)(1)(A, C), 1342(a)(1).

[4] Environmental Law 149E ↪196

149E Environmental Law
149EV Water Pollution
149Ek194 Permits and Certifications
149Ek196 k. Discharge of Pollutants.
Most Cited Cases
(Formerly 199k25.7(13.1) Health and Environment)

Water Quality Act amendments to the Clean Water Act do not require municipal storm-sewer discharges to strictly comply with state water-quality standards, in order to obtain National Pollution Discharge Elimination System (NPDES) permit, but instead prescribe separate standard requiring reduction of discharge of pollutants to maximum extent practicable, in view of Act's distinction between municipal and industrial discharges. Federal Water Pollution Control Act Amendments of 1972, §§ 301(b)(1)(C), 402(p)(3)(B)(iii), 33 U.S.C.A. §§ 1311(b)(1)(C), 1342(p)(3)(B)(iii).

[5] Statutes 361 ↪219(1)

361 Statutes
361VI Construction and Operation
361VI(A) General Rules of Construction
361k213 Extrinsic Aids to Construction
361k219 Executive Construction
361k219(1) k. In General. Most Cited Cases

Questions of congressional intent that can be answered with traditional tools of statutory con-

struction are still firmly within the province of the courts under *Chevron*, which governs review of an agency's interpretation of a statute.

[6] Statutes 361 ↪188

361 Statutes
361VI Construction and Operation
361VI(A) General Rules of Construction
361k187 Meaning of Language
361k188 k. In General. Most Cited Cases

Statutes 361 ↪205

361 Statutes
361VI Construction and Operation
361VI(A) General Rules of Construction
361k204 Statute as a Whole, and Intrinsic Aids to Construction
361k205 k. In General. Most Cited Cases

Using traditional tools of statutory construction when interpreting a statute, courts look first to the words that Congress used, and, rather than focusing just on the word or phrase at issue, courts look to the entire statute to determine Congressional intent.

[7] Statutes 361 ↪195

361 Statutes
361VI Construction and Operation
361VI(A) General Rules of Construction
361k187 Meaning of Language
361k195 k. Express Mention and Implied Exclusion. Most Cited Cases

Where Congress includes particular language in one section of a statute but omits it in another section of the same act, it is generally presumed that Congress acts intentionally and purposely in the disparate inclusion or exclusion.

[8] Environmental Law 149E ↪197

149E Environmental Law
149EV Water Pollution
149Ek194 Permits and Certifications

191 F.3d 1159, 30 Env't. L. Rep. 20,116, 99 Cal. Daily Op. Serv. 7618, 1999 Daily Journal D.A.R. 9661, 1999 Daily Journal D.A.R. 12,369
(Cite as: 191 F.3d 1159)

149Ek197 k. Conditions and Limitations.
Most Cited Cases

(Formerly 199k25.7(10.1) Health and Environment)

Environmental Protection Agency (EPA) is not prohibited from requiring, under Clean Water Act, that municipal storm-sewer discharges strictly comply with state water-quality standards, but has discretion to determine appropriate pollution controls. Federal Water Pollution Control Act Amendments of 1972, § 402(p)(3)(B)(iii), 33 U.S.C.A. § 1342(p)(3)(B)(iii).

*1160 Jennifer Anderson and David Baron, Arizona Center for Law in the Public Interest, Phoenix, Arizona, for the petitioners.

Alan Greenberg, Attorney, U.S. Department of Justice, Environment & Natural Resources Division, Denver, Colorado, for the respondent.

Craig Reece, Phoenix City Attorney's Office, Phoenix, Arizona; Stephen J. Burg, Mesa City Attorney's Office, Mesa, Arizona; Timothy Harrison, Tucson City Attorney's Office, Tucson, Arizona; Harlan C. Agnew, Deputy County Attorney, Tucson, Arizona; and Charlotte Benson, Tempe City Attorney's Office, Tempe, Arizona, for the intervenors-respondents.

*1161 David Burchmore, Squire, Sanders & Dempsey, Cleveland, Ohio, for amici curiae.

Petition to Review a Decision of the Environmental Protection Agency. EPA No. 97-3.

Before: NOONAN, THOMPSON, and GRABER, Circuit Judges.

GRABER, Circuit Judge:

Petitioners challenge the Environmental Protection Agency's (EPA) decision to issue National Pollution Discharge Elimination System (NPDES) permits to five municipalities, for their separate storm sewers, without requiring numeric limitations

to ensure compliance with state water-quality standards. Petitioners sought administrative review of the decision within the EPA, which the Environmental Appeals Board (EAB) denied. This timely petition for review ensued. For the reasons that follow, we deny the petition.

FACTUAL AND PROCEDURAL BACKGROUND

Title 26 U.S.C. § 1342(a)(1) authorizes the EPA to issue NPDES permits, thereby allowing entities to discharge some pollutants. In 1992 and 1993, the cities of Tempe, Tucson, Mesa, and Phoenix, Arizona, and Pima County, Arizona (Intervenors), submitted applications for NPDES permits. The EPA prepared draft permits for public comment; those draft permits did not attempt to ensure compliance with Arizona's water-quality standards.

Petitioner Defenders of Wildlife objected to the permits, arguing that they must contain numeric limitations to ensure strict compliance with state water-quality standards. The State of Arizona also objected.

Thereafter, the EPA added new requirements:

To ensure that the permittee's activities achieve timely compliance with applicable water quality standards (Arizona Administrative Code, Title 18, Chapter 11, Article 1), the permittee shall implement the [Storm Water Management Program], monitoring, reporting and other requirements of this permit in accordance with the time frames established in the [Storm Water Management Program] referenced in Part I.A.2, and elsewhere in the permit. This timely implementation of the requirements of this permit shall constitute a schedule of compliance authorized by Arizona Administrative Code, section R18-11-121(C).

The Storm Water Management Program included a number of structural environmental controls, such as storm-water detention basins, retention basins, and infiltration ponds. It also included

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programs to remove illegal discharges.

With the inclusion of those "best management practices," the EPA determined that the permits ensured compliance with state water-quality standards. The Arizona Department of Environmental Quality agreed:

The Department has reviewed the referenced municipal NPDES storm-water permit pursuant to Section 401 of the Federal Clean Water Act to ensure compliance with State water quality standards. We have determined that, based on the information provided in the permit, and the fact sheet, adherence to provisions and requirements set forth in the final municipal permit, will protect the water quality of the receiving water.

On February 14, 1997, the EPA issued final NPDES permits to Intervenor. Within 30 days of that decision, Petitioners requested an evidentiary hearing with the regional administrator. See 40 C.F.R. § 124.74. Although Petitioners requested a hearing, they conceded that they raised only a legal issue and that a hearing was, in fact, unnecessary. Specifically, Petitioners raised only the legal question whether the Clean Water Act (CWA) requires numeric limitations to ensure strict compliance with state water-quality standards; they did not raise the factual question whether the management practices that the EPA chose would be effective.

*1162 On June 16, 1997, the regional administrator summarily denied Petitioners' request. Petitioners then filed a petition for review with the EAB. See 40 C.F.R. § 124.91(a). On May 21, 1998, the EAB denied the petition, holding that the permits need not contain numeric limitations to ensure strict compliance with state water-quality standards. Petitioners then moved for reconsideration, see 40 C.F.R. § 124.91(i), which the EAB denied.

JURISDICTION

[1][2] Title 33 U.S.C. § 1369(b)(1)(F) authorizes "any interested person" to seek review in this court of an EPA decision "issuing or denying any

permit under section 1342 of this title." "Any interested person" means any person that satisfies the injury-in-fact requirement for Article III standing. See *Natural Resources Defense Council, Inc. v. EPA*, 966 F.2d 1292, 1297 (9th Cir.1992) [*NRDC II*]. It is undisputed that Petitioners satisfy that requirement. Petitioners allege that "[m]embers of Defenders and the Club use and enjoy ecosystems affected by storm water discharges and sources thereof governed by the above-referenced permits," and no other party disputes those facts. See *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 565-66, 112 S.Ct. 2130, 119 L.Ed.2d 351 (1992) ("[A] plaintiff claiming injury from environmental damage must use the area affected by the challenged activity."); see also *NRDC II*, 966 F.2d at 1297 ("NRDC claims, inter alia, that [the] EPA has delayed unlawfully promulgation of storm water regulations and that its regulations, as published, inadequately control storm water contaminants. NRDC's allegations ... satisfy the broad standing requirement applicable here.").

Intervenor argues, however, that they were not parties when this action was filed and that this court cannot redress Petitioners' injury without them. Their real contention appears to be that they are indispensable parties under Federal Rule of Civil Procedure 19. We need not consider that contention, however, because in fact Intervenor has been permitted to intervene in this action and to present their position fully. In the circumstances, Intervenor has suffered no injury.

DISCUSSION

A. Standard of Review

The Administrative Procedures Act (APA), 5 U.S.C. §§ 701-06, provides our standard of review for the EPA's decision to issue a permit. See *American Mining Congress v. EPA*, 965 F.2d 759, 763 (9th Cir.1992). Under the APA, we generally review such a decision to determine whether it was "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A).

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On questions of statutory interpretation, we follow the approach from *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). See *NRDC II*, 966 F.2d at 1297 (so holding). In *Chevron*, 467 U.S. at 842-44, 104 S.Ct. 2778, the Supreme Court devised a two-step process for reviewing an administrative agency's interpretation of a statute that it administers. See also *Bicycle Trails Council of Marin v. Babbitt*, 82 F.3d 1445, 1452 (9th Cir.1996) ("The Supreme Court has established a two-step process for reviewing an agency's construction of a statute it administers."). Under the first step, we employ "traditional tools of statutory construction" to determine whether Congress has expressed its intent unambiguously on the question before the court. *Chevron*, 467 U.S. at 843 n. 9, 104 S.Ct. 2778. "If the intent of Congress is clear, that is the end of the matter; for the court, as well as the agency, must give effect to the unambiguously expressed intent of Congress." *Id.* at 842-43, 104 S.Ct. 2778 (footnote omitted). If, instead, Congress has left a gap for the administrative agency to fill, we proceed to step two. See *id.* at 843, 104 S.Ct. 2778. At step two, we must uphold the administrative regulation unless it is "arbitrary, capricious, or manifestly contrary to the statute." *Id.* at 844, 104 S.Ct. 2778.

***1163 B. Background**

The CWA generally prohibits the "discharge of any pollutant," 33 U.S.C. § 1311(a), from a "point source" into the navigable waters of the United States. See 33 U.S.C. § 1362(12)(A). An entity can, however, obtain an NPDES permit that allows for the discharge of some pollutants. See 33 U.S.C. § 1342(a)(1).

[3] Ordinarily, an NPDES permit imposes effluent limitations on such discharges. See 33 U.S.C. § 1342(a)(1) (incorporating effluent limitations found in 33 U.S.C. § 1311). First, a permit-holder "shall ... achiev[e] ... effluent limitations ... which shall require the application of the best practicable control technology [BPT] currently available." 33

U.S.C. § 1311(b)(1)(A). Second, a permit-holder "shall ... achiev[e] ... any more stringent limitation, including those necessary to meet water quality standards, treatment standards or schedules of compliance, established pursuant to any State law or regulations (under authority preserved by section 1370 of this title)." 33 U.S.C. § 1311(b)(1)(C) (emphasis added). Thus, although the BPT requirement takes into account issues of practicability, see *Rybachek v. EPA*, 904 F.2d 1276, 1289 (9th Cir.1990), the EPA also "is under a specific obligation to require that level of effluent control which is needed to implement existing water quality standards without regard to the limits of practicability," *Oklahoma v. EPA*, 908 F.2d 595, 613 (10th Cir.1990) (internal quotation marks omitted), *rev'd on other grounds sub nom. Arkansas v. Oklahoma*, 503 U.S. 91, 112 S.Ct. 1046, 117 L.Ed.2d 239 (1992). See also *Ackels v. EPA*, 7 F.3d 862, 865-66 (9th Cir.1993) (similar).

The EPA's treatment of storm-water discharges has been the subject of much debate. Initially, the EPA determined that such discharges generally were exempt from the requirements of the CWA (at least when they were uncontaminated by any industrial or commercial activity). See 40 C.F.R. § 125.4 (1975).

The Court of Appeals for the District of Columbia, however, invalidated that regulation, holding that "the EPA Administrator does not have authority to exempt categories of point sources from the permit requirements of § 402 [33 U.S.C. § 1342]." *Natural Resources Defense Council, Inc. v. Costle*, 568 F.2d 1369, 1377 (D.C.Cir.1977). "Following this decision, [the] EPA issued proposed and final rules covering storm water discharges in 1980, 1982, 1984, 1985 and 1988. These rules were challenged at the administrative level and in the courts." *American Mining Congress*, 965 F.2d at 763.

Ultimately, in 1987, Congress enacted the Water Quality Act amendments to the CWA. See *NRDC II*, 966 F.2d at 1296 ("Recognizing both the

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environmental threat posed by storm water runoff and [the] EPA's problems in implementing regulations, Congress passed the Water Quality Act of 1987 containing amendments to the CWA." (footnotes omitted). Under the Water Quality Act, from 1987 until 1994,^{FN1} most entities discharging storm water did not need to obtain a permit. See 33 U.S.C. § 1342(p).

FN1. As enacted, the Water Quality Act extended the exemption to October 1, 1992. Congress later amended the Act to change that date to October 1, 1994. See Pub.L. No. 102-580.

Although the Water Quality Act generally did not require entities discharging storm water to obtain a permit, it did require such a permit for discharges "with respect to which a permit has been issued under this section before February 4, 1987," 33 U.S.C. § 1342(p)(2)(A); discharges "associated with industrial activity," 33 U.S.C. § 1342(p)(2)(B); discharges from a "municipal separate sewer system serving a population of [100,000] or more," 33 U.S.C. § 1342(p)(2)(C) & (D); and "[a] discharge for which the Administrator ... 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," 33 U.S.C. § 1342(p)(2)(E).

*1164 When a permit is required for the discharge of storm water, the Water Quality Act sets two different standards:

(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 ... determines appropriate for the control of such pollutants.

33 U.S.C. § 1342(p)(3) (emphasis added).

C. Application of Chevron

[4] The EPA and Petitioners argue that the Water Quality Act is ambiguous regarding whether Congress intended for municipalities to comply strictly with state water-quality standards, under 33 U.S.C. § 1311(b)(1)(C). Accordingly, they argue that we must proceed to step two of *Chevron* and defer to the EPA's interpretation that the statute does require strict compliance. See *Zimmerman v. Oregon Dep't of Justice*, 170 F.3d 1169, 1173 (9th Cir.1999) ("At step two, we must uphold the administrative regulation unless it is arbitrary, capricious, or manifestly contrary to the statute.") (citation and internal quotation marks omitted), cert. denied, 531 U.S. 1189, 121 S.Ct. 1186, 149 L.Ed.2d 103, 68 USLW 3129 (1999).

Intervenors and amici, on the other hand, argue that the Water Quality Act expresses Congress' intent unambiguously and, thus, that we must stop at step one of *Chevron*. See, e.g., *National Credit Union Admin. v. First Nat'l Bank & Trust Co.*, 522 U.S. 479, 118 S.Ct. 927, 938-39, 140 L.Ed.2d 1 (1998) ("Because we conclude that Congress has made it clear that the same common bond of occupation must unite each member of an occupationally defined federal credit union, we hold that the NCUA's contrary interpretation is impermissible under the first step of *Chevron*.") (emphasis in original); *Sierra Club v. EPA*, 118 F.3d 1324, 1327

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(9th Cir.1997) ("Congress has spoken clearly on the subject and the regulation violates the provisions of the statute. Our inquiry ends at the first prong of *Chevron*. "). We agree with Intervenor and *amici*: For the reasons discussed below, the Water Quality Act unambiguously demonstrates that Congress did not require municipal storm-sewer discharges to comply strictly with 33 U.S.C. § 1311(b)(1)(C). That being so, we end our inquiry at the first step of the *Chevron* analysis.

[5][6] "[Q]uestions of congressional intent that can be answered with 'traditional tools of statutory construction' are still firmly within the province of the courts" under *Chevron*. *NRDC II*, 966 F.2d at 1297 (citation omitted). "Using our 'traditional tools of statutory construction,' *Chevron*, 467 U.S. at 843 n. 9, 104 S.Ct. 2778, 81 L.Ed.2d 694, when interpreting a statute, we look first to the words that Congress used." *Zimmerman*, 170 F.3d at 1173 (alterations, citations, and internal quotation marks omitted). "Rather than focusing just on the word or phrase at issue, we look to the entire statute to determine Congressional intent." *Id.* (alterations, citations, and internal quotation marks omitted).

As is apparent, Congress expressly required *industrial* storm-water discharges to comply with the requirements of 33 U.S.C. § 1311. See 33 U.S.C. § 1342(p)(3)(A). ("Permits for discharges associated with industrial activity shall meet all applicable provisions of this section and section 1311 of this title.") (emphasis added). By incorporation, then, industrial*1165 storm-water discharges "shall ... achiev[e] ... any more stringent limitation, including those necessary to meet water quality standards, treatment standards or schedules of compliance, established pursuant to any State law or regulation (under authority preserved by section 1370 of this title)." 33 U.S.C. § 1311(b)(1)(C) (emphasis added); see also Sally A. Longroy, *The Regulation of Storm Water Runoff and its Impact on Aviation*, 58 J. Air. L. & Com. 555, 565-66 (1993) ("Congress further singled out industrial storm water dischargers, all of which are on the high-priority schedule,

and requires them to satisfy all provisions of section 301 of the CWA [33 U.S.C. § 1311].... Section 301 further mandates that NPDES permits include requirements that receiving waters meet water quality based standards.") (emphasis added). In other words, industrial discharges must comply strictly with state water-quality standards.

Congress chose not to include a similar provision for municipal storm-sewer discharges. Instead, Congress required municipal storm-sewer discharges "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 ... determines appropriate for the control of such pollutants." 33 U.S.C. § 1342(p)(3)(B)(iii).

[7] The EPA and Petitioners argue that the difference in wording between the two provisions demonstrates ambiguity. That argument ignores precedent respecting the reading of statutes. Ordinarily, "[w]here Congress includes particular language in one section of a statute but omits it in another section of the same Act, it is generally presumed that Congress acts intentionally and purposely in the disparate inclusion or exclusion." *Russello v. United States*, 464 U.S. 16, 23, 104 S.Ct. 296, 78 L.Ed.2d 17 (1983) (citation and internal quotation marks omitted); see also *United States v. Hanousek*, 176 F.3d 1116, 1121 (9th Cir.1999) (stating the same principle), *petition for cert. filed*, 68 USLW 3138 (Aug. 23, 1999). Applying that familiar and logical principle, we conclude that Congress' choice to require industrial storm-water discharges to comply with 33 U.S.C. § 1311, but not to include the same requirement for municipal discharges, must be given effect. When we read the two related sections together, we conclude that 33 U.S.C. § 1342(p)(3)(B)(iii) does not require municipal storm-sewer discharges to comply strictly with 33 U.S.C. § 1311(b)(1)(C).

Application of that principle is significantly strengthened here, because 33 U.S.C. §

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1342(p)(3)(B) is not merely silent regarding whether municipal discharges must comply with 33 U.S.C. § 1311. Instead, § 1342(p)(3)(B)(iii) replaces the requirements of § 1311 with the requirement that municipal storm-sewer dischargers "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 ... determines appropriate for the control of such pollutants." 33 U.S.C. § 1342(p)(3)(B)(iii). In the circumstances, the statute unambiguously demonstrates that Congress did not require municipal storm-sewer discharges to comply strictly with 33 U.S.C. § 1311(b)(1)(C).

Indeed, the EPA's and Petitioners' interpretation of 33 U.S.C. § 1342(p)(3)(B)(iii) would render that provision superfluous, a result that we prefer to avoid so as to give effect to all provisions that Congress has enacted. See *Government of Guam ex rel. Guam Econ. Dev. Auth. v. United States*, 179 F.3d 630, 634 (9th Cir.1999) ("This court generally refuses to interpret a statute in a way that renders a provision superfluous."), *as amended*, 1999 WL 604218 (9th Cir. Aug.12, 1999). As all parties concede, § 1342(p)(3)(B)(iii) creates a lesser standard than § 1311. Thus, if § 1311 continues to apply to municipal storm-sewer discharges,*1166 the more stringent requirements of that section always would control.

Contextual clues support the plain meaning of § 1342(p)(3)(B)(iii), which we have described above. The Water Quality Act contains other provisions that undeniably exempt certain discharges from the permit requirement altogether (and therefore from § 1311). For example, "[t]he Administrator shall not require a permit under this section for discharges composed entirely of return flows from irrigated agriculture." 33 U.S.C. § 1342(l)(1). Similarly, a permit is not required for certain storm-water runoff from oil, gas, and mining operations. See 33 U.S.C. § 1342(l)(2). Read in the light of those provisions, Congress' choice to exempt municipal

storm-sewer discharges from strict compliance with § 1311 is not so unusual that we should hesitate to give effect to the statutory text, as written.

Finally, our interpretation of § 1342(p)(3)(B)(iii) is supported by this court's decision in *NRDC II*. There, the petitioner had argued that "the EPA has failed to establish substantive controls for municipal storm water discharges as required by the 1987 amendments." *NRDC II*, 966 F.2d at 1308. This court disagreed with the petitioner's interpretation of the amendments:

Prior to 1987, municipal storm water dischargers were subject to the same substantive control requirements as industrial and other types of storm water. In the 1987 amendments, *Congress retained the existing, stricter controls for industrial storm water dischargers but prescribed new controls for municipal storm water discharge.*

Id. (emphasis added). The court concluded that, under 33 U.S.C. § 1342(p)(3)(B)(iii), "*Congress did not mandate a minimum standards approach.*" *Id.* (emphasis added). The question in *NRDC II* was not whether § 1342(p)(3)(B)(iii) required strict compliance with state water-quality standards, see 33 U.S.C. § 1311(b)(1)(C). Nonetheless, the court's holding applies equally in this action and further supports our reading of 33 U.S.C. § 1342(p).

In conclusion, the text of 33 U.S.C. § 1342(p)(3)(B), the structure of the Water Quality Act as a whole, and this court's precedent all demonstrate that Congress did not require municipal storm-sewer discharges to comply strictly with 33 U.S.C. § 1311(b)(1)(C).

D. *Required Compliance with 33 U.S.C. § 1311(b)(1)(C)*

[8] We are left with Intervenor's contention that the EPA may not, under the CWA, require strict compliance with state water-quality standards, through numerical limits or otherwise. We disagree.

Although Congress did not require municipal

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storm-sewer discharges to comply strictly with § 1311(b)(1)(C), § 1342(p)(3)(B)(iii) states that “[p]ermits for discharges from municipal storm sewers ... shall require ... *such other provisions as the Administrator ... determines appropriate for the control of such pollutants.*” (Emphasis added.) That provision gives the EPA discretion to determine what pollution controls are appropriate. As this court stated in *NRDC II*, “Congress gave the administrator discretion to determine what controls are necessary.... NRDC’s argument that the EPA rule is inadequate cannot prevail in the face of the clear statutory language.” 966 F.2d at 1308.

Under that discretionary provision, the EPA has the authority to determine that ensuring strict compliance with state water-quality standards is necessary to control pollutants. The EPA also has the authority to require less than strict compliance with state water-quality standards. The EPA has adopted an interim approach, which “uses best management practices (BMPs) in first-round storm water permits ... to provide for the attainment of water quality standards.” The EPA applied that approach to the permits at issue here. Under 33 U.S.C. § 1342(p)(3)(B)(iii), the EPA’s choice to include *1167 either management practices or numeric limitations in the permits was within its discretion. See *NRDC II*, 966 F.2d at 1308 (“Congress did not mandate a minimum standards approach or specify that [the] EPA develop minimal performance requirements.”). In the circumstances, the EPA did not act arbitrarily or capriciously by issuing permits to intervenors.

PETITION DENIED.

C.A.9,1999.
Defenders of Wildlife v. Browner
191 F.3d 1159, 30 Env'tl. L. Rep. 20,116, 99 Cal. Daily Op. Serv. 7618, 1999 Daily Journal D.A.R. 9661, 1999 Daily Journal D.A.R. 12,369

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ATTACHMENT 26

Westlaw

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966 F.2d 1292, 34 ERC 2017, 61 USLW 2015, 22 Env'tl. L. Rep. 20,950
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▷

United States Court of Appeals,
Ninth Circuit.
NATURAL RESOURCES DEFENSE COUNCIL,
INC., Petitioner,
v.
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, Respondent,
Battery Council International, et al., Respondents-Intervenors.

Nos. 90-70671, 91-70200.
Argued and Submitted Oct. 9, 1991.
Decided June 4, 1992.

Environmental group sought review of Environmental Protection Agency's (EPA's) Clean Water Act storm water discharge rule. The Court of Appeals, Ferguson, Senior Circuit Judge, held that: (1) the EPA's failure to include deadlines for permit approval or denial and compliance consistent with Clean Water Act was arbitrary and capricious, although injunctive relief was not warranted; (2) EPA's definition of municipal separate storm sewer serving a population was not arbitrary and capricious; and (3) EPA rule excluding various types of light industry and construction sites of less than five acres from application of rule was arbitrary and capricious.

Petition for review granted in part and denied in part.

O'Scannlain, Circuit Judge, filed an opinion concurring in part and dissenting in part.

West Headnotes

[1] Declaratory Judgment 118A ↪203

118A Declaratory Judgment
118AII Subjects of Declaratory Relief
118AII(K) Public Officers and Agencies
118Ak203 k. Federal Officers and Boards.
Most Cited Cases

Question of whether Environmental Protection Agency (EPA) is bound by statutory scheme set by Congress is legal one, and, thus, request for declaratory relief from EPA's failure to issue storm water permitting regulations by particular date was ripe for consideration by court. Federal Water Pollution Control Act Amendments of 1972, §§ 101-606, 101(a), 402(l, p), 502(14), as amended, 33 U.S.C.A. §§ 1251-1387, 1251(a), 1342(l, p), 1362(14).

[2] Declaratory Judgment 118A ↪7

118A Declaratory Judgment
118AI Nature and Grounds in General
118AI(A) In General
118Ak7 k. Necessity, Utility and Propriety.
Most Cited Cases

Declaratory Judgment 118A ↪8

118A Declaratory Judgment
118AI Nature and Grounds in General
118AI(A) In General
118Ak8 k. Termination or Settlement of Controversy. Most Cited Cases

For purposes of granting declaratory relief, court considers whether judgment will clarify and settle legal relations at issue and whether it will afford relief from uncertainty and controversy giving rise to proceedings.

[3] Environmental Law 149E ↪16

149E Environmental Law
149EI In General
149Ek14 Administrative Agencies and Proceedings in General
149Ek16 k. Regulations and Rulemaking in General. Most Cited Cases
(Formerly 199k25.5(1) Health and Environment)
Environmental Protection Agency (EPA) lacks authority to ignore unambiguous deadlines set by Congress for issuing regulations.

[4] Injunction 212 ↪1

966 F.2d 1292, 34 ERC 2017, 61 USLW 2015, 22 Env'tl. L. Rep. 20,950
(Cite as: 966 F.2d 1292)

212 Injunction

212I Nature and Grounds in General

212I(A) Nature and Form of Remedy

212k1 k. Nature and Purpose in General. Most

Cited Cases

Injunctive relief may be inappropriate if it requires constant supervision by the court.

[5] Environmental Law 149E ↪700

149E Environmental Law

149EXIII Judicial Review or Intervention

149Ek699 Injunction

149Ek700 k. In General. Most Cited Cases

(Formerly 199k25.15(2.1), 199k25.15(2) Health and Environment)

Court of Appeals would not enjoin Environmental Protection Agency (EPA) from further extensions of deadline for permit applications for municipal and industrial discharges as to do so would require extensive supervision of EPA by Court; Court would operate on assumption that EPA would follow dictates of Congress and Court.

[6] Environmental Law 149E ↪196

149E Environmental Law

149EV Water Pollution

149Ek194 Permits and Certifications

149Ek196 k. Discharge of Pollutants. Most

Cited Cases

(Formerly 199k25.7(14) Health and Environment)

Environmental Protection Agency's (EPA's) failure to include final approval and compliance deadlines for permit applications for storm water discharges associated with industrial activities in large municipalities was arbitrary and capricious exercise of its responsibility to issue regulations pursuant to Clean Water Act. Federal Water Pollution Control Act Amendments of 1972, § 402(p)(4)(A, B), as amended, 33 U.S.C.A. § 1342(p)(4)(A, B).

[7] Environmental Law 149E ↪196

149E Environmental Law

149EV Water Pollution

149Ek194 Permits and Certifications

149Ek196 k. Discharge of Pollutants. Most

Cited Cases

(Formerly 199k25.7(14) Health and Environment)

Even if Environmental Protection Agency (EPA) was failing to proceed so that regulations for approval and compliance with permit applications for storm water discharges would be in place for small systems by deadline in Clean Water Act, small systems could not be put on same schedule as medium ones, as Clean Water Act did not require regulation of small systems prior to expiration of moratorium. Federal Water Pollution Control Act Amendments of 1972, § 402(p)(1), (p)(4)(A, B), (p)(6), as amended, 33 U.S.C.A. § 1342(p)(1), (p)(4)(A, B), (p)(6).

[8] Environmental Law 149E ↪196

149E Environmental Law

149EV Water Pollution

149Ek194 Permits and Certifications

149Ek196 k. Discharge of Pollutants. Most

Cited Cases

(Formerly 199k25.7(14) Health and Environment)

Despite Environmental Protection Agency's (EPA's) unlawful delay in establishing comprehensive program for permit approval and compliance with Clean Water Act storm water discharge rule, EPA's schedule calling for immediate municipal system applications due six months after applications for large municipal systems was within statutory scheme in its relation to schedule for large systems and was not unreasonable. Federal Water Pollution Control Act Amendments of 1972, § 402(p), (p)(2)(C, D), (p)(4)(B), as amended, 33 U.S.C.A. § 1342(p), (p)(2)(C, D), (p)(4)(B).

[9] Environmental Law 149E ↪176

149E Environmental Law

149EV Water Pollution

149Ek174 Substances, Sources, and Activities Regulated

149Ek176 k. Sewage and Sewers. Most Cited

Cases

(Formerly 199k25.7(5) Health and Environment)

Environmental Protection Agency's (EPA's) defini-

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tion of phrase "municipal separate store sewer system serving a population" in regulations for implementing the Clean Water Act storm water discharge rule, while complex and possibly convoluted, was not arbitrary and capricious; EPA defined phrase by considering factors such as its own workload, the incorporation status of municipalities, and urban density. Federal Water Pollution Control Act Amendments of 1972, §§ 402(p)(2), 502, 502(4), as amended, 33 U.S.C.A. §§ 1342(p)(2), 1362, 1362(4).

[10] Environmental Law 149E ↩175

149E Environmental Law
149EV Water Pollution
149Ek174 Substances, Sources, and Activities Regulated

149Ek175 k. In General. Most Cited Cases
(Formerly 199k25.7(5) Health and Environment)

Environmental Protection Agency's (EPA's) rules excluding various types of light industry and construction sites of less than five acres from application of Clean Water Act storm water discharge rule were arbitrary and capricious absent support in record for assumption that industrial activity or light industry would take place indoors and generate minimal amounts of particles and emissions. Federal Water Pollution Control Act Amendments of 1972, § 402(p)(2)(B), as amended, 33 U.S.C.A. § 1342(p)(2)(B).

[11] Environmental Law 149E ↩175

149E Environmental Law
149EV Water Pollution
149Ek174 Substances, Sources, and Activities Regulated

149Ek175 k. In General. Most Cited Cases
(Formerly 199k25.7(5) Health and Environment)

Environmental Protection Agency's (EPA's) exemption from Clean Water Act storm water discharge rule for construction sites of less than five acres, as increased from original proposal of exemption for sites of less than one acre, was arbitrary and capricious absent support in record for EPA's perception that construction activities on less than five acres were nonindustrial in nature. Federal Water Pollution Control Act Amend-

ments of 1972, § 402(p)(2)(B), as amended, 33 U.S.C.A. § 1342(p)(2)(B).

[12] Environmental Law 149E ↩175

149E Environmental Law
149EV Water Pollution
149Ek174 Substances, Sources, and Activities Regulated

149Ek175 k. In General. Most Cited Cases
(Formerly 199k25.7(5) Health and Environment)

For purposes of setting rules for application of storm water discharge regulations in Clean Water Act, EPA lacked agency power to make categorical exemptions where result was de minimis. Federal Water Pollution Control Act Amendments of 1972, § 402(p)(2)(B), as amended, 33 U.S.C.A. § 1342(p)(2)(B).

[13] Environmental Law 149E ↩176

149E Environmental Law
149EV Water Pollution
149Ek174 Substances, Sources, and Activities Regulated

149Ek176 k. Sewage and Sewers. Most Cited Cases

(Formerly 199k25.7(13.1), 199k25.7(13) Health and Environment)

Environmental Protection Agency's (EPA's) exemption from permit requirements under Clean Water Act storm water discharge rule for uncontaminated runoff from mining, oil, and gas facilities was not arbitrary and capricious; conference report gave administrator discretion to determine when contamination had occurred with respect to overburden, raw materials, waste products, and other items. Federal Water Pollution Control Act Amendments of 1972, § 402(l)(2), as amended, 33 U.S.C.A. § 1342(l)(2).

[14] Environmental Law 149E ↩175

149E Environmental Law
149EV Water Pollution
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149Ek175 k. In General. Most Cited Cases

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(Formerly 199k25.7(6.1), 199k25.7(6) Health and Environment)

Environmental Protection Agency (EPA) established substantive controls for municipal storm water discharges required by amendments to Clean Water Act as result of administrator's discretion to determine which controls were necessary. Federal Water Pollution Control Act Amendments of 1972, § 402(p)(3)(A, B), as amended, 33 U.S.C.A. § 1342(p)(3)(A, B).

[15] Administrative Law and Procedure 15A ↪ 394

15A Administrative Law and Procedure

15AIV Powers and Proceedings of Administrative Agencies, Officers and Agents

15AIV(C) Rules and Regulations

15Ak392 Proceedings for Adoption

15Ak394 k. Notice and Comment, Necessity. Most Cited Cases

Environmental Law 149E ↪ 196

149E Environmental Law

149EV Water Pollution

149Ek194 Permits and Certifications

149Ek196 k. Discharge of Pollutants. Most Cited Cases

(Formerly 199k25.7(14) Health and Environment)

Environmental Protection Agency's (EPA's) group permit application process for industrial dischargers under Clean Water Act storm sewage discharge rules was not invalid despite its failure to provide for notice and comment, as approval of part 1 application was essentially factual determination. 5 U.S.C.A. §§ 551(4), 553.

*1294 Robert W. Adler, Natural Resources Defense Council, Washington, D.C., for petitioner.

Daniel S. Goodman, U.S. Dept. of Justice, Washington, D.C., for respondent.

*1295 Petition for Review of a Rule Promulgated by the Environmental Protection Agency.

Before PREGERSON, FERGUSON, and

O'SCANLAIN, Circuit Judges.

FERGUSON, Senior Circuit Judge:

The Natural Resources Defense Council ("NRDC") challenges aspects of the Environmental Protection Agency's ("EPA") recent Clean Water Act storm water discharge rule.^{FN1} NRDC argues that the deadlines contained in the rule and the scope of its coverage are unlawful under section 402(l), (p) of the Clean Water Act, 33 U.S.C. § 1342(l), (p). We grant partial relief.

FN1. National Pollutant Discharge Elimination System Permit Application Regulations for Storm Water Discharges, 55 Fed.Reg. 47,990 (1990) (to be codified at 40 C.F.R. § 122.26); National Pollutant Discharge Elimination System Permit Application Regulations for Storm Water Discharges; Application Deadline for Group Applications, 56 Fed.Reg. 12,098 (1991) (to be codified at 40 C.F.R. § 122.26(e)).

I. BACKGROUND

In 1972 Congress enacted significant amendments to the Clean Water Act ("CWA"),^{FN2} 33 U.S.C. §§ 1251-1387 (1988), "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 33 U.S.C. § 1251(a). One major focus of the CWA is the control of "point source" pollution. A "point source" is "any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel ... from which pollutants are or may be discharged." 33 U.S.C. § 1362(14). The CWA also established the National Pollutant Discharge Elimination System ("NPDES"), requiring permits for any discharge of pollutants from a point source pursuant to section 402 of the CWA, 33 U.S.C. § 1342. The CWA empowers EPA or an authorized state to conduct an NPDES permitting program. 33 U.S.C. § 1342(a)-(b). Under the program, as long as the permit issued contains conditions that implement the requirements of the CWA, the EPA may issue a permit for discharge of any pollutant. 33 U.S.C. § 1342(a)(1).

FN2. The Act is popularly known as the Clean

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Water Act or the Federal Water Pollution Control Act. 33 U.S.C. § 1251. For more background on the CWA, see *EPA v. State Water Resources Control Bd.*, 426 U.S. 200, 202-09, 96 S.Ct. 2022, 2023-26, 48 L.Ed.2d 578 (1976); *Sierra Club v. Union Oil of California*, 813 F.2d 1480, 1483 (9th Cir.1987), *vacated on other grounds*, 485 U.S. 931, 108 S.Ct. 1102, 99 L.Ed.2d 264 (1988); and *Natural Resources Defense Council v. Train*, 510 F.2d 692, 695-97 (D.C. Cir.1975).

This case involves runoff from diffuse sources that eventually passes through storm sewer systems and is thus subject to the NPDES permit program. See National Pollutant Discharge Elimination System Permit Application Regulations for Storm Water Discharges; Application Deadlines, 56 Fed.Reg. 56,548 (1991). One recent study concluded that pollution from such sources, including runoff from urban areas, construction sites, and agricultural land, is now a leading cause of water quality impairment. 55 Fed.Reg. at 47,991. ^{FN3}

FN3. The Nationwide Urban Runoff Program (NURP) conducted from 1978 through 1983 found that urban runoff from residential, commercial and industrial areas produces a quantity of suspended solids and chemical oxygen demand that is equal to or greater than that from secondary treatment sewage plants. 55 Fed.Reg. at 47,991. A significant number of samples tested exceeded water quality criteria for one or more pollutants. *Id.* at 47,992. Urban runoff is adversely affecting 39% to 59% of the harvest-limited shellfish beds in the waters off the East Coast, West Coast and in the Gulf of Mexico. 56 Fed.Reg. at 56,548.

A. Efforts to Regulate Storm Water Discharge.

Following the enactment of the CWA amendments in 1972, EPA promulgated NPDES permit regulations exempting a number of classes of point sources, including uncontaminated storm water discharge, on the basis of "administrative infeasibility," i.e., the extraordinary administrative burden imposed on EPA should it have to issue permits for possibly millions of point sources of

runoff. *Natural Resources Defense Council v. Costle*, 568 F.2d 1369, 1372 & n. 5, 1377 (D.C.Cir.1977). NRDC *1296 challenged the exemptions. Relying on the language of the statute, its legislative history and precedent, the D.C. Circuit held that the EPA Administrator did not have the authority to create categorical exemptions from regulation. *Id.* at 1379. However, the court acknowledged the agency's discretion to shape permits in ways "not inconsistent with the clear terms of the Act." *Id.* at 1382.

Following this litigation, EPA promulgated regulations covering storm water discharges in 1979, 1980 and 1984. 56 Fed.Reg. 56,548. NRDC challenged various aspects of these rules both at the administrative level as well as in the courts.

Recognizing both the environmental threat posed by storm water runoff ^{FN4} and EPA's problems in implementing regulations, ^{FN5} Congress passed the Water Quality Act of 1987 ^{FN6} containing amendments to the CWA ("the 1987 amendments"), portions of which set up a new scheme for regulation of storm water runoff. Section 402(p), as amended, established deadlines by which certain storm water dischargers must apply for permits, the EPA or states must act on permits and dischargers must implement their permits. See Appendix A. The Act also set up a moratorium on permitting requirements for most storm water discharges, which ends on October 1, 1992. There are five exceptions that are required to obtain permits before that date:

FN4. See 132 Cong. Rec. 32,381 (1986).

FN5. Senator Stafford, speaking in favor of the conference report for the Water Quality Act, noted that "EPA should have developed this program long ago. Unfortunately, it did not. The conference substitute provides a short grace period during which EPA and the States generally may not require permits for municipal separate storm sewers." 132 Cong. Rec. 32,381 (1986). Senator Chafee stated "[t]he Agency has been unable to move forward with a [storm water discharge control] program, because the current law did not give enough guid-

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ance to the Agency. This provision provides such guidance, and I expect EPA to move rapidly to implement this control program." 133 Cong. Rec. 1,264 (1987).

FN6. Pub.L. No. 100-4, 101 Stat. 7 (1987) (codified as amended in scattered sections of 33 U.S.C.).

(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, ... determines that the storm water discharge contributes to a violation of a water quality standard or is a significant contributor of pollutants to the waters of the United States.

CWA § 402(p)(2); 33 U.S.C. § 1342(p)(2).

Section 402(p) also outlines an incremental or "phase-in" approach to issuance of storm water discharge permits. The purpose of this approach was to allow EPA and the states to focus their attention on the most serious problems first. 133 Cong.Rec. 991 (1987). Section 402(p) requires EPA to promulgate rules regulating permit application procedures in a staggered fashion.

Responding to the 1987 amendments requiring the EPA to issue permit application requirements for storm water discharges associated with industrial activities and large municipalities, the EPA issued final rules on November 16, 1990, almost two years after its deadline ("the November 1990 rule"). 55 Fed.Reg. at 47,990. EPA issued amended rules on March 21, 1991 ("the

March 1991 rule"). 56 Fed.Reg. at 12,098. It is to portions of these rules that NRDC objects.

B. Jurisdiction.

We have jurisdiction pursuant to CWA § 509(b)(1), 33 U.S.C. § 1369(b)(1). Section 509(b)(1) describes six types of actions by the EPA administrator that are subject to review in the court of appeals. Although the parties do not specify the section upon which they rely, § 509(b)(1)(F), 33 U.S.C. § 1369(b)(1)(F) allows the court to review *1297 the issuance or denial of a permit under CWA § 402, 33 U.S.C. § 1342. The court also has the power to review rules that regulate the underlying permit procedures. *NRDC v. EPA*, 656 F.2d 768, 775 (D.C.Cir.1981); cf. *E.I. DuPont de Nemours & Co. v. Train*, 430 U.S. 112, 136, 97 S.Ct. 965, 979, 51 L.Ed.2d 204 (1977). NRDC filed timely petitions for review of the final rules at issue here pursuant to CWA § 509(b)(1), 33 U.S.C. 1369(b)(1).

C. Standing.

Any "interested person" may seek review of designated actions of the EPA Administrator. 33 U.S.C. § 1369(b)(1). This court has held that the injury-in-fact rule for standing of *Sierra Club v. Morton*, 405 U.S. 727, 733, 92 S.Ct. 1361, 1365, 31 L.Ed.2d 636 (1972) covers the "interested person" language. *Trustees for Alaska v. EPA*, 749 F.2d 549, 554 (9th Cir.1984) (adopting the analysis in *Montgomery Environmental Coalition v. Costle*, 646 F.2d 568, 578 (D.C.Cir.1980)). A petitioner under *Sierra Club* must suffer adverse affects to her economic interests or "[a]esthetic and environmental well-being." *Sierra Club*, 405 U.S. at 734, 92 S.Ct. at 1366. Intervenors are various industry and trade groups subject to regulation under the rules at issue. NRDC claims, inter alia, that EPA has delayed unlawfully promulgation of storm water regulations and that its regulations, as published, inadequately control storm water contaminants. NRDC's allegations and the potential economic impact of the rules on the intervenors satisfy the broad standing requirement applicable here.

II. DISCUSSION

A. Standard of Review.

5 U.S.C. § 706(2)(A) (1988) authorizes the court to "set aside agency action ... found to be ... arbitrary, ca-

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pricious, an abuse of discretion, or otherwise not in accordance with law." Under this standard a court must find a "rational connection between the facts found and the choice made." *Sierra Pacific Indus.*, 866 F.2d 1099, 1105 (9th Cir.1989) (citing *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43, 103 S.Ct. 2856, 2866, 77 L.Ed.2d 443 (1983)). The court must decide whether the agency considered the relevant factors and whether there has been a clear error of judgment. *Citizens to Preserve Overton Park, Inc. v. Volpe*, 401 U.S. 402, 416, 91 S.Ct. 814, 823, 28 L.Ed.2d 136 (1971).

On questions of statutory construction, courts must carry out the unambiguously expressed intent of Congress. If a statute is "silent or ambiguous with respect to the specific issue, the question for the court is whether the agency's answer is based on a permissible construction of the statute." *Chevron U.S.A. Inc. v. Natural Resources Defense Council Inc.*, 467 U.S. 837, 843, 104 S.Ct. 2778, 2782, 81 L.Ed.2d 694 (1984). Congress may leave an explicit gap, thus delegating legislative authority to an agency subject to the arbitrary and capricious standard. *Id.* at 843-44, 104 S.Ct. at 2781-82. If legislative delegation is implicit, courts must defer to an agency's statutory interpretation as long as it is reasonable. *Id.* at 844, 104 S.Ct. at 2782. This is because an agency has technical expertise as well as the authority to reconcile conflicting policies. *See id.* Nevertheless, questions of congressional intent that can be answered with "traditional tools of statutory construction" are still firmly within the province of the courts. *INS v. Cardoza-Fonseca*, 480 U.S. 421, 447-48, 107 S.Ct. 1207, 1221, 94 L.Ed.2d 434 (1987).

B. EPA's Extension of Statutory Deadlines.

Deadlines pursuant to CWA § 402(p) ⁸ Discharge type	Deadline to issue rules	Deadline for application and approval of permits	EPA Deadlines ⁹ Application deadlines
Industrial	2/4/89	2/4/90-applications due 2/4/91-approval due	See below

1. Background.

NRDC challenges EPA's extension of certain statutory deadlines in the November 1990 and March 1991 rules. The statutory scheme calls for EPA to consider permit applications from the most serious sources of pollutants first: industrial dischargers and large municipal separate storm sewer systems ("large systems").^{FN7} The statute required EPA to establish regulations*1298 for permit application requirements for these two groups by February 4, 1989; to receive applications for permits one year later, February 4, 1990; and to approve or deny the permits by February 4, 1991. Permittees may be given up to three years to comply with their permits. CWA § 402(p)(4)(A), 33 U.S.C. § 1342(p)(4)(A). Medium sized municipal separate storm sewer systems ("medium systems") (those serving a population of 100,000 or more but less than 250,000) are on a similar schedule, except that the deadlines are two years later. CWA § 402(p)(4)(B), 33 U.S.C. § 1342(p)(4)(B). The temporary statutory exemption for all storm water sources expires on October 1, 1992. CWA § 402(p)(1), 33 U.S.C. § 1342(p)(1). EPA states that discharges from municipal separate storm sewer systems serving a population of under 100,000 are to be regulated after that date.

FN7. Large municipal systems are those serving a population of 250,000 or more. § 402(p)(2)(C).

The EPA rules at issue changed the statutory deadlines as follows:

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Large municipal systems	2/4/89	2/4/90-applications due 2/4/91-approval	Part 1- 11/18/91 Part 2- 11/16/92
Medium municipal systems	2/4/91	2/4/92-applications due 2/4/93-approval due	Part 1- 5/18/92 Part 2- 5/17/93

EPA Application Deadlines for "Industrial Activity" Dischargers

Individual
 due 11/18/91

Group
 Part 1-9/30/91; Part 2-10/1/92

FN8. Since NRDC filed this action, Congress has passed certain legislation affecting some of the deadlines at issue. Congress ratified the date of September 30, 1991 for part 1 of group applications for industrial dischargers. See Dire Emergency Supplemental Appropriations Act of 1991, Pub.L. No. 102-27, § 307, 105 Stat. 130, 152 (1991).

municipal or industrial dischargers, nor for compliance by these regulated entities. See 55 Fed.Reg. at 48,072.

Section 1068 of the Intermodal Surface Transportation Efficiency Act of 1991 ("ISTEA") clarifies the deadlines for storm water discharges associated with industrial activity from facilities owned or operated by a municipality. Pub.L. No. 102-240, § 1068, 105 Stat. 1914, 2007 (1991). ISTEA deadlines are being reviewed in a separate case. Nothing in this opinion should be viewed as requiring EPA to comply with deadlines that have been altered or superseded by the ISTEA.

As the chart illustrates, EPA made other elaborations on the statutory scheme in addition to extending the deadlines. Medium and large municipal systems and industrial dischargers are now subject to a two-part application process. 55 Fed.Reg. at 48,072. The November 1990 rules allow industrial dischargers to apply for either individual or group permits. *Id.* at 48,066-67. The March 1991 rules further extended the deadline for part 1 of the group industrial discharger permits to September 30, 1991.^{FN10} 56 Fed.Reg. at 12,098. A final rule published on April 2, 1992 extended the deadline for the part 2 group application for industrial dischargers from May 18, 1992 to October 1, 1992. 57 Fed.Reg. at 11,394. The EPA rules at issue contain neither deadlines for final EPA or state approval of permits nor deadlines for compliance with the permit terms.

FN9. See 55 Fed.Reg. at 48,071-722 (to be codified at 40 C.F.R. § 122.26(e)); 67 Fed.Reg. at 12,100 (to be codified at 40 C.F.R. § 122.26(e)(2)(iii)). EPA changed certain of these deadlines after this case was submitted. These changes are the subject of a separate case.

FN10. NRDC initially claimed that this extension was unlawful because it was granted without proper notice and comment. However, Congress approved this extended deadline in a supplemental appropriations bill. Dire Emergency Supplemental Appropriations Act of 1991, Pub.L. No. 102-27 § 307, 105 Stat. 130, 152 (1991). This Act moots the procedural and

The EPA rules at issue set no date for final approval or denial of applications from mu-

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substantive challenge to this extended deadline.

Seeking to compel the EPA to conform to the statutory scheme, NRDC asks this court:

a) to declare unlawful EPA's failure to issue certain of the storm water permitting regulations by February 4, 1989 and EPA's extension of certain statutory deadlines;

b) to enjoin EPA from granting future extensions of the deadlines;

c) to compel EPA to include deadlines for permit approval or denial and permit compliance consistent with the statute; and

d) to compel EPA to require that medium and small municipal systems meet the same deadlines as large systems.

2. Discussion.

a. Request for Declaratory Relief.

NRDC asks the court to (1) declare unlawful EPA's failure to issue storm water permitting regulations by February 4, 1989; and (2) declare unlawful EPA's extension of deadlines for submission of permit applications by large and medium systems and individual industrial dischargers.

[1] A request for declaratory relief in a challenge to an agency action is ripe for review if the action at issue is final and the questions involved are legal ones. *Public Util. Dist. No. 1 v. Bonneville Power Admin.*, 947 F.2d 386, 390 n. 1 (9th Cir.1991) (citations omitted), *cert. denied*, 503 U.S. 1004, 112 S.Ct. 1759, 118 L.Ed.2d 422 (1992). Here, the agency regulations are final. *See* 55 Fed.Reg. at 47,990, 56 Fed.Reg. at 12,096. The question of whether the EPA is bound by the statutory scheme set by Congress is a legal one. The request for declaratory relief is therefore ripe for consideration by this court.

[2] The granting of declaratory relief "rests in the sound discretion of the [] court exercised in the public interest." 10A Charles A. Wright, Arthur R. Miller &

Mary K. Kane, *Federal Practice & Civil Procedure* § 2759, at 645 (1983). The guiding principles are whether a judgment will clarify and settle the legal relations at issue and whether it will afford relief from the uncertainty and controversy giving rise to the proceedings. *McGraw-Edison Co. v. Preformed Line Products Co.*, 362 F.2d 339, 342 (9th Cir.) (citing Borchard, *Declaratory Judgments* 299 (2d ed. 1941)), *cert. denied*, 385 U.S. 919, 87 S.Ct. 229, 17 L.Ed.2d 143 (1966). A court declaration delineates important rights and responsibilities and can be "a message not only to the parties but also to the public and has significant educational and lasting importance." *Bilbrey v. Bilbrey v. Brown*, 738 F.2d 1462, 1471 (9th Cir.1984). Because of the importance of the interests and the principles at stake, we grant declaratory relief.

[3] EPA does not have the authority to ignore unambiguous deadlines set by Congress. *Delaney v. EPA*, 898 F.2d 687, 691 (9th Cir.), *cert. denied*, 498 U.S. 998, 111 S.Ct. 556, 112 L.Ed.2d 563 (1990). In arguing against injunctive relief, EPA points to cases recognizing factors indicating that equitable relief may be inappropriate. *See, e.g., In re Barr Laboratories, Inc.*, 930 F.2d 72, 74 (D.C.Cir.) (agency's choice of priorities is an important factor in considering whether to grant equitable relief), *cert. denied*, 502 U.S. 906, 112 S.Ct. 297, 116 L.Ed.2d 241 (1991); *Natural Resources Defense Council v. Train*, 510 F.2d 692, 712 (D.C.Cir.1975) (court may need to give *1300 agency some leeway due to budgetary commitments or technological problems); *Environmental Defense Fund v. Thomas*, 627 F.Supp. 566, 569-70 (D.D.C.1986) (EPA's good faith is a factor). None of these factors militates against an award of declaratory relief. They do not grant an executive agency the authority to bypass explicit congressional deadlines. The deadlines are not aspirational-Congress set them and expected compliance. *See* 132 Cong.Rec. 32,381-82 (remarks of Senator Stafford, commenting on EPA delay and the establishment of statutory deadlines as "outside dates.") This court must uphold adherence to the law, and cannot condone the failure of an executive agency to conform to express statutory requirements. For these reasons, we grant NRDC's request for declaratory relief. EPA's failure to

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abide by the statutory deadlines is unlawful.

b. Request for Injunction.

NRDC asks the Court to enjoin the EPA from further extensions for permit applications from municipal and industrial dischargers. Injunctions are an extraordinary remedy issued at a court's discretion when there is a compelling need. 11 Charles A. Wright & Arthur R. Miller, *Federal Practice & Procedure* § 2942, at 365, 368-69 (1973). We decline to enjoin the EPA on discretionary grounds.

[4] Injunctive relief could involve extraordinary supervision by this court. Injunctive relief may be inappropriate where it requires constant supervision. *Id.* at 376. At issue are deadlines for the three major categories of dischargers, each of which has a two-part application. The permitting process will go on for several years. While recognizing the importance of the interests involved, we nevertheless decline to engage in the active management of such a remedy.

[5] In this situation, we must operate on the assumption that an agency will follow the dictates of Congress and the court. As noted above, the EPA does not have the authority to predicate future rules or deadlines in disagreement with this opinion. *See Allegheny General Hosp. v. NLRB*, 608 F.2d 965, 970 (3rd Cir.1979). We presume that the EPA will duly perform its statutory duties. *See Upholstered Furniture Action Council v. California Bureau of Home Furnishing*, 442 F.Supp. 565, 568 (E.D.Cal.1977) (three judge court). Because we decline to take on potentially extensive supervision of the EPA, Congress may need to find other ways to ensure compliance if the agency is recalcitrant.

c. Deadlines for Permit Approval and Compliance.

NRDC requests that the court compel EPA to revise the rules to include deadlines for permit approval or denial and permit compliance consistent with the statute. Section 402(p)(4)(A) calls for the EPA to issue or deny permits for industrial and large municipalities by February 4, 1991, which is one year after the applications are submitted, and states that "[a]ny such permit shall provide for compliance as expeditiously as practicable, but in no event later than 3 years after the date of

the issuance of such permit." CWA § 402(p)(4)(A), 33 U.S.C. § 1342(p)(4)(A). The statute sets out a similar schedule for medium municipalities, except that the deadlines are two years later. CWA § 402(p)(4)(B), 33 U.S.C. § 1342(p)(4)(B).

[6] The regulations promulgated by the EPA contain neither final approval deadlines nor compliance deadlines for industrial dischargers or medium and large municipalities. 55 Fed.Reg. at 48,072. By failing to regulate final approval and compliance, EPA has omitted a key component of the statutory scheme. To ensure adherence to the statutory time frame, especially in the face of deadlines already missed, the regulated community must be informed of these deadlines. EPA's failure to include these important deadlines is an arbitrary and capricious exercise of its responsibility to issue regulations pursuant to the statute.

We see no need for additional delay while supplemental regulations are issued. Given the extraordinary delays already encountered, EPA must avoid further delay. *1301 The regulations should inform the regulated community of the statute's outside dates for compliance.^{FN11} *See* CWA § 402(p)(4)(A)-(B), 33 U.S.C. § 1342(p)(4)(A)-(B).

FN11. In addition, pursuant to the statute, compliance deadlines applicable to each facility shall be contained in its permit.

d. Timeline for Small and Medium Systems.

[7] The parties disagree on when small systems (those serving a population of less than 100,000) should be regulated. As noted above, the temporary statutory exemption for all storm water sources expires on October 1, 1992. The statute requires EPA to establish a comprehensive program to regulate point sources subject to the moratorium, such as small municipalities, by that date. CWA § 401(p)(1), (6), 33 U.S.C. § 1342(p)(1), (6).

Pointing to a perceived statutory gap, NRDC argues that small systems should be subject to the same permitting schedule applicable to medium systems, to assure that they are regulated when the permitting moratorium

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ends on October 1, 1992. However, the plain language of the statute prohibits this. Section 402(p)(1) forbids requiring a permit for entities not listed as exceptions (such as small municipalities) before October 1, 1992. Yet the deadline for part 1 of the application for medium systems is currently May 18, 1992. 55 Fed.Reg. at 48,072.

Even if NRDC is correct that EPA is not proceeding so that regulations will be in place on October 1, 1992, we cannot ignore the plain language of the statute by adopting NRDC's solution. The CWA does not require regulation of such systems prior to expiration of the moratorium. We therefore reject NRDC's proposal that small systems be put on the same schedule as medium ones.

[8] NRDC asks the court to put the medium systems on the same schedule as the large systems, in order to achieve closer compliance with the timeline set out in § 402(p)(4)(B). However, EPA's current schedule for medium systems, although delayed, is still within the statutory scheme in its relation to the schedule for large systems. That is, Congress placed the medium systems on a staggered permitting schedule to start two years after the large systems and industrial users. The EPA schedule now has medium municipal system applications due six months after the applications for the large municipal systems. 55 Fed.Reg. at 48,072. For this reason, the current deadline for medium municipalities does not appear to be unreasonable despite the unlawful delay.

C. Exclusion of Certain Sources from Regulation.

1. Definition of "Municipal Separate Storm Sewer System."

Section 402(p) refers to "municipal separate storm sewer system[s] serving a population" of a specified size. CWA § 402(p)(2)(C), (D), 33 U.S.C. § 1342(p)(2)(C), (D). NRDC contends that EPA's definition of this term violates the plain language of the statute, fails to take into account the statutory definition of the word "municipality" and is arbitrary and capricious because the agency considered improper factors when it

defined the term. All of this, according to NRDC, results in an impermissible narrowing of the municipalities covered by the first two rounds of permitting.

The 1987 amendments to the CWA did not contain definitions of "municipal" or "separate storm sewer system," but the CWA amendments enacted in 1972 defined "municipality" as follows:

[e]xcept as otherwise specifically provided, when used in this chapter: (4) The term "municipality" means a city, town, borough, county, parish, district, association, or other public body created by or pursuant to State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved*1302 management agency under section 1288 of this title [33 U.S.C. § 1288].

33 U.S.C. § 1362.

In the November 1990 regulations, the EPA defined "municipal separate storm sewer" as: "a conveyance or system of conveyances ... [o]wned or operated by a State, city, town, borough, county, parish, district, association or other public body...." 55 Fed.Reg. at 48,065 (to be codified at 40 C.F.R. § 122.26(b)(8)). This definition echoes the language of 33 U.S.C. § 1362(4). However, when defining large and medium municipal separate storm sewer systems serving a population of a specified size, EPA brought in other factors. 55 Fed.Reg. at 48,064 (to be codified at 40 C.F.R. § 122.26(b)(4), (7)). EPA defines medium and large separate storm sewer systems using two main categories:

1) separate storm sewer systems located in an incorporated place with the requisite population, and

2) separate storm sewer systems located in unincorporated, urbanized portions of counties containing the requisite population (as listed in Appendices H and I to the rule), excluding those municipal separate sewers located in incorporated places, townships or towns within such counties.^{FN12} 55 Fed.Reg. at 48,064. NRDC opposes this definition for municipal separate storm

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sewer systems for the reasons explained below.

FN12. The rule also permits the Administrator to include certain other systems as part of a medium or large system due to the physical interconnections between the systems, their locations, or certain other factors. See 40 C.F.R. § 122.26(b)(4)(iii), (iv) and (b)(7)(iii), (iv).

First, NRDC argues that according to the definitional section cited above and principles of statutory construction, general definitions apply wherever the defined term appears elsewhere in the law. See 33 U.S.C. § 1362 (“[e]xcept as otherwise specifically provided” the definitions apply throughout the act); *Sierra Club v. Clark*, 755 F.2d 608, 613 (8th Cir.1985). NRDC argues that the scope of the statutory definition of “municipality” in 33 U.S.C. § 1362(4) and the scope of the phrase “municipal separate storm sewer system serving a population” are the same. NRDC thus proposes that the correct definition is a system of conveyances owned or operated by the full range of entities described at 33 U.S.C. § 1362(4), (cities, towns, etc.) with populations within the ranges designated at § 402(p)(2), i.e., 250,000 or more for large systems and between 100,000 and 250,000 for medium systems.

However, we do not believe that the entire phrase used in the act, “municipal separate storm sewer system serving a population of [a specified size]” can be equated with the term “municipality” in the manner that NRDC proposes. The act contains no definition of either “system” or “serving a population.” The word “system” is particularly ambiguous in the context of storm sewers.^{FN13} We therefore agree with EPA that there is no single, plain meaning for the disputed words.

FN13. Storm sewers located within the boundaries of a city might be part of a state highway system, a flood control district, or a system operated by the state or county. See 55 Fed.Reg. at 48,041.

Because the term is ambiguous, we must look first to whether Congress addressed the issue in another way. See *Abouezk v. Reagan*, 785 F.2d 1043, 1053

(D.C.Cir.1986) (“[i]f the court finds that Congress had a specific intent ..., the court stops there and enforces that intent regardless of the agency's interpretation”) (citing *Chevron U.S.A. Inc. v. Natural Resources Defense Council Inc.*, 467 U.S. 837, 842-43 & n. 9, 104 S.Ct. 2778, 2781 & n. 9, 81 L.Ed.2d 694 (1984)), *aff'd by an equally divided court*, 484 U.S. 1, 108 S.Ct. 252, 98 L.Ed.2d 1 (1987). The legislative history is not illuminating. Although it explains that a purpose of the permitting scheme was to attack the most serious sources of discharge first,^{FN14} this general goal is not helpful in discerning the specific meaning of “municipal separate storm sewer system serving a population.” Without clear guidance from Congress, we turn to the agency's justifications^{*1303} for its choices in the face of NRDC's objections.

FN14. See, e.g., 133 Cong. Rec. 991 (1987) (statement of Rep. Stangeland).

NRDC claims that EPA's definition is arbitrary and capricious because EPA considered improper factors, including its own work load, the incorporation status of municipalities, and urban density. “[A]n agency rule would be arbitrary and capricious if the agency has relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise.” *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto Ins.*, 463 U.S. 29, 43, 103 S.Ct. 2856, 2866, 77 L.Ed.2d 443 (1983).

EPA's final definition took into account many issues and concerns of the regulated community. See 55 Fed.Reg. at 48,039. EPA considered eight different options for defining large and medium municipal separate storm sewer systems. 55 Fed.Reg. at 48,038-43. EPA considered focusing on ownership or operation of a system by an incorporated place, but found that this approach did not take into account systems operated by flood control districts, state transportation systems, or concerns relating to watershed management. It instead fashioned a multi-faceted approach. This choice of ap-

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proach is not unreasonable.

NRDC challenges EPA's consideration of incorporation as a factor. It claims that limiting regulation to incorporated places of the appropriate size excludes portions of 378 counties that contain over 100,000 people. NRDC essentially contends that because counties are a type of municipality, storm water conveyances in all counties with populations over 100,000 should come within the definition of either medium or large municipal separate storm sewer systems. We have already rejected NRDC's claim that the definition of regulated "systems" must include conveyances in all "municipalities."

EPA's use of incorporation as a factor is not arbitrary and capricious or inconsistent with the statute. The agency proceeded on the reasonable assumption that cities possess the police powers needed effectively to control land use within their borders. See 55 Fed.Reg. at 48,039, 48,043. The first major category within the definition of regulated "systems," municipal separate storm sewers located within incorporated places having the requisite population, is reasonable.

NRDC questions EPA's second major category, which covers storm sewers located in unincorporated urbanized areas of counties with the designated population, but excludes conveyances located in incorporated places with populations under 100,000 within those counties. The exclusion, however, has a legitimate statutory basis. The statute prohibits EPA from requiring permits for systems serving under 100,000 persons prior to October 1, 1992. CWA § 402(p)(1), 33 U.S.C. § 1342(p)(1). EPA reasonably concluded that conveyances within small incorporated places should be considered parts of small systems limited to those incorporated places, rather than parts of larger systems serving whole counties. EPA's definition attempts to capture population centers of over 100,000 (by including urbanized, unincorporated areas) without violating the congressional stricture against regulation of areas with populations under 100,000 (thus excluding incorporated areas of less than 100,000 within a county).

In arriving at its definition of "municipal separate

storm sewer systems serving" a designated population, EPA investigated numerous options and considered comments from a range of viewpoints. We find "a rational connection between the facts found and the choices made." *Motor Vehicle Mfrs. Ass'n*, 463 U.S. at 43, 103 S.Ct. at 2866.

NRDC objects to EPA's use of 1980 census data and EPA's definition of urban density. While it appears that NRDC has solid arguments as to why it would be preferable to use 1990 census figures and adopt its method of determining urban density, our role is not to determine whether EPA has chosen the best among all possible*1304 methods. We can only determine if its choices are rational. EPA chose the 1980 census data because it was the most widely available decennial census data at the time of rule formulation and promulgation. Neither this choice nor its use of the Census Bureau's definition of urbanized area is arbitrary and capricious.

EPA took agency work load into account in arriving at its definition. 55 Fed.Reg. at 48,039. NRDC objects on the basis that Congress considered the issue of work load when it developed the "phase-in" approach and allowed permit applications on a system- or jurisdiction-wide basis. However, this broad congressional scheme does not prohibit further consideration of EPA's work load as one among many factors in its attempt to fashion a workable program.

[9] In summary, NRDC's argument that the phrase "municipal separate storm sewer system serving a population" has the plain meaning NRDC proposes is not persuasive. Although EPA's definition in the face of the statute's ambiguity is complex, if not convoluted, it is not arbitrary and capricious, and we therefore reject NRDC's request that the definition be declared invalid.

2. EPA Exemption for Light Industry.

[10] NRDC challenges the portion of the EPA rule excluding various types of "light industry" from the definition of "discharge associated with industrial activity."

Under CWA § 402(p)(2)(B), a "discharge associ-

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ated with industrial activity" is an exception to the permit moratorium. In the November rule, EPA modified the statutory scheme by drawing distinctions among light and heavy industry and considering actual exposure to industrial materials. Although the statute does not define "associated with industrial activity," the EPA definition excludes industries it considers more comparable to retail, commercial or service industries. The excluded categories are manufacturers of pharmaceuticals, paints, varnishes, lacquers, enamels, machinery, computers, electrical equipment, transportation equipment, glass products, fabrics, furniture, paper board, food processors, printers, jewelry, toys and tobacco products. 55 Fed.Reg. at 48,008. These types of facilities need apply for permits only if certain work areas or actual materials are exposed to storm water. *Id.* EPA justifies these exemptions on the assumption that most of the activity at these types of manufacturers takes place indoors, and that emissions from stacks, use of unhooded manufacturing equipment, outside material storage or disposal, and generation of large amounts of dust and particles will all be minimal. 55 Fed.Reg. at 48,008.

Thus, EPA considers actual exposure to certain materials or stormwater for the light industry categories, but does not consider actual exposure for the other industrial categories. After careful review of the statutory language and the record, we conclude that this distinction is impermissible.

We note that the language "discharges associated with industrial activity" is very broad. The operative word is "associated." It is not necessary that storm water be contaminated or come into direct contact with pollutants; only association with any type of industrial activity is necessary.

There is a brief discussion of the issue in the legislative history: "[a] discharge is associated with industrial activity if it is directly related to manufacturing, processing or raw materials storage areas at an industrial plant. Discharges which do not meet this definition include those discharges associated with parking lots and administrative and employee buildings." 133 Cong.Rec. 985 (1987); *see also* 132 Cong.Rec. 31,968 (1986) (same). EPA argues that the words "directly related" in-

dicade Congress's intent to require permits for only those materials that come in contact with industrial materials. *See* 55 Fed.Reg. at 48,007. However, the examples given—parking lots and administrative buildings—indicate that the intent was to exclude only those facilities or parts of a facility that are completely non-industrial.

EPA's definition follows the language quoted above: "Storm water discharge associated with industrial activity means the *1305 discharge from any conveyance which is used for collecting and conveying stormwater and which is directly related to manufacturing, processing or raw materials storage areas at an industrial plant." 40 C.F.R. § 122.26(b)(14). EPA applies this definition differently depending on type of industry. EPA bases its regulation of industrial activity on Standard Industrial Classification ("SIC") categories. For most of the industrial SIC categories (identified at 40 C.F.R. § 122.26(b)(i-x)), the EPA definition includes all stormwater discharges from plant yards, access roads and rail lines, material handling sites, storage and disposal sites, shipping and receiving areas, and manufacturing buildings. 40 C.F.R. § 122.26(b)(14). However, for the "light industry" categories identified in 40 C.F.R. § 122.26(b)(14)(xi), stormwater must be actually exposed to raw materials, by-products, waste, etc., before permitting is required.

EPA justifies this difference on the ground that for "light industry," industrial activity will take place indoors, and that generation of large amounts of particles and emissions will be minimal. There is nothing in the record submitted to the Court however, which supports this assumption. *See, e.g.*, 55 Fed.Reg. at 48,008. Without supportable facts, we are unable to rely on our usual assumption that the EPA has rationally exercised the duties delegated to it by Congress. To exempt these industries from the normal permitting process based on an unsubstantiated assumption about the this group of facilities is arbitrary and capricious.

In addition, by designating these light industries as a group that need only apply for permits if actual exposure occurs, EPA impermissibly alters the statutory scheme. The statute did set up a similar approach for

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oil, gas, and mining industries. However, no other classes of industrial activities are subject to the more lenient "actual exposure" test. To require actual exposure entirely shifts the burden in the permitting scheme. Most industrial facilities will have to apply for permits and show the EPA or state that they are in compliance. Light industries will be relieved from applying for permits unless actual exposure occurs. The permitting scheme then will work only if these facilities self-report, or the EPA searches out the sources and shows that exposure is occurring. We do not know the likelihood of either self-reporting or EPA inspection and monitoring of light industries, and the regulations appear to contemplate neither for these industries. For this reason, the proposed regulation is also arbitrary and capricious.

In conclusion, we hold that the rule for light industries is arbitrary and capricious, vacate the rule, and remand for further proceedings.

3. Exclusion of Construction Sites of Less than Five Acres.

[11] NRDC challenges the exemption for construction sites of less than five acres. EPA concedes that the construction industry should be subject to storm water permitting because at a high level of intensity, construction is equivalent to other regulated industrial activities. 55 Fed.Reg. at 48,033. Construction sites can pollute with soil sediments, phosphorus, nitrogen, nutrients from fertilizers, pesticides, petroleum products, construction chemicals and solid wastes. *Id.* EPA states that such substances can be toxic to aquatic organisms, and affect water used for drinking and recreation. *Id.*

Following its characterization of construction sites as suitable for regulation, EPA defined its task as determining "an acreage limit [] appropriate for identifying sites that amount are (sic) to industrial activity." 55 Fed.Reg. at 48,036. EPA originally proposed regulations that exempted operations that disturb less than one acre of land and are not part of a common plan of development or sale. 55 Fed.Reg. at 48,035-36. In response to comments by the regulated community about the administrative burden presented by the regulation, EPA increased the exemption to five acres. 55 Fed.Reg. at

48,036. EPA also noted that larger sites will involve heavier equipment for removing vegetation and bedrock than smaller sites. *Id.* at 48,036.

~~*1306 We find that EPA's rationale for increasing the limit from one to five acres inadequate and therefore arbitrary and capricious. EPA cites no information to support its perception that construction activities on less than five acres are non-industrial in nature.~~

[12] EPA also claims agency power, inherent in statutory schemes, to make categorical exemptions when the result is *de minimis*. *Alabama Power Co. v. Costle*, 636 F.2d 323, 360 (D.C.Cir.1979). However, if construction activity is industrial in nature, and EPA concedes that it is, EPA is not free to create exemptions from permitting requirements for such activity. *See Natural Resources Defense Council, Inc. v. Costle*, 568 F.2d 1369, 1377 (D.C.Cir.1977) (once Congress has delineated an area that requires permits, EPA is not free to create exemptions).

Further, we find the *de minimis* principle inapplicable here. The *de minimis* exemption is only available where a regulation would "yield a gain of trivial or no value." *Alabama Power Co., supra*, at 361. Because of the lack of data, we cannot know whether exempting sites of less than five acres will indeed have only a *de minimis* effect.

The *de minimis* concept is based on the principle that the law does not concern itself with trifling matters. *Id.* at 360. We question its applicability in a situation such as this where the gains from application of the statute are being weighed against administrative burdens to the regulated community. *See id.* at 360-361 (implied authority to make cost-benefit decisions must derive from statute, and not general *de minimis* doctrine).

Further, EPA's claim that the five-acre exemption is *de minimis* is contradicted by the admission that even small construction sites can have a significant impact on local water quality. The EPA acknowledges that "[o]ver a short period of time, construction sites can contribute more sediment to streams than was previously deposited over several decades." 55 Fed.Reg. at 48,033. Without

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data supporting the expanded exemption, we owe no deference to EPA's line-drawing. We thus hold that EPA's choice of a five-acre limit is arbitrary and capricious, invalidate that portion of the rule exempting construction sites of five acres or less from permitting requirements, and remand for further proceedings.

4. Exemption for oil and gas activities.

The 1987 amendments created an exemption from the permit requirement for uncontaminated runoff from mining, oil and gas facilities. See Appendix, CWA § 402(l)(2), 33 U.S.C. §§ 1342(l)(2). Section 402(l)(2) states that a permit is not required for discharges of storm water runoff from mining, oil or gas operations composed entirely of flows from conveyance systems used for collecting 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". NRDC claims that the November 1990 rule sets up an impermissible standard for determining contamination at oil and gas facilities. The relevant portion of the rule states that at these facilities, an operator is not required to submit a permit application unless the facility has had a discharge of a reportable quantity^{FN15} since November 1987, or contributes to a violation of a water quality standard. 55 Fed.Reg. 48,067 (to be codified at 40 C.F.R. § 122.26(c)(1)(iii)). A facility which has had a release of oil or a hazardous substance in excess of RQs since 1987 must submit a permit application. *Id.*; 55 Fed.Reg. at 48,029-30.

FN15. "Reportable Quantities" (RQs) are not effluent guidelines setting up permissible limits for pollutants. Rather, they are quantities the discharge of which "may be harmful to the public health or welfare of the United States." CWA § 311(b)(4), 33 U.S.C. § 1321(b)(4). EPA has established RQs for a large number of substances, pursuant to both CWA section 311, 33 U.S.C. § 1321, and the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA") section 102, 42 U.S.C. § 9602. See 40 C.F.R. Parts 110, 117, 302. The operator of any vessel or facility

which releases the RQ of any substance must immediately notify the National Response Center. See, e.g., 40 C.F.R. § 110.10.

NRDC claims that oil and gas operations should be subject to the stricter standards which apply to mining operations.^{FN16} It also objects to EPA's use of RQs as the only test for contamination of runoff from oil and gas storm water dischargers, claiming it is inconsistent with the legislative history. We conclude that the legislative history does not support NRDC's position.

FN16. Operators of mines must submit permit applications whenever storm water discharges come into contact with overburden, waste products, etc. 40 C.F.R. § 122.26(c)(1)(iv).

The conference report states:

[P]ermits are not required where stormwater runoff is diverted around mining operations or oil and gas operations and does not come in contact with overburden, raw material, product, or process wastes. In addition, where stormwater runoff is not contaminated by contact with such materials, as determined by the administrator, permits are also not required. With respect to oil or grease or hazardous substances, the determination of whether stormwater is "contaminated by contact with" such materials, as established by the Administrator, shall take into consideration whether these materials are present in such stormwater runoff in excess of reportable quantities under section 311 of the Clean Water Act ..., or in the case of mining operations, above natural background levels.

H.R.Rep. No. 1004, 99th Cong., 2d Sess., at 151 (emphasis added).

[13] Thus, the EPA Administrator has discretion to determine whether or not storm water runoff at an oil, gas or mining operation is contaminated with two types of materials: (1) overburden, raw material, product, or process wastes and (2) oil, grease or hazardous substances. The report sets out factors for the Administrator to consider in determining contamination for the latter group of pollutants.

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NRDC first claims that because section 402(l)(2) treats oil, gas and mining together, the EPA rule must do the same. NRDC's second objection is based on its interpretation of the language in the conference report. ~~Because the conference report lists RQs as only one factor to be taken into consideration, NRDC insists EPA cannot make it the only factor to measure contamination for oil and gas facilities.~~

Both of these arguments must fail in light of the conference report, which gives the Administrator discretion to determine when contamination has occurred with respect to the substances listed in the statute, i.e., overburden, raw materials, waste products, etc. See CWA § 402(l)(2). The conference report states that the Administrator shall take certain factors into account, but the report is clear that the determination of whether storm water is contaminated is within the Administrator's discretion.

NRDC argues that the remarks of certain congressmen during congressional debate show that the mining, oil, and gas exemptions were to apply only if the discharges were entirely free of contaminants. We find these examples less persuasive than the clear language of the conference report. Moreover, in light of the discretion granted the Administrator in the conference report, we cannot say that the rule as promulgated is an arbitrary and capricious exercise of that discretion.

NRDC also contends that Congress intended that EPA consider reportable quantities only in determining if a discharge is contaminated with oil, grease, or hazardous substances. Other pollutants, according to NRDC, must be found to contaminate the discharge if they exceed background levels.

EPA did not, in fact, limit itself to reportable quantities in determining which oil or gas facilities must apply for a permit. The rule requires a permit for any facility which "[c]ontributes to a violation of a water quality standard." 40 C.F.R. § 122.26(c)(1)(iii)(C). This requirement addresses contamination with substances other than oil and hazardous substances. We find no support in the statute or the legislative history for NRDC's claim that, with respect*1308 to these sub-

stances, levels above background must be considered "contamination." The conference report quoted above requires consideration of background levels of any pollutant only with respect to mining operations.

D. Lack of Controls for Municipal Storm Water Discharge.

[14] NRDC contends that EPA has failed to establish substantive controls for municipal storm water discharges as required by the 1987 amendments. Because Congress gave the administrator discretion to determine what controls are necessary, NRDC's argument fails.

Prior to 1987, municipal storm water dischargers were subject to the same substantive control requirements as industrial and other types of storm water. In the 1987 amendments, Congress retained the existing, stricter controls for industrial storm water dischargers but prescribed new controls for municipal storm water discharge. CWA § 402(p)(3)(A), (B), 33 U.S.C. § 1342(p)(3)(A)-(B). The Act states that 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-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 systems, design and engineering methods, *and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.*

Section 402(p)(3)(B), 33 U.S.C. § 1342(p)(3)(B) (emphasis added).

NRDC charges that the EPA regulations accomplish neither of the goals above, i.e., they do not effectively prohibit non-storm water discharges nor do they require the controls described in ¶ (iii), above. NRDC argues that Congress granted the moratorium precisely to give EPA the opportunity to develop new, substantive standards for storm water control of municipal

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sources and instead EPA wrote vague regulations containing no minimum criteria or performance standards. ^{FN17} However, the language in ¶ (iii), above, requires the Administrator or a state to design controls. Congress did not mandate a minimum standards approach or specify that EPA develop minimal performance requirements. NRDC also claims that the testing requirements are inadequate because there is only limited sampling at a limited number of sites. However, we must defer to EPA on matters such as this, where EPA has supplied a reasoned explanation of its choices. *See* 55 Fed.Reg. at 48,049.

FN17. The requirements for permit applications are set forth at 40 C.F.R. § 122.26(d). Individual NPDES permit writers (EPA or state officials) will decide whether application proposals are adequate. Applicants must submit information on source control methods and estimate the annual pollutant load reduction to be achieved from their proposed management programs, but they are not required to achieve any specified level of reduction of any pollutants. *See* 55 Fed.Reg. at 48,070-71.

NRDC's argument that the EPA rule is inadequate cannot prevail in the face of the clear statutory language and our standard of review. Congress could have written a statute requiring stricter standards, and it did not. We therefore reject NRDC's argument that EPA's storm water control regulations fail to comply with the statute.

^{FN18}

FN18. We base our holding on NRDC's challenge to the regulations at issue. Whether a specific permit complies with the requirements of section 402(p)(3)(B) would, of course, be another matter not controlled by this decision.

E. Lack of Notice and Comment on the Approval of Part 1 of Industrial Group Storm Water Applications.

NRDC objects to the lack of opportunity for notice and comment before EPA approval of part 1 of group applications for industrial dischargers. Each member of a proposed group must submit part 1 of the application. ^{FN19} If EPA approves part 1, only *1309 a small subset

of the member facilities need submit part 2 of the application. 55 Fed.Reg. at 48,072 (to be codified at 40 C.F.R. 122.26(e)(2)). NRDC claims that because approval of part 1 waives the requirement of filing part 2 for most members of a group, EPA's decision on part 1 is equivalent to a "rule" requiring notice and comment from the public. The issue thus presented is whether EPA's decision on a part 1 group permit application is a "rule" as defined in 5 U.S.C. § 551(4) (1988) ^{FN20} requiring public notice and opportunity to comment under 5 U.S.C. § 553 (1988), or is otherwise subject to the notice and comment requirement.

FN19. Part I must include the identity of the group's participants, a description of the participants' industrial activities, a list of significant materials exposed to precipitation and the identity of the subset of the group's members who will submit quantitative data in part 2 of the application. 55 Fed.Reg. at 48,067.

FN20. A rule means "the whole or part of an agency statement of general or particular applicability and future effect designed to implement, interpret, or prescribe law or policy or describing the organization, procedure, or practice requirements of an agency...." 5 U.S.C. § 551(4).

[15] NRDC argues that approval or disapproval of a part 1 application requires public comment because it has "general applicability" pursuant to 5 U.S.C. § 551(4) and because it will have a "palpable effect" in that it will relieve the majority of entities in the group from submitting data in part 2 of the application. NRDC cites *NRDC v. EPA*, 683 F.2d 752 (3rd Cir.1982) and *Council of Southern Mountains, Inc. v. Donovan*, 653 F.2d 573 (D.C.Cir.1981) in support of its argument. Both cases involved the postponement of regulations. *See NRDC*, 683 F.2d at 753-54, 764 (indefinite postponement of effective date of final amendments to regulations dealing with the discharge of toxic pollutants requires notice and comment because it has a substantial impact on the public and the industry); *Council of Southern Mountains, Inc.*, 653 F.2d at 575, 580 n. 28 (deferral of implementation of regulations requiring

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coal operators to supply life-saving equipment ordinarily would require notice and comment because it has a "palpable effect" upon the industry and the public).

We find these cases to be distinguishable. Both involve the postponement of rules of general applicability to an entire industry, or to a large class of pollutants. In contrast, although the part 1 application process will relieve some entities from the need to furnish further data, the decision is specific to a particular permit application and approval of a preliminary application will not implement, interpret or prescribe any general law or policy pursuant to 5 U.S.C. § 551(4). Rulemaking ordinarily involves "broad judgments, legislative in nature rather than the resolution of a particular dispute of facts." *Washington Utilities & Transportation Com'n v. Federal Communication Commission*, 513 F.2d 1142, 1160 (9th Cir.1975), cert. denied, 423 U.S. 836, 96 S.Ct. 62, 46 L.Ed.2d 54 (1975). The decision to approve a part 1 permit application, although it may affect a large number of applicants, is nevertheless focused on a specific factual question: whether the application adequately designates a representative smaller group subject to the more extensive data gathering requirements in part 2 of the application. See 55 Fed.Reg. at 48,028. Because the decision involves a discrete, factual issue, the better view is that it is neither a rule nor otherwise subject to the notice and comment requirement.

Because approval of a part 1 application is essentially a factual determination, we hold that EPA's group permit application process for industrial dischargers is not invalid by its failure to provide for notice and comment.

III. CONCLUSION

In summary, we grant and deny relief as follows:

1. "*Deadlines*" issue. We grant the request for declaratory relief and deny the request for injunctive relief. We deny the request to place small, medium and large municipalities on the same permitting schedule. We hold that EPA's failure to include deadlines for permit approval or denial and compliance consistent with CWA § 402(p) is arbitrary and capricious.

2. *Exclusion of Sources from Regulation*. We uphold the definition of "municipal*1310 separate storm sewers serving a population." We hold that the exemption for construction sites of less than five acres is arbitrary and capricious and remand for further proceedings. Based on the record before us, we vacate that portion of the rule regulating "light industry" and remand for further proceedings.

3. *Other issues*. We uphold the rule as to oil and gas operations and storm water control. We further hold that EPA approval of part 1 of a group application for an industrial discharger is not a rule requiring notice and comment from the public.

Petition for Review GRANTED IN PART and DENIED IN PART.

APPENDIX A CWA § 402, 33 USCA § 1342

(l) Limitation on permit requirement

....

(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.

....

(p) Municipal and industrial stormwater discharges

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(1) General rule

Prior to October 1, 1992, 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 *1311 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;

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(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, 1992, 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.

O'SCANNLAIN, Circuit Judge, concurring in part and dissenting in part:

I concur in Parts I, II.A, II.C.1, II.C.4, II.E, and much of Part II.B of the majority opinion. I dissent from Part II.B.2.c, directing EPA to issue supplemental regulations. I dissent also from Parts II.C.2 and II.C.3, in which the court invalidates EPA's exclusion of storm water discharges from certain light industrial and small construction sites from the definition of "discharges associated with industrial activity." Finally, I concur in the result, but not the reasoning, of Part II.D, holding that EPA has not acted unlawfully by failing to include specific control requirements in the permit application regulations.

*1312 I

The majority holds that EPA has violated statutory requirements by failing to set dates for approval of, and compliance with, permits as part of its permit application program. *Ante* at 1300. Despite the holding in Part II.B.2.b that injunctive relief is inappropriate (with which I agree), the majority in Part II.B.2.c orders EPA to issue supplemental regulations setting such deadlines immediately.

I am not convinced that the statute requires EPA to set these deadlines as part of the permit application process. The provision at issue reads, in relevant part:

(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.

CWA § 402(p)(4); 33 U.S.C. § 1342(p)(4) (1988).

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While the statute establishes a time line EPA must follow, it does not, in my view, require that EPA include the deadline for permit approval in the permit application regulations. I agree that, given EPA's past delays and the fact that the statutory dates for issuance or denial of permits are now long past, it is appropriate for this court to declare that the statute requires EPA to issue or deny permits within one year of the application deadline. I do not, however, see that any purpose is served by requiring EPA to issue supplemental regulations setting out these deadlines, and I doubt our authority to do so.

With respect to compliance deadlines, the statute contemplates that such deadlines will be set in individual permits as they are issued. *See* CWA § 402(p)(4)(A), (B) ("Any such permit shall provide for compliance..."). Each permit must contain a compliance deadline, which may not exceed three years from the date of issuance. Nothing in the statute requires EPA to establish compliance deadlines now, before any permits have been issued. Accordingly, in my view, NRDC's challenge to the lack of compliance deadlines in EPA's current regulations is premature. I therefore dissent from Part II.B.2.c of the majority opinion.

II

I dissent also from Parts II.C.2 and II.C.3. In my view, EPA's definition of "discharge associated with industrial activity" is a reasonable construction of an ambiguous statute, entitled to deference. While my colleagues acknowledge that we may not overturn an agency rule that represents a "permissible construction" of a statute, *ante* at 1297 (quoting *Chevron, U.S.A., Inc. v. NRDC*, 467 U.S. 837, 843, 104 S.Ct. 2778, 2781, 81 L.Ed.2d 694 (1984)), they fail to apply that axiom.

A

EPA's rule excludes from the permitting requirement certain light industry facilities at which "areas where material handling equipment or activities, raw materials, intermediate*1313 products, final products, waste materials, byproducts, or industrial machinery" are not exposed to storm water. *See* 40 C.F.R. § 122.26(b)(14). EPA determined that discharges from such facilities do not fall within the definition of

"discharges associated with industrial activity." In my view, this determination was reasonable.

The majority concedes that the statute does not define "discharge associated with industrial activity." *Ante* at 1304. The operative phrase, as my colleagues note, is "associated with." *See id.* For purposes of evaluating the light industry exemption, I concede that manufacturing falls within the generally accepted meaning of "industrial activity," and that many of the facilities exempted by the EPA rule are manufacturers. Nonetheless, that concession does not compel the conclusion that discharges from such facilities are "associated with industrial activity."

The majority concludes, without explanation, that the phrase "discharges associated with industrial activity" is "very broad." *Ante* at 1304. Neither the plain meaning of the term "associated" nor the legislative history of the statute support this conclusion. "Associated with" means closely related to or connected with. *See Webster's Ninth New Collegiate Dictionary* 110 (1986). To the extent it casts any light on the subject, the legislative history supports a narrow reading of the phrase "associated with." Four members of the House, in the course of floor debates on the measure both before and after President Reagan's veto, explained that:

[a] discharge is associated with industrial activity if it is *directly related to manufacturing, processing or raw materials storage areas* at an industrial plant. Discharges which do not meet this definition include those discharges associated with parking lots and administrative and employee buildings.

133 Cong.Rec. 985 (1987) (statement of Rep. Hammerschmidt) (emphasis added).^{FN1} The underscored language suggests that Congress intended to regulate only discharges directly related to certain activities at industrial facilities. EPA's interpretation, that discharges are "directly related" to these activities only if storm water may reasonably be expected to come into contact with them before its discharge, is eminently logical.

FN1. This statement was repeated verbatim by Reps. Stangeland and Snyder. 133 Cong. Rec.

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at 991-92; 132 Cong. Rec. at 31,959, 31,964 (1986). Rep. Rowland offered a slight variation on the theme:

One of the discharge categories is "a discharge associated with an industrial activity." A discharge is not considered to be associated with industrial activity unless it is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant. Such discharges include [sic] those from parking lots and administrative areas and employee buildings.

132 Cong. Rec. at 31,968. Rep. Rowland apparently misspoke; he probably meant, like the other legislators who addressed the topic, to say "[s]uch discharges do not include" those from parking lots.

The majority opinion interprets the exclusion of parking lots as an expression of congressional intent "to exclude only those facilities or parts of a facility that are completely nonindustrial." *Ante* at 1304. My colleagues' reliance on the second sentence of the statement quoted above to establish this intent, however, is misplaced. The sentence relied on cannot assist us in our search for the meaning of "associated with" because it employs that very term. Moreover, it does not pretend to establish an exhaustive list of areas excluded from regulation. Legislators listed discharges from parking lots and administrative and employee buildings as *among those* not directly related to industrial activity; no one suggested that *only* discharges associated with those structures were to be excluded.

EPA's definition is consistent with the plain words of the statute and, to the extent any intent is discernible, the congressional intent. EPA has defined the term "storm water discharge associated with industrial activity" to cover only those discharges reasonably expected to come into contact with industrial activities. A large number of facilities automatically fall within EPA's definition and are required to ¹³¹⁴ apply for permits. Because facilities falling within certain specified classifications under the Standard Industrial Classification

manual generally conduct their operations entirely indoors, minimizing the likelihood of contact with storm water, EPA has not automatically included them within the regulations. However, these facilities *are* required to apply for permits if "areas where material handling equipment or activities, raw materials, intermediate products, final products, waste materials, byproducts, or industrial machinery at these facilities are exposed to storm water." 40 C.F.R. § 122.26(b)(14). If a storm water discharge is in fact directly related to or associated with the industrial activity carried on at a facility falling within the light industry category, the facility must obtain a permit.^{FN2}

FN2. Thus, nothing turns on the assumption, attacked by my colleagues as unsupported by the record, *ante* at 1304, that industrial activities at this category of facilities will take place largely indoors. Where the assumption does not hold true, the permit requirement applies with full force. I also note that NRDC has pointed us to no evidence undermining EPA's assumption.

Unlike my colleagues, I decline to assume that EPA will not carry out its responsibility to identify and to require permits of facilities where industrial activities are in fact exposed to storm water, or that such facilities will ignore their statutory duty to apply for permits. Should that occur, a lawsuit challenging EPA's failure to enforce its regulations might well be in order. An unsubstantiated suspicion that EPA may not vigorously enforce its regulations, however, does not make those regulations arbitrary or capricious.

In my view, the statute's treatment of oil and gas facilities supports EPA's reading of the term "associated with industrial activity." Congress specifically exempted from the permit requirement discharges from oil and gas facilities and mining operations which have not come in contact with raw materials, finished products, or waste products. CWA § 402(l)(2). This section indicates a congressional intent to exempt uncontaminated discharges which have not come into contact with "industrial activities" from regulation. For oil, gas, and

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mining operations, Congress in this section supplied a specific, and quite limited, definition of "industrial activities." For other facilities, that definition was left to the discretion of EPA, which has adopted a much broader definition, encompassing contact with such things as industrial machinery and materials handling equipment. See 40 C.F.R. § 122.26(b)(14).

I do not mean to suggest that the majority's construction of the statute is untenable. It may even be preferable to the reading chosen by the agency. Nonetheless, in my view the statute is ambiguous and the legislative history does not demonstrate any clear congressional intent. The question before this court, therefore, is not whether "the agency construction was the only one it permissibly could have adopted" or even whether it is the "reading the court would have reached if the question initially had arisen in a judicial proceeding." *Chevron, U.S.A. v. NRDC*, 467 U.S. 837, 843 n. 11, 104 S.Ct. 2778, 2782 n. 11, 81 L.Ed.2d 694 (1984). We need only inquire if the agency's construction is a permissible one. *Id.* at 843, 104 S.Ct. at 2781. EPA's definition falls well within permissible bounds, and should be upheld.

B

Although the issue is closer, I also am not persuaded that EPA's exemption for construction sites under five acres should be struck down. EPA has not conceded that "construction activity is industrial in nature." *Ante* at 1306. In the preamble to its final rule, EPA noted that "Construction activity at a high level of intensity is comparable to other activity that is traditionally viewed as industrial, such as natural resource extraction." FN3 55 Fed.Reg. 48,033 (1990) (emphasis added). EPA explained that it was "attempting to focus [regulation] only on those construction activities*1315 that resemble industrial activity." 55 Fed.Reg. at 48,035 (emphasis added).

FN3. EPA did admit that "[e]ven small construction sites may have a significant negative impact on water quality in localized areas," 55 Fed.Reg. at 48,033. In the absence of any indication of what EPA meant by "small," however, that statement does not undermine

EPA's exemption of sites under five acres.

Neither NRDC nor the majority point to anything in the statute or the legislative history that would require the agency to define "industrial activity" as including all construction operations. Accordingly, I believe deference is due EPA's definition, provided it is not arbitrary, capricious, or manifestly contrary to the statute. *Chevron, U.S.A.*, 467 U.S. at 844, 104 S.Ct. at 2782.

In trying to determine when construction should be treated as industrial activity, EPA considered a number of possible approaches. See 55 Fed.Reg. at 48,035. Exempting construction that would be completed within a certain designated time frame was deemed inappropriate, because the work could be both intensive and expansive but nonetheless take place over a short period of time. Basing the limit on quantity of soil removed was also rejected as not relating to the amount of land surface disturbed. EPA finally settled on the surface area disturbed by the construction project as a feasible and appropriate mechanism for "identifying sites that are [sic] amount to industrial activity." 55 Fed.Reg. at 48,036.

Having determined that not all construction amounts to industrial activity, and that the appropriate basis for differentiation is land area disturbed, EPA then had to determine where to draw the line. Initially, EPA proposed to exempt all construction operations disturbing less than one acre of land, as well as single family residential projects disturbing less than five acres. 53 Fed.Reg. 49,431 (1988). In the final rule, however, EPA adopted a five-acre minimum for all construction projects. 55 Fed.Reg. 48,066 (1990); 40 C.F.R. § 122.26(b)(14)(x).

Admittedly, the final rule contains little in the way of justification for treating two-acre sites differently than five-acre ones, but that does not necessarily make it arbitrary and capricious. Line-drawing is often difficult. NRDC was apparently willing to accept EPA's proposed one-acre/five-acre rule. Although NRDC now challenges the blanket five-acre rule, it offers no evidence that sites excluded from the permitting requirement constitute "industrial activity." In such absence of

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any evidence in the record undermining EPA's conclusion on an issue squarely within its expertise, I believe the rule must be upheld.^{FN4}

~~FN4. Because I conclude that the rule falls within the permissible bounds of the statutory definition of "discharges associated with industrial activity," I need not consider the applicability of the *de minimis* exception.~~

III

Finally, while I concur in the result reached by the majority in Part II.D, rejecting NRDC's claim that EPA has unlawfully failed to require substantive controls on municipal discharges, I disagree with the majority's reasoning. In my view, NRDC's claim is premature, and we should decline to address its merits.

NRDC contends that the 1987 amendments require EPA to establish substantive controls for municipal storm water discharges. In support of this argument, NRDC relies on CWA § 402(p)(3)(B), 33 U.S.C. § 1342(p)(3)(B), which provides:

Permits for discharges from municipal storm sewers-

* * * * *

- (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....

This section refers only to *permits*, and says nothing about permit applications. Because EPA has yet to issue any permits, NRDC's claim on this point is premature. In the absence of any indication to the contrary, we must assume that any permit issued will comply with all applicable statutory requirements. The statute does not require that EPA detail the substantive controls to be imposed when establishing permit application requirements. Accordingly, I would reject NRDC's claim without *1316 reaching the issue of the Administrator's discretion in selecting those controls.

IV

In sum, I join much of my colleagues' opinion. However, I would not require EPA to issue supplemental regulations detailing the time line for issuance of and compliance with permits, and I would uphold EPA's definition of "discharge associated with industrial activity." Finally, I would reject NRDC's claim that EPA is required to detail control measures in the permit application regulations on the grounds that the statute requires control measures only in the permits themselves.

C.A.9,1992.
Natural Resources Defense Council, Inc. v. U.S. E.P.A.
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ATTACHMENT 27

Westlaw

568 F.2d 1369, 10 ERC 2025, 186 U.S.App.D.C. 147, 8 Env'tl. L. Rep. 20,028
(Cite as: 568 F.2d 1369, 186 U.S.App.D.C. 147)

▷

United States Court of Appeals,
District of Columbia Circuit.
NATURAL RESOURCES DEFENSE COUNCIL,
INC.[FN*]

FN* For convenience the court will refer to this case hereafter as NRDC v. Costle (Runoff Point Sources).

v.
Douglas M. COSTLE, Administrator, Environmental Protection Agency, et al., National Forest Products Association, Appellant.
NATURAL RESOURCES DEFENSE COUNCIL, INC., etc.

v.
Douglas M. COSTLE, Administrator, Environmental Protection Agency, et al., National Milk Producers Federation, Appellant.
NATURAL RESOURCES DEFENSE COUNCIL, INC., etc.

v.
Douglas M. COSTLE, Administrator, and Environmental Protection Agency, et al., Appellants.
NATURAL RESOURCES DEFENSE COUNCIL, INC.

v.
Douglas M. COSTLE, Administrator, Environmental Protection Agency, Colorado River Water Conservation District, Appellant.

Nos. 75-2056, 75-2066, 75-2067 and 75-2235.
Argued Dec. 3, 1976.
Decided Nov. 16, 1977.

The National Resources Defense Council, Inc. challenged authority of the Environmental Protection Agency Administrator to exempt categories of point sources from permit requirements of the Federal Water Pollution Control Act Amendments of 1972. The United States District Court for the District of Columbia, Thomas A. Flannery, J., 396

F.Supp. 1393, granted summary judgment to the NRDC and the Administrator and others appealed. The Court of Appeals, Leventhal, Circuit Judge, held that: (1) legislative history shows that National Pollution Discharge Elimination System permit is the only means by which discharger may escape total prohibition of discharges from point sources found in FWPCA; (2) national effluent limitations need not be uniform as precondition for NPDES program to include pollution from agricultural, silvicultural, and storm runoff point sources, and while technological or administrative infeasibility of such limitations may warrant adjustments in permit program it does not authorize Administrator to exclude relevant point sources; (3) where numeric effluent limitations are infeasible, permit conditions may proscribe industry practices that aggravate problems of point source pollution as well as require monitoring and reporting of effluent level; and (4) a number of administrative devices, including general or area permits are available to aid EPA in practical administration of NPDES program, and FWPCA, however tight in some respects, leaves some leeway to EPA in interpretation of that statute and affords agency some means to consider matters of feasibility.

Affirmed in accordance with opinion.

MacKinnon, Circuit Judge, filed a concurring opinion.

West Headnotes

[1] Environmental Law 149E ↻196

149E Environmental Law
149EV Water Pollution
149Ek194 Permits and Certifications
149Ek196 k. Discharge of Pollutants.
Most Cited Cases
(Formerly 270k35, 199k25.7(16) Health and Environment)
Legislative history clearly shows that Congress

568 F.2d 1369, 10 ERC 2025, 186 U.S.App.D.C. 147, 8 Env'tl. L. Rep. 20,028
(Cite as: 568 F.2d 1369, 186 U.S.App.D.C. 147)

intended that the national pollution discharge elimination system permit be the only means by which a discharger of pollutant may escape total prohibition of discharges from point sources found in Federal Water Pollution Control Act Amendments. Federal Water Pollution Control Act, §§ 301, 301(a), 402 as amended 33 U.S.C.A. §§ 1311, 1311(a), 1342.

[2] Environmental Law 149E ↪ 196

149E Environmental Law
149EV Water Pollution
149Ek194 Permits and Certifications
149Ek196 k. Discharge of Pollutants.

Most Cited Cases

(Formerly 199k25.7(13.1), 199k25.7(13) Health and Environment, 270k35)

Use of word "may" in that section of Federal Water Pollution Control Act Amendment providing that the administrator may issue permit for discharge of any pollutant means only that the administrator has the discretion either to issue permit or to leave pollutant discharger subject to total proscription of statute making discharge of any pollutant by any person unlawful except as provided in Act. Federal Water Pollution Control Act, §§ 301(a), 302, 304 as amended 33 U.S.C.A. §§ 1311(a), 1342, 1344.

[3] Environmental Law 149E ↪ 175

149E Environmental Law
149EV Water Pollution
149Ek174 Substances, Sources, and Activities Regulated

149Ek175 k. In General. Most Cited Cases
(Formerly 199k25.7(6.1), 199k25.7(6) Health and Environment)

Environmental Law 149E ↪ 196

149E Environmental Law
149EV Water Pollution
149Ek194 Permits and Certifications
149Ek196 k. Discharge of Pollutants.

Most Cited Cases

(Formerly 270k35)

Existence of uniform national effluent limitations is not a necessary precondition for incorporating into the national pollutant discharge elimination system program pollution from agricultural, silvicultural, and storm water runoff point sources; technological or administrative infeasibility of such limitations may result in adjustments in permit programs but does not authorize administrator to exclude relevant point sources from program. Federal Water Pollution Control Act, §§ 301, 402, 404, 1362(12, 14), as amended 33 U.S.C.A. §§ 1311, 1342, 1344, 502(12, 14).

[4] Environmental Law 149E ↪ 197

149E Environmental Law
149EV Water Pollution
149Ek194 Permits and Certifications
149Ek197 k. Conditions and Limitations.

Most Cited Cases

(Formerly 270k35, 199k25.7(10.1), 199k25.7(10) Health and Environment)

Where numeric effluent limitations are infeasible, point of discharge permits may proscribe industry practices which aggravate problems of point source pollution as well as require monitoring and reporting of effluent levels contrary to claim that any limitations must be issued in terms of a numerical effluent standard. Federal Water Pollution Control Act, §§ 302(a), 402, 402(a) as amended 33 U.S.C.A. §§ 1312(a), 1342, 1342(a).

[5] Environmental Law 149E ↪ 196

149E Environmental Law
149EV Water Pollution
149Ek194 Permits and Certifications
149Ek196 k. Discharge of Pollutants.

Most Cited Cases

(Formerly 270k35, 199k25.7(13.1), 199k25.7(13) Health and Environment)

Federal Water Pollution Control Act Amendments merely require that point of discharge permits be in compliance with limitations section of

568 F.2d 1369, 10 ERC 2025, 186 U.S.App.D.C. 147, 8 Env'tl. L. Rep. 20,028
(Cite as: 568 F.2d 1369, 186 U.S.App.D.C. 147)

Act and as a result the use of area or general permits is allowed. Federal Water Pollution Control Act, § 402 as amended 33 U.S.C.A. § 1342.

[6] Environmental Law 149E ↪641

149E Environmental Law
149EXIII Judicial Review or Intervention
149Ek636 Administrative Decisions or Actions Reviewable in General
149Ek641 k. Water Pollution. Most Cited Cases

(Formerly 199k25.15(3.2), 199k25.15(1) Health and Environment, 270k35)

Power to define point and nonpoint sources of pollution is vested in Environmental Protection Agency under the Federal Water Pollution Control Act Amendments, and exercise of that power should be reviewed by court only after opportunity for full agency review and examination. Federal Water Pollution Control Act, § 402 as amended 33 U.S.C.A. § 1342.

[7] Environmental Law 149E ↪216

149E Environmental Law
149EV Water Pollution
149Ek215 Administrative Agencies and Proceedings
149Ek216 k. In General. Most Cited Cases
(Formerly 270k35, 199k25.7(11) Health and Environment)

Federal Water Pollution Control Act Amendments, however tight in some respects, leave some leeway to Environmental Protection Agency in interpretation and affords agency some means to consider matter of feasibility. Federal Water Pollution Control Act, §§ 1-26, 101-517 as amended 33 U.S.C.A. §§ 1151-1175, 1251-1376.

[8] Administrative Law and Procedure 15A ↪305

15A Administrative Law and Procedure
15AIV Powers and Proceedings of Administrat-

ive Agencies, Officers and Agents
15AIV(A) In General
15Ak303 Powers in General
15Ak305 k. Statutory Basis and Limitation. Most Cited Cases

It is not what court thinks that is generally appropriate to regulatory process, but what Congress intended.

**1370 **148 Syllabus by the Court*

The National Resources Defense Council, Inc. (NRDC) challenged the authority of the EPA Administrator to exempt categories of point sources from the permit requirements of s 402 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. s 1342 (Supp. V 1975). On appeal from a grant of summary judgment to NRDC, held:

1. The legislative history makes clear that Congress intended the National Pollution Discharge Elimination System (NPDES) permit to be the only means by which a discharger may escape the total prohibition of discharges from point sources found in FWPCA s 301(a), 33 U.S.C. s 1311(a) (Supp. V 1975).

2. It is not necessary that national effluent limitations be uniform as a precondition for the NPDES program to include pollution from agricultural, silvicultural, and storm water runoff point sources. The technological or administrative infeasibility *1371 **149 of such limitations may warrant adjustments in the permit program, but it does not authorize the Administrator to exclude the relevant point source from the NPDES program.

3. Where numeric effluent limitations are infeasible, permit conditions may proscribe industry practices that aggravate the problems of point source pollution as well as require monitoring and reporting of effluent levels.

4. A number of administrative devices, including general or area permits, are available to aid EPA in the practical administration of the NPDES program. The FWPCA, however tight in some re-

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spects, leaves some leeway to EPA in the interpretation of that statute and, in that regard, affords the agency some means to consider matters of feasibility.

Appeals from the United States District Court for the District of Columbia (D.C. Civil 1629-73). Irvin B. Nathan, Washington, D. C., with whom Burton J. Mallinger, Washington, D. C., was on the brief, for appellant in No. 75-2056.

Charles W. Bills, Washington, D. C., with whom James R. Murphy, Washington, D. C., was on the brief for appellant in No. 75-2066.

G. William Frick, Atty., Dept. of Justice, Kansas City, Mo., of the bar of the Supreme Court of Missouri, pro hac vice by special leave of court for appellants in No. 75-2067. Peter R. Taft, Asst. Atty. Gen., Robert V. Zener, Gen. Counsel, Environmental Protection Agency, Edmund B. Clark, Lloyd S. Guerci, Larry A. Boggs, Attys., Dept. of Justice and Pamela P. Quinn, Atty., Environmental Protection Agency, Washington, D. C., were on the brief for appellants in No. 75-2067.

Christopher D. Williams, Washington D. C., with whom Kenneth Balcomb and Robert L. McCarty, Washington, D. C., were on the brief for appellant in No. 75-2235.

J. G. Speth, Washington, D. C., for appellee.

Theodore O. Torve, Asst. Atty. Gen., State of Washington, Olympia, Wash., filed a brief on behalf of the State of Washington as amicus curiae urging reversal in No. 75-2056.

Richard E. Schwartz, Jefferson City, Mo., filed a brief on behalf of Iron and Steel Institute, as amicus curiae urging reversal in No. 75-2067.

John L. Hill, Atty. Gen., State of Texas, and David M. Kendall, Jr., First Asst. Atty. Gen., State of Texas, Austin, Tex., filed a brief on behalf of State of Texas as amicus curiae urging reversal in No. 75-2067.

Before BAZELON, Chief Judge, and LEVENTHAL and MacKINNON, Circuit Judges.

Opinion for the Court filed by LEVENTHAL, Circuit Judge.

Concurring Opinion filed by MacKINNON, Circuit Judge.

LEVENTHAL, Circuit Judge:

In 1972 Congress passed the Federal Water Pollution Control Act Amendments (hereafter referred to as the "FWPCA" or the "Act" [FN1]). It was a dramatic response to accelerating environmental degradation of rivers, lakes and streams in this country. The Act's stated goal is to eliminate the discharge of pollutants into the Nation's waters by 1985. This goal is to be achieved through the enforcement of the strict timetables and technology-based effluent limitations established by the Act.

FN1. 33 U.S.C. ss 1251-1376 (Supp. V 1975). Although characterized in the official title as "amendments", the 1972 FWPCA actually substitutes its provisions for those of the pre-1972 Federal Water Pollution Control Act as amended, id. ss 1151-1175 (1970).

The FWPCA sets up a permit program, the National Pollutant Discharge Elimination System (NPDES), as the primary means of enforcing the Act's effluent limitations.[FN2] At issue in this case is the authority*1372 **150 of the Administrator of the Environmental Protection Agency to make exemptions from this permit component of the FWPCA.

FN2. This case deals with s 402 of the FWPCA, 33 U.S.C. s 1342 (Supp. V 1975), which sets out the permitting authority of the EPA Administrator as well as that of the states under EPA-approved state permit programs. The Secretary of the Army also has a permitting authority in certain circumstances. Under s 404 of the FWPCA, 33 U.S.C. s 1344 (Supp. V 1975), he may

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issue permits for the discharge of dredged or fill material into navigable waters.

Section 402 of the FWPCA, 33 U.S.C. s 1342 (Supp. V 1975), provides that under certain circumstances the EPA Administrator "may . . . issue a permit for the discharge of any pollutant" notwithstanding the general proscription of pollutant discharges found in s 301 of the Act. 33 U.S.C. s 1311 (Supp. V 1975). The discharge of a pollutant is defined in the FWPCA as "any addition of any pollutant to navigable waters from any point source" or "any addition of any pollutant to the waters of the contiguous zone or the ocean from any point source other than a vessel or floating craft." 33 U.S.C. s 1362(12) (Supp. V 1975). In 1973 the EPA Administrator issued regulations that exempted certain categories of "point sources" of pollution from the permit requirements of s 402.[FN3] The Administrator's purported authority to make such exemptions turns on the proper interpretation of s 402.

FN3. 40 C.F.R. s 125.4 (1975). See 38 Fed.Reg. 18000-04 (1973).

A "point source" is defined in s 502(14) as "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 operation, or vessel or other floating craft, from which pollutants are or may be discharged." [FN4]

FN4. 33 U.S.C. s 1362(14) (Supp. V 1975).

The 1973 regulations exempted discharges from a number of classes of point sources from the permit requirements of s 402, including all silvicultural point sources; all confined animal feeding operations below a certain size; all irrigation return flows from areas of less than 3,000 contiguous acres or 3,000 noncontiguous acres that use the same drainage system; all nonfeedlot, nonirrigation agricultural point sources; and separate storm sewers containing only storm runoff uncontaminated by

any industrial or commercial activity. [FN5] The EPA's *1373 **151 rationale for these exemptions is that in order to conserve the Agency's enforcement resources for more significant point sources of pollution, it is necessary to exclude these smaller sources of pollutant discharges from the permit program.

FN5. 40 C.F.R. s 125.4 (1975):

The following do not require an NPDES permit:

(f) Uncontrolled discharges composed entirely of storm runoff when these discharges are uncontaminated by any industrial or commercial activity, unless the particular storm runoff discharge has been identified by the Regional Administrator, the State water pollution control agency or an interstate agency as a significant contributor of pollution. (It is anticipated that significant contributors of pollution will be identified in connection with the development of plans pursuant to section 303(e) of the Act. This exclusion applies only to separate storm sewers. Discharges from combined sewers and bypass sewers are not excluded.)

(j) Discharges of pollutants from agricultural and silvicultural activities, including irrigation return flow and runoff from orchards, cultivated crops, pastures, rangelands, and forest lands, except that this exclusion shall not apply to the following:

(1) Discharges from animal confinement facilities, if such facility or facilities contain, or at any time during the previous 12 months contained, for a total of 30 days or more, any of the following types of animals at or in excess of the number listed for each type of animal:

(i) 1,000 slaughter and feeder cattle;

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(ii) 700 mature dairy cattle (whether milkers or dry cows);

(iii) 2,500 swine weighing over 55 pounds;

(iv) 10,000 sheep;

(v) 55,000 turkeys;

(vi) If the animal confinement facility has continuous overflow watering, 100,000 laying hens and broilers;

(vii) If the animal confinement facility has liquid manure handling systems, 30,000 laying hens and broilers;

(viii) 5,000 ducks;

(2) Discharges from animal confinement facilities, if such facility or facilities contain, or any time during the previous 12 months contained for a total of 30 days or more, a combination of animals such that the sum of the following numbers is 1,000 or greater: the number of slaughter and feeder cattle multiplied by 1.0, plus the number of mature dairy cattle multiplied by 1.4, plus the number of swine weighing over 55 pounds multiplied by 0.4, plus the number of sheep multiplied by 0.1;

(3) Discharges from aquatic animal production facilities;

(4) Discharges of irrigation return flow (such as tailwater, tile drainage, surfaced ground water flow or bypass water), operated by public or private organizations or individuals, if: (1) There is a point source of discharge (e. g., a pipe, ditch, or other defined or discrete conveyance, whether natural or artificial) and; (2) the return flow is from land areas of more than 3,000 contiguous acres, or 3,000 non-contiguous acres which use the same drainage system; and

(5) Discharges from any agricultural or silvicultural activity which have been identified by the Regional Administrator or the Director of the State water pollution control agency or interstate agency as a significant contributor of pollution.

The National Resources Defense Council, Inc. (NRDC) sought a declaratory judgment that the regulations are unlawful under the FWPCA. Specifically, NRDC contended that the Administrator does not have authority to exempt any class of point source from the permit requirements of s 402. It argued that Congress in enacting ss 301, 402 of the FWPCA intended to prohibit the discharge of pollutants from all point sources unless a permit had been issued to the discharger under s 402 or unless the point source was explicitly exempted from the permit requirements by statute. The District Court granted NRDC's motion for summary judgment. It held that the FWPCA does not authorize the Administrator to exclude any class of point sources from the permit program. *NRDC v. Train*, 396 F.Supp. 1393 (D.D.C.1975). The EPA has appealed to this court. It is joined on appeal by a number of defendant-intervenors, National Forest Products Association (NFPA), National Milk Producers Federation (NMPF), and the Colorado River Conservation District.[FN6]

FN6. Briefs as amicus curiae were filed by the American Iron and Steel Institute, the State of Texas, and the State of Washington, Department of Natural Resources.

This case thus presents principally a question of statutory interpretation. EPA also argues that even if Congress intended to include the pertinent categories in the permit program, the regulations exempting them should be upheld on a doctrine of administrative infeasibility, i. e., the regulations should be upheld as a deviation from the literal terms of the FWPCA that is necessary to permit the Agency to realize the principal objectives of the Act.

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I. LEGISLATIVE HISTORY

The principal purpose of the FWPCA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." [FN7] The Act's ultimate objective, to eliminate the discharge of pollutants into navigable waters by 1985, is to be achieved by means of two intermediate steps. As of July 1, 1977, all point sources other than publicly owned treatment works were to have achieved effluent limitations that require application of the "best practicable control technology." [FN8] These same point sources must reduce their effluent discharges by July 1, 1983, to meet limitations determined by application of the "best available technology economically achievable" for each category of point source.[FN9]

FN7. 33 U.S.C. s 1251(a) (Supp. V 1975).

FN8. 33 U.S.C. s 1311(b)(1)(A) (Supp. V 1975).

FN9. Id. s 1311(b)(2)(A).

The technique for enforcing these effluent limitations is straightforward. Section 301(a) of the FWPCA provides:

Except as in compliance with this section and sections 302, 306, 307, 318, 402, and 404 of this Act, the discharge of any pollutant by any person shall be unlawful.[FN10]

FN10. Id. s 1311(a).

Appellants concede that if the regulations are valid, it must be because they are authorized*1374 **152 by s 402; none of the other sections listed in s 301(a) afford grounds for relieving the exempted point sources from the prohibition of s 301. [FN11]

FN11. Section 302, 33 U.S.C. s 1312 (Supp. V 1975), permits the Administrator to set water quality related effluent limitations or control strategies, where technology-based limitations are inadequate. Sec-

tion 306, 33 U.S.C. s 1316 (Supp. V 1975), instructs the EPA Administrator to promulgate standards of performance for new sources of pollution constructed after those standards are proposed. Section 307, 33 U.S.C. s 1317 (Supp. V 1975), gives the EPA Administrator the authority to issue generally applicable effluent standards with respect to toxic substances and to require pretreatment of some pollutants before their introduction into treatment works. By virtue of s 318, 33 U.S.C. s 1328 (Supp. V 1975), the Administrator may "permit the discharge of a specific pollutant or pollutants under controlled conditions associated with an approved aquaculture project under Federal or State supervision." Section 404, 33 U.S.C. s 1344 (Supp. V 1975), gives the Secretary of the Army authority to issue permits for the discharge of dredged or fill material into the navigable waters at specified disposal sites.

Section 402 provides in relevant part that the Administrator may, after opportunity for public hearing, issue a permit for the discharge of any pollutant, or combination of pollutants, notwithstanding section 301(a), upon condition that such discharge will meet either all applicable requirements under sections 301, 302, 306, 307, 308, and 403 of this Act, or prior to the taking of the necessary implementing actions relating to all such requirements, such conditions as the Administrator determines are necessary to carry out the provisions of this Act.

The NPDES permit program established by s 402 is central to the enforcement of the FWPCA. It translates general effluent limitations into the specific obligations of a discharger. As this court noted in *NRDC v. Train*, 166 U.S.App.D.C. 312, 315, 510 F.2d 692, 695 (1975), the Act "relies primarily on a permit program for the achievement of effluent limitations . . . to attain its goals." The comments in

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floor debates of Senator Muskie, the leading Congressional sponsor of the Act, makes this clear.
[FN12]

FN13. H.Rep.No.92-911, 92d Cong., 2d Sess. 100 (1972), reprinted in Legislative History at 787.

FN12. "The Administrator of the Environmental Protection Agency is authorized to regulate discharge of pollutants through the use of an expanded permit program." 117 Cong.Rec. 38800 (1971) (Senator Muskie) (emphasis added), reprinted in 2 Environmental Policy Div., Congressional Reference Serv., A Legislative History of the Water Pollution Control Act Amendments of 1972, at 1259 (Senate Public Works Comm. Print 1973) (hereinafter cited as Legislative History).

The Senate Report echoed this interpretation:

(Section 301) clearly establishes that the discharge of pollutants is unlawful. Unlike its predecessor program which permitted the discharge of certain amounts of pollutants under the conditions described above, this legislation would clearly establish that no one has the right *1375 **153 to pollute that pollution continues because of technological limits, not because of any inherent rights to use the nation's waterways for the purpose of disposing of wastes.

The appellants argue that s 402 not only gives the Administrator the discretion to grant or refuse a permit, but also gives him the authority to exempt classes of point sources from the permit requirements entirely. They argue that this interpretation is supported by the legislative history of s 402 and the fact that unavailability of this exemption power would place unmanageable administrative burdens on the EPA.

The program proposed by this Section will be implemented through permits issued in Section 402. The Administrator will have the capability and the mandate to press technology and economics to achieve those levels of effluent reduction which he believes to be practicable in the first instance and attainable in the second.[FN14]

[1] Putting aside for the moment the appellants' administrative infeasibility argument, we agree with the District Court that the legislative history makes clear that Congress intended the NPDES permit to be the only means by which a discharger from a point source may escape the total prohibition of s 301(a). This intention is evident in both Committee Reports. In discussing s 301 the House Report stressed:

FN14. S.Rep.No.92-414, 92d Cong., 1st Sess. 42 (1971), reprinted in Legislative History at 1460; U.S.Code Cong. & Admin.News 1972, pp. 3668, 3709.

Any discharge of a pollutant without a permit issued by the Administrator under section 318, or by the Administrator or the State under section 402 or by the Secretary of the Army under section 404 is unlawful. Any discharge of a pollutant not in compliance with the conditions or limitations of such a permit is also unlawful.[FN13]

[2] The EPA argues that since s 402 provides that "the Administrator may . . . issue a permit for the discharge of any pollutant" (emphasis added), he is given the discretion to exempt point sources from the permit requirements altogether. This argument, as to what Congress meant by the word "may" in s 402, is insufficient to rebut the plain language of the statute and the committee reports. We say this with due awareness of the deference normally due "the construction of a new statute by its implementing agency." NRDC v. Train, 166 U.S.App.D.C. at 326, 510 F.2d at 706; see Zuber v. Allen, 396 U.S. 168, 192, 90 S.Ct. 314, 24 L.Ed.2d 345 (1969); Udall v. Tallman, 380 U.S. 1, 16, 85 S.Ct. 792, 13 L.Ed.2d 616 (1965). The use of the

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word "may" in s 402 means only that the Administrator has discretion either to issue a permit or to leave the discharger subject to the total proscription of s 301. This is the natural reading, and the one that retains the fundamental logic of the statute.

Under the EPA's interpretation the Administrator would have broad discretion to exempt large classes of point sources from any or all requirements of the FWPCA. This is a result that the legislators did not intend. Rather they stressed that the FWPCA was a tough law that relied on explicit mandates to a degree uncommon in legislation of this type. A statement of Senator Jennings Randolph of West Virginia, Chairman of the Senate Committee responsible for the Act, is illustrative.

I stress very strongly that Congress has become very specific on the steps it wants taken with regard to environmental protection. We have written into law precise standards and definite guidelines on how the environment should be protected. We have done more than just provide broad directives for administrators to follow. . . .

In the past, too many of our environmental laws have contained vague generalities. What we are attempting to do now is provide laws that can be administered with certainty and precision. I think that is what the American people expect that we do.[FN15]

FN15. 117 Cong.Rec. 38805 (1971), reprinted in Legislative History at 1272. See also the comments of Senator Montoya on the original Senate bill.

Your committee has placed before you a tough bill. This body and this Nation would not have it be otherwise. Our legislation contains an important principle of psychology: Men seldom draw the best from themselves unless pressed by circumstances and deadlines. This bill contains deadlines and it imposes rather tough

standards on industry, municipalities, and all other sources of pollution. Only under such conditions are we likely to press the technological threshold of invention into new and imaginative developments that will allow us to meet the objectives stated in our bill.

117 Cong.Rec. 38808 (1971), reprinted in Legislative History at 1278.

There are innumerable references in the legislative history to the effect that the Act is founded on the "basic premise that a discharge of pollutants without a permit is unlawful and that discharges not in compliance with the limitations and conditions for a permit are unlawful." [FN16] Even when infeasibility arguments were squarely raised, *1376 **154 the legislature declined to abandon the permit requirement.[FN17] We stand by our previous interpretation of the Act's scheme for the enforcement of effluent limitations:

FN16. 118 Cong.Rec. 10215 (1972) (Rep. Clausen), reprinted in Legislative History at 378. See, e. g., H.R.Rep.No.92-911 92d Cong., 2d Sess. 100 (1972), reprinted in Legislative History at 787; S.Rep.No.92-414; 92d Cong., 1st Sess. 42-43 (1971), reprinted in Legislative History at 1460-61; 118 Cong.Rec. 10661 (1972) (Rep. Podell), reprinted in Legislative History at 574.

FN17. The House rejected an amendment designed to avoid the problems of including irrigation return flows in the permit program. Congressman Teno Roncalio of Wyoming offered an amendment on the floor of the House that would have explicitly exempted irrigated agriculture from the NPDES permit program.

Mr. RONCALIO. . . .

I offer my amendment so that a serious

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omission to H.R. 11896 can be corrected before we end up with a law that would be virtually impossible to enforce. My amendment would specifically exempt irrigated agriculture from sections 301(a), 302 and 304 of the Federal Water Pollution Control Act.

I think my colleagues will agree that the type of salinity problems created by irrigation runoff are simply not as alarming as the more common pollutants discharged by industrial and municipal facilities. Substantial salinity concentrations have little effect on recreational use of water or its suitability for the propagation of fish.

My amendment is necessary, Mr. Chairman, because at the present time we could not enforce pollution control on irrigation systems. It is virtually impossible to trace pollutants to specific irrigation lands, making these pollutants a nonpoint source in most cases. Second, we do not have the technology to deal with irrigation runoff (as contrasted to industrial pollution) and if we begin making laws to control something that cannot be handled with our given technological knowledge, we will be doing many thousand farmers and ranchers a great disservice. In fact, we will be doing the Federal Government a great disservice if we actually pass a Federal water pollution control bill that cannot be fully enforced.

118 Cong.Rec. 10764-65 (1972), reprinted in Legislative History at 651. The amendment was rejected.

After dates set forth in (s 301(b)), a person must obtain a permit and comply with its terms in order to discharge any pollutant. The conditions of the permit must assure that any discharge complies with the applicable requirements of numerous sections including the effluent limitations of section

301(b).

NRDC v. Train, 166 U.S.App.D.C. at 316, 510 F.2d at 696 (emphasis added; footnotes omitted).

We also note that all the Supreme Court decisions referring to s 402 view the permit as the only means by which a point source polluter can avoid the ban on discharges found in s 301. Strictly speaking these expressions may be dicta, for they do not touch directly on the interpretation of s 402. But they are at least a considered reading of what the Act appears to mean.

In Train v. Colorado Public Interest Research Group, Inc., 426 U.S. 1, 96 S.Ct. 1938, 48 L.Ed.2d 434 (1976), Justice Marshall characterized the enforcement scheme of the FWPCA as follows:

(E)ffluent limitations are enforced through a permit program. The discharge of "pollutants" into water is unlawful without a permit issued by the Administrator of the EPA or, if a State has developed a program that complies with the FWPCA, by the State. . . .

Id. at 7, 96 S.Ct. at 1941 (footnote omitted).

In EPA v. State Water Resources Control Board, 426 U.S. 200, 96 S.Ct. 2022, 48 L.Ed.2d 578 (1976), the issue was whether federal installations were subject to state NPDES programs. Justice White's majority opinion describes NPDES at 205, 96 S.Ct. at 2025 (footnote omitted):

Under NPDES, it is unlawful for any person to discharge a pollutant without obtaining a permit and complying with its terms. An NPDES permit serves to transform generally applicable effluent limitations and other standards including those based on water quality into the obligations (including a timetable for compliance) of the individual discharger, and the Amendments provide for direct administrative and judicial enforcement of permits.

In E. I. du Pont de Nemours v. Train, 430 U.S. 112, 97 S.Ct. 965, 51 L.Ed.2d 204 (1977), the

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Court held that under FWPCA the EPA can set uniform effluent limitations through industry-wide regulations rather than develop them on an individual basis during the permit issuance process. But the Court, per Justice Stevens, clearly indicated*1377 **155 that those limitations were translated into obligations of the discharger through their inclusion in an NPDES permit. *Id.* at 119-20, 97 S.Ct. 965.

The wording of the statute, legislative history, and precedents are clear: the EPA Administrator does not have authority to exempt categories of point sources from the permit requirements of s 402. Courts may not manufacture for an agency a revisory power inconsistent with the clear intent of the relevant statute. In holding that the FPC does not have authority to exempt the rates of small producers from regulation under the Natural Gas Act, the Supreme Court observed:

It is not the Court's role . . . to overturn congressional assumptions embedded into the framework of regulation established by the Act. This is a proper task for the Legislature where the public interest may be considered from the multifaceted points of view of the representational process.

FPC v. Texaco, Inc., 417 U.S. 380, 400, 94 S.Ct. 2315, 2327, 41 L.Ed.2d 141 (1974).

II. ADMINISTRATIVE INFEASIBILITY

The appellants have stressed in briefs and at oral argument the extraordinary burden on the EPA that will be imposed by the above interpretation of the scope of the NPDES program. The spectre of millions of applications for permits is evoked both as part of appellants' legislative history argument that Congress could not have intended to impose such burdens on the EPA and as an invitation to this court to uphold the regulations as deviations from the literal terms of the FWPCA necessary to permit the agency to realize the general objectives of that act. During oral argument we asked for supplemental briefs so that the appellants could expand on their infeasibility arguments. We consider EPA's infeasibility contentions in turn.

A. Uniform National Effluent Limitations

EPA argues that the regulatory scheme intended under Titles III and IV of the FWPCA requires, first, that the Administrator establish national effluent limitations [FN18] and, second, that these limitations be incorporated in the individual permits of dischargers. EPA argues that the establishment of such limitations is simply not possible with the type of point sources involved in the 1973 regulations, which essentially involve the discharge of runoff i. e., wastewaters generated by rainfall that drain over terrain into navigable waters, picking up pollutants along the way.

FN18. See FWPCA s 502(11), 33 U.S.C. s 1362(11) (Supp. V 1975):

The term "effluent limitation" means any restriction established by a State or the 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.

There is an initial question, to what extent point sources are involved in agricultural, silvicultural, and storm sewer runoff. The definition of point source in s 502(14), including the concept of a "discrete conveyance", suggests that there is room here for some exclusion by interpretation. We discuss this issue subsequently. Meanwhile, we assume that even taking into account what are clearly point sources, there is a problem of infeasibility which the EPA properly opens for discussion.

EPA contends that certain characteristics of runoff pollution make it difficult to promulgate effluent limitations for most of the point sources exempted by the 1973 regulations:

The major characteristic of the pollution problem which is generated by runoff . . . is that the owner of the discharge point . . . has no control

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over the quantity of the flow or the nature and amounts of the pollutants picked up by the runoff. The amount of flow obviously is unpredictable because it results from the duration and intensity of the rainfall event, the topography, the type of ground cover and the saturation point of the land due to any previous *1378 **156 rainfall. Similar factors affect the types of pollutants which will be picked up by that runoff, including the type of farming practices employed, the rate and type of pesticide and fertilizer application, and the conservation practices employed . . .

An effluent limitation must be a precise number in order for it to be an effective regulatory tool; both the discharger and the regulatory agency need to have an identifiable standard upon which to determine whether the facility is in compliance. That was the principal of the passage of the 1972 Amendments.

Federal Appellants' Memorandum on "Impossibility" at 7-8 (footnote omitted). Implicit in EPA's contentions is the premise that there must be a uniform effluent limitation prior to issuing a permit. That is not our understanding of the law.

In *NRDC v. Train*, we described the interrelationship of the effluent limitations and the NPDES permit program, 166 U.S.App.D.C. at 327, 510 F.2d at 707 (footnotes omitted):

The Act relies on effluent limitations on individual point sources as the "basis of pollution prevention and elimination." . . . Section 301(b) contains a broad description of phase one and phase two effluent limitations, to be achieved by July 1, 1977 and July 1, 1983, respectively. The limitations established under section 301(b) are to be imposed upon individual point sources through permits issued under the National Pollutant Discharge Elimination System (NPDES) established by section 402. Those permits are to contain schedules which will assure phased compliance with the effluent limitations no later than the final dates set forth in section 301(b). Section 304(b) calls for the publica-

tion of regulations containing guidelines for effluent limitations for classes and categories of point sources. These guidelines are intended to assist in the establishment of section 301(b) limitations that will provide uniformity in the permit conditions imposed on similar sources within the same category by diverse state and federal permit authorities.

As noted in *NRDC v. Train*, the primary purpose of the effluent limitations and guidelines was to provide uniformity among the federal and state jurisdictions enforcing the NPDES program and prevent the "Tragedy of the Commons" [FN19] that might result if jurisdictions can compete for industry and development by providing more liberal limitations than their neighboring states. 166 U.S.App.D.C. at 329, 510 F.2d at 709. The effluent limitations were intended to create floors that had to be respected by state permit programs.

FN19. As one commentator has recently written:

The Tragedy of the Commons arises in noncentralized decisionmaking under conditions in which the rational but independent pursuit by each decisionmaker of its own self-interest leads to results that leave all decisionmakers worse off than they would have been had they been able to agree collectively on a different set of policies.

Stewart, *Pyramids of Sacrifice? Problems of Federalism in Mandating State Implementation of National Environmental Policy*, 86 *Yale L.J.* 1196, 1211 (1977). The classic account of the Tragedy of the Commons can be found in *Hardin, The Tragedy of the Commons*, 162 *Science* 1243 (1968). *Hardin* makes the point in the context of sheep-grazing. Put simply, even over-simply, *Hardin* shows that if no one is authorized to set limits to preserve open pasture land as a whole, allowing sheep to graze on that land may lead to serious

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overgrazing, as each herdsman thinks only of his own advantage. The solution lies in some mandate, from above or by agreement, with sanctions to compel conformance.

But in *NRDC v. Train* it was also recognized that permits could be issued before national effluent limitations were promulgated and that permits issued subsequent to promulgation of uniform effluent limitations could be modified to take account of special characteristics of subcategories of point sources.

Prior to the promulgation of effluent limitations under section 301, the director of a state program is instructed merely to impose such terms and conditions in each permit as he determines are necessary to carry out the provisions of the Act. Once *1379 **157 an effluent limitation is established, however, the state director and the regional EPA Administrator are required to apply the specified, uniform effluent limitations, modified only as necessary to take account of fundamentally different factors pertaining to particular point sources within a given class or category. Any variation in the uniform limitations adopted for specific dischargers must be approved by the Administrator.

166 U.S.App.D.C. at 330, 510 F.2d at 710 (footnotes omitted).

Another passage in *NRDC v. Train* touches on the infeasibility problem. We noted that "(t)he statutory framework is not so tightly drawn as to require guidelines for each and every class and category of point source regardless of the need for uniform guidelines or to mandate that all guidelines be published prior to December 31 (1974) regardless of their quality or the burden that task would place upon the agency." *Id.* at 320-21, 510 F.2d at 710-11. In that case this court fully appreciated that technological and administrative constraints might prevent the Administrator from developing guidelines and corresponding uniform numeric effluent limitations for certain point sources anytime

in the near future. The Administrator was deemed to have the burden of demonstrating that the failure to develop the guidelines on schedule was due to administrative or technological infeasibility. 166 U.S.App.D.C. at 333, 510 F.2d at 713. Yet the underlying teaching was that technological or administrative infeasibility was a reason for adjusting court mandates to the minimum extent necessary to realize the general objectives of the Act. [FN20] It is a number of steps again to suggest that these problems afford the Administrator the authority to exempt categories of point sources from the NPDES program entirely.

FN20. In *NRDC v. Train*, this court stated:

A federal equity court may exercise its discretion to give or withhold its mandate in furtherance of the public interest, including specifically the interest in effectuating the congressional objective incorporated in regulatory legislation. We think the court may forebear the issuance of an order in those cases where it is convinced by the official involved that he has in good faith employed the utmost diligence in discharging his statutory responsibilities. The sound discretion of an equity court does not embrace enforcement through contempt of a party's duty to comply with an order that calls him "to do an impossibility."

166 U.S.App.D.C. at 333, 510 F.2d at 713 (footnotes omitted). For reasons stated in this opinion, we conclude that to require the EPA Administrator to include silvicultural, agricultural, and storm sewer point sources in the NPDES program is not to require him "to do an impossibility."

With time, experience, and technological development, more point sources in the categories that EPA has now classed as exempt may be amenable to national effluent limitations achieved through end-of-pipe technology or other means of

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pollution control. EPA has noted its own success with runoff from mining operations:

EPA has found that in the area of runoff from mining operations, there is sufficient predictability because of a longer history of regulation and the relatively confined nature of the operations that numerical limitations can be established. Thus, consistent with EPA's position stated earlier that it will expand the permit program where its capability of establishing effluent limitations allows, appropriate limitations have been created and the permit program expanded.

Federal Appellants' Memorandum on "Impossibility" at 8.

[3] In sum, we conclude that the existence of uniform national effluent limitations is not a necessary precondition for incorporating into the NPDES program pollution from agricultural, silvicultural, and storm water runoff point sources. The technological or administrative infeasibility of such limitations may result in adjustments in the permit programs, as will be seen, but it does not authorize the Administrator to exclude the relevant point source from the NPDES program.

B. Alternative Permit Conditions under s 402(a)

EPA contends that even if it is possible to issue permits without national effluent limitations,*1380 **158 the special characteristics of point sources of runoff pollution make it infeasible to develop restrictions on a case-by-case basis. EPA's implicit premise is that whether limitations are promulgated on a class or individual source basis, it is still necessary to articulate any limitation in terms of a numerical effluent standard. That is not our understanding.

[4] Section 402 provides that a permit may be issued upon condition "that such discharge will meet either all applicable requirements under sections 301, 302, 306, 307, 308 and 403 of this Act, or prior to taking of necessary implementing actions relating to all such requirements, such condi-

tions as the Administrator determines are necessary to carry out the provisions of this Act." 33 U.S.C. s 1342(a) (Supp. V 1975) (emphasis added). This provision gives EPA considerable flexibility in framing the permit to achieve a desired reduction in pollutant discharges. The permit may proscribe industry practices that aggravate the problem of point source pollution.[FN21]

FN21. That Congress did not regard numeric effluent limitations as the only permissible limitation on a discharger is supported by s 302(a) of the Act, 33 U.S.C. s 1312(a) (Supp. V 1975):

Whenever, in the judgment of the Administrator, discharges of pollutants from a point source or group of point sources, with the application of effluent limitations required under (s 301(b) of the Act), would interfere with the attainment or maintenance of that water quality in a specific portion of the navigable waters which shall assure protection of public water supplies, agricultural and industrial uses, and the protection and propagation of a balanced population of shellfish, fish and wildlife, and allow recreational activities in and on the water, effluent limitations (including alternative effluent control strategies) for such point source or sources shall be established which can reasonably be expected to contribute to the attainment or maintenance of such water quality.

The emphasis has been added.

EPA's counsel caricatures the matter by stating that recognition of any such authority would give EPA the power "to instruct each individual farmer on his farming practices." Federal Appellants Memorandum on "Impossibility" at 12. Any limitation on a polluter forces him to modify his conduct and operations. For example, an air polluter may have a choice of installing scrubbers, burning different fuels or reducing output. Indeed, the author-

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ity to prescribe limits consistent with the best practicable technology may be tantamount to prescribing that technology. Of course, when alternative techniques are available, Congress intended to give the discharger as much flexibility as possible in choosing his mode of compliance. See, e. g., H.Rep.No.92-911, 92d Cong., 2d Sess. 107, reprinted in Legislative History at 794. We only indicate here that when numerical effluent limitations are infeasible, EPA may issue permits with conditions designed to reduce the level of effluent discharges to acceptable levels. This may well mean opting for a gross reduction in pollutant discharge rather than the fine-tuning suggested by numerical limitations. But this ambitious statute is not hospitable to the concept that the appropriate response to a difficult pollution problem is not to try at all.

It may be appropriate in certain circumstances for the EPA to require a permittee simply to monitor and report effluent levels; EPA manifestly has this authority.[FN22] Such permit conditions might be desirable where the full extent of the pollution problem is not known.

FN22. FWPCA s 402(a)(3), (b)(2)(B), 33 U.S.C. s 1342(a)(3), (b)(2)(B) (Supp. V 1975). EPA concedes that it has this authority. Federal Appellants' Memorandum on "Impossibility" at 14.

C. General Permits

Finally, EPA argues that the number of permits involved in the absence of an exemption authority will simply overwhelm the Agency. Affidavits filed with the District Court indicate, for example, that the number of silviculture point sources may be over 300,000 and that there are approximately 100,000 separate storm sewer point sources.[FN23] We are and must be sensitive to *1381 **159 EPA's concerns of an intolerable permit load. But the District Court and the various parties have suggested devices to mitigate the burden to accommodate within a practical regulatory scheme Congress's clear mandate that all point sources have permits. All that is required is that EPA makes full use of its

interpretational authority. The existence of a variety of options belies EPA's infeasibility arguments.

FN23. Affidavit of William H. McCredie, Director, Industrial Forestry, of the NFPA; Affidavit of Walter G. Gilbert, Chief of the Municipal Operations Branch, Municipal Waste Water Systems Div., EPA Office of Air and Water Programs.

[5] Section 402 does not explicitly describe the necessary scope of a NPDES permit. The most significant requirement is that the permit be in compliance with limitation sections of the Act described above. As a result NRDC and the District Court have suggested the use of area or general permits. The Act allows such techniques. Area-wide regulation is one well-established means of coping with administrative exigency. An instance is area pricing for natural gas producers, which the Supreme Court upheld in Permian Basin Area Rate Cases, 390 U.S. 747, 88 S.Ct. 1344, 20 L.Ed.2d 312 (1968).[FN24] A more dramatic example is the administrative search warrant, which may be issued on an area basis despite the normal Fourth Amendment requirement of probable cause for searching specific premises. *Camara v. Municipal Court*, 387 U.S. 523, 87 S.Ct. 1727, 18 L.Ed.2d 930 (1967).

FN24. In Permian Basin the Supreme Court observed:

The Commission has asserted, and the history of producer regulation has confirmed, that the ultimate achievement of the Commission's regulatory purposes may easily depend upon the contrivance of more expeditious administrative methods. The Commission believes that the elements of such methods may be found in area proceedings. "(C)onsiderations of feasibility and practicality are certainly germane" to the issues before us. . . . We cannot, in these circumstances, conclude that Congress has given authority inadequate to achieve with reasonable effectiveness the

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purposes for which it has acted.

390 U.S. at 777, 88 S.Ct. at 1365.

In response to the District Court's order, EPA promulgated regulations that make use of the general permit device. 42 Fed.Reg. 6846-53 (Feb. 4, 1977). The general permit is addressed to a class of point source dischargers, subject to notice and opportunity for public hearing in the geographical area covered by the permit. Although we do not pass on the validity of the February, 1977, regulations, they serve to dilute an objection of wholesale infeasibility. [FN25]

FN25. It is also of some, albeit limited, significance that the House Committee on Government Operations found EPA's administrative problems with applying the permit program to animal feedlots "grossly exaggerated." It was of the opinion that the Administrator did not have authority to exempt point sources from the NPDES program. H.Rep.No.93-1012, 93d Cong., 2d Sess. 15-30 (1974).

Our approach is not fairly subject to the criticism that it elevates form over substance that the end result will look very much like EPA's categorical exemption. It is the function of the courts to require agencies to comply with legislative intent when that intent is clear, and to leave it to the legislature to make adjustments when the result is counterproductive.[FN26] At the same time, where intent on an issue is unclear,*1382 **160 we are instructed to afford the administering agency the flexibility necessary to achieve the general objectives of the Act. *Weinberger v. Bentex Pharmaceuticals, Inc.*, 412 U.S. 645, 653, 93 S.Ct. 2448, 37 L.Ed.2d 235 (1973); *United States v. Southwestern Cable Co.*, 392 U.S. 157, 177-78, 88 S.Ct. 1994, 20 L.Ed.2d 1001 (1968); *Permian Basin Area Rate Cases*, 390 U.S. 747, 780, 88 S.Ct. 1344, 20 L.Ed.2d 312 (1968). These lines of authority conjoin in our approach. We insist, as the Act insists, that a permit is necessary; the Administrator has no

authority to exempt point sources from the NPDES program. But we concede necessary flexibility in the shaping of the permits that is not inconsistent with the clear terms of the Act.

FN26. The Supreme Court recently reiterated this instruction in *Union Electric Co. v. EPA*, 427 U.S. 246, 96 S.Ct. 2518, 49 L.Ed.2d 474 (1976). There the Court held that the EPA Administrator could not consider claims of technological or economic infeasibility when approving state implementation plans under the Clean Air Act Amendments of 1970, 42 U.S.C. ss 1857a-1857i (1970). Such claims were held only to be cognizable by the states in the plan design stage or by the Administrator when drawing up compliance orders. Justice Marshall, writing for the Court, emphasized that federal courts are not to ignore clear expressions of Congressional intent in order to accommodate claims of technological or economic infeasibility.

Allowing such claims to be raised by appealing the Administrator's approval of an implementation plan . . . would frustrate congressional intent. It would permit a proposed plan to be struck down as infeasible before it is given a chance to work, even though Congress clearly contemplated that some plans would be infeasible when proposed. And it would permit the Administrator or a federal court to reject a State's legislative choices in regulating air pollution, even though Congress plainly left with the States, so long as the national standards were met, the power to determine which sources would be burdened by regulation and to what extent. Technology forcing is a concept somewhat new to our national experience and it necessarily entails certain risks. But Congress considered those risks in passing the 1970 Amendments and decided that the dangers posed

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by uncontrolled air pollution made them worth taking. Petitioner's theory would render that considered legislative judgment a nullity, and that is a result we refuse to reach.

427 U.S. at 268-69, 96 S.Ct. at 2531 (footnote omitted). See also *Wilderness Society v. Morton*, 156 U.S.App.D.C. 121, 171, 479 F.2d 842, 892 (1973), cert. denied, 411 U.S. 917, 93 S.Ct. 1550, 36 L.Ed.2d 309 (quoting *United States v. City and County of San Francisco*, 310 U.S. 16, 31-32, 60 S.Ct. 749, 84 L.Ed. 1050 (1940): "We cannot accept the contention that administrative rulings such as those relied on can thwart the plain purpose of a valid law.")

There is also a very practical difference between a general permit and an exemption. An exemption tends to become indefinite: the problem drops out of sight, into a pool of inertia, unlikely to be recalled in the absence of crisis or a strong political protagonist. In contrast, the general or area permit approach forces the Agency to focus on the problems of specific regions and requires that the problems of the region be reconsidered at least every five years, the maximum duration of a permit.[FN27]

FN27. 33 U.S.C. s 1342(a)(3), (b)(1)(B) (Supp. V 1975).

D. Other Interpretational Powers

[6] Many of the intervenor-appellants appear to argue that the District Court should be reversed because the categories exempted by EPA are nonpoint sources and are not, in fact, point sources.[FN28] We agree with the District Court "that the power to define point and nonpoint sources is vested in EPA and should be reviewed by the court only after opportunity for full agency review and examination." 396 F.Supp. at 1396. The only issue precisely confronted by all the parties and properly framed for our consideration is whether the Administrator has

authority to exempt point sources from the NPDES program. We also think that we should, for similar reasons, not consider at this time the appropriate definition of "discharge of any pollutant" as used in s 402. The American Iron and Steel Institute as amicus curiae has pressed upon us the argument that the term "discharge" as used in s 402 was intended to encompass only "volitional flows" that add pollutants to navigable waters. Most forms of runoff, it is argued, do not involve volitional flows.

FN28. This appears to be the position of the Colorado River Water Conservation District and the NFPA with respect to silvicultural activities, and NMPF, less obviously, with respect to small dairy farms.

We would put in the same category EPA's contention that the exempt categories are best handled under the areawide waste treatment management planning process of s 208 of the FWPCA, 33 U.S.C. s 1288 (Supp. V 1975). By its terms that section is concerned with areawide waste treatment plans that identify and control "agriculturally and silviculturally related non-point sources of pollution." *Id.* s 1288(b)(2)(F).

[7] We assume that FWPCA, however tight in some respects, leaves some leeway to EPA in the interpretation of that statute, and in that regard affords the Agency some means to consider matters of feasibility. However, for reasons already noted, we do not consider these particular contentions as to interpretation on the merits.

III. CONCLUSION

[8] As the Supreme Court recently stated in a FWPCA case, "(t)he question . . . is**161 *1383 not what a court thinks is generally appropriate to the regulatory process, it is what Congress intended . . ." *E. I. du Pont de Nemours & Co. v. Train*, 430 U.S. 112, 138, 97 S.Ct. 965, 980, 51 L.Ed.2d 204 (1977). We find a plain Congressional intent to require permits in any situation of pollution from

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point sources. We also discern an intent to give EPA flexibility in the structure of the permits, in the form of general or area permits. We are aware that Congress hoped that more of the NPDES permit program would be administered by the states at this point. [FN29] But it also made provision for continuing EPA administration. Imagination conjoined with determination will likely give EPA a capability for practicable administration. If not, the remedy lies with Congress.

FN29. See, e. g., 118 Cong.Rec. 10235 (1972) (Rep. Ichord) reprinted in Legislative History at 428.

So ordered.

MacKINNON, Circuit Judge, concurring:

I concur in the very sound and practical construction set forth in the foregoing opinion. Any person concerned with the actual application and enforcement of laws would necessarily be concerned by the application of the relevant legislation to all point sources in agriculture and particularly to irrigated agriculture. Concern would also lie in the congressional admission that present technology is inadequate to enable our citizens to meet the standards and deadlines the Act imposes; in passing the law, Congress was relying on the future "invention (of) new and imaginative developments that will allow us to meet the objectives of our bill." [FN1] In gambling parlance, Congress in enacting the law was "betting on the come." It is relying on our citizens in the near future to develop the complex technology to meet all the law's standards and objectives on time. The difficulty with that approach is that the hopes of Congress in this respect, like that of any gambler, might not be realized. The agency in this case, however, has shown that it takes a realistic view of both the situation and the task of meeting the difficult requirements and objectives of the Act. I sincerely hope that the ability of the agency to issue section 402 permits including general area permits [FN2] will permit it to meet the present and future compliance problems posed by the Act in a practical way.

FN1. Comments of Senator Montoya, 117 Cong.Rec. 38808 (1971), quoted in court's opinion at 12, reprinted in Legislative History at 1278.

FN2. As an example, an area permit with appropriate conditions and modifications could issue for the agricultural point sources within the Grand River Irrigation District, or the watershed of the Roaring Fork River and tributaries, etc.

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ATTACHMENT 28

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▷
COUNTY OF LOS ANGELES et al., Plaintiffs and
Appellants,
v.
THE STATE OF CALIFORNIA et al., Defendants
and Respondents.
CITY OF SONOMA et al., Plaintiffs and Appel-
lants,
v.
THE STATE OF CALIFORNIA et al., Defendants
and Respondents

L.A. No. 32106.

Supreme Court of California
Jan 2, 1987.

SUMMARY

The trial court denied a petition for writ of mandate to compel the State Board of Control to approve reimbursement claims of local government entities, for costs incurred in providing an increased level of service mandated by the state for workers' compensation benefits. The trial court found that Cal. Const., art. XIII B, § 6, requiring reimbursement when the state mandates a new program or a higher level of service, is subject to an implied exception for the rate of inflation. In another action, the trial court, on similar claims, granted partial relief and ordered the board to set aside its ruling denying the claims. The trial court, in this second action, found that reimbursement was not required if the increases in benefits were only cost of living increases not imposing a higher or increased level of service on an existing program. Thus, the second matter was remanded due to insubstantial evidence and legally inadequate findings. (Superior Court of Los Angeles County, Nos. C 424301 and C 464829, Leon Savitch and John L. Cole, Judges.) The Court of Appeal, Second Dist., Div. Five, Nos. B001713 and B003561 affirmed the first action; the second action was reversed and remanded to the State Board of Control for further and adequate findings.

The Supreme Court reversed the judgment of the Court of Appeal, holding that the petitions lacked merit and should have been denied by the trial court without the necessity of further proceedings before the board. The court held that when the voters adopted art. XIII B, § 6, their intent was not to require the state to provide subvention whenever a newly enacted statute results incidentally in some cost to local agencies, but only to require subvention for the expense or increased cost of programs administered locally, and for expenses occasioned by laws that impose unique requirements on local governments and do not apply generally to all state residents or entities. Thus, the court held, reimbursement was not required by art. XIII B, § 6. Finally, the court held that no pro tanto repeal of Cal. Const., art. XIV, § 4 (workers' compensation), was intended or made necessary by the adoption of art. XIII B, § 6. (Opinion by Grodin, J., with Bird, C. J., Broussard, Reynoso, Lucas and Panelli, JJ., concurring. Separate concurring opinion by Mosk, J.)

HEADNOTES

Classified to California Digest of Official Reports
(1) State of California § 12--Fiscal Matters--
-Appropriations--Reimbursement to Local Govern-
ments--Costs to Be Reimbursed.

When the voters adopted Cal. Const., art. XIII B, § 6 (reimbursement to local agencies for new programs and services), their intent was not to require the state to provide subvention whenever a newly enacted statute resulted incidentally in some cost to local agencies. Rather, the drafters and the electorate had in mind subvention for the expense or increased cost of programs administered locally, and for expenses occasioned by laws that impose unique requirements on local governments and do not apply generally to all state residents or entities.

(2) Statutes § 18--Repeal--Effect--"Increased Level of Service."

The statutory definition of the phrase "increased level of service," within the meaning of Rev. & Tax. Code, § 2207, subd. (a) (programs res-

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ulting in increased costs which local agency is required to incur), did not continue after it was specifically repealed, even though the Legislature, in enacting the statute, explained that the definition was declaratory of existing law. It is ordinarily presumed that the Legislature, by deleting an express provision of a statute, intended a substantial change in the law.

[See **Am.Jur.2d**, Statutes, § 384.]

(3) Constitutional Law § 13--Construction of Constitutions--Language of Enactment.

In construing the meaning of an initiative constitutional provision, a reviewing court's inquiry is focused on what the voters meant when they adopted the provision. To determine this intent, courts must look to the language of the provision itself.

(4) Constitutional Law § 13--Construction of Constitutions--Language of Enactment--"Program."

The word "program," as used in Cal. Const., art. XIII B, § 6 (reimbursement to local agencies for new programs and services), refers to programs that carry out the governmental function of providing services to the public, or 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.

(5) State of California § 12--Fiscal Matters--Appropriations--Reimbursement to Local Governments--Increases in Workers' Compensation Benefits.

The provisions of Cal. Const., art. XIII B, § 6 (reimbursement to local agencies for new programs and services), have no application to, and the state need not provide subvention for, the costs incurred by local agencies in providing to their employees the same increase in workers' compensation benefits that employees of private individuals or organizations receive. Although the state requires that employers provide workers' compensation for nonexempt categories of employees, increases in the cost of providing this employee benefit are not subject to reimbursement as state-mandated programs or higher levels of service within the mean-

ing of art. XIII B, § 6. Accordingly, the State Board of Control properly denied reimbursement to local governmental entities for costs incurred in providing state-mandated increases in workers' compensation benefits. (Disapproving *City of Sacramento v. State of California* (1984) 156 Cal.App.3d 182 [203 Cal.Rptr. 258], to the extent it reached a different conclusion with respect to expenses incurred by local entities as the result of a newly enacted law requiring that all public employees be covered by unemployment insurance.)

[See **Cal.Jur.3d**, State of California, § 78.]

(6) Constitutional Law § 14--Construction of Constitutions--Reconcilable and Irreconcilable Conflicts.

Controlling principles of construction require that in the absence of irreconcilable conflict among their various parts, constitutional provisions must be harmonized and construed to give effect to all parts.

(7) Constitutional Law § 14--Construction of Constitutions--Reconcilable and Irreconcilable Conflicts--Pro Tanto Repeal of Constitutional Provision.

The goals of Cal. Const., art. XIII B, § 6 (reimbursement to local agencies for new programs and services), were to protect residents from excessive taxation and government spending, and to preclude a shift of financial responsibility for governmental functions from the state to local agencies. Since these goals can be achieved in the absence of state subvention for the expense of increases in workers' compensation benefit levels for local agency employees, the adoption of art. XIII B, § 6, did not effect a pro tanto repeal of Cal. Const., art. XIV, § 4, which gives the Legislature plenary power over workers' compensation.

COUNSEL

De Witt W. Clinton, County Counsel, Paula A. Snyder, Senior Deputy County Counsel, Edward G. Pozorski, Deputy County Counsel, John W. Witt, City Attorney, Kenneth K. Y. So, Deputy City Attorney, William D. Ross, Diana P. Scott, Ross &

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Scott and Rogers & Wells for Plaintiffs and Appellants.

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John K. Van de Kamp, Attorney General, N. Eugene Hill, Assistant Attorney General, Henry G. Ullerich and Martin H. Milas, Deputy Attorneys General, for Defendants and Respondents.

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GRODIN, J.

We are asked in this proceeding to determine whether legislation enacted in 1980 and 1982 increasing certain workers' compensation benefit payments is subject to the command of article XIII B of the California Constitution that local government costs mandated by the state must be funded by the state. The County of Los Angeles and the City of Sonoma sought review by this court of a decision of the Court of Appeal which held that state-mandated increases in workers' compensation benefits that do not exceed the rise in the cost of living are not costs which must be borne by the state under article XIII B, an initiative constitutional provision, and legislative implementing statutes.

Although we agree that the State Board of Control properly denied plaintiffs' claims, our conclusion rests on grounds other than those relied upon by the Court of Appeal, and requires that its judgment be reversed. (1) We conclude that when the voters adopted article XIII B, section 6, their intent

was not to require the state to provide subvention whenever a newly enacted statute resulted incidentally in some cost to local agencies. Rather, the drafters and the electorate had in mind subvention for the expense or *50 increased cost of programs administered locally and for expenses occasioned by laws that impose unique requirements on local governments and do not apply generally to all state residents or entities. In using the word "programs" they had in mind the commonly understood meaning of the term, programs which carry out the governmental function of providing services to the public. Reimbursement for the cost or increased cost of providing workers' compensation benefits to employees of local agencies is not, therefore, required by section 6.

We recognize also the potential conflict between article XIII B and the grant of plenary power over workers' compensation bestowed upon the Legislature by section 4 of article XIV, but in accord with established rules of construction our construction of article XIII B, section 6, harmonizes these constitutional provisions.

I

On November 6, 1979, the voters approved an initiative measure which added article XIII B to the California Constitution. That article imposed spending limits on the state and local governments and provided in section 6 (hereafter section 6): "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." No

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definition of the phrase "higher level of service" was included in article XIII B, and the ballot materials did not explain its meaning.^{FN1}

FN1 The analysis by the Legislative Analyst advised that the state would be required to "reimburse local governments for the cost of complying with 'state mandates.' 'State mandates' are requirements imposed on local governments by legislation or executive orders." Elsewhere the analysis repeats: "[T]he initiative would establish a requirement that the state provide funds to reimburse local agencies for the cost of complying with state mandates. ...

The one ballot argument which made reference to section 6, referred only to the "new program" provision, stating, "Additionally, this measure [¶] (1) will not allow the state government to force programs on local governments without the state paying for them."

The genesis of this action was the enactment in 1980 and 1982, after article XIII B had been adopted, of laws increasing the amounts which #51 employers, including local governments, must pay in workers' compensation benefits to injured employees and families of deceased employees.

The first of these statutes, Assembly, Bill No. 2750 (Stats. 1980, ch. 1042, p. 3328), amended several sections of the Labor Code related to workers' compensation. The amendments of Labor Code sections 4453, 4453.1 and 4460 increased the maximum weekly wage upon which temporary and permanent disability indemnity is computed from \$231 per week to \$262.50 per week. The amendment of section 4702 of the Labor Code increased certain death benefits from \$55,000 to \$75,000. No appropriation for increased state-mandated costs was made in this legislation.^{FN2}

FN2 The bill was approved by the Gov-

ernor and filed with the Secretary of State on September 22, 1980. Prior to this, the Assembly gave unanimous consent to a request by the bill's author that his letter to the Speaker stating the intent of the Legislation be printed in the Assembly Journal. The letter stated: (1) that the Assembly Ways and Means Committee had recommended approval without appropriation on grounds that the increases were a result of changes in the cost of living that were not reimbursable under either Revenue and Taxation Code section 2231, or article XIII B; (2) the Senate Finance Committee had rejected a motion to add an appropriation and had approved a motion to concur in amendments of the Conference Committee deleting any appropriation.

Legislative history confirms only that the final version of Assembly Bill No. 2750, as amended in the Assembly on April 16, 1986, contained no appropriation. As introduced on March 4, 1980, with a higher minimum salary of \$510 on which to base benefits, an unspecified appropriation was included.

Test claims seeking reimbursement for the increased expenditure mandated by these changes were filed with the State Board of Control in 1981 by the County of San Bernardino and the City of Los Angeles. The board rejected the claims, after hearing, stating that the increased maximum workers' compensation benefit levels did not change the terms or conditions under which benefits were to be awarded, and therefore did not, by increasing the dollar amount of the benefits, create an increased level of service. The first of these consolidated actions was then filed by the County of Los Angeles, the County of San Bernardino, and the City of San Diego, seeking a writ of mandate to compel the board to approve the reimbursement claims for costs incurred in providing an increased level of service mandated by the state pursuant to Revenue

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and Taxation Code section 2207.^{FN3} They also sought a declaration that because the State of California and the board were obliged by article XIII B to reimburse them, they were not obligated to pay the increased benefits until the state provided reimbursement.

FN3 The superior court consolidated another action by the County of Butte, Novato Fire Protection District, and the Galt Unified School District with that action. Neither those plaintiffs nor the County of San Bernardino are parties to the appeal.

The superior court denied relief in that action. The court recognized that although increased benefits reflecting cost of living raises were not expressly *52 excepted from the requirement of state reimbursement in section 6 the intent of article XIII B to limit governmental expenditures to the prior year's level allowed local governments to make adjustment for changes in the cost of living; by increasing their own appropriations. Because the Assembly Bill No. 2750 changes did not exceed cost of living changes, they did not, in the view of the trial court, create an "increased level of service" in the existing workers' compensation program.

The second piece of legislation (Assem. Bill No. 684), enacted in 1982 (Stats. 1982, ch. 922, p. 3363), again changed the benefit levels for workers' compensation by increasing the maximum weekly wage upon which benefits were to be computed, and made other changes among which were: The bill increased minimum weekly earnings for temporary and permanent total disability from \$73.50 to \$168, and the maximum from \$262.50 to \$336. For permanent partial disability the weekly wage was raised from a minimum of \$45 to \$105, and from a maximum of \$105 to \$210, in each case for injuries occurring on or after January 1, 1984. (Lab. Code, § 4453.) A \$10,000 limit on additional compensation for injuries resulting from serious and willful employer misconduct was removed (Lab. Code, § 4553), and the maximum death benefit was

raised from \$75,000 to \$85,000 for deaths in 1983, and to \$95,000 for deaths on or after January 1, 1984. (Lab. Code, § 4702.)

Again the statute included no appropriation and this time the statute expressly acknowledged that the omission was made "[n]otwithstanding section 6 of Article XIII B of the California Constitution and section 2231 ... of the Revenue and Taxation Code." (Stats. 1982, ch. 922, § 17, p. 3372.)^{FN4}

FN4 The same section "recognized," however, that a local agency "may pursue any remedies to obtain reimbursement available to it" under the statutes governing reimbursement for state-mandated costs in chapter 3 of the Revenue and Taxation Code, commencing with section 2201.

Once again test claims were presented to the State Board of Control, this time by the City of Sonoma, the County of Los Angeles, and the City of San Diego. Again the claims were denied on grounds that the statute made no change in the terms and conditions under which workers' compensation benefits were to be awarded, and the increased costs incurred as a result of higher benefit levels did not create an increased level of service as defined in Revenue and Taxation Code section 2207, subdivision (a).

The three claimants then filed the second action asking that the board be compelled by writ of mandate to approve the claims and the state to pay them, and that chapter 922 be declared unconstitutional because it was not adopted in conformity with requirements of the Revenue and Taxation Code or *53 section 6. The trial court granted partial relief and ordered the board to set aside its ruling. The court held that the board's decision was not supported by substantial evidence and legally adequate findings on the presence of a state-mandated cost. The basis for this ruling was the failure of the board to make adequate findings on the possible impact of changes in the burden of proof in some

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workers' compensation proceedings (Lab. Code, § 3202.5); a limitation on an injured worker's right to sue his employer under the "dual capacity" exception to the exclusive remedy doctrine (Lab. Code, §§ 3601-3602); and changes in death and disability benefits and in liability in serious and wilful misconduct cases. (Lab. Code, § 4551.)

The court also held: "[T]he changes made by chapter 922, Statutes of 1982 may be excluded from state-mandated costs if that change effects a cost of living increase which does not impose a higher or increased level of service on an existing program." The City of Sonoma, the County of Los Angeles, and the City of San Diego appeal from this latter portion of the judgment only.

II

The Court of Appeal consolidated the appeals. The court identified the dispositive issue as whether legislatively mandated increases in workers' compensation benefits constitute a "higher level of service" within the meaning of section 6, or are an "increased level of service" ^{FN5} described in subdivision (a) of Revenue and Taxation Code section 2207. The parties did not question the proposition that higher benefit payments might constitute a higher level of "service." The dispute centered on whether higher benefit payments which do not exceed increases in the cost of living constitute a higher level of service. Appellants maintained that the reimbursement requirement of section 6 is absolute and permits no implied or judicially created exception for increased costs that do not exceed the inflation rate. The Court of Appeal addressed the problem as one of defining "increased level of service."

FN5 The court concluded that there was no legal or semantic difference in the meaning of the terms and considered the intent or purpose of the two provisions to be identical.

The court rejected appellants' argument that a definition of "increased level of service" that once

had been included in section 2231, subdivision (e) of the Revenue and Taxation Code should be applied. That definition brought any law that imposed "additional costs" within the scope of "increased level of service." The court concluded that the repeal of section 2231 in 1975 (Stats. 1975, ch. 486, § 7, pp. 999-1000) and the failure of the Legislature by statute or the electorate in article XIII B to readopt the *54 definition must be treated as reflecting an intent to change the law. (*Eu v. Chacon* (1976) 16 Cal.3d 465, 470 [128 Cal.Rptr. 1, 546 P.2d 289].) ^{FN6} On that basis the court concluded that increased costs were no longer tantamount to an increased level of service.

FN6 The Court of Appeal also considered the expression of legislative intent reflected in the letter by the author of Assembly Bill No. 2750 (see fn. 2, *ante*). While consideration of that expression of intent may have been proper in construing Assembly Bill No. 2750, we question its relevance to the proper construction of either section 6, adopted by the electorate in the prior year, or of Revenue and Taxation Code section 2207, subdivision (a) enacted in 1975. (*Cf. California Employment Stabilization Co. v. Payne* (1947) 31 Cal.2d 210, 213-214 [187 P.2d 702].) There is no assurance that the Assembly understood that its approval of printing a statement of intent as to the later bill was also to be read as a statement of intent regarding the earlier statute, and it was not relevant to the intent of the electorate in adopting section 6.

The Court of Appeal also recognized that the history of Assembly Bill No. 2750 and Statutes 1982, chapter 922, which demonstrated the clear intent of the Legislature to omit any appropriation for reimbursement of local government expenditures to pay the higher benefits precluded reliance on reimbursement provisions included in benefit-increase bills passed in earlier years.

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(See e.g., Stats. 1973, chs. 1021 and 1023.)

The court nonetheless assumed that an increase in costs mandated by the Legislature did constitute an increased level of service if the increase exceeds that in the cost of living. The judgment in the second, or "Sonoma" case was affirmed. The judgment in the first, or "Los Angeles" case, however, was reversed and the matter "remanded" to the board for more adequate findings, with directions.^{FN7}

FN7 We infer that the intent of the Court of Appeal was to reverse the order denying the petition for writ of mandate and to order the superior court to grant the petition and remand the matter to the board with directions to set aside its order and reconsider the claim after making the additional findings. (See Code Civ. Proc. § 1094.5, subd. (f).)

III

The Court of Appeal did not articulate the basis for its conclusion that costs in excess of the increased cost of living do constitute a reimbursable increased level of service within the meaning of section 6. Our task in ascertaining the meaning of the phrase is aided somewhat by one explanatory reference to this part of section 6 in the ballot materials.

A statutory requirement of state reimbursement was in effect when section 6 was adopted. That provision used the same "increased level of service" phraseology but it also failed to include a definition of "increased level of service," providing only: "Costs mandated by the state" means any increased costs which a local agency is required to incur as a result of the following: [¶] (a) Any law ... which mandates a new program or an increased level of service of an existing program." (Rev. & Tax. Code § 2207.) As noted, however, the definition of that term which had been *55 included in Revenue and Taxation Code section 2164.3 as part of the Property Tax Relief Act of 1972 (Stats. 1972, ch. 1406,

§ 14.7, p. 2961), had been repealed in 1975 when Revenue and Taxation Code section 2231, which had replaced section 2164.3 in 1973, was repealed and a new section 2231 enacted. (Stats. 1975, ch. 486, §§ 6 & 7, p. 999.)^{FN8} Prior to repeal, Revenue and Taxation Code section 2164.3, and later section 2231, after providing in subdivision (a) for state reimbursement, explained in subdivision (e) that " "Increased level of service" means any requirement mandated by state law or executive regulation ... which makes necessary expanded or additional costs to a county, city and county, city, or special district." (Stats. 1972, ch. 1406, § 14.7, p. 2963.)

FN8 Pursuant to the 1972 and successor 1973 property tax relief statutes the Legislature had included appropriations in measures which, in the opinion of the Legislature, mandated new programs or increased levels of service in existing programs (see, e.g., Stats. 1973, ch. 1021, § 4, p. 2026; ch. 1022, § 2, p. 2027; Stats. 1976, ch. 1017, § 9, p. 4597) and reimbursement claims filed with the State Board of Control pursuant to Revenue and Taxation Code sections 2218-2218.54 had been honored. When the Legislature fails to include such appropriations there is no judicially enforceable remedy for the statutory violation notwithstanding the command of Revenue and Taxation Code section 2231, subdivision (a) that "[t]he state shall reimburse each local agency for all 'costs mandated by the state,' as defined in Section 2207" and the additional command of subdivision (b) that any statute imposing such costs "provide an appropriation therefor." (*County of Orange v. Flounroy* (1974) 42 Cal.App.3d 908, 913 [117 Cal.Rptr. 224].)

(2) Appellants contend that despite its repeal, the definition is still valid, relying on the fact that the Legislature, in enacting section 2207, explained

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that the provision was "declaratory of existing law." (Stats. 1975, ch. 486, § 18.6, p. 1006.) We concur with the Court of Appeal in rejecting this argument. "[I]t is ordinarily to be presumed that the Legislature by deleting an express provision of a statute intended a substantial change in the law." (*Lake Forest Community Assn. v. County of Orange* (1978) 86 Cal.App.3d 394, 402 [150 Cal.Rptr. 286]; see also *Eu v. Chacon, supra*, 16 Cal.3d 465, 470.) Here, the revision was not minor: a whole subdivision was deleted. As the Court of Appeal noted, "A change must have been intended; otherwise deletion of the preexisting definition makes no sense."

Acceptance of appellants' argument leads to an unreasonable interpretation of section 2207. 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." We decline to accept such an interpretation. Under the repealed provision, "additional costs" may have been deemed tantamount to an "increased level of service," but not under the post-1975 statutory scheme. Since that definition has been repealed, an act of which the drafters of section 6 and the electorate are presumed to have been *56 aware, we may not conclude that an intent existed to incorporate the repealed definition into section 6.

(3) In construing the meaning of the constitutional provision, our inquiry is not focussed on what the Legislature intended in adopting the former statutory reimbursement scheme, but rather on what the voters meant when they adopted article XIII B in 1979. To determine this intent, we must look to the language of the provision itself. (*ITT World Communications, Inc. v. City and County of San Francisco* (1985) 37 Cal.3d 859, 866 [210 Cal.Rptr. 226, 693 P.2d 811].) In section 6, the electorate commands that the state reimburse local agencies for the cost of any "new program or higher

level of service." Because workers' compensation is not a new program, the parties have focussed on whether providing higher benefit payments constitutes provision of a higher level of service. As we have observed, however, the former statutory definition of that term has been incorporated into neither section 6 nor the current statutory reimbursement scheme.

(4) Looking at the language of section 6 then, it seems clear that by itself the term "higher level of service" is meaningless. It 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." But the term "program" itself is not defined in article XIII B. What programs then did the electorate have in mind when section 6 was adopted? We conclude that the drafters and the electorate had in mind the commonly understood meanings of the term - programs that carry out the governmental function of providing services to the public, or 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.

The concern which prompted the inclusion of section 6 in article XIII B was the perceived attempt by the state to enact legislation or adopt administrative orders creating programs to be administered by local agencies, thereby transferring to those agencies the fiscal responsibility for providing services which the state believed should be extended to the public. In their ballot arguments, the proponents of article XIII B explained section 6 to the voters: "Additionally, this measure: (1) Will not allow the state government to *force programs* on local governments without the state paying for them." (Ballot Pamp., Proposed Amend. to Cal. Const. with arguments to voters, Spec. Statewide Elec. (Nov. 6, 1979) p. 18. Italics added.) In this context the phrase "to force programs on local gov-

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ernments” confirms that the intent underlying section 6 was to require reimbursement to local agencies for the costs involved in carrying out functions peculiar to government, not *57 for expenses incurred by local agencies as an incidental impact of laws that apply generally to all state residents and entities. Laws of general application are not passed by the Legislature to “force” programs on localities.

The language of section 6 is far too vague to support an inference that it was intended that each time the Legislature passes a law of general application it must discern the likely effect on local governments and provide an appropriation to pay for any incidental increase in local costs. We believe that if the electorate had intended such a far-reaching construction of section 6, the language would have explicitly indicated that the word “program” was being used in such a unique fashion. (Cf. *Fuentes v. Workers' Comp. Appeals Bd.* (1976) 16 Cal.3d 1, 7 [128 Cal.Rptr. 673, 547 P.2d 449]; *Big Sur Properties v. Mott* (1976) 63 Cal.App.3d 99, 105 [132 Cal.Rptr. 835].) Nothing in the history of article XIII B that we have discovered, or that has been called to our attention by the parties, suggests that the electorate had in mind either this construction or the additional indirect, but substantial impact it would have on the legislative process.

Were section 6 construed to require state subvention for the incidental cost to local governments of general laws, the result would be far-reaching indeed. Although such laws may be passed by simple majority vote of each house of the Legislature (art. IV, § 8, subd. (b)), the revenue measures necessary to make them effective may not. A bill which will impose costs subject to subvention of local agencies must be accompanied by a revenue measure providing the subvention required by article XIII B. (Rev. & Tax. Code, §§ 2255, subd. (c).) Revenue bills must be passed by two-thirds vote of each house of the Legislature. (Art. IV, § 12, subd. (d).) Thus, were we to construe section 6 as applicable to general legislation whenever it might have an incidental effect on local agency costs, such legislation

could become effective only if passed by a supermajority vote.^{FN9} Certainly no such intent is reflected in the language or history of article XIII B or section 6.

FN9 Whether a constitutional provision which requires a supermajority vote to enact substantive legislation, as opposed to funding the program, may be validly enacted as a Constitutional amendment rather than through revision of the Constitution is an open question. (See *Amador Valley Joint Union High Sch. Dist. v. State Bd. of Equalization* (1978) 22 Cal.3d 208, 228 [149 Cal.Rptr. 239, 583 P.2d 1281].)

(5) We conclude therefore that section 6 has no application to, and the state need not provide subvention for, the costs incurred by local agencies in providing to their employees the same increase in workers' compensation *58 benefits that employees of private individuals or organizations receive.^{FN10} Workers' compensation is not a program administered by local agencies to provide service to the public. Although local agencies must provide benefits to their employees either through insurance or direct payment, they are indistinguishable in this respect from private employers. In no sense can employers, public or private, be considered to be administrators of a program of workers' compensation or to be providing services incidental to administration of the program. Workers' compensation is administered by the state through the Division of Industrial Accidents and the Workers' Compensation Appeals Board. (See Lab. Code, § 3201 et seq.) Therefore, although the state requires that employers provide workers' compensation for nonexempt categories of employees, increases in the cost of providing this employee benefit are not subject to reimbursement as state-mandated programs or higher levels of service within the meaning of section 6.

FN10 The Court of Appeal reached a different conclusion in *City of Sacramento v. State of California* (1984) 156 Cal.App.3d 182 [203 Cal.Rptr. 258], with respect to a

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newly enacted law requiring that all public employees be covered by unemployment insurance. Approaching the question as to whether the expense was a "state mandated cost," rather than as whether the provision of an employee benefit was a "program or service" within the meaning of the Constitution, the court concluded that reimbursement was required. To the extent that this decision is inconsistent with our conclusion here, it is disapproved.

IV

(6) Our construction of section 6 is further supported by the fact that it comports with controlling principles of construction which "require that in the absence of irreconcilable conflict among their various parts, [constitutional provisions] must be harmonized and construed to give effect to all parts. (*Clean Air Constituency v. California State Air Resources Bd.* (1974) 1 Cal.3d 801, 813-814 [114 Cal.Rptr. 577, 523 P.2d 617]; *Serrano v. Priest* (1971) 5 Cal.3d 584, 596 [96 Cal.Rptr. 601, 487 P.2d 1241, 41 A.L.R.3d 1187]; *Select Base Materials v. Board of Equal.* (1959) 51 Cal.2d 640, 645 [335 P.2d 672].) " (*Legislature v. Deukmejian* (1983) 34 Cal.3d 658, 676 [194 Cal.Rptr. 781, 669 P.2d 17].)

Our concern over potential conflict arises because article XIV, section 4, FN11 gives the Legislature "plenary power, unlimited by any provision of *59 this Constitution" over workers' compensation. Although seemingly unrelated to workers' compensation, section 6, as we have shown, would have an indirect, but substantial impact on the ability of the Legislature to make future changes in the existing workers' compensation scheme. Any changes in the system which would increase benefit levels, provide new services, or extend current service might also increase local agencies' costs. Therefore, even though workers' compensation is a program which is intended to provide benefits to all injured or deceased employees and their families, because the change might have some incidental im-

act on local government costs, the change could be made only if it commanded a supermajority vote of two-thirds of the members of each house of the Legislature. The potential conflict between section 6 and the plenary power over workers' compensation granted to the Legislature by article XIV, section 4 is apparent.

FN11 Section 4: "The Legislature is hereby expressly vested with plenary power, unlimited by any provision of this Constitution, to create, and enforce a complete system of workers' compensation, by appropriate legislation, and in that behalf to create and enforce a liability on the part of any or all persons to compensate any or all of their workers for injury or disability, and their dependents for death incurred or sustained by the said workers in the course of their employment, irrespective of the fault of any party. A complete system of workers' compensation includes adequate provisions for the comfort, health and safety and general welfare of any and all workers and those dependent upon them for support to the extent of relieving from the consequences of any injury or death incurred or sustained by workers in the course of their employment, irrespective of the fault of any party; also full provision for securing safety in places of employment; full provision for such medical, surgical, hospital and other remedial treatment as is requisite to cure and relieve from the effects of such injury; full provision for adequate insurance coverage against liability to pay or furnish compensation; full provision for regulating such insurance coverage in all its aspects, including the establishment and management of a State compensation insurance fund; full provision for otherwise securing the payment of compensation and full provision for vesting power, authority and jurisdiction in an administrative body with all the

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requisite governmental functions to determine any dispute or matter arising under such legislation, to the end that the administration of such legislation shall accomplish substantial justice in all cases expeditiously, inexpensively, and without encumbrance of any character; all of which matters are expressly declared to be the social public policy of this State, binding upon all departments of the State government.

"The Legislature is vested with plenary powers, to provide for the settlement of any disputes arising under such legislation by arbitration, or by an industrial accident commission, by the courts, or by either, any, or all of these agencies, either separately or in combination, and may fix and control the method and manner of trial of any such dispute, the rules of evidence and the manner of review of decisions rendered by the tribunal or tribunals designated by it; provided, that all decisions of any such tribunal shall be subject to review by the appellate courts of this State. The Legislature may combine in one statute all the provisions for a complete system of workers' compensation, as herein defined.

"The Legislature shall have power to provide for the payment of an award to the state in the case of the death, arising out of and in the course of the employment, of an employee without dependents, and such awards may be used for the payment of extra compensation for subsequent injuries beyond the liability of a single employer for awards to employees of the employer.

"Nothing contained herein shall be taken or construed to impair or render ineffectual in any measure the creation and existence of the industrial accident commission of this State or the State compensation insurance fund, the creation and existence of which, with all the functions vested in

them, are hereby ratified and confirmed."
(Italics added.)

The County of Los Angeles, while recognizing the impact of section 6 on the Legislature's power over workers' compensation, argues that the "plenary power" granted by article XIV, section 4, is power over the substance of workers' compensation legislation, and that this power would be unaffected by article XIII B if the latter is construed to compel reimbursement. The subvention requirement, it is argued, is analogous to other procedural *60 limitations on the Legislature, such as the "single subject rule" (art. IV, § 9), as to which article XIV, section 4, has no application. We do not agree. A constitutional requirement that legislation either exclude employees of local governmental agencies or be adopted by a supermajority vote would do more than simply establish a format or procedure by which legislation is to be enacted. It would place workers' compensation legislation in a special classification of substantive legislation and thereby curtail the power of a majority to enact substantive changes by any procedural means. If section 6 were applicable, therefore, article XIII B would restrict the power of the Legislature over workers' compensation.

The City of Sonoma concedes that so construed article XIII B *would* restrict the plenary power of the Legislature, and reasons that the provision therefore either effected a pro tanto repeal of article XIV, section 4, or must be accepted as a limitation on the power of the Legislature. We need not accept that conclusion, however, because our construction of section 6 permits the constitutional provisions to be reconciled.

Construing a recently enacted constitutional provision such as section 6 to avoid conflict with, and thus pro tanto repeal of, an earlier provision is also consistent with and reflects the principle applied by this court in *Hustedt v. Workers' Comp. Appeals Bd.* (1981) 30 Cal.3d 329 [178 Cal.Rptr. 801, 636 P.2d 1139]. There, by coincidence, article XIV, section 4, was the later provision. A statute,

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enacted pursuant to the plenary power of the Legislature over workers' compensation, gave the Workers' Compensation Appeals Board authority to discipline attorneys who appeared before it. If construed to include a transfer of the authority to discipline attorneys from the Supreme Court to the Legislature, or to delegate that power to the board, article XIV, section 4, would have conflicted with the constitutional power of this court over attorney discipline and might have violated the separation of powers doctrine. (Art. III, § 3.) The court was thus called upon to determine whether the adoption of article XIV, section 4, granting the Legislature plenary power over workers' compensation effected a pro tanto repeal of the preexisting, exclusive jurisdiction of the Supreme Court over attorneys.

We concluded that there had been no pro tanto repeal because article XIV, section 4, did not give the Legislature the authority to enact the statute. Article XIV, section 4, did not expressly give the Legislature power over attorney discipline, and that power was not integral to or necessary to the establishment of a complete system of workers' compensation. In those circumstances the presumption against implied repeal controlled. "It is well established that the adoption of article XIV, section 4 'effected a repeal *pro tanto*' of any state constitutional provisions which conflicted with that *61 amendment. (*Subsequent Etc. Fund. v. Ind. Acc. Com.* (1952) 39 Cal.2d 83, 88 [244 P.2d 889]; *Western Indemnity Co. v. Pillsbury* (1915) 170 Cal. 686, 695, [151 P. 398].) A *pro tanto* repeal of conflicting state constitutional provisions removes 'insofar as necessary' any restrictions which would prohibit the realization of the objectives of the new article. (*Methodist Hosp. of Sacramento v. Saylor* (1971) 5 Cal.3d 685, 691-692 [97 Cal.Rptr. 1, 488 P.2d 161]; cf. *City and County of San Francisco v. Workers' Comp. Appeals Bd.* (1978) 22 Cal.3d 103, 115-117 [148 Cal.Rptr. 626, 583 P.2d 151].) Thus the question becomes whether the board must have the power to discipline attorneys if the objectives of article XIV, section 4 are to be effectuated. In other words, does the achievement of those objectives

compel the modification of a power - the disciplining of attorneys - that otherwise rests exclusively with this court?" (*Husted v. Workers' Comp. Appeals Bd.*, *supra*, 30 Cal.3d 329, 343.) We concluded that the ability to discipline attorneys appearing before it was not necessary to the expeditious resolution of workers' claims or the efficient administration of the agency. Thus, the absence of disciplinary power over attorneys would not preclude the board from achieving the objectives of article XIV, section 4, and no pro tanto repeal need be found.

(7) A similar analysis leads to the conclusion here that no pro tanto repeal of article XIV, section 4, was intended or made necessary here by the adoption of section 6. The goals of article XIII B, of which section 6 is a part, were to protect residents from excessive taxation and government spending. (*Huntington Park Redevelopment Agency v. Martin* (1985) 38 Cal.3d 100, 109-110 [211 Cal.Rptr. 133, 695 P.2d 220].) Section 6 had the additional purpose of precluding a shift of financial responsibility for carrying out governmental functions from the state to local agencies which had had their taxing powers restricted by the enactment of article XIII A in the preceding year and were ill equipped to take responsibility for any new programs. Neither of these goals is frustrated by requiring local agencies to provide the same protections to their employees as do private employers. Bearing the costs of salaries, unemployment insurance, and workers' compensation coverage - costs which all employers must bear - neither threatens excessive taxation or governmental spending, nor shifts from the state to a local agency the expense of providing governmental services.

Therefore, since the objectives of article XIII B and section 6 can be achieved in the absence of state subvention for the expense of increases in workers' compensation benefit levels for local agency employees, section 6 did not effect a pro tanto repeal of the Legislature's otherwise plenary power over workers' compensation, a power that

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does not contemplate that the Legislature rather than the employer must fund the cost or increases in *62 benefits paid to employees of local agencies, or that a statute affecting those benefits must garner a supermajority vote.

Because we conclude that section 6 has no application to legislation that is applicable to employees generally, whether public or private, and affects local agencies only incidentally as employers, we need not reach the question that was the focus of the decision of the Court of Appeal - whether the state must reimburse localities for state-mandated cost increases which merely reflect adjustments for cost-of-living in existing programs.

V

It follows from our conclusions above, that in each of these cases the plaintiffs' reimbursement claims were properly denied by the State Board of Control. Their petitions for writs of mandate seeking to compel the board to approve the claims lacked merit and should have been denied by the superior court without the necessity of further proceedings before the board.

In B001713, the Los Angeles case, the Court of Appeal reversed the judgment of the superior court denying the petition. In the B003561, the Sonoma case, the superior court granted partial relief, ordering further proceedings before the board, and the Court of Appeal affirmed that judgment.

The judgment of the Court of Appeal is reversed. Each side shall bear its own costs.

Bird, C. J., Broussard, J., Reynoso, J., Lucas, J., and Panelli, J., concurred.

MOSK, J.

I concur in the result reached by the majority, but I prefer the rationale of the Court of Appeal, i.e., that neither article XIII B, section 6, of the Constitution nor Revenue and Taxation Code sections 2207 and 2231 require state subvention for increased workers' compensation benefits provided

by chapter 1042, Statutes of 1980, and chapter 922, Statutes of 1982, but only if the increases do not exceed applicable cost-of-living adjustments because such payments do not result in an increased level of service.

Under the majority theory, the state can order unlimited financial burdens on local units of government without providing the funds to meet those burdens. This may have serious implications in the future, and does violence to the requirement of section 2231, subdivision (a), that the state reimburse local government for "all costs mandated by the state."

In this instance it is clear from legislative history that the Legislature did not intend to mandate additional burdens, but merely to provide a cost-of-living *63 adjustment. I agree with the Court of Appeal that this was permissible.

Appellants' petition for a rehearing was denied February 26, 1987. *64

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ATTACHMENT 29

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▷
LONG BEACH UNIFIED SCHOOL DISTRICT,
Plaintiff and Appellant,

v.
THE STATE OF CALIFORNIA et al., Defendants
and Appellants; MARK H. BLOODGOOD, as Aud-
itor-Controller, etc., et al., Defendants and Re-
spondents.

No. B033742.

Court of Appeal, Second District, Division 5, Cali-
fornia.
Nov. 15, 1990.

SUMMARY

A school district filed a claim with the state Board of Control asserting that its expenditures related to its efforts to alleviate racial and ethnic segregation in its schools had been mandated by the state through an executive order (in the form of regulations issued by the state Department of Education) and were reimbursable pursuant to former Rev. & Tax. Code, § 2234, and Cal. Const., art. XIII B, § 6. The board approved the claim, but the Legislature deleted the requested funding from an appropriations bill and enacted a "finding" that the executive order did not impose a state-mandated local program. The district then filed a petition to compel reimbursement pursuant to Code Civ. Proc., § 1085, and a complaint for declaratory relief. The trial court ruled that the doctrines of administrative collateral estoppel and waiver prevented the state from challenging the board's decisions. The court's judgment in favor of the district identified certain funds previously appropriated by the Legislature as "reasonably available" for reimbursement of the claimed expenditures. (Superior Court of Los Angeles County, No. C606020, Robert I. Weil, Judge.)

The Court of Appeal modified the trial court's decision by striking as sources of reimbursement the Special Fund for Economic Uncertainties "or

similarly designated accounts," and by including charging orders against certain funds appropriated through subsequent budget acts. The court affirmed the judgment as so modified and remanded to the trial court to determine whether at the time of its order, there were, in the funds from which reimbursement could properly be paid, unexpended, unencumbered funds sufficient to satisfy the judgment. The court held that since the doctrines of collateral estoppel and waiver were inapplicable to the facts of the case, the trial court should have allowed the state to challenge the board's decisions. However, the court also held that the executive order required local school boards to provide a higher level of service than is required constitutionally or by case law and that the order was a reimbursable state mandate pursuant to Cal. Const., art. XIII B, § 6. The court further held that former Rev. & Tax. Code, § 2234, did not provide reimbursement of the subject claim. (Opinion by Lucas, P. J., with Ashby and Boren, JJ., concurring.)

HEADNOTES

Classified to California Digest of Official Reports (1a, 1b, 1c, 1d) Judgments § 88--Collateral Estoppel--Finality of Judgment--Administrative Order--Where Appeal Still Possible.

In an action by a school district against the state to compel the state to reimburse the district for expenditures related to its efforts to alleviate racial and ethnic segregation, the doctrine of administrative collateral estoppel was inapplicable and did not prevent the state from litigating whether the state Board of Control properly considered the subject claim and whether the claim was reimbursable. The board had approved the claim but the Legislature had deleted the requested funding from an appropriations bill. The board's decisions were administratively final, for collateral estoppel purposes, since no party requested reconsideration within the applicable 10-day period, and no statute or regulation provided for further consideration of the matter by the board. However, a decision will not be given

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collateral estoppel effect if an appeal has been taken or if the time for such appeal has not lapsed. The applicable statute of limitations for review of the board's decisions was three years, and the school district's action was filed before this period lapsed.

(2) Judgments § 88--Collateral Estoppel--Finality of Judgment.

Collateral estoppel precludes a party from relitigating in a subsequent action matters previously litigated and determined. The traditional elements of collateral estoppel include the requirement that the prior judgment be "final."

(3a, 3b) Administrative Law § 81--Judicial Review and Relief--Finality of Administrative Action--For Collateral Estoppel Purposes.

Finality for the purposes of administrative collateral estoppel may be understood as a two-step process: the decision must be final with respect to action by the administrative agency, and the decision must have conclusive effect. A decision attains the requisite administrative finality when the agency has exhausted its jurisdiction and possesses no further power to reconsider or rehear the claim. To have conclusive effect, the decision must be free from direct attack.

(4) Limitation of Actions § 30--Commencement of Period.

A statute of limitations commences to run at the point where a cause of action accrues and a suit may be maintained thereon.

(5a, 5b, 5c) Estoppel and Waiver § 23--Waiver--State's Right to Contest Board of Control's Findings as to State-mandated Costs.

In an action by a school district against the state to compel the state to reimburse the district for expenditures related to its efforts to alleviate racial and ethnic segregation, the doctrine of waiver did not preclude the state from contesting the state Board of Control's previous findings that the subject claim was reimbursable (the Legislature subsequently deleted the requested funding from an ap-

propriations bill). The statute of limitations applicable to an appeal by the state from the board's decisions had not run at the time the state raised its affirmative defenses in the district's action, and this assertion of defenses was inconsistent with an intent on the state's part to waive its right to contest the board's decisions.

(6) Estoppel and Waiver § 19--Waiver--Requisites.

A waiver occurs when there is an existing right, actual or constructive knowledge of its existence, and either an actual intention to relinquish it, or conduct so inconsistent with an intent to enforce the right as to induce a reasonable belief that it has been waived. Ordinarily the issue of waiver is a question of fact that is binding on the appellate court if the determination is supported by substantial evidence. However, the question is one of law when the evidence is not in conflict and is susceptible of only one reasonable inference.

(7) Estoppel and Waiver § 6--Equitable Estoppel--Challenge to State Board of Control's Findings as to State-mandated Costs--Absence of Confidential Relationship.

In an action by a school district against the state to compel the state to reimburse the district for expenditures related to its efforts to alleviate racial and ethnic segregation, the state was not equitably estopped from challenging the state Board of Control's decisions finding that the subject claim was reimbursable as a state-mandated cost (the Legislature subsequently deleted the requested funding from an appropriations bill). In the absence of a confidential relationship, the doctrine of equitable estoppel is inapplicable where there is a mistake of law. There was no confidential relationship, and since the statute of limitations did not bar the state from litigating the mandate and reimbursability issues, the doctrine was inapplicable.

(8) Appellate Review § 145--Function of Appellate Court--Questions of Law.

On appeal by the state in an action by a school district to compel the state to reimburse the district for expenditures related to its efforts to alleviate ra-

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cial and ethnic segregation, the appellate court's conclusion that the trial court erred in failing to consider the merits of the state's challenge to the state Board of Control's decisions that the subject claims were reimbursable as state-mandated costs did not require that the matter be remanded to the trial court for a full hearing, since the question of whether a cost is state-mandated is one of law.

(9a, 9b, 9c) Schools § 4--School Districts; Financing; Funds-- Reimbursement of State-mandated Costs--Desegregation Expenditures.

A school district was entitled to reimbursement pursuant to Cal. Const., art. XIII B, § 6 (reimbursement of local governments for state-mandated costs or increased levels of service), for expenditures related to its efforts to alleviate racial and ethnic segregation in its schools, since an executive order (in the form of regulations issued by the state Department of Education) required a higher level of service and constituted a state mandate. The requirements of the order went beyond constitutional and case law requirements in that they required specific actions to alleviate segregation. Although under Cal. Const., art. XIII B, § 6, subd. (c), the state has discretion whether to reimburse pre-1975 mandates that are either statutes or executive orders implementing statutes, it cannot be inferred from this exception that reimbursability is otherwise dependent on the form of the mandate. Further, the district's claim was not defeated by Gov. Code, §§ 17561 and 17514, limiting reimbursement to certain costs incurred after July 1, 1980, the effective date of Cal. Const., art. XIII B, since the limitations contained in those sections are confined to the exception contained in Cal. Const., art. XIII B, § 6, subd. (c).

(10) State of California § 11--Fiscal Matters--Reimbursement to Local Governments for State-mandated Costs.

The subvention requirement of Cal. Const., art. XIII B, § 6 (reimbursement of local governments for state-mandated costs or increased levels of service), is directed to state-mandated increases in the

services provided by local agencies in existing "programs." The drafters and electorate had in mind the commonly understood meaning of the term-programs that carry out the governmental function of providing services to the public, or laws that, to implement a state policy, impose unique requirements on local governments and do not apply generally to all residents and entities in the state.

[See Cal.Jur.3d, State of California, § 78; 9 Witkin, Summary of Cal. Law (9th ed. 1989) Taxation, § 123.]

(11) Constitutional Law § 13--Construction of Constitutions--Language of Enactments.

In construing a constitutional provision enacted by the voters, a court must determine the intent of the voters by first looking to the language itself, which should be construed in accordance with the natural and ordinary meaning of its words.

(12) State of California § 11--Fiscal Matters--Reimbursement to Local Governments for State-mandate Costs--Executive Order as Mandate.

In Cal. Const., art. XIII B, § 6 (reimbursement of local governments for state-mandated costs or increased levels of service), "mandates" means "orders" or "commands," concepts broad enough to include executive orders as well as statutes. The concern that prompted the inclusion of § 6 in art. XIII B was the perceived attempt by the state to enact legislation or adopt administrative orders creating programs to be administered by local agencies, thereby transferring to those agencies the fiscal responsibility for providing services that the state believed should be extended to the public. It is clear that the primary concern of the voters was the increased financial burdens being shifted to local government, not the form in which those burdens appeared.

(13) Administrative Law § 88--Judicial Review and Relief--Exhaustion of Administrative Remedies--Claim by School District for Reimbursement of State-mandated Costs.

A school district did not fail to exhaust its administrative remedies in seeking reimbursement for

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expenditures related to its efforts to alleviate racial and ethnic segregation, based on its claim that the expenditures were mandated by a state executive order, where the state Board of Control approved the district's reimbursement claim, even though the state Commission on State Mandates subsequently succeeded to the functions of the board and the district never made a claim to the commission. The board's decisions in favor of the district became administratively final before the commission was in place, and there was no evidence that the commission did not consider these decisions by the board to be final. Although the commission was given jurisdiction over all claims that had not been included in a local government claims bill enacted before January 1, 1985, the subject claim was included in such a bill (which was signed into law only after the recommended appropriation was deleted). Under the statutory scheme, the district pursued the only relief that a disappointed claimant at such a juncture could pursue—an action in declaratory relief to declare an executive order void or unenforceable and to enjoin its enforcement. There was no requirement to seek further administrative review.

(14) Courts § 20--Subject Matter Jurisdiction--When Issue May Be Raised.

Lack of subject matter jurisdiction may be raised at any time.

(15a, 15b) Schools § 4--School Districts; Financing; Funds-- Reimbursement of State-mandated Costs--Desegregation Expenditures-- Applicability of Statute Requiring Reimbursement of Subsequently Mandated Costs.

A school district was not entitled to reimbursement on the basis of former Rev. & Tax. Code, § 2234 (reimbursement of school district for costs it is incurring that are subsequently mandated by a state), for expenditures related to its efforts to alleviate racial and ethnic segregation in its schools, since the executive order (in the form of regulations issued by the state Department of Education) that required the district to take specific actions to alleviate segregation fell outside the purview of §

2234. The "subsequently mandated" provision of § 2234 originally was contained in sections that set forth specific date limitations, and the Legislature likewise intended to limit claims made pursuant to § 2234. The use of the language "subsequently mandated" merely describes an additional circumstance in which the state will reimburse costs. Since the executive order fell outside the January 1, 1978, limits set by Rev. & Tax. Code, § 2207.5, Rev. & Tax. Code, § 2234, did not provide reimbursement to the district.

(16) Statutes § 39--Construction--Giving Effect to Statute--Conformation of Parts.

A statute should be construed with reference to the whole system of law of which it is a part in order to ascertain the intent of the Legislature. The legislative history of the statute may be considered in ascertaining legislative design.

(17a, 17b, 17c) Constitutional Law § 40--Distribution of Governmental Powers--Judicial Power--Appropriation of Funds--Reimbursement of State-mandated Costs.

In an action by a school district against the state to compel the state to reimburse the district for expenditures related to its efforts to alleviate racial and ethnic segregation, the trial court's award of reimbursement to the district, on the ground that the district's expenditures were mandated by an executive order, from appropriated funds and specified budgets and accounts did not constitute an invasion of the province of the Legislature or a judicial usurpation of the republican form of government guaranteed by U.S. Const., art. IV, § 4, except insofar as it designated the Special Fund for Economic Uncertainties as a source for reimbursement. The specified line item accounts for the Department of Education, the Commission on State Mandates, and the Reserve for Contingencies and Emergencies provided funds for a broad range of activities similar to those specified in the executive order and thus were reasonably available for reimbursement. However, remand to the trial court was necessary to determine whether these sources contained suffi-

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cient unexhausted funds to cover the award.

(18) Constitutional Law § 40--Distribution of Governmental Powers--Judicial Power--Appropriation of Funds.

A court cannot compel the Legislature either to appropriate funds or to pay funds not yet appropriated. However, no violation of the separation of powers doctrine occurs when a court orders appropriate expenditures from already existing funds. The test is whether such funds are reasonably available for the expenditures in question. Funds are "reasonably available" for reimbursement of local government expenditures when the purposes for which those funds were appropriated are generally related to the nature of costs incurred. There is no requirement that the appropriation specifically refer to the particular expenditure, nor must past administrative practice sanction coverage from a particular fund.

(19) Appellate Review § 162--Modification--To Add Charge Order.

An appellate court is empowered to add a directive that a trial court order be modified to include charging orders against funds appropriated by subsequent budgets acts.

(20) Schools § 4--School Districts; Financing; Funds--Reimbursement of State-mandated Costs--Desegregation Expenditures--Effect of Legislative Finding That Costs Not State-mandated.

A school district was entitled to reimbursement pursuant to Cal. Const., art. XIII B, § 6 (reimbursement of local governments for state-mandated costs or increased levels of service), for expenditures related to its efforts to alleviate racial and ethnic segregation in its schools, notwithstanding that after the state Board of Control approved the district's reimbursement claim, the Legislature enacted a "finding" that the executive order requiring the district to undertake desegregation activities did not impose a state-mandated local program. Unsupported legislative disclaimers are insufficient to defeat reimbursement. The district had a constitutional right to reimbursement, and the Legislature

could not limit that right.

(21) Schools § 4--School Districts; Financing; Funds--Reimbursement of State-mandated Costs--Desegregation Expenditures--Department of Education Budget as Source.

In an action by a school district against the state to compel the state to reimburse the district for expenditures related to its efforts to alleviate racial and ethnic segregation, the trial court, after finding that the executive order requiring the district to undertake desegregation activities was a reimbursable state mandate, did not err in ordering reimbursement to take place in part from the state Department of Education budget. Logic dictated that department funding be the initial and primary source for reimbursement: given the fact that the executive order was issued by the department, the evidence overwhelmingly supported the trial court's finding of a general relationship between the department budget items and the reimbursable expenditures.

(22) Interest § 8--Rate--Reimbursement of School District's State-mandated Costs.

In an action by a school district against the state to compel the state to reimburse the district for expenditures related to its efforts to alleviate racial and ethnic segregation, the trial court, after finding that the executive order requiring the district to undertake desegregation activities was a reimbursable state mandate, did not err in awarding the district interest at the legal rate (Cal. Const., art. XV, § 1, par. (2)), rather than at the rate of 6 percent per annum pursuant to Gov. Code, § 926.10. Gov. Code, § 926.10, is part of the California Tort Claims Act (Gov. Code, § 900 et seq.), which provides a statutory scheme for the filing of claims against public entities for alleged injuries. It makes no provision for claims for reimbursement for state-mandated expenditures.

(23) Schools § 4--School Districts; Financing; Funds--Reimbursement of State-mandated Costs--Desegregation Expenditures--County Fines and Forfeitures Funds as Source.

In an action by a school district against the

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state to compel the state to reimburse the district for expenditures related to its efforts to alleviate racial and ethnic segregation, the trial court, after finding that the executive order requiring the district to undertake desegregation activities was a reimbursable state mandate, did not err in determining that moneys in the Fines and Forfeiture Funds in the custody and possession of the county auditor-controller for transfer to the state treasury were not reasonably available for reimbursement purposes. There was no evidence in the record showing the use of those funds once they were transmitted to the state, nor was there any evidence indicating that those funds were then reasonably available to satisfy the district's claim. It could not be concluded as a matter of law that a general relationship existed between the funds and the nature of the costs incurred pursuant to the executive order. Further, there was no ground on which the funds could be made available to the district while in the possession of the auditor-controller.

COUNSEL

John K. Van de Kamp, Attorney General, N. Eugene Hill, Assistant Attorney General, Henry G. Ullerich and Martin H. Milas, Deputy Attorneys General; Joseph R. Symkowitz and Joanne Lowe for Defendants and Appellants.

De Witt W. Clinton, County Counsel, and Lawrence B. Launer, Assistant County Counsel, for Defendants and Respondents.

Ball, Hunt, Hart, Brown & Baerwitz, Anthony Murray, Allan E. Tebbetts, Agnes H. Mulhearn, Ross & Scott, William D. Ross, Corin L. Kahn and Diana P. Scott for Plaintiff and Appellant.

LUCAS, P. J.

Introduction

Long Beach Unified School District (LBUSD) filed a claim with the Board of Control of the State of California (Board), asserting that certain expenditures related to its efforts to alleviate racial

and ethnic segregation in its schools had been mandated by the state through regulations (Executive Order) issued by the Department of Education (DOE) and were *164 reimbursable pursuant to former Revenue and Taxation Code section 2234 and article XIII B, section 6 of the California Constitution. The Board eventually approved the claim and reported to the Legislature its recommendation that funds be appropriated to cover the statewide estimated costs of compliance with the Executive Order. When the Legislature deleted the requested funding from an appropriations bill, LBUSD filed a petition to compel reimbursement (Code Civ. Proc., § 1085) and complaint for declaratory relief. The trial court held that the doctrines of administrative collateral estoppel and waiver prevented the state from challenging the decisions of the Board, and it gave judgment to LBUSD. It also ruled that certain funds previously appropriated by the Legislature were "reasonably available" for reimbursement of the claimed expenditures, subject to audit by the state Controller.

We conclude that the doctrines of collateral estoppel and waiver are inapplicable to the facts of this case. However, we determine as a question of law that the Executive Order requires local school boards to provide a higher level of service than is required either constitutionally or by case law and that the Executive Order is a reimbursable state mandate pursuant to article XIII B, section 6 of the California Constitution. We also decide that former Revenue and Taxation Code section 2234 does not provide for reimbursement of the claim.

Based on uncontradicted evidence, we modify the decision of the trial court regarding which budget line item account numbers provide "reasonably available" funds to reimburse LBUSD for appropriate expenditures under the claim. We further modify the decision to include charging orders against funds appropriated by subsequent budget acts. Finally, we remand the matter to the trial court to determine whether at the time of its order unexpended, unencumbered funds sufficient

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to satisfy the judgment remained in the approved budget line item account numbers. The trial court must resolve this same issue with respect to the charging order.

Background and Procedural History

The California Property Tax Relief Act of 1972 (Stats. 1972, ch. 1406, § 1, p. 2931) limited the power of local governmental entities to levy property taxes. It also mandated that when the state requires such entities to provide a new program or higher level of service, the state must reimburse those costs. Over time, amendments to the California Constitution and numerous legislative changes impacted both the right and procedure for obtaining reimbursement. *165

Sometime prior to September 8, 1977, LBUSD, at its option, voluntarily began to incur substantial costs to alleviate the racial and ethnic segregation of students within its jurisdiction.

On or about the above date, DOE adopted certain regulations which added sections 90 through 101 to title 5 of the California Administrative Code, effective September 16, 1977. We refer to these regulations as the Executive Order.

The Executive Order and related guidelines for implementation required in part that school districts which identified one or more schools as either having or being in danger of having segregation of its minority students "shall, no later than January 1, 1979, and each four years thereafter, develop and adopt a reasonably feasible plan for the alleviation and prevention of racial and ethnic segregation of minority students in the district."

On or about June 4, 1982, LBUSD submitted a "test claim" (Claim) ^{FN1} to the Board for reimbursement of \$9,050,714—the total costs which LBUSD claimed it had incurred during fiscal years 1977-1978 through 1981-1982 for activities required by the Executive Order and guidelines. LBUSD cited former Revenue and Taxation Code section 2234 as authority for the requested reim-

bursement, asserting that the costs had been "subsequently mandated" by the state. ^{FN2}

FN1 Former Revenue and Taxation Code section 2218 defines "test claim" as "the first claim filed with the State Board of Control alleging that a particular statute or executive order imposes a mandated cost on such local agency or school district." (Stats. 1980, ch. 1256, § 7, p. 4249.)

FN2 All statutory references are to the Revenue and Taxation Code unless otherwise stated.

Former section 2234 provided: "If a local agency or a school district, at its option, has been incurring costs which are subsequently mandated by the state, the state shall reimburse the local agency or school district for such costs incurred after the operative date of such mandate." (Stats. 1980, ch. 1256, § 11, pp. 4251-4252.)

The Board denied the Claim on the grounds that it had no jurisdiction to accept a claim filed under section 2234. LBUSD petitioned superior court for review of the Board decision. (Code Civ. Proc., § 1094.5.) That court concluded the Board had jurisdiction to accept a section 2234 claim and ordered it to hear the matter on its merits. The Board did not appeal this decision.

On February 16, 1984, the Board conducted a hearing to consider the Claim. LBUSD presented written and oral argument that the Claim was reimbursable pursuant to section 2234 and, in addition, under article XIII B, section 6 of the California Constitution. DOE and the State Department *166 of Finance (Finance) participated in the hearing. ^{FN3} The Board concluded that the Executive Order constituted a state mandate. On April 26, 1984, the Board adopted parameters and guidelines proposed by LBUSD for reimbursement of the expenditures. No state entity either sought reconsideration of the Board decisions, available pursuant to former sec-

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tion 633.6 of the California Administrative Code,
FN4 or petitioned for judicial review. FN5

FN3 The DOE recommended that the Claim be denied on the grounds that the requirements of the Executive Order were constitutionally mandated and court ordered and because the Executive Order was effective prior to January 1, 1978 (issues discussed *post*). However, counsel for the DOE expressed dismay that school districts which had voluntarily instituted desegregation programs had been having problems receiving funding from the Legislature, while schools which had been forced to do so had been receiving "substantial amounts of money."

A spokesman from Finance recalled there had been some doubt whether the Board had jurisdiction to hear a 2234 claim. He stated that, assuming the Board did have jurisdiction, the Executive Order contained at least one state mandate, which possibly consisted of administrative kinds of tasks related to the identification of "problem areas and the like."

FN4 Former section 633.6 of the California Administrative Code (now renamed California Code of Regulations) provided in relevant part: "(b) Request for Reconsideration. [¶] (1) A request for reconsideration of a Board determination on a specific test claim ... shall be filed, in writing, with the Board of Control, no later than ten (10) days after any determination regarding the claim by the Board" (Title 2, Cal. Admin. Code)

FN5 Former section 2253.5 provided: "A claimant or the state may commence a proceeding in accordance with the provisions of Section 1094.5 of the Code of Civil Procedure to set aside a decision of the Board of Control on the grounds that the board's

decision is not supported by substantial evidence. The court may order the board to hold another hearing regarding such claim and may direct the board on what basis the claim is to receive a rehearing." (Stats. 1978, ch. 794, § 8, p. 2551.)

In December 1984, pursuant to former section 2255, the Board reported to the Legislature the number of mandates it had found and the estimated statewide costs of each mandate. With respect to the Executive Order mandate, the Board adopted an estimate by Finance that reimbursement of school districts, including LBUSD, for costs expended in compliance with the Executive Order would total \$95 million for fiscal years 1977-1978 through 1984-1985. The Board recommended that the Legislature appropriate that amount.

Effective January 1, 1985, the Commission on State Mandates (Commission) succeeded to the functions of the Board. (Gov. Code, §§ 17525, 17630.)

On March 4, 1985, Assembly Bill No. 1301 was introduced. It included an appropriation of \$95 million to the state controller "for payment of claims of school districts seeking reimbursable state-mandated costs incurred pursuant to [the Executive Order]" On June 27, the Assembly amended the bill by deleting this \$95 million appropriation and adding a *167 "finding" that the Executive Order did not impose a state-mandated local program. FN6 On September 28, 1985, the Governor approved the bill as amended.

FN6 Former Section 2255 provided in part: "(b) If the Legislature deletes from a local government claims bill funding for a mandate imposed either by legislation or by a regulation ..., it may take one of the following courses of action: (1) Include a finding that the legislation or regulation does not contain a mandate" (Stats. 1982, ch. 1638, § 7, p. 6662.)

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On June 26, 1986, LBUSD petitioned for writ of mandate (Code Civ. Proc., § 1085) and filed a complaint for declaratory relief against defendants State of California; Commission; Finance; DOE; holders of the offices of State Controller and State Treasurer and holder of the office of Auditor-Controller of the County of Los Angeles, and their successors in interest. LBUSD requested issuance of a writ of mandate commanding the respondents to comply with section 2234 (fn. 2, *ante*)^{FN7} and, in an amended petition, its successor, Government Code section 17565, and with California Constitution, article XIII B, section 6.^{FN8} It further requested respondents to reimburse LBUSD \$24,164,593 for fiscal years 1977-1978 through 1982-1983, \$3,850,276 for fiscal years 1983-1984 and 1984-1985, and accrued interest, for activities mandated by the Executive Order.

FN7 The language of Government Code section 17565 is nearly identical to that of section 2234 (fn. 2, *ante*), and provides: "If a local agency or a school district, at its option, has been incurring costs which are subsequently mandated by the state, the state shall reimburse the local agency or school district for those costs incurred after the operative date of the mandate." (Stats. 1986, ch. 879, § 10, p. 3043.)

FN8 Article XIII B, section 6 provides in pertinent 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 government for the costs of such program or increased level of service"

The trial court let stand the conclusion of the Board that the Executive Order constituted a reimbursable state mandate and ruled in favor of LBUSD. No party requested a statement of decision.

The judgment stated that the Executive Order

constituted a reimbursable state mandate which state entities could not challenge because of the doctrines of administrative collateral estoppel and waiver. It provided that certain previously appropriated funds were "reasonably available" to reimburse LBUSD for its claimed expenditures, applicable interest, and court costs. The judgment also stated that funds denominated the "Fines and Forfeitures Funds," under the custody of the Auditor-Controller of the County of Los Angeles, were not reasonably available. The judgment further decreed that the State Controller retained the right to audit the claims and records of LBUSD to verify the amount of the reimbursement award sum. *168

State respondents (State) and DOE separately filed timely notices of appeal, and LBUSD cross-appealed.^{FN9}

FN9 Although an "Amended Notice to Prepare Clerk's Transcript" filed by DOE on April 11, 1988, requests the clerk of the superior court to incorporate in the record its notice of appeal filed April 1, 1988, this latter document does not appear in the record before us, and the original apparently is lost within the court system. Respondent LBUSD received a copy of the notice on April 4, 1988.

Discussion

State asserts that neither the doctrine of collateral estoppel nor the doctrine of waiver is applicable to this case, the costs incurred by LBUSD are not reimbursable, and the remedy authorized by the trial court is inconsistent with California law and invades the province of the Legislature, a violation of article IV, section 4 of the United States Constitution.

The thrust of the DOE appeal is that its budget is not an appropriate source of funding for the reimbursement.

LBUSD has argued in its cross-appeal that an additional source of funding, the "Fines and For-

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feiture Funds," should be made available for reimbursement of its costs and, in supplementary briefing, requests this court to order a modification of the judgment to include as "reasonably available funding" specific line item accounts from the 1988-1989 and 1989-1990 state budgets.

I. State Not Barred From Challenging Decisions of the Board

A. Administrative Collateral Estoppel

(1a) State first contends that the doctrine of administrative collateral estoppel is not applicable to the facts of this case and does not prevent State from litigating whether the Board properly considered the subject claim and whether the claim is reimbursable.

(2) Collateral estoppel precludes a party from relitigating in a subsequent action matters previously litigated and determined. (*Teitelbaum Furs, Inc. v. Dominion Ins. Co., Ltd.* (1962) 58 Cal.2d 601, 604 [25 Cal.Rptr. 559, 375 P.2d 439].) The traditional elements of collateral estoppel include the requirement that the prior judgment be "final." (*Ibid.*)

(3a) Finality for the purposes of administrative collateral estoppel may be understood as a two-step process: (1) the decision must be final with *169 respect to action by the administrative agency (see Code Civ. Proc., § 1094.5, subd. (a)); and (2) the decision must have conclusive effect (*Sandoval v. Superior Court* (1983) 140 Cal.App.3d 932, 936-937 [190 Cal.Rptr. 29]).

A decision attains the requisite administrative finality when the agency has exhausted its jurisdiction and possesses "no further power to reconsider or rehear the claim. [Fn. omitted.]" (*Chas. L. Harney, Inc. v. State of California* (1963) 217 Cal.App.2d 77, 98 [31 Cal.Rptr. 524].) (1b) In the case at bar, former section 633.6 of the Administrative Code provided a 10-day period during which any party could request reconsideration of any Board determination (fn. 4, *ante*). The Board decided on February 16, 1984, that the Executive Or-

der constituted a state mandate, and on April 26, 1984, it adopted parameters and guidelines for the reimbursement of the claimed expenditures. No party requested reconsideration, no statute or regulation provided for further consideration of the matter by the Board (see, e.g., *Olive Proration etc. Com. v. Agri. etc. Com.* (1941) 17 Cal.2d 204, 209 [109 P.2d 918]), and the decisions became administratively final on February 27, 1984, and May 7, 1984, respectively ^{FN10} (*Ziganto v. Taylor* (1961) 198 Cal.App.2d 603, 607 [18 Cal.Rptr. 229]).

FN10 We take judicial notice pursuant to Evidence Code section 452, subdivision (h), that February 26, 1984, and May 6, 1984, fall on Sundays.

(3b) Next, the decision must have conclusive effect. (*Sandoval v. Superior Court, supra*, 140 Cal.App.3d 932, 936-937.) In other words, the decision must be free from direct attack. (*People v. Sims* (1982) 32 Cal.3d 468, 486 [186 Cal.Rptr. 77, 651 P.2d 321].) A direct attack on an administrative decision may be made by appeal to the superior court for review by petition for administrative mandamus. (Code Civ. Proc., § 1094.5.) (1c) A decision will not be given collateral estoppel effect if such appeal has been taken or if the time for such appeal has not lapsed. (*Sandoval v. Superior Court, supra*, 140 Cal.App.3d at pp. 936-937; *Producers Dairy Delivery Co. v. Sentry Ins. Co.* (1986) 41 Cal.3d 903, 911 [226 Cal.Rptr. 558, 718 P.2d 920].) The applicable statute of limitations for such review in the case at bar is three years. (*Carmel Valley Fire Protection Dist. v. State of California* (1987) 190 Cal.App.3d 521, 534 [234 Cal.Rptr. 795]; *Green v. Obledo* (1981) 29 Cal.3d 126, 141, fn. 10 [172 Cal.Rptr. 206, 624 P.2d 256].) (4) A statute of limitations commences to run at the point where a cause of action accrues and a suit may be maintained thereon. (*Dillon v. Board of Pension Comm'rs.* (1941) 18 Cal.2d 427, 430 [116 P.2d 37, 136 A.L.R. 800].)

(1d) In the instant case, State's causes of action accrued when the Board made the two decisions ad-

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verse to State on February 16 and April 26, 1984, *170 as discussed. State did not request reconsideration, and the decisions became administratively final on February 27 and May 7, 1984. ^{FN11} For purposes of discussion, we will assume the applicable three-year statute of limitations period for the two Board decisions commenced on February 28 and May 8, 1984, and ended on February 28 and May 8, 1987. ^{FN12} LBUSD filed its petition for ordinary mandamus (Code Civ. Proc., § 1085) and complaint for declaratory relief on June 26, 1986. At that point, the limitations periods had not run against State and the Board decisions lacked the necessary finality to satisfy that requirement of the doctrine of administrative collateral estoppel. ^{FN13}

FN11 We do not address the contention of LBUSD that State failed to exhaust its administrative remedies (*Abelleira v. District Court of Appeal* (1941) 17 Cal.2d 280, 292 [109 P.2d 942, 132 A.L.R. 715]; *Morton v. Superior Court* (1970) 9 Cal.App.3d 977, 982 [88 Cal.Rptr. 533]) and therefore State cannot assert its affirmative defenses in response to the petition and complaint of the school district. Traditionally, the doctrine has been raised as a bar only with respect to the party seeking judicial relief, not against the responding party (*ibid.*); we have found no case holding otherwise.

FN12 If State had sought reconsideration and its request been denied, or if its request had been granted but the matter again decided in favor of LBUSD, the Board decision would have been final 10 days after the Board action, and at that point the statute would have commenced to run against State.

FN13 State argues that its statute of limitations did not commence until the legislation was enacted without the appropriation (Sept. 28, 1985), citing *Carmel Valley Fire Protection Dist. v. State of California*,

supra, 190 Cal.App.3d at page 548. However, *Carmel Valley* held that the claimant does not exhaust its administrative remedies and cannot come under the court's jurisdiction until the legislative process is complete, which occurred in that case when the legislation was enacted without the subject appropriations. At that point, *Carmel Valley* reasoned, the state had breached its duty to reimburse, and the claimant's right of action in traditional mandamus accrued. (*Ibid.*) However, *Carmel Valley* decided, as do we in the case at bar, that the state's statute of limitations commenced on the date the Board made decisions adverse to its interests. (*Id.* at p. 534.)

In addition, we see no reason to permit State to rely on the fortuitous actions of the Legislature, an independent branch of government, to bail it out of obligations established in the distant past by state agents—especially given the lengthy three-year statute of limitations. (Compare, e.g., Gov. Code, § 11523 [mandatory time limit within which to petition for administrative mandamus can be 30 days after last day on which administrative reconsideration can be ordered]; Lab. Code, § 1160.8, and *Jackson & Perkins Co. v. Agricultural Labor Relations Board* (1978) 77 Cal.App.3d 830, 834 [144 Cal.Rptr. 166] [30 days from issuance of board order even if party has filed a motion to reconsider].)

B. Waiver

(5a) State also asserts that the doctrine of waiver is not applicable.

(6) A waiver occurs when there is “an existing right; actual or constructive knowledge of its existence; and either an actual intention to relinquish it, or conduct so inconsistent with an intent to enforce the right as to induce *171 a reasonable belief that it has been waived. [Citations.]” (*Carmel Valley*

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Fire Protection Dist. v. State of California, supra, 190 Cal.App.3d at p. 534.) Ordinarily, the issue of waiver is a question of fact which is binding on the appellate court if the determination is supported by substantial evidence. (*Napa Association of Public Employees v. County of Napa* (1979) 98 Cal.App.3d 263, 268 [159 Cal.Rptr. 522].) However, the question is one of law when the evidence is not in conflict and is susceptible of only one reasonable inference. (*Glendale Fed. Sav. & Loan Assn. v. Marina View Heights Dev. Co.* (1977) 66 Cal.App.3d 101, 151-152 [135 Cal.Rptr. 802].)

(5b) In the instant case, the right to contest the findings of the Board is at issue, and there is no dispute that the state was aware of the existence of this right. As discussed, the statute of limitations had not run when State raised its affirmative defenses, and during this time State could have filed a separate petition for administrative mandamus. (7)(5c) State's assertion of its affirmative defenses during this period is inconsistent with an intent to waive its right to contest the Board decisions, and therefore the doctrine of waiver is not applicable. ^{FN14}

FN14 LBUSD contends that State should be equitably estopped from challenging the Board decisions. In the absence of a confidential relationship, the doctrine of equitable estoppel is inapplicable where there is a mistake of law. (*Gilbert v. City of Martinez* (1957) 152 Cal.App.2d 374, 378 [313 P.2d 139]; *People v. Stuyvesant Ins. Co.* (1968) 261 Cal.App.2d 773, 784 [68 Cal.Rptr. 389].) There is no confidential relationship herein, and since we conclude as a matter of law and contrary to the trial court that the statute of limitations does not bar State from litigating the mandate and reimbursability issues, the doctrine is inapplicable.

II. Issue of State Mandate

(8) Ordinarily, our conclusion that the trial court erred in failing to consider the merits of the State's challenge to the decisions of the Board

would require that the matter be remanded to the trial court for a full hearing. However, because the question of whether a cost is state mandated is one of law in the instant case (cf. *Carmel Valley Fire Protection Dist. v. State of California, supra*, 190 Cal.App.3d at p. 536), we now decide that the expenditures are reimbursable pursuant to article XIII B, section 6 of the California Constitution and that no relief is available under section 2234. ^{FN15} *172

FN15 We invited State, DOE, and LBUSD to submit additional briefing on the following issues: "1. Can it be determined as a question of law whether sections 90 through 101 of Title 5 of the California Administrative Code [Executive Order] constitute a state mandate within the meaning of article XIII B, section 6 of the California Constitution? 2. Do the above sections constitute such mandate?" State and LBUSD submitted additional argument; DOE declined the invitation.

A. Recovery Under Article XIII B, Section 6

(9a) On November 6, 1979, California voters passed initiative measure Proposition 4, which added article XIII B to the state Constitution. This measure, a corollary to the previously passed Proposition 13 (art. XIII A, which restricts governmental taxing authority), placed limits on the growth of state and local government appropriations. It also provided reimbursement to local governments for the costs of complying with certain requirements mandated by the state. LBUSD argues that section 6 of this provision is an additional ground for reimbursement.

1. The Executive Order Requires a Higher Level of Service

In relevant part article XIII B, section 6 (Section 6) provides: "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 pro-

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gram or increased level of service” (10) The subvention requirement of Section 6 “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].) “[T]he drafters and the electorate had in mind the commonly understood meanings of the term—programs that carry out the governmental function of providing services to the public, or 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.” (*Ibid.*)

(9b) In the instant case, although numerous private schools exist, education in our society is considered to be a peculiarly governmental function. (Cf. *Carmel Valley Fire Protection Dist. v. State of California*, *supra*, 190 Cal.App.3d at p. 537 .) Further, public education is administered by local agencies to provide service to the public. Thus public education constitutes a “program” within the meaning of Section 6.

State argues that the Executive Order does not mandate a higher level of service—or a new program—because school districts in California have a constitutional duty to make an effort to eliminate racial segregation in the public schools. In support of its argument, State cites *Brown v. Board of Education* (1952) 347 U.S. 483, 495 [98 L.Ed. 873, 881, 74 S.Ct. 686, 38 A.L.R.2d 1180]; *Jackson v. Pasadena City School District* (1963) 59 Cal.2d 876, 881 [31 Cal.Rptr. 606, 382 P.2d 878]; *Crawford v. Board of Education* (1976) 17 Cal.3d 280 [130 Cal.Rptr. 724, 551 P.2d 28] and cases cited therein; and *173*National Assn. for Advancement of Colored People v. San Bernardino City Unified Sch. Dist.* (1976) 17 Cal.3d 311 [130 Cal.Rptr. 744, 551 P.2d 48]. These cases show that school districts do indeed have a constitutional obligation to alleviate racial segregation, and on this ground the Executive Order does not constitute a “new program.” However, although school districts are re-

quired to “take steps, insofar as reasonably feasible, to alleviate racial imbalance in schools regardless of its cause []” (*Crawford, supra*, at p. 305, italics omitted, citing *Jackson*), the courts have been wary of requiring specific steps in advance of a demonstrated need for intervention (*Crawford*, at pp. 305-306; *Jackson, supra*, at pp. 881-882; *Swann v. Board of Education* (1971) 402 U.S. 1, 18-21 [28 L.Ed.2d 554, 567-570, 91 S.Ct. 1267]). On the other hand, courts have required specific factors be considered in determining whether a school is segregated (*Keyes v. School District No. 1, Denver, Colo.* (1973) 413 U.S. 189, 202-203 [37 L.Ed.2d 548, 559-560, 93 S.Ct. 2686]; *Jackson, supra*, at p. 882).

The phrase “higher level of service” is not defined in article XIII B or in the ballot materials. (*County of Los Angeles v. State of California, supra*, 43 Cal.3d 46, 50.) A mere increase in the cost of providing a service which is the result of a requirement mandated by the state is not tantamount to a higher level of service. (*Id.*, at pp. 54-56.) However, a review of the Executive Order and guidelines shows that a higher level of service is mandated because their requirements go beyond constitutional and case law requirements. Where courts have suggested that certain steps and approaches may be helpful, the Executive Order and guidelines require specific actions. For example, school districts are to conduct mandatory biennial racial and ethnic surveys, develop a “reasonably feasible” plan every four years to alleviate and prevent segregation, include certain specific elements in each plan, and take mandatory steps to involve the community, including public hearings which have been advertised in a specific manner. While all these steps fit within the “reasonably feasible” description of *Jackson* and *Crawford*, the point is that these steps are no longer merely being suggested as options which the local school district may wish to consider but are required acts. These requirements constitute a higher level of service. We are supported in our conclusion by the report of the Board to the Legislature regarding its decision that

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the Claim is reimbursable: “[O]nly those costs that are above and beyond the regular level of service for like pupils in the district are reimbursable.”

2. The Executive Order Constitutes a State Mandate

For the sake of clarity we quote Section 6 in full: “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 *174 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.*” (Italics added.) This amendment became effective July 1, 1980. (Art. XIII B, § 10.) Again, the Executive Order became effective September 16, 1977.

State argues there is no constitutional ground for reimbursement because (a) with reference to the language of exception (c) of Section 6, the Executive Order is neither a statute nor an executive order or regulation implementing a statute; (b) recent legislation limits reimbursement to certain costs incurred after July 1, 1980, the effective date of the constitutional amendment; and (c) LBUSD failed to exhaust administrative procedures for reimbursement of Section 6 claims (Gov. Code, § 17500 et seq.). We conclude that recovery is available under Section 6.

(a) Form of Mandate

State argues the Executive Order is not a state mandate because, with reference to exception (c) of Section 6, it is neither a statute nor an executive order implementing a statute.

(11) In construing the meaning of Section 6, we must determine the intent of the voters by first

looking to the language itself (*County of Los Angeles v. State of California*, *supra*, 43 Cal.3d 46, 56), which “ ‘should be construed in accordance with the natural and ordinary meaning of its words.’ ” [Citation.]” (*ITT World Communications, Inc. v. City and County of San Francisco* (1985) 37 Cal.3d 859, 865 [210 Cal.Rptr. 226, 693 P.2d 811].) The main provision of Section 6 states that whenever the Legislature or any state agency “mandates” a new program or higher level of service, the state must provide reimbursement. (12) We understand the use of “mandates” in the ordinary sense of “orders” or “commands,” concepts broad enough to include executive orders as well as statutes. As has been noted, “[t]he concern which prompted the inclusion of section 6 in article XIII B was the perceived attempt by the state to enact legislation or adopt administrative orders creating programs to be administered by local agencies, thereby transferring to those agencies the fiscal responsibility for providing services which the state believed should be extended to the public.” (*County of Los Angeles v. State of California*, *supra*, 43 Cal.3d at p. 56.) It is clear that the primary concern of the voters was the increased financial *175 burdens being shifted to local government, not the form in which those burdens appeared.

We derive support for our interpretation by reference to the ballot summary presented to the electorate. (Cf. *Amador Valley Joint Union High Sch. Dist. v. State Bd. of Equalization* (1978) 22 Cal.3d 208, 245-246 [149 Cal.Rptr. 239, 583 P.2d 1281].) The legislative analyst determined that the amendment would limit the rate of growth of governmental appropriations, require the return of taxes which exceeded amounts appropriated, and “[r]equire the state to reimburse local governments for the costs of complying with ‘state mandates.’ ” The term “state mandates” was defined as “requirements imposed on local governments by legislation or executive orders.” (Italics added; Ballot Pamp., Proposed Amend. to Cal. Const. with arguments to voters, Special Statewide Elec. (Nov. 6, 1979) p. 16.)

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(9c) Although exception (c) of Section 6 gives the state discretion whether to reimburse pre-1975 mandates which are either statutes or executive orders implementing statutes, we do not infer from this exception that reimbursability is otherwise dependent on the form of the mandate. We conclude that since the voters provided for mandatory reimbursement except for the three narrowly drawn exceptions found in (a), (b), and (c), there was no intent to exclude recovery for state mandates in the form of executive orders. Further, as State sets forth in its brief, the adoption of the Executive Order was "arguably prompted" by the decision in *Crawford v. Board of Education*, supra, 17 Cal.3d 280, a case decided after the 1975 cutoff date of exception (c). Since case law and statutory law are of equal force, there appears to be no basis on which to exclude executive orders which implement case law or constitutional law while permitting reimbursement for executive orders implementing statutes. We see no relationship between the proposed distinction and the described purposes of the amendment (*County Los Angeles v. State of California*, supra, 43 Cal.3d at p. 56; *County of Los Angeles v. Department of Industrial Relations* (1989) 214 Cal.App.3d 1538, 1545 [263 Cal.Rptr. 351]).

(b) *Recent Legislative Limits*
State contends that LBUSD cannot claim reimbursement under Section 6 because Government Code sections 17561 (Stats. 1986, ch. 879, § 6, p. 3041) and 17514 (Stats. 1984, ch. 1459, § 1, p. 5114) limit such recovery to mandates created by statutes or executive orders implementing statutes, and only for costs incurred after July 1, 1980.

As discussed above, the voters did not intend to limit reimbursement of costs only to those incurred pursuant to statutes or executive orders implementing *176 statutes except as set forth in exception (c) of Section 6. We presume that when the Legislature passed Government Code sections 17561 and 17514 it was aware of Section 6 as a related law and intended to maintain a consistent body of rules. (*Fuentes v. Workers' Comp. Appeals Bd.* (1976) 16

Cal.3d 1, 7 [128 Cal.Rptr. 673, 547 P.2d 449].) As discussed above, the limitations suggested by State are confined to exception (c).

Further, the state must reimburse costs incurred pursuant to mandates enacted after January 1, 1975, although actual payments for reimbursement were not required to be made prior to July 1, 1980, the effective date of Section 6. (*Carmel Valley Fire Protection Dist. v. State of California*, supra, 190 Cal.App.3d at pp. 547-548; *City of Sacramento v. State of California* (1984) 156 Cal.App.3d 182, 191-194 [203 Cal.Rptr. 258], disapproved on other grounds in *County of Los Angeles v. State of California*, supra, 43 Cal.3d at p. 58, fn. 10.)

(c) *Administrative Procedures*

The Legislature passed Government Code section 17500 et seq. (Stats. 1984, ch. 1459, § 1, p. 5113), effective January 1, 1985 (Stats. 1984, ch. 1459, § 1, p. 5123), to aid the implementation of Section 6 and to consolidate the procedures for reimbursement under statutes found in the Revenue and Taxation Code. This legislation created the Commission, which replaced the Board, and instituted a number of procedural changes. (Gov. Code, §§ 17525, 17527, subd. (g), 17550 et seq.) The legislature intended the new system to provide "the sole and exclusive procedure by which a local agency or school district" could claim reimbursement. (Gov. Code, § 17552.) (13) State argues that since LBUSD never made its claim before the Commission, it failed to exhaust its administrative remedies and cannot now receive reimbursement under section 6.

As discussed, the Board decisions favorable to LBUSD became administratively final in 1984. The Commission was not in place until January 1, 1985. There is no evidence in the record that the Commission did not consider these decisions to be final.

State argues the Commission was given jurisdiction over all claims which had not been included in a local government claims bill enacted before January 1, 1985. (Gov. Code, § 17630.) State is

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correct. However, the subject claim was included in such a bill, but the bill was signed into law after the recommended appropriation had been deleted. Under the statutory scheme, the only relief offered a disappointed claimant at such juncture is an action in declaratory relief to declare a subject executive order void *177 (former Rev. & Tax Code, § 2255, subd. (c); Stats. 1982, ch. 1638, § 7, pp. 6662-6663) or unenforceable (Gov. Code, § 17612, subd. (b); Stats. 1984, ch. 1459, § 1, p. 5121) and to enjoin its enforcement. LBUSD pursued this remedy and in addition petitioned for writ of mandate (Code Civ. Proc., § 1085) to compel reimbursement. There is no requirement to seek further administrative review. Indeed, to do so after the Legislature has spoken would appear to be an exercise in futility.

We conclude that Section 6 provides reimbursement to LBUSD because the Executive Order required a higher level of service and because the Executive Order constitutes a state mandate.

B. Section 2234

As set forth in the procedural history of this case, the Board originally declined to consider the Claim as a claim made under section 2234 on the ground that it lacked jurisdiction to do so. LBUSD petitioned for judicial relief, and the trial court held that the Board had jurisdiction and must consider the claim on its merits. The Board did not appeal that decision. State raised the jurisdiction issue as an affirmative defense to the second petition for writ of mandate filed by LBUSD and presents it again for our consideration. (14) Of course, lack of subject matter jurisdiction may be raised at any time. (*Stuck v. Board of Medical Examiners* (1949) 94 Cal.App.2d 751, 755 [211 P.2d 389].)

Former section 2250 provided: "The State Board of Control, pursuant to the provisions of this article, shall hear and decide upon a claim by a local agency or school district that such local agency or school district has not been reimbursed for *all costs mandated by the state as required by Section 2231 or 2234*. [¶] Notwithstanding any other provision of law, this article shall provide the sole and

exclusive procedure by which the Board of Control shall hear and decide upon a claim that a local agency or school district has not been reimbursed for *all costs mandated by the state as required by Section 2231 or 2234*." (Italics added; Stats. 1978, ch. 794, § 5, p. 2549.) Given the clear, unambiguous language of the statute, there is no need for construction. (*West Covina Hospital v. Superior Court* (1986) 41 Cal.3d 846, 850 [226 Cal.Rptr. 132, 718 P.2d 119, 60 A.L.R.4th 1257].) (15a) We conclude that the Board had jurisdiction to consider a claim filed under former section 2234. However, as discussed below, the 1977 Executive Order falls outside the purview of section 2234.

Former section 2231 provided: "(a) ... The state shall reimburse each school district only for those 'costs mandated by the state', as defined in *178 Section 2207.5." (Stats. 1982, ch. 1586, § 3, p. 6264.) In part, former section 2207.5 defines "costs mandated by the state" as increased costs which a school district is required to incur as a result of certain new programs or certain increased program levels or services mandated by an executive order issued *after* January 1, 1978. (Stats. 1980, ch. 1256, § 5, pp. 4248-4249.) As previously stated, the Executive Order in the case at bar was issued September 8, 1977.

Former section 2234, pursuant to which LBUSD initially filed its claim, does not itself contain language indicating a time limitation: "If a local agency or a school district, at its option, has been incurring costs which are subsequently mandated by the state, the state shall reimburse the local agency or school district for such costs incurred after the operative date of such mandate." (Stats. 1980, ch. 1256, § 11, p. 4251.)

State asserts that the January 1, 1978, limitation of sections 2231 and 2207.5 applies to section 2234, preventing reimbursement for costs expended pursuant to the September 8, 1977, Executive Order; LBUSD argues section 2234 is self-contained and without time limitation.

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(16) It is a fundamental rule of statutory construction that a statute should be construed with reference to the whole system of law of which it is a part in order to ascertain the intent of the Legislature. (*Moore v. Panish* (1982) 32 Cal.3d 535, 541 [186 Cal.Rptr. 475, 652 P.2d 32]; *Pitman v. City of Oakland* (1988) 197 Cal.App.3d 1037, 1042 [243 Cal.Rptr. 306].) The legislative history of a statute may be considered in ascertaining legislative design. (*Walters v. Weed* (1988) 45 Cal.3d 1, 10 [246 Cal.Rptr. 5, 752 P.2d 443].)

The earliest version of section 2234 is found in former section 2164.3, subdivision (f), which provided reimbursement to a city, county, or special district for "a service or program [provided] at its option which is subsequently mandated by the state" Reimbursement was limited to costs mandated by statutes or executive orders enacted or issued after January 1, 1973. (Stats. 1972, ch. 1406, § 3, pp. 2962-2963.)

In 1973, section 2164.3 was amended to provide reimbursement to school districts for costs mandated by statutes enacted after January 1, 1973 (subd. (a)), *but it expressly excluded school districts from reimbursement for costs mandated by executive orders* (subd. (d)). (Stats. 1973, ch. 208, § 51, p. 565.) Later that same year, the Legislature repealed section 2164.3 (Stats. 1973, ch. 358, § 2, p. 779) and added section 2231, which took over the pertinent *179 reimbursement provisions of section 2164.3 virtually unchanged. (Stats. 1973, ch. 358, § 3, pp. 779, 783-784.)

In 1975, the Legislature removed the time limitation language from section 2231 and incorporated it into a new section, 2207. (Stats. 1975, ch. 486, § 1.8, pp. 997-998.) After this change, section 2231 then provided in pertinent part: "(a) The state shall reimburse each local agency for all 'costs mandated by the state', as defined in Section 2207. *The state shall reimburse each school district only for those 'costs mandated by the state' specified in subdivision (a) of Section 2207*" (Italics added; Stats. 1975, ch. 486, § 7, pp. 999-1000.) Subdivi-

sion (a) of section 2207 limited reimbursement solely to costs mandated by statutes enacted after January 1, 1973.

At this same juncture, the Legislature further amended section 2231 by deleting the provision for "subsequently mandated" services or programs and incorporating that provision into a new section, 2234 (Stats. 1975, ch. 486, § 9, p. 1000), the section under which LBUSD would eventually make its claim. The substance of section 2234 (see fn. 2, *ante*) remained unchanged until its repeal in 1986. (Stats. 1977, ch. 1135, § 8.6, p. 3648; Stats. 1980, ch. 1256, § 11, pp. 4251-4252; Stats. 1986, ch. 879, § 25, p. 3045.)

Next, section 2231 was amended to show that with regard to school districts, "costs mandated by the state" were now defined by a new section, 2207.5. (Stats. 1977, ch. 1135, § 7, pp. 3647-3648.) Section 2207.5 limited reimbursement to costs mandated by statutes enacted after January 1, 1973, and *executive orders issued after January 1, 1978*. (Stats. 1977, ch. 1135, § 5, pp. 3646-3647.) (No further pertinent amendments to section 2231 occurred; see Stats. 1978, ch. 794, § 1.1, p. 2546; Stats. 1980, ch. 1256, § 8, pp. 4249-4250; Stats. 1982, ch. 734, § 3, p. 2912.) The distinction between statutes and executive orders was preserved when section 2207.5 was amended in 1980 (Stats. 1980, ch. 1256, § 5, pp. 4248-4249) and was in effect at the time of the Board hearing.

(15b) This survey teaches us that with respect to the reimbursement process, the Legislature has treated school districts differently than it has treated other local government entities. The Legislature initially did not give school districts the right to recover costs mandated by executive orders; and when this option was made available, the effective date differed from that applicable to other entities. The Legislature consistently limited reimbursement of costs by reference to the effective dates of statutes and executive orders and nothing indicates the state intended recovery of costs to be open-ended.
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Because the "subsequently mandated" provision of section 2234 originally was contained in sections which set forth specific date limitations (former sections 2164.3 and 2231), we conclude the Legislature likewise intended to limit claims made pursuant to section 2234. The use of the language "subsequently mandated" merely describes an additional circumstance in which the state will reimburse costs, provided the claimant meets other requirements. Since the September 1977 Executive Order falls outside the January 1, 1978, limit set by section 2207.5, section 2234 does not provide for reimbursement to LBUSD.

III. The Award

The full text of the award as provided by the judgment is set forth in an appendix to this opinion. In part, the judgment states that there are appropriated funds in budgets for the DOE, the Commission, the Reserve for Contingencies or Emergencies, and the Special Fund for Economic Uncertainties, "or similarly designated accounts" which are "reasonably available" to reimburse LBUSD for the state mandated costs it has incurred. (Appendix, pars. 3, 2.) The State Controller is commanded to pay the claims plus interest "at the legal rate" from the described appropriations for fiscal years 1984-1985 through 1987-1988 and "subsequently enacted State Budget Acts." (Appendix, par. 7.) The judgment declares that the deletion of funding for reimbursement of costs incurred in compliance with the Executive Order was invalid and unconstitutional. (Appendix, par. 12.) Finally, the Fines and Forfeiture Funds in the custody of the Auditor-Controller of Los Angeles County are held to be not reasonably available for reimbursement. (Appendix, par. 5.)

A. State Position

(17a) State contends the trial court's award is contrary to California law, asserting that it constitutes an invasion of the province of the Legislature and therefore a judicial usurpation of the republican form of government guaranteed by the United States Constitution, Article IV, section 4.

(18) A court cannot compel the Legislature either to appropriate funds or to pay funds not yet appropriated. (Cal. Const., art. III, § 3; art. XVI, § 7; *Mandel v. Myers* (1981) 29 Cal.3d 531, 540 [174 Cal.Rptr. 841, 629 P.2d 935]; *Carmel Valley Fire Protection Dist. v. State of California*, *supra*, 190 Cal.App.3d at p. 538.) However, no violation of the separation of powers doctrine occurs when a court orders appropriate expenditures from already existing funds. (*Mandel*, at p. 540; *Carmel Valley*, at pp. 539-540.) The test is whether such funds are "reasonably available for the *181 expenditures in question" (*Mandel*, at p. 542; *Carmel Valley*, at pp. 540-541.) Funds are "reasonably available" for reimbursement when the purposes for which those funds were appropriated are "generally related to the nature of costs incurred" (*Carmel Valley*, at p. 541.) There is no requirement that the appropriation specifically refer to the particular expenditure (*Mandel* at pp. 543-544, *Carmel Valley* at pp. 540; *Committee to Defend Reproductive Rights v. Cory* (1982) 132 Cal.App.3d 852, 857-858 [183 Cal.Rptr. 475]), nor must past administrative practice sanction coverage from a particular fund (*Carmel Valley*, at p. 540).

(17b) As previously stated, the trial court found the subject funds were "reasonably available." No party requested a statement of decision, and therefore it is implied that the trial court found all facts necessary to support its judgment. (*Michael U. v. Jamie B.* (1985) 39 Cal.3d 787, 792-793 [218 Cal.Rptr. 39, 705 P.2d 362]; *Homestead Supplies, Inc. v. Executive Life Ins. Co.* (1978) 81 Cal.App.3d 978, 984 [147 Cal.Rptr. 22].) We now examine the record to ascertain whether substantial evidence supports the decision of the trial court.

The Board having approved reimbursement under the Executive Order, reported to the Legislature that "[t]he categories of reimbursable costs include, but are not limited to: (1) voluntary pupil assignment or reassignment programs, (2) magnet schools or centers, (3) transportation of pupils to alternative schools or programs, (5) [*sic*, no item (4)] racially

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isolated minority schools, (6) costs of planning, recruiting, administration and/or evaluation, and (7) overhead costs." The guidelines set out comprehensive steps to be taken by school districts in order to be in compliance with the Executive Order.

The peremptory writ of mandate, issued the same date as the judgment, designated funds in specific account numbers and, in addition, a special fund as available for reimbursement. We take judicial notice of the relevant budget enactments and Government Code sections 16418 and 16419 (Evid. Code, §§ 459, subd. (a), 452) and address these designations seriatim.

The line item account numbers for the DOE for fiscal years 1984-1985 through 1987-1988 set forth in the writ are as follows: 6100-001-001, 6100-001-178, 6100-015-001, 6100-101-001, 6100-114-001, 6100-115-001, 6100-121-001, 6100-156-001, 6100-171-178, 6100-206-001, 6100-226-001.

An examination of the relevant budget acts Statutes 1985, chapter 111; Statutes 1986, chapter 186; Statutes 1987, chapter 135; and final budgetary changes as published by the Department of Finance for each year, shows *182 that appropriations in the 11 DOE line item account numbers have supported a very broad range of activities including reimbursement of costs for both mandated and voluntary integration programs, assessment programs, child nutrition, meals for needy pupils, participation in educational commissions, administration costs of various programs, proposal review, teacher recruitment, analysis of cost data, school bus driver instructor training, shipping costs for instructional materials, local assistance for school district transportation aid, summer school programs, local assistance to districts with high concentrations of limited- and non-English-speaking children, adult education, driver training, Urban Impact Aid, and cost of living increases for specific programs. Further evidence regarding the uses of these funds is found in the deposition testimony of William C. Pieper, Deputy Superintendent for Administration with the

State Department of Education, who stated that local school districts were being reimbursed for the costs of desegregation programs from line item account numbers 6100-114-001 and 6100-115-001 in the 1986 State Budget Act.

Comparing the requirements of the Executive Order and guidelines with the broad range of activities supported by the DOE budget, we conclude that the subject funds, although not specifically appropriated for the reimbursement in question, were generally related to the nature of the costs incurred.

With regard to the Commission, the writ sets out three line item account numbers: 8885-001-001; 8885-101-001; and 8885-101-214. A review of the relevant budget acts shows that the first line item provides funding for support of the Commission, and line item number 8885-101-001 provides funding specifically for local assistance "in accordance with the provisions of Section 6 of Article XIII B of the California Constitution" (Stats. 1986, ch. 186.) Line item number 8885-101-214 also provides funds for "local assistance." Since the Commission was created specifically to effect reimbursements for qualifying claims, we conclude there is a general relationship between the purpose of the appropriations and the requirements of the Executive Order.

Line item 9840-001-001 of the Reserve for Contingencies or Emergencies defines "contingencies" as "proposed expenditures arising from unexpected conditions or losses for which no appropriation, or insufficient appropriation, has been made by law and which, in the judgment of the Director of Finance, constitute cases of actual necessity." (All relevant budget acts.) In the instant case, previous to the issuance of the Executive Order, LBUSD could not have anticipated the expenditures necessary to bring it into compliance. Further, the Legislature refused to appropriate the necessary funds *183 to directly reimburse the district for these expenditures. The necessity exists by virtue of the writ and judgment issued by the trial court. Therefore, this line item, and three others

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which also support the reserve (9840-001-494, 9840-001-988, 9840-011-001) are generally related to the costs. ^{FN16}

FN16 The costs do not come within past or current definitions of "emergency," which are, respectively, as follows. "[P]roposed expenditures arising from unexpected conditions or losses for which no appropriation, or insufficient appropriation, has been made by law and which in the judgment of the Director of Finance require immediate action to avert undesirable consequences or to preserve the public peace, health or safety." (Fiscal years 1984-1985, 1985-1986.) "[E]xpenditure incurred in response to conditions of disaster or extreme peril which threaten the health or safety of persons or property within the state." (Fiscal years 1986-1987 forward.)

Finally the writ lists as sources of reimbursement the Special Fund for Economic Uncertainties "or similarly designated accounts" An examination of Government Code sections 16418 and 16419 relating to the special fund shows only one use of this reserve: establishment of the Disaster Relief Fund "for purposes of funding disbursements made for response to and recovery from the earthquake, aftershocks, and any other related casualty." No evidence in the record indicates a general relationship between this purpose and the costs incurred by LBUSD. We conclude, therefore, that this source of funding cannot be used for reimbursement. This source is stricken from the judgment.

The description of further sources of funding as "similarly designated accounts" fails to sufficiently identify these sources and we therefore strike this part of the judgment.

In a supplemental brief, LBUSD requests this court to take judicial notice of the Budget Acts of 1988-1989 (Stats. 1988, ch. 313) and 1989-1990 (Stats. 1989, ch. 93) pursuant to the Evidence Code (Evid. Code, §§ 451, subd. (a), 452, subd. (a), 452,

subd. (c), 459) and to order that the amounts set forth in the judgment and writ be satisfied from specific line item accounts in these later budgets and from the Special Fund for Economic Uncertainties. ^{FN17}

FN17 LBUSD identifies the line items accounts as follows: DOE-6110-001-001, 6110-001-178, 6110-015-001, 6110-101-001, 6110-114-001, 6110-115-001, 6110-121-001, 6110-156-001, 6110-171-178, 6110-226-001, 6110-230-001; Commission-8885-001-001, 8885-101-001, 8885-101-214; Reserve for Contingencies or Emergencies-9840-001-001, 9840-001-494, 9840-001-988, 9840-011-001.

(19) "An appellate court is empowered to add a directive that the trial court order be modified to include charging orders against funds appropriated by subsequent budget acts. [Citation.]" (*Carmel Valley*, *supra*; 190 Cal.App.3d at p. 557.) (17c) We have reviewed the designated budget acts and conclude that the specified line item accounts for DOE, the Commission, *184 and the Reserve for Contingencies and Emergencies provide funds for a broad range of activities similar to those set out above and therefore are generally related to the nature of the costs incurred. However, for the reasons previously discussed, we decline to designate the Special Fund for Economic Uncertainties as a source for reimbursement.

While we have concluded that certain line item accounts are generally related to the nature of the costs incurred, there must also be evidence that at the time of the order the enumerated budget items contained sufficient funds to cover the award. (Gov. Code, § 12440; *Mandel v. Myers*, *supra*, 29 Cal.3d at p. 543; *Carmel Valley*, *supra*, 190 Cal.App.3d at p. 541; cf. *Baggett v. Dunn* (1886) 69 Cal. 75, 78 [10 P. 125]; *Marshall v. Dunn* (1886) 69 Cal. 223, 225 [10 P. 399].) The record before us contains evidence regarding balances at various points in

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time for some of the line item accounts, but that evidence is primarily in the form of uninterpreted statistical data. We have not found a clear statement which would satisfy this requirement. Furthermore, not every line item was in existence every fiscal year. In addition, those which entered the budgetary process did not always survive it unscathed. Therefore, we remand the matter to the trial court to determine with regard to the line item account numbers approved above whether funds sufficient to satisfy the award were available at the time of the order. (Cf. *County of Sacramento v. Loeb* (1984) 160 Cal.App.3d 446, 454-455 [206 Cal.Rptr. 626].) If the trial court determines that the unexhausted funds remaining in the specified appropriations are insufficient, the trial court order can be further amended to reach subsequent appropriated funds. (*County of Sacramento* at p. 457; *Serrano v. Priest* (1982) 131 Cal.App.3d 188, 198 [182 Cal.Rptr. 387].)

(20) Having concluded that certain appropriations are generally available to reimburse LBUSD, we turn to an additional issue raised by State: that the "finding" by the Legislature that the Executive Order does not impose a "state-mandated local program" prevents reimbursement.

Unsupported legislative disclaimers are insufficient to defeat reimbursement. (*Carmel Valley, supra*, 190 Cal.App.3d at pp. 541-544.) As discussed, LBUSD, pursuant to Section 6, has a constitutional right to reimbursement of its costs in providing an increased service mandated by the state. The Legislature cannot limit a constitutional right. (*Hale v. Bohannon* (1952) 38 Cal.2d 458, 471 [241 P.2d 4].)

B. DOE Contentions

DOE is sympathetic to LBUSD's position. On appeal, it takes no stand on the issue whether the Executive Order constitutes a state mandate within *185 the meaning of Section 6. (21) The thrust of its appeal is that, if there is a mandate, the DOE budget is an inappropriate source of funding in comparison with other budget line item accounts in-

cluded in the order.

We conclude to the contrary because logic dictates that DOE funding be the initial and primary source for reimbursement. As discussed, the test set forth in *Mandel and Carmel Valley* is whether there is a general relationship between budget items and reimbursable expenditures. Since the Executive Order was issued by DOE, it is not surprising that the evidence overwhelmingly supports the finding of the trial court that this general relationship exists with regard to the DOE budget.

While we also have concluded that certain line item accounts for entities other than DOE are also appropriate sources of funding, the record does not provide the statistical data necessary to determine how far the order will reach with regard to these additional sources of support.

DOE also contends that reimbursement for expenditures in fiscal years 1977-1978, 1978-1979, and 1979-1980 cannot be awarded under Section 6 because the amendment was not effective until July 1, 1980. As discussed, this argument has been previously rejected. (*Carmel Valley Fire Protection Dist. v. State of California, supra*, 190 Cal.App.3d at pp. 547-548; *City of Sacramento v. State of California, supra*, 156 Cal.App.3d 182, 191-194, disapproved on other grounds in *County of Los Angeles v. State of California, supra*, 43 Cal.3d 46, 58, fn. 10.)

(22) Finally, DOE contends that interest should have been awarded at the rate of 6 percent per annum pursuant to Government Code section 926.10 rather than at the legal rate provided under article XV, section 1, paragraph (2) of the California Constitution.

Government Code section 926.10 is part of the California Tort Claims Act (Gov. Code, § 900 et seq.) which provides a statutory scheme for the filing of claims against public entities for alleged injuries; it makes no provision for claims for reimbursement for state mandated expenditures. In *Car-*

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mel Valley a judgment awarding interest at the legal rate was affirmed. (*Carmel Valley Fire Protection Dist. v. State of California, supra*, 190 Cal.App.3d at p. 553.) We decline the invitation of DOE to apply another rule.

C. Cross Appeal of LBUSD

(23) LBUSD seeks reversal of that part of the judgment holding that monies in the Fines and Forfeitures Funds in the custody and possession of *186 cross-respondent Auditor-Controller of the County of Los Angeles (County Controller) for transfer to the state treasury are not reasonably available for reimbursement of its state mandated expenditures. ^{FN18}

FN18 In its first amended petition, LBUSD listed the following code sections as appropriate sources of reimbursement: " Penal Code Sections 1463.02, 1463.03, 1403.5A and 1464; Government Code Sections 13967, 26822.3 and 72056; Health and Safety Code Section 11502; and Vehicle Code Sections 1660.7, 42003, and 41103.5."

As previously stated, funds are "reasonably available" when the purposes for which those funds were appropriated are generally related to the nature of the costs incurred. (*Carmel Valley, supra*, 190 Cal.App.3d at pp. 540-541.) LBUSD does not cite, nor have we found, any evidence in the record showing the use of those funds once they are transmitted to the state and that those funds are then "reasonably available" to satisfy the Claim. We cannot conclude as a matter of law that a general relationship exists between those funds and the nature of the costs incurred pursuant to the Executive Order. LBUSD has failed to carry its burden of proof and the trial court correctly decided these funds were not "reasonably available" for reimbursement.

Nor have we concluded that there is any ground on which the funds could be made available to LBUSD while in the possession of the county

Auditor-Controller. The instant case differs from *Carmel Valley* wherein we affirmed an order which authorized a county to satisfy its claims against the state by offsetting fines and forfeitures it held which were due the state. The *Carmel Valley, supra*, 190 Cal.App.3d 521, holding was based on the right of offset as "a long-established principle of equity." (*Id.* at p. 550.) That is a different standard than the standard of "generally related to the nature of costs incurred." In the case at bar there is no set-off relationship between county and LBUSD.

Disposition

We conclude that because the doctrines of collateral estoppel and waiver are inapplicable to the facts of this case, the trial court should have allowed State to challenge the decisions of the Board. However, we also determine, as a question of law, that the Executive Order requires local school boards to provide a higher level of service than is required constitutionally or by case law and that the Executive Order is a reimbursable state mandate pursuant to article XIII B, section 6 of the California Constitution. Former Revenue and Tax Code section 2234 does not provide reimbursement of the subject claim. *187

Based on uncontradicted evidence, we modify the decision of the trial court by striking as sources of reimbursement the Special Fund for Economic Uncertainties "or similarly designated accounts." We also modify the judgment to include charging orders against certain funds appropriated through subsequent budget acts.

We affirm the decision of the trial court that the Fines and Forfeitures Funds are not "reasonably available" to satisfy the Claim.

Finally, we remand the matter to the trial court to determine whether at the time of its order, unexpended, unencumbered funds sufficient to satisfy the judgment remained in the approved budget line item account numbers. The trial court is also directed to determine this same issue with respect to the charging order.

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The judgment is affirmed as modified. Each party is to bear its own costs on appeal.

Ashby, J., and Boren, J., concurred.

Appellants' petitions for review by the Supreme Court were denied February 28, 1991. Lucas, C. J., did not participate therein. *188

Appendix

The superior court judgment provides in pertinent part: "It Is Ordered, Adjudged and Decreed That: "1. The requirements contained in Title 5, California Administrative Code, Sections 90-101 constitute a reimbursable State-mandate which cannot be challenged by State Respondents or Respondent DOE because of the doctrines of administrative collateral estoppel and waiver.

"2. There are appropriated funds from specified line items in the 1984, 1985, 1986 and 1987 budgets which are 'reasonably available' to reimburse Petitioner for State-mandated costs it has occurred [*sic*] as a result of its compliance with the requirements of Title 5, California Administrative Code, Sections 90-101.

"3. The funds appropriated by the Legislature for:

"(a) the support of the Department of Education, including, but not limited, to the Department's General Fund;

"(b) the Commission on State Mandates, including, but not limited to the State Mandates Claim Fund; and

"(c) the 'Reserve for Contingencies or Emergencies', 'Special Fund for Economic Uncertainties' or similarly designated accounts, are 'reasonably available' and may properly be and should be encumbered and expended for the reimbursement of State-mandated costs in the amount of \$28,014,869.00, plus applicable interest, as incurred by Petitioner and as computed by Petitioner in compliance with Parameters and Guidelines adopted by the State Board of Control.

"4. The law in effect at the time that Petitioner's claim was processed provided for the computation of a specific claim amount for specific fiscal years based on Parameters and Guidelines, or claiming instructions, adopted in April 1984 and a Statewide Cost Estimate adopted on August 23, 1984, both of which are administrative actions of the State Board of Control which have not been challenged by State Respondents. The computations made pursuant to the Parameters and Guidelines and Statewide Cost Estimate are specific and ascertainable and subject to audit by the State Controller under Government Code section 17558.

"5. The Court decrees that State funds entitled the 'Fines and Forfeitures Funds' under the custody and control of Respondent Bloodgood, are not reasonably available for satisfaction of Petitioner's claim for reimbursement of State-mandated costs.

"6. A peremptory writ of mandamus shall issue under the seal of this Court, commanding State Respondents and Respondent Doe to comply with Article XIII B, Section 6 of the California Constitution and Government Code Section 17565 and reimburse petitioner for:

"(a) State-mandated costs in the amount of \$24,164,593.00, incurred as a result of its compliance with the requirements of Title 5, California Administrative Code, Sections 90-101 during fiscal years 1977-78 through 1982-1983, plus interest at the legal rate from September 28, 1985; and

"(b) State-mandated costs in the amount of \$3,850,276.00, incurred as a result of Petitioner's compliance with the requirements of Title 5, California Administrative Code, Sections 90-101 during fiscal years 1983-84 and 1984-85, plus interest at the legal rate from September 28, 1985.

"7. Said peremptory writ shall command Respondent Gray Davis, State Controller, or his successor-in-interest, to pay the claims of Petitioner, plus interest at the legal rate from *189 September 28, 1985 from the appropriations in the State

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Budget Acts for the 1984-85, 1985-86, 1986-87 and 1987-88 fiscal years, and the subsequently enacted State Budget Acts, which include, or will include appropriations for:

“(a) the support of the Department of Education, including, but not limited to the Department's General Fund;

“(b) the Commission on State Mandates, including, but not limited to the State Mandates Claim Fund; and

“(c) the 'Reserve for Contingencies or Emergencies', Special Fund for Economic Uncertainties' or similarly designated accounts, which are 'reasonably available' to be encumbered and expended for the reimbursement of State-mandated costs incurred by Petitioner and further shall compel Elizabeth Whitney, Acting State Treasurer, or her successor-in-interest, to make payments on the warrants drawn by Respondent Gray Davis, State Controller upon their presentation for payment by Petitioner without offset or attempt to offset against other monies due and owing Petitioner until Petitioner is reimbursed for all such costs.

“8. Said Peremptory Writ of Mandate also shall command Respondent Jesse R. Huff, Director of the State Department of Finance, to perform such actions as may be necessary to effect reimbursement required by other portions of this Judgment, including but not limited to, those actions specified in Chapter 135, Statutes of 1987, Section 2.00, pp. 549-553, or with respect to the Special Fund for Economic Uncertainties.

“9. Pending the final disposition of this proceeding, State Respondents and Respondent DOE, and each of them, their successors in office, agents, servants and employees and all persons acting in concert or participation with them, are hereby enjoined or restrained from directly or indirectly expending from the appropriations described in Paragraph No. 7 hereinabove any sums greater than that which would leave in said appropriations at the

conclusion of the respective fiscal years an amount less than the reimbursement amounts claimed by Petitioner together with interest at the legal rate through payment of said reimbursement amount. Said amounts are hereinafter referred to collectively as the 'reimbursement award sum'.

“10. Pending the final disposition of this proceeding State Respondents and Respondent DOE, and each of them, their successors in office, agents, servants and employees, and all persons acting in concert or participation with them, are hereby enjoined and restrained from directly or indirectly causing to revert the reimbursement award sum from the appropriations described in Paragraph No. 7 hereinabove to the general funds of the State of California and from otherwise dissipating the reimbursement award sum in a manner that would make it unavailable to satisfy this Court's judgment.

“11. The State Respondents and Respondent Doe have a continuing obligation to reimburse Petitioner for costs incurred in compliance with the requirements contained in Title 5, California Administrative Code, Section 90-101 in the fiscal years subsequent to its [*sic*] claims for expenditures in fiscal years 1977-78 through 1984-85 as set forth in the First Amended Petition, as amended, and the accompanying Motion For the Issuance Of A Writ Of Mandate.

“12. The deletion of funding for reimbursement of State-mandated costs incurred in compliance with Title 5, California Administrative Code, Sections 90-101 from Chapter 1175, Statutes of 1985 was invalid and unconstitutional.

“13. Respondent Gray Davis, State Controller, shall retain the right to audit the claims and records of the Petitioner pursuant to Government Code Section 17561(d) to verify the actual dollar amount of the reimbursement award sum.

“14. The Court reserves and retains jurisdiction to effect any appropriate remedy at law or equity which may be necessary to enforce its judgment or

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order. *190

"15. Petitioner shall recover from State Respondents and Respondent DOE costs in this proceeding in the amount of 1,863.54.

"Dated: 3-2, 1988"/s/ Weil

"Robert I. Weil

"Judge of The Superior Court" *191

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END OF DOCUMENT

ATTACHMENT 30

Westlaw

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(Cite as: 11 Cal.App.4th 1564)

▷

THOMAS WILLIAM HAYES, as Director, etc.,
Plaintiff and Respondent,

v.

COMMISSION ON STATE MANDATES, Defendant,
Cross-defendant, and Respondent; DALE S.
HOLMES, as Superintendent, etc., Real Party in Interest,
Cross-complainant and Appellant; WILLIAM CIRONE,
as Superintendent, etc., Real Party in Interest and Respondent;
STATE OF CALIFORNIA et al., Cross-defendants and Respondents.

No. C009519.

Court of Appeal, Third District, California.
Dec 30, 1992.

SUMMARY

Two school districts filed claims with the State Board of Control for state reimbursement of alleged state-mandated costs incurred in connection with special education programs. The board determined that the costs were state mandated and subject to reimbursement by the state. In a mandamus proceeding, the trial court entered a judgment by which it issued a writ of administrative mandate directing the Commission on State Mandates (the successor to the board) to set aside the board's administrative decision and to reconsider the matter in light of an intervening decision by the California Supreme Court, and by which it denied the petition of one of the school districts for a writ of mandate that would have directed the State Controller to issue a warrant in payment of the district's claim. (Superior Court of Sacramento County, No. 352795, Eugene T. Gualco, Judge.)

The Court of Appeal affirmed. It held that the 1975 amendments to the federal Education of the Handicapped Act (20 U.S.C. § 1401 et seq.) constituted a federal mandate with respect to the state. However, even though the state had no real choice in deciding whether to comply with the act, the act did not necessarily require the state to impose all of

the costs of implementation upon local school districts. The court held that to the extent the state implemented the act by freely choosing to impose new programs or higher levels of service upon local school districts, the costs of such programs or higher levels of service are state-mandated and subject to subvention under Cal. Const., art. XIII B, § 6. Thus, on remand to the commission, the court held, the commission was required to focus on the costs incurred by local school districts and on whether those costs were imposed by federal mandate or by the state's voluntary choice in its implementation of the federal program. (Opinion by Sparks, Acting P. J., with Davis and Scotland, JJ., concurring.)

HEADNOTES

Classified to California Digest of Official Reports
(1) State of California § 11--Fiscal Matters--Reimbursement to Local Governments--State-mandated Costs:Words, Phrases, and Maxims--Subvention.

"Subvention" generally means a grant of financial aid or assistance, or a subsidy. The constitutional rule of state subvention provides that the state is required to pay for any new governmental programs, or for higher levels of service under existing programs, that it imposes upon local governmental agencies. This does not mean that the state is required to reimburse local agencies for any incidental cost that may result from the enactment of a state law; rather, the subvention requirement is restricted to governmental services that the local agency is required by state law to provide to its residents. The subvention requirement is intended to prevent the state from transferring the costs of government from itself to local agencies. Reimbursement is required when the state freely chooses to impose on local agencies any peculiarly governmental cost which they were not previously required to absorb.

[See Cal.Jur.3d, State of California, § 78; 9 Witkin, Summary of Cal. Law (9th ed. 1989) Taxation, §§ 123, 124.]

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(2) Schools § 4--School Districts--Relationship to State.

A school district's relationship to the state is different from that of local governmental entities such as cities, counties, and special districts. Education and the operation of the public school system are matters of statewide rather than local or municipal concern. Local school districts are agencies of the state and have been described as quasi-municipal corporations. They are not distinct and independent bodies politic. The Legislature's power over the public school system is exclusive, plenary, absolute, entire, and comprehensive, subject only to constitutional constraints. The Legislature has the power to create, abolish, divide, merge, or alter the boundaries of school districts. The state is the beneficial owner of all school properties, and local districts hold title as trustee for the state. School moneys belong to the state, and the apportionment of funds to a school district does not give the district a proprietary interest in the funds. While the Legislature has chosen to encourage local responsibility for control of public education through local school districts, that is a matter of legislative choice rather than constitutional compulsion, and the authority that the Legislature has given to local districts remains subject to the ultimate and nondelegable responsibility of the Legislature.

(3) Property Taxes § 7.8--Real Property Tax Limitation--Exemptions and Special Taxes--Federally Mandated Costs.

Pursuant to Rev. & Tax. Code, § 2271 (local agency may levy rate in addition to maximum property tax rate to pay costs mandated by federal government that are not funded by federal or state government), costs mandated by the federal government are exempt from an agency's taxing and spending limits.

(4) State of California § 11--Fiscal Matters--Reimbursement to Local Governments--State-mandated Costs--Costs Incurred Before Effective Date of Constitutional Provision.

Since Cal. Const., art. XIII B, requiring sub-

vention for state mandates enacted after Jan. 1, 1975, had an effective date of July 1, 1980, a local agency may seek subvention for costs imposed by legislation after Jan. 1, 1975, but reimbursement is limited to costs incurred after July 1, 1980. Reimbursement for costs incurred before July 1, 1980, must be obtained, if at all, under controlling statutory law.

(5) Schools § 53--Parents and Students--Right or Duty to Attend-- Handicapped Children--Federal Rehabilitation Act--Obligations Imposed on Districts.

Section 504 of the federal Rehabilitation Act of 1973 (29 U.S.C. § 794) does not only obligate local school districts to prevent handicapped children from being excluded from school. States typically purport to guarantee all of their children the opportunity for a basic education. In California, basic education is regarded as a fundamental right. All basic educational programs are essentially affirmative action activities in the sense that educational agencies are required to evaluate and accommodate the educational needs of the children in their districts. Section 504 does not permit local agencies to accommodate the educational needs of some children while ignoring the needs of others due to their handicapped condition. The statute imposes an obligation upon local school districts to take affirmative steps to accommodate the needs of handicapped children.

(6) Schools § 53--Parents and Students--Right or Duty to Attend-- Handicapped Children--Education of the Handicapped Act.

The federal Education of the Handicapped Act (20 U.S.C. § 1401 et seq.), which since its 1975 amendment has required recipient states to demonstrate a policy that assures all handicapped children the right to a free appropriate education, is not merely a funding statute; rather, it establishes an enforceable substantive right to a free appropriate public education in recipient states. Congress intended the act to establish a basic floor of opportunity that would bring into compliance all school districts

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with the constitutional right to equal protection with respect to handicapped children. It is also apparent that Congress intended to achieve nationwide application.

(7) Civil Rights §
6--Education--Handicapped--Scope of Federal Statute.

Congress intended the Education of the Handicapped Act (20 U.S.C. § 1401 et seq.) to serve as a means by which state and local educational agencies could fulfill their obligations under the equal protection and due process provisions of the Constitution and under section 504 of the Rehabilitation Act of 1973 (29 U.S.C. § 794). Accordingly, where it is applicable, the act supersedes claims under the Civil Rights Act (42 U.S.C. § 1983) and section 504, and the administrative remedies provided by the act constitute the exclusive remedy of handicapped children and their parents or other representatives. As a result of the exclusive nature of the Education of the Handicapped Act, dissatisfied parties in recipient states must exhaust their administrative remedies under the act before resorting to judicial intervention.

(8a, 8b) State of California § 11--Fiscal Matters--Reimbursement to Local Governments--State-mandated Costs--Special Education:Schools § 4--School Districts; Financing; Funds--Special Education Costs--Reimbursement by State.

The 1975 amendments to the federal Education of the Handicapped Act (20 U.S.C. § 1401 et seq.) constituted a federal mandate with respect to the state. However, even though the state had no real choice in deciding whether to comply with the act, the act did not necessarily require the state to impose all of the costs of implementation upon local school districts. To the extent the state implemented the act by freely choosing to impose new programs or higher levels of service upon local school districts, the costs of such programs or higher levels of service are state mandated and subject to subvention under Cal. Const., art. XIII B, § 6. Thus, on remand of a proceeding by school districts to the

Commission on State Mandates for consideration of whether special education programs constituted new programs or higher levels of service mandated by the state entitling the districts to reimbursement, the commission was required to focus on the costs incurred by local school districts and whether those costs were imposed by federal mandate or by the state's voluntary choice in its implementation of the federal program.

(9) State of California § 11--Fiscal Matters--Reimbursement to Local Governments--Federally Mandated Costs.

The constitutional subvention provision (Cal. Const., art. XIII B, § 6) 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. Rather, that conclusion follows from the plain language of the subvention provisions themselves. The constitutional provision requires state subvention when "the Legislature or any State agency mandates a new program or higher level of service" on local agencies. Likewise, the earlier statutory provisions required subvention for new programs or higher levels of service mandated by legislative act or executive regulation. When the federal government imposes costs on local agencies, those costs are not mandated by the state and thus would not require a state subvention. Instead, such costs are exempt from local agencies' taxing and spending limitations. This should be true even though the state has adopted an implementing statute or regulation pursuant to the federal mandate, so long as the state had no "true choice" in the manner of implementation of the federal mandate.

(10) Statutes §
28--Construction--Language--Consistency of Meaning Throughout Statute.

As a general rule and unless the context clearly requires otherwise, it must be assumed that the meaning of a term or phrase is consistent throughout the entire act or constitutional article of which it is a part.

(11) State of California § 11--Fiscal Matters--

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-Reimbursement to Local Governments--Federally Mandated Costs--Subvention.

Subvention principles are part of a more comprehensive political scheme. The basic purpose of the scheme as a whole was to limit the taxing and spending powers of government. The taxing and spending powers of local agencies were to be "frozen" at existing levels with adjustments only for inflation and population growth. Since local agencies are subject to having costs imposed upon them by other governmental entities, the scheme provides relief in that event. If the costs are imposed by the federal government or the courts, then the costs are not included in the local government's taxing and spending limitations. If the costs are imposed by the state, then the state must provide a subvention to reimburse the local agency. Nothing in the scheme suggests that the concept of a federal mandate should have different meanings depending upon whether one is considering subvention or taxing and spending limitations. Thus, the criteria set forth in a California Supreme Court case concerning whether costs mandated by the federal government are exempt from an agency's taxing and spending limits are applicable when subvention is the issue.

(12) State of California § 11--Fiscal Matters--Reimbursement to Local Governments--State-mandated Costs--Special Education--Applicable Criteria in Determining Whether Subvention Required.

In a proceeding for a writ of mandate to direct the Commission on State Mandates to set aside an administrative decision by the State Board of Control (the commission's predecessor), in which the board found that all local special education costs were state mandated and thus subject to state reimbursement, the trial court did not err in determining that the board failed to consider the issues under the appropriate criteria as set forth in a California Supreme Court case concerning whether costs mandated by the federal government are exempt from an agency's taxing and spending limits. The board relied upon the "cooperative federalism" nature of

the Education of the Handicapped Act (20 U.S.C. § 1401 et seq.) without any consideration of whether the act left the state any actual choice in the matter. It also relied on litigation involving another state. However, under the criteria set forth in the Supreme Court's case, the litigation in the other state did not support the board's decision but in fact strongly supported a contrary result.

(13) Courts § 34--Decisions and Orders--Prospective and Retroactive Decisions--Opinion Elucidating Existing Law.

In a California Supreme Court case concerning whether costs mandated by the federal government are exempt from an agency's taxing and spending limits, the court elucidated and enforced existing law. Under such circumstances, the rule of retrospective operation controls. Thus, in a proceeding for a writ of mandate to direct the Commission on State Mandates to set aside an administrative decision by the State Board of Control (the commission's predecessor), in which the board found that all local special education costs were state mandated and thus subject to state reimbursement, the trial court correctly applied the Supreme Court decision to the litigation pending before it.

COUNSEL

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No appearance for Real Party in Interest and Respondent.

Daniel E. Lungren, Attorney General, N. Eugene Hill, Assistant Attorney General, Cathy Christian and Marsha A. Bedwell, Deputy Attorneys General, and Daniel G. Stone for Plaintiff and Respondent.

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Richard J. Chivaro and Patricia A. Cruz for Cross-defendants and Respondents.

SPARKS, Acting P. J.

This appeal involves a decade-long battle over claims for subvention by two county superintendents of schools for reimbursement for mandated special education programs. Section 6 of article XIII B of the California Constitution directs, with exceptions not relevant here, that "[w]henver 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, ..." The issue on appeal is whether the special education programs in question constituted new programs or higher levels of service mandated by the state entitling the school districts to reimbursement under section 6 of article XIII B of the California Constitution and related statutes for the cost of implementing them or whether these programs were instead mandated by the federal government for which no reimbursement is due.

The Santa Barbara County Superintendent of Schools and the Riverside County Superintendent of Schools each filed claims with the Board of Control for state reimbursement for alleged state-mandated costs incurred in connection with special education programs. After a lengthy administrative process, the Board of Control rendered a decision finding that all local special education costs were state mandated and subject to state reimbursement. That decision was then successfully challenged in the Sacramento County Superior Court. The superior court entered a judgment by which it: (1) issued a writ of administrative mandate (Code Civ. Proc., § 1094.5), directing the Commission on State Mandates (the successor to the Board of *1571 Control) to set aside the administrative decision and to reconsider the matter in light of the California Supreme Court's intervening decision in *City of Sacramento v. State of California* (1990) 50 Cal.3d 51 [266 Cal.Rptr. 139, 785 P.2d 522]; and (2) denied

the Riverside County Superintendent of School's petition for a writ of mandate (Code Civ. Proc., § 1085), which would have directed the State Controller to issue a warrant in payment of the claim. The Riverside County Superintendent of Public Schools appeals. We shall clarify the criteria to be applied by the Commission on State Mandates on remand and affirm the judgment.

I. The Parties

This action was commenced in July 1987 by Jesse R. Huff, then the Director of the California Department of Finance. Huff petitioned for a writ of administrative mandate to set aside the administrative decision which found all the special education costs to be state mandated. On appeal Huff appears as a respondent urging that we affirm the judgment.

The Commission on State Mandates (the Commission) is the administrative agency which now has jurisdiction over local agency claims for reimbursement for state-mandated costs. (Gov. Code, § 17525.) In this respect the Commission is the successor to the Board of Control. The Board of Control rendered the administrative decision which is at issue here. Since an appropriation for payment of these claims was not included in a local government claims bill before January 1, 1985, administrative jurisdiction over the claims has been transferred from the Board of Control to the Commission. (Gov. Code, § 17630.) The Commission is the named defendant in the petition for a writ of administrative mandate. In the trial court and on appeal the Commission has appeared as the agency having administrative jurisdiction over the claims, but has not expressed a position on the merits of the litigation.

The Santa Barbara County Superintendent of Schools (hereafter Santa Barbara) is a claimant for state reimbursement of special education costs incurred in the 1979-1980 fiscal year. Santa Barbara is a real party in interest in the proceeding for administrative mandate. Santa Barbara has not appealed from the judgment of the superior court and,

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although a nominal respondent on appeal, has not filed a brief in this court.

The Riverside County Superintendent of Schools (hereafter Riverside) represents a consortium of school districts which joined together to provide special education programs to handicapped students. Riverside seeks reimbursement for special education costs incurred in the 1980-1981 fiscal year. *1572 Riverside is a real party in interest in the proceeding for writ of administrative mandate. It filed a cross-petition for a writ of mandate directing the Controller to pay its claim. Riverside is the appellant in this appeal.

The State of California and the State Treasurer are named cross-defendants in Riverside's cross-petition for a writ of mandate. They joined with Huff in this litigation. The State Controller is the officer charged with drawing warrants for the payment of moneys from the State Treasury upon a lawful appropriation. (Cal. Const., art. XVI, § 7.) The State Controller is a named defendant in Riverside's petition for a writ of mandate. In the trial court and on appeal the State Controller expresses no opinion on the merits of Riverside's reimbursement claim, but asserts that the courts lack authority to compel him to issue a warrant for payment of the claim in the absence of an appropriation for payment of the claim.

In addition to the briefing by the parties on appeal, we have permitted a joint amici curiae brief to be filed in support of Riverside by the Monterey County Office of Education, the Monterey County Office of Education Special Education Local Planning Area, and 21 local school districts.

II. *Factual and Procedural Background*

The Legislature has provided an administrative remedy for the resolution of local agency claims for reimbursement for state mandates. In *County of Contra Costa v. State of California* (1986) 177 Cal.App.3d 62 [222 Cal.Rptr. 750], at pages 71 and 72, we described these procedures as follows (with footnotes deleted): " Section 2250 [Revenue &

Taxation Code] and those following it provide a hearing procedure for the determination of claims by local governments. The State Board of Control is required to hear and determine such claims. (§ 2250.) For purposes of such hearings the board consists of the members of the Board of Control provided for in part 4 (commencing with § 13900) of division 3 of title 2 of the Government Code, together with two local government officials appointed by the Governor. (§ 2251.) The board was required to adopt procedures for receiving and hearing such claims. (§ 2252.) The first claim filed with respect to a statute or regulation is considered a 'test claim' or a 'claim of first impression.' (§ 2218, subd. (a).) The procedure requires an evidentiary hearing where the claimant, the Department of Finance, and any affected department or agency can present evidence. (§ 2252.) If the board determines that costs are mandated, then it must adopt parameters and guidelines for the reimbursement of such claims. (§ 2253.2.) The claimant or the state is entitled to commence an action in administrative mandate pursuant to Code of Civil Procedure section 1094.5 to set aside a decision of the board on the grounds that the board's decision is not supported by substantial evidence. (§ 2253.5.) *1573

"At least twice each calendar year the board is required to report to the Legislature on the number of mandates it has found and the estimated statewide costs of these mandates. (§ 2255, subd. (a).) In addition to the estimate of the statewide costs for each mandate, the report must also contain the reasons for recommending reimbursement. (§ 2255, subd. (a).) Immediately upon receipt of the report a local government claims bill shall be introduced in the Legislature which, when introduced, must contain an appropriation sufficient to pay for the estimated costs of the mandates. (§ 2255, subd. (a).) In the event the Legislature deletes funding for a mandate from the local government claims bill, then it may take one of the following courses of action: (1) include a finding that the legislation or regulation does not contain a mandate; (2) include a finding that the mandate is not reimbursable; (3)

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find that a regulation contains a mandate and direct that the Office of Administrative Law repeal the regulation; (4) include a finding that the legislation or regulation contains a reimbursable mandate and direct that the legislation or regulation not be enforced against local entities until funds become available; (5) include a finding that the Legislature cannot determine whether there is a mandate and direct that the legislation or regulation shall remain in effect and be enforceable unless a court determines that the legislation or regulation contains a reimbursable mandate in which case the effectiveness of the legislation or regulation shall be suspended and it shall not be enforced against a local entity until funding becomes available; or (6) include a finding that the Legislature cannot determine whether there is a reimbursable mandate and that the legislation or regulation shall be suspended and shall not be enforced against a local entity until a court determines whether there is a reimbursable mandate. (§ 2255, subd. (b).) If the Legislature deletes funding for a mandate from a local government claims bill but does not follow one of the above courses of action or if a local entity believes that the action is not consistent with article XIII B of the Constitution, then the local entity may commence a declaratory relief action in the Superior Court of the County of Sacramento to declare the mandate void and enjoin its enforcement. (§ 2255, subd. (c).)

“Effective January 1, 1985, the Legislature has established a new commission to consider and determine claims based upon state mandates. This is known as the Commission on State Mandates and it consists of the Controller, the Treasurer, the Director of Finance, the Director of the Office of Planning and Research, and a public member with experience in public finance, appointed by the Governor and approved by the Senate. (Gov. Code, § 17525.) 'Costs mandated by the state' are defined as 'any increased costs which a local agency or school district is required to incur after July 1, 1980, as a result of any statute enacted after January 1, 1975, or any executive order implementing any statute en-

acted on or after January 1, 1975, which *1574 mandates a new program or higher level of service of an existing program within the meaning of Section 6 of Article XIII B of the California Constitution.' (Gov. Code, § 17514.) The procedures before the Commission are similar to those which were followed before the Board of Control. (Gov. Code, § 17500 et seq.) Any claims which had not been included in a local government claims bill prior to January 1, 1985, were to be transferred to and considered by the commission. (Gov. Code, § 17630; [Rev. & Tax. Code,] § 2239.)”

On October 31, 1980, Santa Barbara filed a test claim with the Board of Control seeking reimbursement for costs incurred in the 1979-1980 fiscal year in connection with the provision of special education services as required by Statutes 1977, chapter 1247, and Statutes 1980, chapter 797. Santa Barbara asserted that these acts should be considered an ongoing requirement of increased levels of service.

Santa Barbara's initial claim was based upon the “mandate contained in the two bills specified above [which require] school districts and county offices to provide full and formal due process procedures and hearings to pupils and parents regarding the special education assessment, placement and the appropriate education of the child.” Santa Barbara asserted that state requirements exceeded those of federal law as reflected in section 504 of the Rehabilitation Act of 1973 (29 U.S.C. § 794).^{FN1} Santa Barbara's initial claim was for \$10,500 in state-mandated costs for the 1979-1980 fiscal year.

FN1 Section 794 of title 29 of the United States Code will of necessity play an important part in our discussion of the issues presented in this case. That provision was enacted as section 504 of the Rehabilitation Act of 1973. (Pub.L. No. 93-112, tit. V, § 504 (Sept. 26, 1973) 87 Stat. 394.) It has been amended several times. (Pub.L. No. 95-602, tit. I, §§ 119, 122(d)(2) (Nov.

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6, 1978) 92 Stat. 2982, 2987 [Rehabilitation, Comprehensive Services, and Developmental Disabilities Act of 1978]; Pub.L. No. 99- 506, tit. I, § 103(d)(2)(B), tit. X, § 1002(e)(4) (Oct. 21, 1986) 100 Stat. 1810, 1844; Pub.L. No. 100-259, § 4 (Mar. 22, 1988) 102 Stat. 29; Pub.L. No. 100-630, tit. II, § 206(d) (Nov. 7, 1988) 102 Stat. 3312.) The decisional authorities universally refer to the statute as "section 504." We will adhere to this nomenclature and subsequent references to section 504 will refer to title 29, United States Code, section 794.

During the administrative proceedings Santa Barbara amended its claim to reflect the following state-mandated activities alleged to be in excess of federal requirements: (1) the extension of eligibility to children younger and older than required by federal law; (2) the establishment of procedures to search for and identify children with special needs; (3) assessment and evaluation; (4) the preparation of "Individual Education Plans" (IEP's); (5) due process hearings in placement determinations; (6) substitute teachers; and (7) staff development programs. Santa Barbara was claiming reimbursement in excess of \$520,000 for the cost of these services during the 1979- 1980 fiscal year. *1575

Also, during the administrative proceedings the focus of federally mandated requirements shifted from section 504 of the Rehabilitation Act to federal Public Law No. 94-142, which amended the Education of the Handicapped Act. (20 U.S.C. § 1401 et seq.)^{FN2}

FN2 The Education of the Handicapped Act was enacted in 1970. (Pub.L. No. 91-230, tit. VI (Apr. 13, 1970) 84 Stat. 175.) It has been amended many times. The amendment of primary interest here was enacted as the Education for All Handicapped Children Act of 1975. (Pub.L. No. 94-142 (Nov. 29, 1975) 89 Stat. 774.) The 1975 legislation significantly amended

the Education of the Handicapped Act, but did not change its short title. The Education of the Handicapped Act has now been renamed the Individuals with Disabilities Education Act. (Pub.L. No. 101-476, tit. IX, § 901(b)(21) (Oct. 30, 1990) 104 Stat. 1143; Pub.L. No. 101-476, tit. IX, § 901b; Pub.L. No. 102-119, § 25(b) (Oct. 7, 1991) 105 Stat. 607.) Since at all times relevant here the federal act was known as the Education of the Handicapped Act, we will adhere to that nomenclature.

The Board of Control adopted a decision denying Santa Barbara's claim. The board concluded that the Education of the Handicapped Act resulted in costs mandated by the federal government, that state special education requirements exceed those of federal law, but that "the resulting mandate is not reimbursable because the Legislature already provides funding for all Special Education Services through an appropriation in the annual Budget Act."

Santa Barbara sought judicial review by petition for a writ of administrative mandate. The superior court found the administrative record and the Board of Control's findings to be inadequate. Judgment was rendered requiring the Board of Control to set aside its decision and to rehear the matter to establish a proper record, including findings. That judgment was not appealed.

On October 30, 1981, Riverside filed a test claim for reimbursement of \$474,477 in special education costs incurred in the 1980-1981 fiscal year. Riverside alleged that the costs were state mandated by chapter 797 of Statutes 1980. The basis of Riverside's claim was Education Code section 56760, a part of the state special education funding formula which, according to Riverside, "mandates a 10% cap on ratio of students served by special education and within that 10% mandates the ratio of students to be served by certain services." Riverside explained that chapter 797 of Statutes 1980 was enacted as urgency legislation effective

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July 28, 1980, and that at that time it was already "locked into" providing special education services to more than 13 percent of its students in accordance with prior state law and funding formulae.^{FN3}

FN3 The 1980 legislation required that a local agency adopt an annual budget plan for special education services. (Ed. Code, § 56200.) Education Code section 56760 provided that in the local budget plan the ratio of students to be served should not exceed 10 percent of total enrollment. However, those proportions could be waived for undue hardship by the Superintendent of Public Instruction. (Ed. Code, §§ 56760, 56761.) In addition, the 1980 legislation included provisions for a gradual transition to the new requirements. (Ed. Code, § 56195 et seq.) The transitional provisions included a guarantee of state funding for 1980-1981 at prior student levels with an inflationary adjustment of 9 percent. (Ed. Code, § 56195.8.) The record indicates that Riverside applied for a waiver of the requirements of Education Code section 56760, but that the waiver request was denied due to a shortage of state funding. It also appears that Riverside did not receive all of the 109 percent funding guarantee under Education Code section 56195.8. In light of the current posture of this appeal we need not and do not consider whether the failure of the state to appropriate sufficient funds to satisfy its obligations under the 1980 legislation can be addressed in a proceeding for the reimbursement of state-mandated costs or must be addressed in some other manner.

The Riverside claim, like Santa Barbara's, evolved over time with increases in the amount of reimbursement sought. Eventually the Board of *1576 Control denied Riverside's claim for the same reasons the Santa Barbara claim was denied.

Riverside sought review by petition for a writ of administrative mandate. In its decision the superior court accepted the board's conclusions that the Education of the Handicapped Act constitutes a federal mandate and that state requirements exceed those of the federal mandate. However, the court disagreed with the board that any appropriation in the state act necessarily satisfies the state's subvention obligation. The court concluded that the Board of Control had failed to consider whether the state had fully reimbursed local districts for the state-mandated costs which were in excess of the federal mandate, and the matter was remanded for consideration of that question. That judgment was not appealed.

On return to the Board of Control, the Santa Barbara claim and the Riverside claim were consolidated. The Board of Control adopted a decision holding that all special education costs under Statutes 1977, chapter 1247, and Statutes 1980, chapter 797, are state-mandated costs subject to subvention. The board reasoned that the federal Education of the Handicapped Act is a discretionary program and that section 504 of the Rehabilitation Act does not require school districts to implement any programs in response to federal law, and therefore special education programs are optional in the absence of a state mandate.

The claimants were directed to draft, and the Board of Control adopted, parameters and guidelines for reimbursement of special education costs. The board submitted a report to the Legislature estimating that the total statewide cost of reimbursement for the 1980-1981 through 1985-1986 fiscal years would be in excess of \$2 billion. Riverside's claim for reimbursement for the 1980-1981 fiscal year was now in excess of \$7 million. Proposed legislation which would have appropriated funds for reimbursement of special education costs during the 1980-1981 through 1985-1986 fiscal years failed to pass in the Legislature. (Sen. Bill No. 1082 (1985-1986 Reg. Sess.)) A separate bill which would have appropriated funds to reimburse

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Riverside *1577 for its 1980-1981 claim also failed to pass. (Sen. Bill No. 238 (1987-1988 Reg. Sess.))

At this point Huff, as Director of the Department of Finance, brought an action in administrative mandate seeking to set aside the decision of the Board of Control. Riverside cross-petitioned for a writ of mandate directing the state, the Controller and the Treasurer to issue a warrant in payment of its claim for the 1980-1981 fiscal year.

The superior court concluded that the Board of Control did not apply the appropriate standard in determining whether any portion of local special education costs are incurred pursuant to a federal mandate. The court found that the definition of a federal mandate set forth by the *Supreme Court in City of Sacramento v. State of California*, *supra*, 50 Cal.3d 51, "marked a departure from the narrower 'no discretion' test" of this court's earlier decision in *City of Sacramento v. State of California* (1984) 156 Cal.App.3d 182 [203 Cal.Rptr. 258]. It further found that the standard set forth in the high court's decision in *City of Sacramento* "is to be applied retroactively." Accordingly, the superior court issued a peremptory writ of mandate directing the Commission on State Mandates to set aside the decision of the Board of Control, to reconsider the claims in light of the decision in *City of Sacramento v. State of California*, *supra*, 50 Cal.3d 51, and "to ascertain whether certain costs arising from Chapter 797/80 and Chapter 1247/77 are federally mandated, and if so, the extent, if any, to which the state-mandated costs exceed the federal mandate." Riverside's cross-petition for a writ of mandate was denied. This appeal followed.

III. Principles of Subvention

(1) "Subvention" generally means a grant of financial aid or assistance, or a subsidy. (See Webster's Third New Internat. Dict. (1971) p. 2281.) As used in connection with state-mandated costs, the basic legal requirements of subvention can be easily stated; it is in the application of the rule that difficulties arise.

Essentially, the constitutional rule of state subvention provides that the state is required to pay for any new governmental programs, or for higher levels of service under existing programs, that it imposes upon local governmental agencies. (*County of Los Angeles v. State of California* (1987) 43 Cal.3d 46, 56 [233 Cal.Rptr. 38, 729 P.2d 202].) This does not mean that the state is required to reimburse local agencies for any incidental cost that may result from the enactment of a state law; rather, the subvention requirement is restricted to governmental services which the local agency is required by *1578 state law to provide to its residents. (*City of Sacramento v. State of California*, *supra*, 50 Cal.3d at p. 70.) The subvention requirement is intended to prevent the state from transferring the costs of government from itself to local agencies. (*Id.* at p. 68.) Reimbursement is required when the state "freely chooses to impose on local agencies any peculiarly 'governmental' cost which they were not previously required to absorb." (*Id.* at p. 70, italics in original.)

The requirement of subvention for state-mandated costs had its genesis in the "Property Tax Relief Act of 1972" which is also known as "SB 90" (Senate Bill No. 90). (*City of Sacramento v. State of California*, *supra*, 156 Cal.App.3d at p. 188.) That act established limitations upon the power of local governments to levy taxes and concomitantly prevented the state from imposing the cost of new programs or higher levels of service upon local governments. (*Ibid.*) The Legislature declared: "It is the intent in establishing the tax rate limits in this chapter to establish limits that will be flexible enough to allow local governments to continue to provide existing programs, that will be firm enough to insure that the property tax relief provided by the Legislature will be long lasting and that will afford the voters in each local government jurisdiction a more active role in the fiscal affairs of such jurisdictions." (Rev. & Tax. Code, former § 2162, Stats. 1972, ch. 1406, § 14.7, p. 2961.)^{FN4} The act provided that the state would pay each county, city and county, city, and special district the sums

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which were sufficient to cover the total cost of new state-mandated costs. (See Rev. & Tax. Code, former § 2164.3, Stats. 1972, ch. 1406, § 14.7, pp. 2962-2963.) New state-mandated costs would arise from legislative action or executive regulation after January 1, 1973, which mandated a new program or higher level of service under an existing mandated program. (*Ibid.*)

FN4 In addition to requiring subventions for new state programs and higher levels of service, Senate Bill No. 90 required the state to reimburse local governments for revenues lost by the repeal or reduction of property taxes on certain classes of property. In this connection the Legislature said: "It is the purpose of this part to provide property tax relief to the citizens of this state, as undue reliance on the property tax to finance various functions of government has resulted in serious detriment to one segment of the taxpaying public. The subventions from the State General Fund required under this part will serve to partially equalize tax burdens among all citizens, and the state as a whole will benefit." (Gov. Code, § 16101, Stats. 1972, ch. 1406, § 5, p. 2953.)

(2)(See fn. 5.) Senate Bill No. 90 did not specifically include school districts in the group of agencies entitled to reimbursement for state-mandated costs. ^{FN5} (Rev. & Tax. Code, former § 2164.3, Stats. 1972, ch. 1406, § 14.7, pp. 2962-2963.) In fact, at that time methods of financing education in this state were *1579 undergoing fundamental reformation as the result of the litigation in *Serrano v. Priest* (1971) 5 Cal.3d 584 [96 Cal.Rptr. 601, 487 P.2d 1241, 41 A.L.R.3d 1187]. At the time of the *Serrano* decision local property taxes were the primary source of school revenue. (*Id.* at p. 592.) In *Serrano*, the California Supreme Court held that education is a fundamental interest, that wealth is a suspect classification, and that an educational system which produces disparities of

opportunity based upon district wealth would violate principles of equal protection. (*Id.* at pp. 614-615, 619.) A major portion of Senate Bill No. 90 constituted new formulae for state and local contributions to education in a legislative response to the decision in *Serrano*. (Stats. 1972, ch. 1406, §§ 1.5-2.74, pp. 2931-2953. See *Serrano v. Priest* (1976) 18 Cal.3d 728, 736- 737 [135 Cal.Rptr. 345, 557 P.2d 929].) ^{FN6}

FN5 A school district's relationship to the state is different from that of local governmental entities such as cities, counties, and special districts. Education and the operation of the public school system are matters of statewide rather than local or municipal concern. (*California Teachers Assn. v. Huff* (1992) 5 Cal.App.4th 1513, 1524 [7 Cal.Rptr.2d 699].) Local school districts are agencies of the state and have been described as quasi-municipal corporations. (*Ibid.*) They are not distinct and independent bodies politic. (*Ibid.*) The Legislature's power over the public school system has been described as exclusive, plenary, absolute, entire, and comprehensive, subject only to constitutional constraints. (*Ibid.*) The Legislature has the power to create, abolish, divide, merge, or alter the boundaries of school districts. (*Id.* at p. 1525.) The state is the beneficial owner of all school properties and local districts hold title as trustee for the state. (*Ibid.*) School moneys belong to the state and the apportionment of funds to a school district does not give the district a proprietary interest in the funds. (*Ibid.*) While the Legislature has chosen to encourage local responsibility for control of public education through local school districts, that is a matter of legislative choice rather than constitutional compulsion and the authority that the Legislature has given to local districts remains subject to the ultimate and nondelegable responsibility of the Legis-

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lature. (*Id.* at pp. 1523-1524.)

FN6 After the first *Serrano* decision, the United States Supreme Court held that equal protection does not require dollar-for-dollar equality between school districts. (*San Antonio School District v. Rodriguez* (1973) 411 U.S. 1, 33-34 48-56, 61-62 [36 L.Ed.2d 16, 42-43, 51-56, 59-60, 93 S.Ct. 1278].) In the second *Serrano* decision, the California Supreme Court adhered to the first *Serrano* decision on independent state grounds. (*Serrano v. Priest*, *supra*, 18 Cal.3d at pp. 761-766.) The court concluded that Senate Bill No. 90 and Assembly Bill No. 1267, enacted the following year (Stats. 1973, ch. 208, p. 529 et seq.), did not satisfy equal protection principles. (*Serrano v. Priest*, *supra*, 18 Cal.3d at pp. 776-777.) Additional complications in educational financing arose as the result of the enactment of article XIII A of the California Constitution at the June 1978 Primary Election (Proposition 13), which limited the taxes which can be imposed on real property and forced the state to assume greater responsibility for financing education (see Ed. Code, § 41060), and the enactment of Propositions 98 and 111 in 1988 and 1990, respectively, which provide formulae for minimum state funding for education. (See generally *California Teachers Assn. v. Huff*, *supra*, 5 Cal.App.4th 1513.)

The provisions of Senate Bill No. 90 were amended and refined in legislation enacted the following year. (Stats. 1973, ch. 358.) Revenue and Taxation Code section 2231, subdivision (a), was enacted to require the state to reimburse local agencies, including school districts, for the full costs of new programs or increased levels of service mandated by the Legislature after January 1, 1973. Local agencies except school districts were also entitled to reimbursement for costs mandated by exec-

utive regulation after January 1, 1973. (Rev. & Tax. Code, § 2231, subd. (d), added by Stats. 1973, ch. 358, § 3, p. 783 *1580 and repealed by Stats. 1986, ch. 879, § 23, p. 3045.) In subsequent years legislation was enacted to entitle school districts to subvention for state-mandated costs imposed by legislative acts after January 1, 1973, or by executive regulation after January 1, 1978. (Rev. & Tax. Code, former § 2207.5, added by Stats. 1977, ch. 1135, § 5, p. 3646 and amended by Stats. 1980, ch. 1256, § 5, pp. 4248-4249.)

In the 1973 legislation, Revenue and Taxation Code section 2271 was enacted to provide, among other things: "A local agency may levy, or have levied on its behalf, a rate in addition to the maximum property tax rate established pursuant to this chapter (commencing with Section 2201) to pay costs mandated by the federal government or costs mandated by the courts or costs mandated by initiative enactment, which are not funded by federal or state government." (3) In this respect costs mandated by the federal government are exempt from an agency's taxing and spending limits. (*City of Sacramento v. State of California*, *supra*, 50 Cal.3d at p. 71, fn. 17.)

At the November 6, 1979, General Election, the voters added article XIII B to the state Constitution by enacting Proposition 4. That article imposes spending limits on the state and all local governments. For purposes of article XIII B the term "local government" includes school districts. (Cal. Const., art. XIII B, § 8, subd. (d).) The measure accomplishes its purpose by limiting a governmental entity's annual appropriations to the prior year's appropriations limit adjusted for changes in the cost of living and population growth, except as otherwise provided in the article. (Cal. Const., art. XIII B, § 1.)^{FN7} The appropriations subject to limitation do not include, among other things: "Appropriations required to comply with mandates of the courts or the federal government which, without discretion, require an expenditure for additional services or which unavoidably make the pro-

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vision of existing services more costly." (Cal. Const., art. XIII B, § 9, subd. (b).)

FN7 As it was originally enacted, article XIII B required that all governmental entities return revenues in excess of their appropriations limits to the taxpayers through tax rate or fee schedule revisions. In Proposition 98, adopted at the November 1988 General Election, article XIII B was amended to provide that half of state excess revenues would be transferred to the state school fund for the support of school districts and community college districts. (See Cal. Const., art. XVI, § 8.5; *California Teachers Assn. v. Huff*, *supra*, 5 Cal.App.4th 1513.)

Like its statutory predecessor, the constitutional initiative measure includes a provision designed "to preclude the state from shifting to local agencies the financial responsibility for providing public services in view of these restrictions on the taxing and spending power of the local entities." (*Lucia Mar Unified School Dist. v. Honig* (1988) 44 Cal.3d 830, 835-836 [244 Cal.Rptr. 677, 750 P.2d 318].) Section 6 of article XIII B of the state Constitution provides: "Whenever the Legislature or any State agency mandates a new program or higher level of service on any local government, the *1581 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."

Although article XIII B of the state Constitution requires subvention for state mandates enacted after January 1, 1975, the article had an effective

date of July 1, 1980. (Cal. Const., art. XIII B, § 10.) (4) Accordingly, under the constitutional provision, a local agency may seek subvention for costs imposed by legislation after January 1, 1975, but reimbursement is limited to costs incurred after July 1, 1980. (*City of Sacramento v. State of California*; *supra*, 156 Cal.App.3d at pp. 190-193.) Reimbursement for costs incurred before July 1, 1980, must be obtained, if at all, under controlling statutory law. (See 68 Ops.Cal.Atty.Gen. 244 (1985).)

The constitutional subvention provision, like the statutory scheme before it, requires state reimbursement whenever "the Legislature or any State agency" mandates a new program or higher level of service. (Cal. Const., art. XIII B, § 6.) Accordingly, it has been held that state subvention is not required when the federal government imposes new costs on local governments. (*City of Sacramento v. State of California*, *supra*, 156 Cal.App.3d at p. 188; see also *Carmel Valley Fire Protection Dist. v. State of California* (1987) 190 Cal.App.3d 521, 543 [234 Cal.Rptr. 795].) In our *City of Sacramento* decision this court held that a federal program in which the state participates is not a federal mandate, regardless of the incentives for participation, unless the program leaves state or local government with no discretion as to alternatives. (156 Cal.App.3d at p. 198.)

In its *City of Sacramento* opinion, ^{FNS} the California Supreme Court rejected this court's earlier formulation. In doing so the high court noted that the vast bulk of cost-producing federal influence on state and local government is by inducement or incentive rather than direct compulsion. (50 Cal.3d at p. 73.) However, "certain regulatory standards imposed by the federal government *1582 under 'cooperative federalism' schemes are coercive on the states and localities in every practical sense." (*Id.* at pp. 73-74.) The test for determining whether there is a federal mandate is whether compliance with federal standards "is a matter of true choice," that is, whether participation in the federal program "is truly voluntary." (*Id.* at p. 76.) The court went on to

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say: "Given the variety of cooperative federal-state-local programs, we here attempt no final test for 'mandatory' versus 'optional' compliance with federal law. A determination in each case must depend on such factors as the nature and purpose of the federal program; whether its design suggests an intent to coerce; when state and/or local participation began; the penalties, if any, assessed for withdrawal or refusal to participate or comply; and any other legal and practical consequences of nonparticipation, noncompliance, or withdrawal." (*Ibid.*)

FN8 The Supreme Court's decision in *City of Sacramento* was not a result of direct review of this court's decision. The Supreme Court denied a petition for review of this court's *City of Sacramento* decision. After the Board of Control had adopted parameters and guidelines for reimbursement under this court's decision, the Legislature failed to appropriate the funds necessary for such reimbursement. The litigation which resulted in the Supreme Court's *City of Sacramento* decision was commenced as an action to enforce the result on remand from this court's *City of Sacramento* decision. (See 50 Cal.3d at p. 60.)

IV. Special Education

The issues in this case cannot be resolved by consideration of a particular federal act in isolation. Rather, reference must be made to the historical and legal setting of which the particular act is a part. Our consideration begins in the early 1970's.

In considering the 1975 amendments to the Education of the Handicapped Act, Congress referred to a series of "landmark court cases" emanating from 36 jurisdictions which had established the right to an equal educational opportunity for handicapped children. (See *Smith v. Robinson* (1984) 468 U.S. 992, 1010 [82 L.Ed.2d 746, 763, 104 S.Ct. 3457].) Two federal district court cases, *Pennsylvania Ass'n, Ret'd Child. v. Commonwealth of Pa.* (E.D.Pa. 1972) 343 F.Supp. 279 (see also *Pennsylvania Ass'n, Retard. Child. v. Common-*

wealth of Pa. (E.D.Pa. 1971) 334 F.Supp. 1257), and *Mills v. Board of Education of District of Columbia* (D.D.C. 1972) 348 F.Supp. 866, were the most prominent of these judicial decisions. (See *Hendrick Hudson Dist. Bd. of Ed. v. Rowley* (1982) 458 U.S. 176, 180, fn. 2 [73 L.Ed.2d 690, 695, 102 S.Ct. 3034].)

In the Pennsylvania case, an association and the parents of certain retarded children brought a class action against the commonwealth and local school districts in the commonwealth, challenging the exclusion of retarded children from programs of education and training in the public schools. (*Pennsylvania Ass'n, Ret'd Child. v. Commonwealth of Pa.*, *supra*, 343 F.Supp. at p. 282.) The matter was assigned to a three-judge panel which heard evidence on the plaintiffs' due process and equal protection claims. (*Id.* at p. 285.) The parties then agreed to resolve the litigation by means of a consent *1583 judgment. (*Ibid.*) The consent agreement required the defendants to locate and evaluate all children in need of special education services, to reevaluate placement decisions periodically, and to accord due process hearings to parents who are dissatisfied with placement decisions. (*Id.* at pp. 303-306.) It required the defendants to provide "a free public program of education and training appropriate to the child's capacity." (*Id.* at p. 285, italics deleted.)

In view of the consent agreement the district court was not required to resolve the plaintiffs' equal protection and due process contentions. Rather, it was sufficient for the court to find that the suit was not collusive and that the plaintiffs' claims were colorable. The court found: "Far from an indication of collusion, however, the Commonwealth's willingness to settle this dispute reflects an intelligent response to overwhelming evidence against [its] position." (*Pennsylvania Ass'n, Ret'd Child. v. Commonwealth of Pa.*, *supra*, 343 F.Supp. at p. 291.) The court said that it was convinced the due process and equal protection claims were colorable. (*Id.* at pp. 295-296.)

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In the *Mills* case, an action was brought on behalf of a number of school-age children with exceptional needs who were excluded from the Washington, D.C., public school system. (*Mills v. Board of Education of District of Columbia, supra*, 348 F.Supp. at p. 868.) The district court concluded that equal protection entitled the children to a public-supported education appropriate to their needs and that due process required a hearing with respect to classification decisions. (*Id.* at pp. 874-875.) The court said: "If sufficient funds are not available to finance all of the services and programs that are needed and desirable in the system then the available funds must be expended equitably in such manner that no child is entirely excluded from a publicly supported education consistent with his needs and ability to benefit therefrom. The inadequacies of the District of Columbia Public School System whether occasioned by insufficient funding or administrative inefficiency, certainly cannot be permitted to bear more heavily on the 'exceptional' or handicapped child than on the normal child." (*Id.* at p. 876.)

In the usual course of events, the development of principles of equal protection and due process as applied to special education, which had just commenced in the early 1970's with the authorities represented by the *Pennsylvania* and *Mills* cases, would have been fully expounded through appellate processes. However, the necessity of judicial development was truncated by congressional action. In the Rehabilitation Act of 1973, section 504, Congress provided: "No otherwise qualified handicapped individual in the United States, as defined in section 706(7) [now 706(8)] of this title, *1584 shall, solely by reason of his handicap, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance" (29 U.S.C. § 794, Pub.L. No. 93-112, tit. V, § 504 (Sept. 26, 1973) 87 Stat. 394.)^{FN9} Since federal assistance to education is pervasive (see, e.g., Ed. Code, §§ 12000-12405, 49540 et seq., 92140 et seq.), section 504 was applicable to virtu-

ally all public educational programs in this and other states.

FN9 In section 119 of the Rehabilitation, Comprehensive Services, and Developmental Disabilities Act of 1978, the application of section 504 was extended to federal executive agencies and the United States Postal Service. (Pub.L. No. 95-602, tit. I, § 119 (Nov. 6, 1978) 92 Stat. 2982.) The section is now subdivided and includes subdivision (b), which provides that the section applies to all of the operations of a state or local governmental agency, including local educational agencies, if the agency is extended federal funding for any part of its operations. (29 U.S.C. § 794.) This latter amendment was in response to judicial decisions which had limited the application of section 504 to the particular activity for which federal funding is received. (See *Consolidated Rail Corporation v. Darrone* (1984) 465 U.S. 624, 635-636 [79 L.Ed.2d 568, 577-578, 104 S.Ct. 1248].)

The Department of Health, Education and Welfare (HEW) promulgated regulations to ensure compliance with section 504 by educational agencies.^{FN10} The regulations required local educational agencies to locate and evaluate handicapped children in order to provide appropriate educational opportunities and to provide administrative hearing procedures in order to resolve disputes. The federal courts concluded that section 504 was essentially a codification of the equal protection rights of citizens with disabilities. (See *Halderman v. Pennhurst State School & Hospital* (E.D.Pa. 1978) 446 F.Supp. 1295, 1323.) Courts also held that section 504 embraced a private cause of action to enforce its requirements. (*Sherry v. New York State Ed. Dept.* (W.D.N.Y. 1979) 479 F.Supp. 1328, 1334; *Doe v. Marshall* (S.D.Tex. 1978) 459 F.Supp. 1190, 1192.) It was further held that section 504 imposed upon school districts and other public educational

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agencies "the duty of analyzing individually the needs of each handicapped student and devising a program which will enable each individual handicapped student to receive an appropriate, free public education. The failure to perform this analysis and structure a program suited to the needs of each handicapped child, constitutes discrimination against that child and a failure to provide an appropriate, free *1585 public education for the handicapped child." (*Doe v. Marshall, supra*, 459 F.Supp. at p. 1191. See also *David H. v. Spring Branch Independent School Dist.* (S.D.Tex. 1983) 569 F.Supp. 1324, 1334; *Halderman v. Pennhurst State School & Hospital, supra*, 446 F.Supp. at p. 1323.)

FN10 HEW was later dissolved and its responsibilities are now shared by the federal Department of Education and the Department of Health and Human Services. The promulgation of regulations to enforce section 504 had a somewhat checkered history. Initially HEW determined that Congress did not intend to require it to promulgate regulations. The Senate Public Welfare Committee then declared that regulations were intended. By executive order and by judicial decree in *Cherry v. Matthews* (D.D.C. 1976) 419 F.Supp. 922, HEW was required to promulgate regulations. The ensuing regulations were embodied in title 45 Code of Federal Regulations part 84, and are now located in title 34 Code of Federal Regulations part 104. (See *Southeastern Community College v. Davis* (1979) 442 U.S. 397, 404, fn. 4 [60 L.Ed.2d 980, 987, 99 S.Ct. 2361]; *N. M. Ass'n for Retarded Citizens v. State of N. M.* (10th Cir. 1982) 678 F.2d 847, 852.)

(5) Throughout these proceedings Riverside, relying upon the decision in *Southeastern Community College v. Davis, supra*, 442 U.S. 397 [60 L.Ed.2d 980], has contended that section 504 cannot be considered a federal mandate because it does

not obligate local school districts to take any action to accommodate the needs of handicapped children so long as they are not excluded from school. That assertion is not correct.

In the *Southeastern Community College* case a prospective student with a serious hearing disability sought to be admitted to a postsecondary educational program to be trained as a registered nurse. As a result of her disability the student could not have completed the academic requirements of the program and could not have attended patients without full-time personal supervision. She sought to require the school to waive the academic requirements, including an essential clinical program, which she could not complete and to otherwise provide full-time personal supervision. That demand, the Supreme Court held, was beyond the scope of section 504, which did not require the school to modify its program affirmatively and substantially. (442 U.S. at pp. 409-410 [60 L.Ed.2d at pp. 990-991].)

The *Southeastern Community College* decision is inapposite. States typically do not guarantee their citizens that they will be admitted to, and allowed to complete, specialized postsecondary educational programs. State educational institutions often impose stringent admittance and completion requirements for such programs in higher education. In the *Southeastern Community College* case the Supreme Court simply held that an institution of higher education need not lower or effect substantial modifications of its standards in order to accommodate a handicapped person. (442 U.S. at p. 413 [60 L.Ed.2d at pp. 992-993].) The court did not hold that a primary or secondary educational agency need do nothing to accommodate the needs of handicapped children. (See *Alexander v. Choate* (1985) 469 U.S. 287, 301 [83 L.Ed.2d 661, 672, 105 S.Ct. 712].)

States typically do purport to guarantee all of their children the opportunity for a basic education. In fact, in this state basic education is regarded as a fundamental right. (*Serrano v. Priest, supra*, 18

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Cal.3d at pp. 765-766.) All basic educational programs are essentially affirmative action activities in the sense that educational agencies are required to evaluate and accommodate *1586 the educational needs of the children in their districts. Section 504 would not appear to permit local agencies to accommodate the educational needs of some children while ignoring the needs of others due to their handicapped condition. (Compare *Lau v. Nichols* (1974) 414 U.S. 563 [39 L.Ed.2d 1, 94 S.Ct. 786], which required the San Francisco Unified School District to take affirmative steps to accommodate the needs of non-English speaking students under section 601 of the Civil Rights Act of 1964.)

Riverside's view of section 504 is inconsistent with congressional intent in enacting it. The congressional record makes it clear that section 504 was perceived to be necessary not to combat affirmative animus but to cure society's benign neglect of the handicapped. The record is replete with references to discrimination in the form of the denial of special educational assistance to handicapped children. In *Alexander v. Choate*, *supra*, 469 U.S. at pages 295 to 297 [83 L.Ed.2d at pages 668- 669], the Supreme Court took note of these comments in concluding that a violation of section 504 need not be proven by evidence of purposeful or intentional discrimination. With respect to the *Southeastern Community College v. Davis*, *supra*, 442 U.S. 397 case, the high court said: "The balance struck in *Davis* requires that an otherwise qualified handicapped individual must be provided with meaningful access to the benefit that the grantee offers. The benefit itself, of course, cannot be defined in a way that effectively denies otherwise qualified handicapped individuals the meaningful access to which they are entitled; to assure meaningful access, reasonable accommodations in the grantee's program or benefit may have to be made. ..." (*Alexander v. Choate*, *supra*, 469 U.S. at p. 301 [83 L.Ed.2d at p. 672], fn. omitted.)

Federal appellate courts have rejected the argument that the *Southeastern Community College* case

means that pursuant to section 504 local educational agencies need do nothing affirmative to accommodate the needs of handicapped children. (*N. M. Ass'n for Retarded Citizens v. State of N. M.*, *supra*, 678 F.2d at pp. 852-853; *Tatro v. State of Texas* (5th Cir. 1980) 625 F.2d 557, 564 [63 A.L.R. Fed. 844].) FN11 We are satisfied that section 504 does impose an obligation upon local school districts to accommodate the needs of handicapped children. However, as was the case with constitutional principles, full judicial development of section 504 as it relates to special education in elementary and secondary school districts was truncated by congressional action. *1587

FN11 Following a remand and another decision by the Court of Appeals, the *Tatro* litigation, *supra*, eventually wound up in the Supreme Court. (*Irving Independent School Dist. v. Tatro* (1984) 468 U.S. 883 [82 L.Ed.2d 664, 104 S.Ct. 3371].) However, by that time the Education of the Handicapped Act had replaced section 504 as the means for vindicating the education rights of handicapped children and the litigation was resolved, favorably for the child, under that act.

In 1974 Congress became dissatisfied with the progress under earlier efforts to stimulate the states to accommodate the educational needs of handicapped children. (*Hendrick Hudson Dist. Bd. of Ed. v. Rowley*, *supra*, 458 U.S. at p. 180 [73 L.Ed.2d at p. 695].) These earlier efforts had included a 1966 amendment to the Elementary and Secondary Education Act of 1965, and the 1970 version of the Education of the Handicapped Act. (*Ibid.*) The prior acts had been grant programs that did not contain specific guidelines for a state's use of grant funds. (*Ibid.*) In 1974 Congress greatly increased federal funding for education of the handicapped and simultaneously required recipient states to adopt a goal of providing full educational opportunities to all handicapped children. (*Ibid.* [73 L.Ed.2d at pp. 695-696].) The following year Congress amended

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the Education of the Handicapped Act by enacting the Education for All Handicapped Children Act of 1975. (*Ibid.* [73 L.Ed.2d at p. 696].)

Since the 1975 amendment, the Education of the Handicapped Act has required recipient states to demonstrate a policy that assures all handicapped children the right to a free appropriate education. (20 U.S.C. § 1412(1).) (6) The act is not merely a funding statute; rather, it establishes an enforceable substantive right to a free appropriate public education in recipient states. (*Smith v. Robinson, supra*, 468 U.S. at p. 1010 [82 L.Ed.2d at p. 764].) To accomplish this purpose the act incorporates the major substantive and procedural requirements of the "right to education" cases which were so prominent in the congressional consideration of the measure. (*Hendrick Hudson Dist. Bd. of Ed. v. Rowley, supra*, 458 U.S. at p. 194 [73 L.Ed.2d at p. 704].) The substantive requirements of the act have been interpreted in a manner which is "strikingly similar" to the requirements of section 504 of the Rehabilitation Act of 1973. (*Smith v. Robinson, supra*, 468 U.S. at pp. 1016-1017 [82 L.Ed.2d at p. 768].) The Supreme Court has noted that Congress intended the act to establish "a basic floor of opportunity that would bring into compliance all school districts with the constitutional right to equal protection with respect to handicapped children." (*Hendrick Hudson Dist. Bd. of Ed. v. Rowley, supra*, 458 U.S. at p. 200 [73 L.Ed.2d at p. 708] citing the House of Representatives Report.)^{FN12}

FN12 Consistent with its "basic floor of opportunity" purpose, the act does not require local agencies to maximize the potential of each handicapped child commensurate with the opportunity provided non-handicapped children. Rather, the act requires that handicapped children be accorded meaningful access to a free public education, which means access that is sufficient to confer some educational benefit. (*Ibid.*)

It is demonstrably manifest that in the view of

Congress the substantive requirements of the 1975 amendment to the Education of the Handicapped Act were commensurate with the constitutional obligations of state and local *1588 educational agencies. Congress found that "State and local educational agencies have a responsibility to provide education for all handicapped children, but present financial resources are inadequate to meet the special educational needs of handicapped children;" and "it is in the national interest that the Federal Government assist State and local efforts to provide programs to meet the educational needs of handicapped children in order to assure equal protection of the law." (20 U.S.C. former § 1400(b)(8) & (9).)

FN13

FN13 That Congress intended to enforce the Fourteenth Amendment to the United States Constitution in enacting the Education of the Handicapped Act has since been made clear. In *Dellmuth v. Muth* (1989) 491 U.S. 223 at pages 231 and 232 [105 L.Ed.2d 181, 189-191, 109 S.Ct. 2397], the court noted that Congress has the power under section 5 of the Fourteenth Amendment to abrogate a state's Eleventh Amendment immunity from suit in federal court, but concluded that the Education of the Handicapped Act did not clearly evince such a congressional intent. In 1990 Congress responded by expressly abrogating state sovereign immunity under the act. (20 U.S.C. § 1403.)

It is also apparent that Congress intended the act to achieve nationwide application: "It is the purpose of this chapter to assure that all handicapped children have available to them, within the time periods specified in section 1412(2)(B) of this title, a free appropriate public education which emphasizes special education and related services designed to meet their unique needs, to assure that the rights of handicapped children and their parents or guardians are protected, to assist States and localities to provide for the education of all handicapped chil-

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dren, and to assess and assure the effectiveness of efforts to educate handicapped children." (20 U.S.C. former § 1400(c).)

In order to gain state and local acceptance of its substantive provisions, the Education of the Handicapped Act employs a "cooperative federalism" scheme, which has also been referred to as the "carrot and stick" approach. (See *City of Sacramento v. State of California*, *supra*, 50 Cal.3d at pp. 73-74; *City of Sacramento v. State of California*, *supra*, 156 Cal.App.3d at p. 195.) As an incentive Congress made substantial federal financial assistance available to states and local educational agencies that would agree to adhere to the substantive and procedural terms of the act. (20 U.S.C. §§ 1411, 1412.) For example, the administrative record indicates that for fiscal year 1979-1980, the base year for Santa Barbara's claim, California received \$71.2 million in federal assistance, and during fiscal year 1980-1981, the base year for Riverside's claim, California received \$79.7 million. We cannot say that such assistance on an ongoing basis is trivial or insubstantial.

Contrary to Riverside's argument, federal financial assistance was not the only incentive for a state to comply with the Education of the Handicapped Act. (7) Congress intended the act to serve as a means by which state and *1589 local educational agencies could fulfill their obligations under the equal protection and due process provisions of the Constitution and under section 504 of the Rehabilitation Act of 1973. Accordingly, where it is applicable the act supersedes claims under the Civil Rights Act (42 U.S.C. § 1983) and section 504 of the Rehabilitation Act of 1973, and the administrative remedies provided by the act constitute the exclusive remedy of handicapped children and their parents or other representatives. (*Smith v. Robinson*, *supra*, 468 U.S. at pp. 1009, 1013, 1019 [82 L.Ed.2d at pp. 763, 766, 769].)^{FN14}

FN14 In *Smith v. Robinson*, *supra*, the court concluded that since the Education of the Handicapped Act did not include a pro-

vision for attorney fees, a successful complainant was not entitled to an award of such fees even though such fees would have been available in litigation under section 504 of the Rehabilitation Act of 1973 or section 1983 of the Civil Rights Act. Congress reacted by adding a provision for attorney fees to the Education of the Handicapped Act. (20 U.S.C. § 1415(e)(4)(B).)

As a result of the exclusive nature of the Education of the Handicapped Act, dissatisfied parties in recipient states must exhaust their administrative remedies under the act before resorting to judicial intervention. (*Smith v. Robinson*, *supra*, 468 U.S. at p. 1011 [82 L.Ed.2d at p. 764].) This gives local agencies the first opportunity and the primary authority to determine appropriate placement and to resolve disputes. (*Ibid.*) If a party is dissatisfied with the final result of the administrative process then he or she is entitled to seek judicial review in a state or federal court. (20 U.S.C. § 1415(e)(2).) In such a proceeding the court independently reviews the evidence but its role is restricted to that of review of the local decision and the court is not free to substitute its view of sound educational policy for that of the local authority. (*Hendrick Hudson Dist. Bd. of Ed. v. Rowley*, *supra*, 458 U.S. at pp. 206-207 [73 L.Ed.2d at p. 712].) And since the act provides the exclusive remedy for addressing a handicapped child's right to an appropriate education, where the act applies a party cannot pursue a cause of action for constitutional violations, either directly or under the Civil Rights Act (42 U.S.C. § 1983), nor can a party proceed under section 504 of the Rehabilitation Act of 1973. (*Smith v. Robinson*, *supra*, 468 U.S. at pp. 1013, 1020 [82 L.Ed.2d at pp. 766, 770].)

Congress's intention to give the Education of the Handicapped Act nationwide application was successful. By the time of the decision in *Hendrick Hudson Dist. Bd. of Ed. v. Rowley*, *supra*, all states except New Mexico had become recipients under the act. (458 U.S. at pp. 183-184 [73 L.Ed.2d at p.

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698].) It is important at this point in our discussion to consider the experience of New Mexico, both because the Board of Control relied upon that state's failure to adopt the Education of the Handicapped Act as proof that the act is not federally mandated, and because it illustrates the consequences of a failure to adopt the act. *1590

In *N. M. Ass'n for Retarded Citizens v. State of N. M.* (D.N.M. 1980) 495 F.Supp. 391, a class action was brought against New Mexico and its local school districts based upon the alleged failure to provide a free appropriate public education to handicapped children. The plaintiffs' causes of action asserting constitutional violations were severed and stayed pending resolution of the federal statutory causes of action. (*Id.* at p. 393.) The district court concluded that the plaintiffs could not proceed with claims under the Education of the Handicapped Act because the state had not adopted that act and, without more, that was a governmental decision within the state's power. (*Id.* at p. 394.)^{FN15} The court then considered the cause of action under section 504 and found that both the state and its local school districts were in violation of that section by failing to provide a free appropriate education to handicapped children within their territories. (495 F.Supp. at pp. 398-399.)

FN15 The plaintiffs alleged that the failure of the state to apply for federal funds under the Education of the Handicapped Act was itself an act of discrimination. The district court did not express a view on that question, leaving it for resolution in connection with the constitutional causes of action. (*Ibid.*)

After the district court entered an injunctive order designed to compel compliance with section 504, the matter was appealed. (*N. M. Ass'n for Retarded Citizens v. State of N. M.*, *supra*, 678 F.2d 847.) The court of appeals rejected the defendants' arguments that the plaintiffs were required to exhaust state administrative remedies before bringing their action and that the district court should have

applied the doctrine of primary jurisdiction to defer ruling until the Office of Civil Rights could complete its investigation into the charges. (*Id.* at pp. 850-851.) The court also rejected the defendants' arguments that section 504 does not require them to take action to accommodate the needs of handicapped children and that proof of disparate treatment is essential to a violation of section 504. (678 F.2d at p. 854.) The court found sufficient evidence in the record to establish discrimination against handicapped children within the meaning of section 504. (678 F.2d at p. 854.) However, the reviewing court concluded that the district court had applied an erroneous standard in reaching its decision, and the matter was remanded for further proceedings. (*Id.* at p. 855.)

On July 19, 1984, during the proceedings before the Board of Control, a representative of the Department of Education testified that New Mexico has since implemented a program of special education under the Education of the Handicapped Act. We have no doubt that after the litigation we have just recounted New Mexico saw the handwriting on the wall and realized that it could either establish a program of special education with federal financial assistance under the Education of the Handicapped Act, or be compelled through litigation to accommodate the educational needs of handicapped *1591 children without federal assistance and at the risk of losing other forms of federal financial aid. In any event, with the capitulation of New Mexico the Education of the Handicapped Act achieved the nationwide application intended by Congress. (20 U.S.C. § 1400(c).)

California's experience with special education in the time period leading up to the adoption of the Education of the Handicapped Act is examined as a case study in Kirp et al., *Legal Reform of Special Education: Empirical Studies and Procedural Proposals* (1974) 62 Cal.L.Rev. 40, at pages 96 through 115. As this study reflects, during this period the state and local school districts were struggling to create a program to accommodate ad-

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equately the educational needs of the handicapped. (*Id.* at pp. 97-110.) Individuals and organized groups, such as the California Association for the Retarded and the California Association for Neurologically Handicapped Children, were exerting pressure through political and other means at every level of the educational system. (*Ibid.*) Litigation was becoming so prevalent that the authors noted: "Fear of litigation over classification practices, prompted by the increasing number of lawsuits, is pervasive in California." (*Id.* at p. 106, fn. 295.)^{FN16}

FN16 Lawsuits primarily fell into three types: (1) Challenges to the adequacy or even lack of available programs and services to accommodate handicapped children. (*Id.* at p. 97, fns. 255, 257.) (2) Challenges to classification practices in general, such as an overtendency to classify minority or disadvantaged children as "retarded." (*Id.* at p. 98, fns. 259, 260.) (3) Challenges to individual classification decisions. (*Id.* at p. 106.) In the absence of administrative procedures for resolving classification disputes, dissatisfied parents were relegated to self-help remedies, such as pestering school authorities, or litigation. (*Ibid.*)

In the early 1970's the state Department of Education began working with local school officials and university experts to design a "California Master Plan for Special Education." (Kirp et al., *Legal Reform of Special Education: Empirical Studies and Procedural Proposals*, *supra*, 62 Cal.L.Rev. at p. 111.) In 1974 the Legislature enacted legislation to give the Superintendent of Public Instruction the authority to implement and administer a pilot program pursuant to a master plan adopted by State Board of Education in order to determine whether services under such a plan would better meet the needs of children with exceptional needs. (Stats. 1974, ch. 1532, § 1, p. 3441, enacting Ed. Code, § 7001.) In 1977 the Legislature acted to

further implement the master plan. (Stats. 1977, ch. 1247, especially § 10, pp. 4236-4237, enacting Ed. Code, § 56301.) In 1980 the Legislature enacted urgency legislation revising our special education laws with the express intent of complying with the 1975 amendments to the Education of the Handicapped Act. (Stats. 1980, ch. 797, especially § 9, pp. 2411-2412, enacting Ed. Code, § 56000.)

As this history demonstrates, in determining whether to adopt the requirements of the Education of the Handicapped Act as amended in 1975, our *1592 Legislature was faced with the following circumstances: (1) In the *Serrano* litigation, our Supreme Court had declared basic education to be a fundamental right and, without even considering special education in the equation, had found our educational system to be violative of equal protection principles. (2) Judicial decisions from other jurisdictions had established that handicapped children have an equal protection right to a free public education appropriate to their needs and due process rights with regard to placement decisions. (3) Congress had enacted section 504 of the Rehabilitation Act of 1973 to codify the equal protection rights of handicapped children in any school system that receives federal financial assistance and to threaten the state and local districts with the loss of all federal funds for failure to accommodate the needs of such children. (4) Parents and organized groups representing handicapped children were becoming increasingly litigious in their efforts to secure an appropriate education for handicapped children. (5) In enacting the 1975 amendments to the Education of the Handicapped Act, Congress did not intend to require state and local educational agencies to do anything more than the Constitution already required of them. The act was intended to provide a means by which educational agencies could fulfill their constitutional responsibilities and to provide substantial federal financial assistance for states that would agree to do so.

(8a) Under these circumstances we have no doubt that enactment of the 1975 amendments to

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the Education of the Handicapped Act constituted a federal mandate under the criteria set forth in *City of Sacramento v. State of California*, *supra*, 50 Cal.3d at page 76. The remaining question is whether the state's participation in the federal program was a matter of "true choice" or was "truly voluntary." The alternatives were to participate in the federal program and obtain federal financial assistance and the procedural protections accorded by the act, or to decline to participate and face a barrage of litigation with no real defense and ultimately be compelled to accommodate the educational needs of handicapped children in any event. We conclude that so far as the state is concerned the Education of the Handicapped Act constitutes a federal mandate.

V. Subvention for Special Education

Our conclusion that the Education of the Handicapped Act is a federal mandate with respect to the state marks the starting point rather than the end of the consideration which will be required to resolve the Santa Barbara and Riverside test claims. In *City of Sacramento v. State of California*, *supra*, 50 Cal.3d at pages 66 through 70, the California Supreme Court concluded that the costs at issue in that case (unemployment insurance premiums) were not subject to state subvention because they were incidental to a law of general application rather than a new governmental program or increased level of service under an existing program. The court addressed the federal mandate issue solely with respect to the question whether the costs were exempt from the local government's taxing and spending limitations. (*Id.* at pp. 70-71.) It observed that prior authorities had assumed that if a cost was federally mandated it could not be a state mandated cost subject to subvention, and said: "We here express no view on the question whether 'federal' and 'state' mandates are mutually exclusive for purposes of state subvention, but leave that issue for another day. ..." (*Id.* at p. 71, fn. 16.) The test claims of Santa Barbara and Riverside present that question which we address here for the guidance of the Commission on remand.

(9) The 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. Rather, that conclusion follows from the plain language of the subvention provisions themselves. The constitutional provision requires state subvention when "the Legislature or any State agency mandates a new program or higher level of service" on local agencies. (Cal. Const., art. XIII B, § 6.) Likewise, the earlier statutory provisions required subvention for new programs or higher levels of service mandated by legislative act or executive regulation. (See Rev. & Tax. Code, former §§ 2164.3 [Stats. 1972, ch. 1406, § 14.7, pp. 2962-2963], 2231 [Stats. 1973, ch. 358, § 3, pp. 783-784], 2207 [Stat. 1975, ch. 486, § 1.8, pp. 997-998], 2207.5 [Stats. 1977, ch. 1135, § 5, pp. 3646-3647].) When the federal government imposes costs on local agencies those costs are not mandated by the state and thus would not require a state subvention. Instead, such costs are exempt from local agencies' taxing and spending limitations. This should be true even though the state has adopted an implementing statute or regulation pursuant to the federal mandate so long as the state had no "true choice" in the manner of implementation of the federal mandate. (See *City of Sacramento v. State of California*, *supra*, 50 Cal.3d at p. 76.)

This reasoning would not hold true where the manner of implementation of the federal program was left to the true discretion of the state. A central purpose of the principle of state subvention is to prevent the state from shifting the cost of government from itself to local agencies. (*City of Sacramento v. State of California*, *supra*, 50 Cal.3d at p. 68.) Nothing in the statutory or constitutional subvention provisions would suggest that the state is free to shift state costs to local agencies without subvention merely because those costs were imposed upon the state by the federal government. In our view the determination whether certain costs were imposed upon a local agency by a federal mandate must focus upon the local agency which

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*1594 is ultimately forced to bear the costs and how those costs came to be imposed upon that agency. If the state freely chose to impose the costs upon the local agency as a means of implementing a federal program then the costs are the result of a reimbursable state mandate regardless whether the costs were imposed upon the state by the federal government.

The Education of the Handicapped Act is a comprehensive measure designed to provide all handicapped children with basic educational opportunities. While the act includes certain substantive and procedural requirements which must be included in a state's plan for implementation of the act, it leaves primary responsibility for implementation to the state. (20 U.S.C. §§ 1412, 1413.) (8b) In short, even though the state had no real choice in deciding whether to comply with the federal act, the act did not necessarily require the state to impose all of the costs of implementation upon local school districts. To the extent the state implemented the act by freely choosing to impose new programs or higher levels of service upon local school districts, the costs of such programs or higher levels of service are state mandated and subject to subvention.

We can illustrate this point with a hypothetical situation. Subvention principles are intended to prevent the state from shifting the cost of state governmental services to local agencies and thus subvention is required where the state imposes the cost of such services upon local agencies even if the state continues to perform the services. (*Lucia Mar Unified School Dist. v. Honig, supra*, 44 Cal.3d at pp. 835-836.) The Education of the Handicapped Act requires the state to provide an impartial, state-level review of the administrative decisions of local or intermediate educational agencies. (20 U.S.C. § 1415(c), (d).) Obviously, the state could not shift the actual performance of these new administrative reviews to local districts, but it could attempt to shift the costs to local districts by requiring local districts to pay the expenses of reviews in which they are involved. An attempt to do so would trig-

ger subvention requirements. In such a hypothetical case, the state could not avoid its subvention responsibility by pleading "federal mandate" because the federal statute does not require the state to impose the costs of such hearings upon local agencies. Thus, as far as the local agency is concerned, the burden is imposed by a state rather than a federal mandate.

In the administrative proceedings the Board of Control did not address the "federal mandate" question under the appropriate standard and with proper focus on local school districts. In its initial determination the board concluded that the Education of the Handicapped Act constituted a federal mandate and that the state-imposed costs on local school districts in excess of the federally imposed costs. However, the board did not consider the *1595 extent of the state-mandated costs because it concluded that any appropriation by the state satisfied its obligation. On Riverside's petition for a writ of administrative mandate the superior court remanded to the Board of Control to consider whether the state appropriation was sufficient to reimburse local school districts fully for the state-mandated costs. On remand the board clearly applied the now-discredited criteria set forth in this court's decision in *City of Sacramento v. State of California, supra*, 156 Cal.App.3d 182, and concluded that the Education of the Handicapped Act is not a federal mandate at any level of government. Under these circumstances we agree with the trial court that the matter must be remanded to the Commission for consideration in light of the criteria set forth in the Supreme Court's *City of Sacramento* decision. We add that on remand the Commission must focus upon the costs incurred by local school districts and whether those costs were imposed *on local districts* by federal mandate or by the state's voluntary choice in its implementation of the federal program.

VI. Riverside's Objections

In light of this discussion we may now consider Riverside's objections to the trial court's decision to remand the matter to the Commission for reconsid-

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eration.

Riverside asserts that the California Supreme Court opinion in *City of Sacramento* is not on point because the court did not address the federal mandate question with respect to state subvention principles. Riverside implies that the definition of a federal mandate may be different with respect to state subvention than with respect to taxing and spending limitations. (10) As a general rule and unless the context clearly requires otherwise, we must assume that the meaning of a term or phrase is consistent throughout the entire act or constitutional article of which it is a part. (*Lungren v. Davis* (1991) 234 Cal.App.3d 806, 823 [285 Cal.Rptr. 777].) (11) Subvention principles are part of a more comprehensive political scheme. The basic purpose of the scheme as a whole was to limit the taxing and spending powers of government. The taxing and spending powers of local agencies were to be "frozen" at existing levels with adjustments only for inflation and population growth. Since local agencies are subject to having costs imposed upon them by other governmental entities, the scheme provides relief in that event. If the costs are imposed by the federal government or the courts, then the costs are not included in the local government's taxing and spending limitations. If the costs are imposed by the state then the state must provide a subvention to reimburse the local agency. Nothing in this scheme suggests that the concept of a federal mandate should have different meanings depending upon whether one is considering subvention or taxing and spending limitations. Accordingly, we reject the claim that the criteria set forth in *1596 the Supreme Court's *City of Sacramento* decision do not apply when subvention is the issue.

(12) Riverside asserts that the trial court erred in concluding that the Board of Control did not consider the issues under the appropriate criteria and that the board did in fact consider the factors set forth in the Supreme Court's *City of Sacramento* decision. From our discussion above it is clear that we must reject these assertions. In its decision the

board relied upon the "cooperative federalism" nature of the Education of the Handicapped Act without any consideration whether the act left the state any actual choice in the matter. In support of its conclusion the board relied upon the New Mexico litigation which we have also discussed. However, as we have pointed out, under the criteria set forth in the Supreme Court's *City of Sacramento* decision, the New Mexico litigation does not support the board's decision but in fact strongly supports a contrary result. We are satisfied that the trial court correctly concluded that the board did not apply the appropriate criteria in reaching its decision.

Riverside asserts that the Supreme Court's *City of Sacramento* decision elucidated and enforced prior law and thus no question of retroactivity arises. (See *Donaldson v. Superior Court* (1983) 35 Cal.3d 24, 37 [196 Cal.Rptr. 704, 672 P.2d 110].) (13) We agree that in *City of Sacramento* the Supreme Court elucidated and enforced existing law. Under such circumstances the rule of retrospective operation controls. (*Ibid.* See also *Wellenkamp v. Bank of America* (1978) 21 Cal.3d 943, 953- 954 [148 Cal.Rptr. 379, 582 P.2d 970]; *County of Los Angeles v. Faus* (1957) 48 Cal.2d 672, 680-681 [312 P.2d 680].) Pursuant to that rule the trial court correctly applied the *City of Sacramento* decision to the litigation pending before it. As we have seen, that decision supports the trial court's determination to remand the matter to the Commission for reconsideration.

Riverside asserts that if further consideration under the criteria of the Supreme Court's *City of Sacramento* decision is necessary then the trial court should have, and this court must, engage in such consideration to reach a final conclusion on the question. To a limited extent we agree. In our previous discussion we have concluded that under the criteria set forth in *City of Sacramento*, the Education of the Handicapped Act constitutes a federal mandate as far as the state is concerned. We are satisfied that is the only conclusion which may be drawn and we so hold as a matter of law. However,

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that conclusion does not resolve the question whether new special education costs were imposed upon local school districts by federal mandate or by state choice in the implementation of the federal program. The issues were not addressed by the parties or the Board of Control in this light. The *1597 Commission on State Mandates is the entity with the responsibility for considering the issues in the first instance and which has the expertise to do so. We agree with the trial court that it is appropriate to remand the matter to the Commission for reconsideration in light of the appropriate criteria which we have set forth in this appeal.

In view of the result we have reached we need not and do not consider whether it would be appropriate otherwise to fashion some judicial remedy to avoid the rule, based upon the separation of powers doctrine, that a court cannot compel the State Controller to make a disbursement in the absence of an appropriation. (See *Carmel Valley Fire Protection Dist. v. State of California*, *supra*, 190 Cal.App.3d at pp. 538- 541.)

Disposition

The judgment is affirmed.

Davis, J., and Scotland, J., concurred.

The petition of plaintiff and respondent for review by the Supreme Court was denied April 1, 1993. Lucas, C.J., Kennard, J., and Arabian, J., were of the opinion that the petition should be granted. *1598

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ATTACHMENT 31

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▷

CITY OF RICHMOND, Plaintiff and Appellant,

v.

COMMISSION ON STATE MANDATES, Defendant and Respondent; DEPARTMENT OF FINANCE, Real Party in Interest and Respondent.

No. C026835.

Court of Appeal, Third District, California.
May 28, 1998.

SUMMARY

A city filed an administrative mandamus action against the Commission on State Mandates, seeking a determination that an amendment to Lab. Code, § 4707, making local safety members of the Public Employees' Retirement System (PERS) eligible for both PERS and workers' compensation death benefits, was a state mandate to which the city was entitled to reimbursement under Cal. Const., art. XIII B, § 6, which applies when a state law establishes a new program or higher level of service payable by local governments. The amendment eliminated local safety members of PERS from the coordination provisions for death benefits payable under workers' compensation and under PERS, whereby survivors of a local safety member of PERS who are killed in the line of duty receive both a death benefit under workers' compensation and a special death benefit under PERS, instead of only the latter. The trial court denied the petition, finding that the amendment created an increased cost but not an increased level of service by local governments. (Superior Court of Sacramento County, No. 96CS03417, James Timothy Ford, Judge.)

The Court of Appeal affirmed. The court held that although the amendment increased the cost of providing services, that could not be equated with requiring an increased level of service, and did not constitute a new program. Neither did the amendment impose a unique requirement on local governments that was not applicable to all residents and

entities within the state. The amendment merely made the workers' compensation death benefit requirements as applicable to local governments as they are to private employers. Local entities are not entitled to reimbursement for all increased costs mandated by state law, but only those costs resulting from a new program or an increased level of service imposed upon them by the state. Although a law is addressed only to local governments and imposes new costs on them, it may still not be a reimbursable state mandate. The court also held that assembly bill analyses stating that the amendment was a reimbursable state mandate (Cal. Const., art. XIII B, § 6), were irrelevant to the issue. The Legislature has entrusted the determination of what constitutes a state mandate to the Commission on State Mandates, subject to judicial review, and has provided that the initial determination by Legislative Counsel is not binding on the commission. (Opinion by Morrison, J., with Puglia, P. J., and Nicholson, J., concurring.)

HEADNOTES

Classified to California Digest of Official Reports
(1) Administrative Law § 138--Judicial Review and Relief--Appellate Court-- Standard--Decision of Commission on State Mandates.

Under Gov. Code, § 17559, a proceeding to set aside a decision of the Commission on State Mandates on a claim may be commenced on the ground that the commission's decision was not supported by substantial evidence. Where the scope of review in the trial court is whether the administrative decision is supported by substantial evidence, review on appeal is generally the same. However, the appellate court independently reviews the superior court's legal conclusions as to the meaning and effect of constitutional and statutory provisions. The question of whether a law is a state-mandated program or a higher level of service under Cal. Const., art. XIII B, § 6, is a question of law that is reviewed de novo.

(2a, 2b, 2c) State of California § 11--Fiscal Mat-

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ters--Reimbursement for State Mandates--Workers' Compensation Death Benefits Payable to Local Safety Members.

An amendment to Lab. Code, § 4707, to eliminate local safety members of the Public Employees' Retirement System (PERS) from the coordination provisions for death benefits payable under workers' compensation and under PERS, whereby the survivors of a local safety member of PERS who is killed in the line of duty receive both a death benefit under workers' compensation and a special death benefit under PERS, instead of only the latter, did not mandate a new program or higher level of service on local governments, requiring a subvention of funds to reimburse the local government under Cal. Const., art. XIII B, § 6. Although the amendment increased the cost of providing services, that could not be equated with requiring an increased level of service, and did not constitute a new program. Neither did it impose a unique requirement on local governments that was not applicable to all residents and entities within the state. The amendment merely made the workers' compensation death benefit requirements as applicable to local governments as they are to private employers.

(3a, 3b) State of California § 11--Fiscal Matters--Reimbursement for State Mandates--Purpose.

Cal. Const., art. XIII B, § 6, which requires a subvention of funds to reimburse local governments when a state law mandates a new program or higher level of service on local governments, was intended 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. Although a law is addressed only to local governments and imposes new costs on them, it may still not be a reimbursable state mandate.

[See 9 Witkin, Summary of Cal. Law (9th ed. 1989) Taxation, § 123A.]

(4) Statutes § 43--Construction--Aids--Legislative Analysis--Reimbursement for State Mandates--

-Legislative Intent.

Assembly bill analyses of an amendment to Lab. Code, § 4707, making local safety members of the Public Employees' Retirement System (PERS) eligible for both PERS and workers' compensation death benefits, stating that it was a reimbursable state mandate (Cal. Const., art. XIII B, § 6), were irrelevant to the issue. The Legislature has entrusted the determination of what constitutes a state mandate to the Commission on State Mandates, subject to judicial review (Gov. Code, §§ 17500, 17559) and has provided that the initial determination by legislative counsel is not binding on the commission (Gov. Code, § 17575).

COUNSEL

Nossaman, Guthner, Knox & Elliott, Robert J. Sullivan, Stephen P. Wilman, John T. Kennedy and Scott N. Yamaguchi for Plaintiff and Appellant.

Dwight L. Herr, County Counsel (Santa Cruz), Ronald R. Ball, City Attorney (Carlsbad), Michael G. Colantuono, City Attorney (Cudahay), William B. Conners, City Attorney (Monterey), Jonathan B. Stone, City Attorney (Montebello), Daniel J. McHugh, City Attorney (Redlands), Jeffrey G. Jorgensen, City Attorney (San Luis Obispo), Brian Libow, City Attorney (San Pablo), Howard, Rice, Nemerovski, Canady & Falk and Richard C. Jacobs as Amici Curiae on behalf of Plaintiff and Appellant.

Gary D. Hori and Shawn D. Silva for Defendant and Respondent.

Daniel E. Lungren, Attorney General, Linda A. Catic, Assistant Attorney General, Marsha Bedwell and Shelleyanne W. L. Chang, Deputy Attorneys General, for Real Party in Interest and Respondent.
*1193

MORRISON, J.

Chapter 478 of the Statutes of 1989 (chapter 478) amended Labor Code section 4707 to eliminate local safety members of the Public Employees'

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Retirement System (PERS) from the coordination provisions for death benefits payable under workers' compensation and under PERS. As a result, the survivors of a local safety member of PERS who is killed in the line of duty receives both a death benefit under workers' compensation and a special death benefit under PERS, instead of only the latter. This proceeding presents the question whether chapter 478 mandates a new program or higher level of service on local governments, requiring a subvention of funds to reimburse the local government under article XIII B section 6 of the California Constitution. We conclude that chapter 478 is not a state mandate requiring reimbursement and affirm the judgment.

Factual and Procedural Background

The workers' compensation system provides for death benefits payable to the deceased employee's survivors. (Lab. Code, § 4700 et seq.) There are also preretirement death benefits under PERS. (Gov. Code, § 21530 et seq.) There is a special death benefit under PERS if the death was industrial and the deceased was a patrol, state peace officer/firefighter, state safety officer, state industrial, or local safety member. (Gov. Code, § 21537.) Labor Code section 4707 provides a coordination or offset for workers' compensation death benefits when the special death benefit under PERS is payable. In such cases, no workers' compensation death benefit, other than burial expenses, is payable, except that if the PERS special death benefit is less than the workers' compensation death benefit, the difference is paid as a workers' compensation death benefit. The total death benefit is equal to the greater of the PERS special death benefit or the workers' compensation benefit, not the combination of the two death benefits.

Prior to 1989, Labor Code section 4707 provided in part: "No benefits, except reasonable expenses of burial ... shall be awarded under this division on account of the death of an employee who is a member of the Public Employees' Retirement System unless it shall be determined that a special

death benefit ... will not be paid by the Public Employees' Retirement System to the widow or children under 18 years of age, of the deceased, on account of said death, but if the total death allowance paid to said widow and children shall be less than the benefit otherwise payable under this division such widow and children shall be entitled, under this division, to the difference." (Stats. 1977, ch. 468, § 4, pp. 1528-1529.) *1194

Chapter 478 amended Labor Code section 4707 to make technical changes, to provide the death benefit is payable to the surviving spouse rather than to the widow, and to add subdivision (b). Subdivision (b) of Labor Code section 4707 reads: "The limitation prescribed by subdivision (a) shall not apply to local safety members of the Public Employees' Retirement System." (Stats. 1989, ch. 478, § 1, p. 1689.)

In 1992, David Haynes, a police officer for the City of Richmond (Richmond), was killed in the line of duty. Officer Haynes was a local safety member of PERS. His wife and children received the PERS special death benefit; they also received a death benefit under workers' compensation.

Richmond filed a test claim with the Commission on State Mandates (the Commission), contending chapter 478 created a state-mandated local cost. FN1 Richmond sought reimbursement of the cost of the workers' compensation death benefit, estimated to be \$295,432. As part of its test claim, Richmond included legislative history of chapter 478, purporting to show a legislative intent to create a reimbursable state mandate.

FN1 " 'Test claim' means the first claim filed with the commission alleging that a particular statute or executive order imposes costs mandated by the state." (Gov. Code, § 17521.)

The Commission denied the test claim. It found that chapter 478 dealt with workers' compensation benefits and case law held that workers' compensa-

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tion laws are laws of general application and not subject to section 6 of article XIII B of the California Constitution. It noted the legislative history containing analyses that chapter 478 was a state mandate had been prepared before the issuance of *City of Sacramento v. State of California* (1990) 50 Cal.3d 51 [266 Cal.Rptr. 139, 785 P.2d 522].

Richmond filed a petition for a writ of administrative mandate under Code of Civil Procedure section 1094.5, seeking to compel the Commission to approve its claim. Both the Commission and the Department of Finance, as real parties in interest, responded. The court denied the petition, finding chapter 478 created an increased cost but not an increased level of service by local governments.

Discussion

I

(1) Under Government Code section 17559, a proceeding to set aside the Commission's decision on a claim may be commenced on the ground that the Commission's decision is not supported by substantial evidence. Where *1195 the scope of review in the trial court is whether the administrative decision is supported by substantial evidence, our review on appeal is generally the same. (*County of Los Angeles v. Commission on State Mandates* (1995) 32 Cal.App.4th 805, 814 [38 Cal.Rptr.2d 304].) However, we independently review the superior court's legal conclusions as to the meaning and effect of constitutional and statutory provisions. (*City of San Jose v. State of California* (1996) 45 Cal.App.4th 1802, 1810 [53 Cal.Rptr.2d 521].) The question of whether chapter 478 is a state-mandated program or higher level of service under article XIII B, section 6 of the California Constitution is a question of law we review de novo. (45 Cal.App.4th at p. 1810.)

With certain exceptions not relevant here, "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" (Cal. Const. art. XIII B, § 6, (hereafter referred to as section 6).)

In *County of Los Angeles v. State of California* (1987) 43 Cal.3d 46 [233 Cal.Rptr. 38, 729 P.2d 202], the Supreme Court considered whether laws increasing the amount employers, including local governments, had to pay in certain workers' compensation benefits were a reimbursable "higher level of service" under section 6. The court looked to the intent of the voters in adopting the constitutional provision by initiative. (43 Cal.3d at p. 56.) Noting that the phrase "higher level of service" is meaningless alone, the court found it must be read in conjunction with the phrase "new program." The court concluded, "that the drafters and the electorate had in mind the commonly understood meanings of the term-programs that carry out the governmental function of providing services to the public, or 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." (*Ibid.*)

(2a) Richmond contends chapter 478 meets both tests to qualify as a program under section 6. Richmond contends increased death benefits are provided to generate a higher quality of local safety officers and thus provide the public with a higher level of service. Richmond argues that providing increased death benefits to local safety workers is analogous to providing protective clothing and equipment for fire fighters. In *Carmel Valley Fire Protection Dist. v. State of California* (1987) 190 Cal.App.3d 521 [234 Cal.Rptr. 795], executive orders requiring updated protective clothing and equipment for firefighters were found to be reimbursable state mandates under section 6. The executive orders applied only to fire protection, a peculiarly governmental function. The court noted that police and fire *1196 protection are two of the most essential and basic functions of local government. (190 Cal.App.3d at p. 537.) Richmond urges that since chapter 478 applies only to local safety members, it is also a state mandate directed to a peculi-

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arly local governmental function.

In *Carmel Valley Fire Protection Dist. v. State of California*, *supra*, 190 Cal.App.3d 521, the executive order required updated equipment for the fighting of fires. The use of this equipment would result in more effective fire protection and thus would provide a higher level of service to the public. Here chapter 478 addresses death benefits, not the equipment used by local safety members. Increasing the cost of providing services cannot be equated with requiring an increased level of service under a section 6 analysis. A higher cost to the local government for compensating its employees is not the same as a higher cost of providing services to the public. (*City of Anaheim v. State of California* (1987) 189 Cal.App.3d 1478, 1484 [235 Cal.Rptr. 101] [temporary increase in PERS benefit to retired employees which resulted in higher contribution rate by local government was not a program or service under section 6].) In *County of Los Angeles v. State of California*, *supra*, 43 Cal.3d 46, the increase in certain workers' compensation benefits resulted in an increase in the cost to local governments of providing services. Nonetheless, the Supreme Court found no "higher level of service" under section 6. Similarly, a new requirement for mandatory unemployment insurance for local government employees, an increase in the cost of providing services, was not a "new program" or "higher level of service" in *City of Sacramento v. State of California*, *supra*, 50 Cal.3d 51, 66-70. Chapter 478 fails to meet the first test of a "program" under section 6.

Richmond urges chapter 478 meets the second test of a program under section 6 because it imposed a unique requirement on local governments that was not applicable to all residents and entities within the state. (*County of Los Angeles v. State of California*, *supra*, 43 Cal.3d 46, 56.) Richmond argues that only local governments have "local safety members" and chapter 478 required double death benefits, both PERS and workers' compensation, for this specific group of employees. By requiring

double death benefits for local safety members, chapter 478 imposed a unique requirement on local government.

The Commission takes a different view of chapter 478. First, it argues that chapter 478 addresses an aspect of workers' compensation law, which, under *County of Los Angeles v. State of California*, *supra*, 43 Cal.3d 46, is a law of general application to which section 6 does not apply. The Commission argues chapter 478 imposes no unique requirement; it merely *1197 eliminates the previous exemption from providing workers' compensation death benefits to local safety members. As such, chapter 478 simply puts local government employers on the same footing as all other nonexempt employers, requiring that they provide the workers' compensation death benefit. That chapter 478 affects only local government does not compel the conclusion that it imposes a unique requirement on local government. The Commission contends Richmond's view of chapter 478 is too narrow; the law must be considered in its broader context.

While Richmond's argument has surface appeal, we conclude the Commission's view is the correct one. Section 6 was designed to prevent the state from forcing programs on local government. (3a) "[T]he 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. Laws of general application are not passed by the Legislature to 'force' programs on localities." (*County of Los Angeles v. State of California*, *supra*, 43 Cal.3d at pp. 56-57.) "The goals of article XIII B, of which section 6 is a part, were to protect residents from excessive taxation and government spending. [Citation.] Section 6 had the additional purpose of precluding a shift of financial responsibility for carrying out governmental functions from the state to local agencies which had had their taxing powers restricted by the enactment of article XIII A in the

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preceding year and were ill equipped to take responsibility for any new programs. Neither of these goals is frustrated by requiring local agencies to provide the same protections to their employees as do private employers. Bearing the costs of salaries, unemployment insurance, and workers' compensation coverage-costs which all employers must bear-neither threatens excessive taxation or governmental spending, nor shifts from the state to a local agency the expense of providing governmental services. " (*Id.* at p. 61.)

Although a law is addressed only to local governments and imposes new costs on them, it may still not be a reimbursable state mandate. In *City of Sacramento v. State of California, supra*, 50 Cal.3d 51, the Legislature enacted a statute requiring local governments to participate in the state's unemployment insurance system on behalf of their employees. Local entities made a claim for reimbursement. First, the Supreme Court found that like an increase in workers' compensation benefits, a requirement to provide unemployment insurance did not compel new or increased "service to the public" at the local level. (*Id.* at pp. 66-67.) The court next addressed whether the new law imposed a unique requirement on local governments.

"Here, the issue is whether costs *unrelated* to the provision of public services are *nonetheless* reimbursable costs of government, because they are *1198 imposed on local governments 'unique[ly],' and not merely as an incident of compliance with general laws. State and local governments, and non-profit corporations, had previously enjoyed a special *exemption* from requirements imposed on most other employers in the state and nation. Chapter 2/78 merely eliminated the exemption and made these previously exempted entities subject to the general rule. By doing so, it may have imposed a requirement 'new' to local agencies, but that requirement was not 'unique.' [¶] The distinction proposed by plaintiffs would have an anomalous result. The state could avoid subvention under *County of Los Angeles* standards by imposing new obligations

on the public and private sectors *at the same time*. However, if it chose to proceed by stages, extending such obligations first to private entities, and only later to local governments, it would have to pay. This was not the intent of our recent decision." (*City of Sacramento v. State of California, supra*, 50 Cal.3d 51, 68-69, italics in original.)

Richmond argues that Labor Code section 4707, prior to chapter 478, was not an exemption from workers' compensation, relying on *Jones v. Kaiser Industries Corp.* (1987) 43 Cal.3d 552 [237 Cal.Rptr. 568, 737 P.2d 771]. In *Jones*, the plaintiff, a city police officer, was killed in a traffic accident while on duty. His survivors brought suit against the city, contending it has created and maintained a dangerous condition at the intersection where the accident occurred. Plaintiffs argued their suit was not barred by the exclusivity provisions of workers' compensation because they did not receive a workers' compensation death benefit under Labor Code section 4707. The court rejected this argument. First, plaintiffs did receive a benefit under workers' compensation in the form of burial expenses. Further, Labor Code section 4707 was designed not to exclude plaintiffs from receiving workers' compensation benefits, but to assure they received the maximum benefit under either PERS or workers' compensation. (43 Cal.3d at p. 558.)

Under *Jones v. Kaiser Industries Corp., supra*, 43 Cal.3d 552, one receiving a special death benefit under PERS rather than the workers' compensation death benefit is not considered exempt from workers' compensation for purposes of its exclusivity provisions, precluding a suit against the employer for negligence. This conclusion does not affect the analysis that chapter 478, by removing the offset provisions for employers of local safety members, merely makes local governments "indistinguishable in this respect from private employers." (*County of Los Angeles v. State of California, supra*, 43 Cal.3d at p. 58.)

(2b) Richmond's error is in viewing chapter 478 from the perspective of what the final result is,

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rather than from the perspective of what the law mandates. (3b) "We recognize that, as is made indisputably clear from *1199 the language of the constitutional provision, local entities are not entitled to reimbursement for all increased costs mandated by state law, but only those costs resulting from a new program or an increased level of service imposed upon them by the state." (*Lucia Mar Unified School Dist. v. Honig* (1988) 44 Cal.3d 830, 835 [244 Cal.Rptr. 677, 750 P.2d 318].) (2c) While the result of chapter 478 is that local safety members of PERS now are eligible for two death benefits and local governments will have to fund the workers' compensation benefit, chapter 478 does not mandate double death benefits. Instead, it merely eliminates the offset provisions of Labor Code section 4707. In this regard, the law makes the workers' compensation death benefit requirements as applicable to local governments as they are to private employers. It imposes no "unique requirement" on local governments.

Further, the view that the Legislature was proceeding by stages in enacting chapter 478 finds support in the history of the nearly identical predecessor to chapter 478, Assembly Bill No. 1097 (1987-1988 Reg. Sess.). Assembly Bill No. 1097 was passed in 1988, but was vetoed by the Governor. While the final version of Assembly Bill No. 1097 was virtually identical to chapter 478 in adding subdivision (b) to Labor Code section 4707 (Assem. Bill No. 1097 (1987-1988 Reg. Sess.) as amended Mar. 22, 1988), the bill was very different when it began. The initial version of Assembly Bill No. 1097 repealed Labor Code section 4707 in its entirety. (Assem. Bill No. 1097 (1987-1988 Reg. Sess.) introduced Mar. 2, 1987.) The next version made Labor Code section 4707 applicable only to state members of PERS. (Assem. Bill No. 1097 (1987-1988 Reg. Sess.) as amended June 15, 1987.) The final version left Labor Code section 4707 applicable to all but local safety members of PERS.

II

(4) As part of its test claim, Richmond included

portions of the legislative history of chapter 478 to show the Legislature intended to create a state mandate. This history includes numerous bill analyses by legislative committees that state the bill creates a state-mandated local program.

Government Code section 17575 requires the Legislative Counsel to determine if a bill mandates a new program or higher level of service under section 6. If the Legislative Counsel determines the bill will mandate a new program or higher level of service under section 6, the bill must contain a section specifying that reimbursement shall be made from the state mandate fund, that there is no mandate, or that the mandate is being disclaimed. (Gov. Code, § 17579.) The Legislative Counsel found that chapter 478 imposed *1200 a state-mandated local program. The enacted statute provided: "Notwithstanding Section 17610 of the Government Code, if the Commission on State Mandates determines that this act contains costs mandated by the state, reimbursement to local agencies and school districts for those costs shall be made pursuant to Part 7 (commencing with Section 17500) of Division 4 of Title 2 of the Government Code. If the statewide cost of the claim for reimbursement does not exceed one million dollars (\$1,000,000), reimbursement shall be made from the State Mandates Claims Fund." (Stats. 1989, ch. 478, § 2, p. 1689.)

One analysis concluded this language was technically deficient because it does not contain a specific acknowledgment that the bill is a state mandate. Reimbursement could not be made until the Commission held a hearing on a test claim. The analysis concluded it "should not be a serious problem because the information provided in this analysis could also be provided to the Commission on State Mandates if any local agency submits a claim for reimbursement to that Commission."

Another analysis suggested including an appropriation to avoid the necessity of the Commission having to determine that the bill was a mandate.

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Richmond argues this legislative history shows the Legislature intended chapter 478 to be a state mandate and that it should be considered in making that determination. Amici curiae submitted a brief urging that case law holding that legislative history is irrelevant to the issue of whether there is a state-mandated new program or higher level of service under section 6 is wrongly decided. ^{FN2} Amici curiae argue that the intent of the Legislature should control. They further note that the legislative history of chapter 478 shows that the initial opposition of the League of California Cities was dropped after the bill was amended to ensure reimbursement, and that the Governor signed the bill after he had vetoed a similar one that was not considered a state mandate. Amici curiae argue that to ignore the widespread understanding that the bill created a state mandate would undermine the legislative process.

FN2 The California State Association of Counties, and the Cities of Carlsbad, Cudahy, Montebello, Monterey, Redlands, San Luis Obispo and San Pablo filed an amici curiae brief in support of Richmond.

In *County of Los Angeles v. Commission on State Mandates*, *supra*, 32 Cal.App.4th 805, plaintiff sought reimbursement for costs incurred under Penal Code section 987.9 for providing certain services to indigent criminal defendants. Plaintiff argued the Legislature's initial appropriation of funds to cover the costs incurred under Penal Code section 987.9 was a final and *1201 unchallengeable determination that section 987.9 constituted a state mandate. The court rejected this argument. "The findings of the Legislature as to whether section 987.9 constitutes a state mandate are irrelevant." (32 Cal.App.4th at p. 818.)

The court, relying on *Kinlaw v. State of California* (1991) 54 Cal.3d 326 [285 Cal.Rptr. 66, 814 P.2d 1308], found the Legislature had created a comprehensive and exclusive procedure for implementing and enforcing section 6. (*County of Los Angeles v. Commission on State Mandates*, *supra*,

32 Cal.App.4th at pp. 818-819.) This procedure is set forth in Government Code section 17500 et seq. "[T]he statutory scheme contemplates that the Commission, as a quasi-judicial body, has the sole and exclusive authority to adjudicate whether a state mandate exists. Thus, any legislative findings are irrelevant to the issue of whether a state mandate exists, and the Commission properly determined that no state mandate existed." (32 Cal.App.4th at p. 819.)

In *City of San Jose v. State of California*, *supra*, 45 Cal.App.4th 1802, 1817-1818, the court relied upon *County of Los Angeles v. Commission on State Mandates*, *supra*, 32 Cal.App.4th 805, in rejecting the argument that the determination by Legislative Counsel that a bill imposed a state mandate was entitled to deference.

Amici curiae contend these cases are wrong because they ignore the cardinal rules of statutory construction that courts must construe statutes to conform to the purpose and intent of lawmakers and that the intent of the Legislature should be ascertained to effectuate the purpose of the law.

Amici curiae are correct that "the objective of statutory interpretation is to ascertain and effectuate legislative intent." [Citation.]" (*Trope v. Katz* (1995) 11 Cal.4th 274, 280 [45 Cal.Rptr.2d 241, 902 P.2d 259].) Where such intent is not clear from the language of the statute, we may resort to extrinsic aids, including legislative history. (*People v. Coronado* (1995) 12 Cal.4th 145, 151 [48 Cal.Rptr.2d 77, 906 P.2d 1232].) Here, however, the issue is not the interpretation of Labor Code section 4707. The parties agree it requires that the survivors of local safety members killed due to an industrial injury receive both the special death benefit under PERS and the workers' compensation death benefit. Rather, the issue is whether section 6 requires reimbursement for the costs incurred by local governments under chapter 478. The Legislature has entrusted that determination to the Commission, subject to judicial review. (Gov. Code, §§ 17500, 17559.) It has provided that the initial de-

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termination by Legislative Counsel is not binding on the Commission. (*Id.*, § 17575.) Indeed, the language of chapter 478 recognizes that the determination of whether the bill is a state mandate lies with *1202 the Commission. It reads, “*if* the Commission on State Mandates determines that this act contains costs mandated by the state, ...” (Stats. 1989, ch. 478, § 2, p. 1689, italics added.) While the legislative history of chapter 478 may evince the understanding or belief of the Legislature that chapter 478 created a state mandate, such understanding or belief is irrelevant to the issue of whether a state mandate exists. (*County of Los Angeles v. Commission on State Mandates, supra*, 32 Cal.App.4th 805, 819.)

Disposition

The judgment is affirmed.

Puglia, P. J., and Nicholson, J., concurred.

Appellant's petition for review by the Supreme Court was denied August 19, 1998. *1203

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ATTACHMENT 32

Westlaw

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H

[1] States 360 ↪ 111

Supreme Court of California

DEPARTMENT OF FINANCE, Plaintiff and Appellant,
v.
COMMISSION ON STATE MANDATES, Defendant and Respondent;
Kern High School District, et al., Real Parties in Interest.

No. S109219.
May 22, 2003.

Two school districts and one county filed a test claim with the **Commission on State Mandates** for a determination of whether costs for statutorily required meeting notices and agendas constituted reimbursable **state mandates**. The **Commission** determined they were. **State**, through its **Department of Finance**, brought an administrative **mandate** proceeding to review the **Commission's** decision. The Superior Court, Sacramento County, No. 00CS00866, Ronald B. Robie, J., denied petition. **State** appealed. The Court of Appeal, Davis, Acting P.J., reversed and remanded. The Supreme Court granted review, superseding the opinion of the Court of Appeal. The Supreme Court, George, C.J., held that: (1) since districts and county were not legally obligated to participate in eight of the nine programs at issue, the meeting notice and agenda costs for those programs were not reimbursable state mandate, and (2) the program funding provided by state for the Chacon-Moscone Bilingual Bicultural Education program satisfied any constitutional obligation of state to reimburse school districts and county for modest cost to provide notice of meetings and post agendas.

Reversed.

Opinion, 122 Cal.Rptr.2d 447, superseded.

West Headnotes

360 States
360III Property, Contracts, and Liabilities
360k111 k. State expenses and charges and statutory liabilities. Most Cited Cases
If a school district elects to participate in or continue participation in a voluntary education-related funded program, the district's obligation to comply with the notice and agenda requirements related to that program is not a "state mandate" for purposes of a local government's constitutional right to reimbursement whenever the legislature or any state agency mandates a new program or higher level of service on any local government. West's Ann.Cal. Const. Art. 13B, § 6; West's Ann.Cal.Educ.Code § 35147(b, c) (Repealed).

[2] States 360 ↪ 111

360 States
360III Property, Contracts, and Liabilities
360k111 k. State expenses and charges and statutory liabilities. Most Cited Cases
Mere participation of school districts and county in education-related funded programs did not make the costs incurred in complying with program conditions legally compelled and hence state mandates, for purposes of a local government's constitutional right to reimbursement whenever the legislature or any state agency mandates a new program or higher level of service on any local government; rather, the proper focus under a legal compulsion inquiry is upon the nature of the participation in the underlying programs themselves. West's Ann.Cal. Const. Art. 13B, § 6; West's Ann.Cal.Educ.Code § 35147(b, c) (Repealed).

[3] States 360 ↪ 111

360 States
360III Property, Contracts, and Liabilities
360k111 k. State expenses and charges and statutory liabilities. Most Cited Cases

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Costs incurred by school districts and county for statutorily required meeting notices and agendas were not a "state mandate," and, thus, state had no constitutional obligation to reimburse districts and county for those costs with regard to school improvement program, the American Indian Early Childhood Education Program, the School Based Program Coordination Act to coordinate various categorical aid programs, the McAteer Act education programs for disadvantaged minors, the Migrant Children Education Programs, the School Based Pupil Motivation and Maintenance Program and Dropout Recovery Act to address truancy and dropout issues, the Programs to Encourage Parental Involvement, and the federal Indian Education Program; the districts and county were not legally compelled to participate. West's Ann.Cal. Const. Art. 13B, § 6; Elementary and Secondary Education Act of 1965, § 7111, as amended, 20 U.S.C.A. § 7421; West's Ann.Cal.Educ.Code §§ 11500 et seq., 52010 et seq., 52060 et seq., 52850 et seq., 54400 et seq., 54440 et seq., 54720 et seq., 62000, 62000.2(b), 62002; § 35147(b, c) (Repealed).

[4] States 360 ⚡111

360 States

360III Property, Contracts, and Liabilities

360k111 k. State expenses and charges and statutory liabilities. Most Cited Cases

Statutes governing the school improvement program to disburse funds for all aspects of school operation and performance do not require schools and school districts throughout the state to establish a school site council, even if the school or district does not participate in the program, and, thus, they do not create a mandate for purposes of a local government's constitutional right to reimbursement whenever the legislature or any state agency mandates a new program or higher level of service on any local government. West's Ann.Cal. Const. Art. 13B, § 6; West's Ann.Cal.Educ.Code §§ 52010, 52011(b), 52012 et seq., 62000, 62000.2(b), 62002.

[5] States 360 ⚡111

360 States

360III Property, Contracts, and Liabilities

360k111 k. State expenses and charges and statutory liabilities. Most Cited Cases

Program funding provided by state for the Chacon-Moscone Bilingual Bicultural Education program satisfied any constitutional obligation of state to reimburse school districts and county for modest cost to provide notice of meetings and post agendas; even if the districts and county were legally compelled to participate in the program, the state provided funds to cover the necessary notice and agenda related expenses. West's Ann.Cal. Const. Art. 13B, § 6; West's Ann.Cal.Educ.Code § 52168(b).

[6] Schools 345 ⚡19(1)

345 Schools

345II Public Schools

345II(A) Establishment, School Lands and Funds, and Regulation in General

345k16 School Funds

345k19 Apportionment and Disposition

345k19(1) k. In general. Most Cited Cases

Costs of complying with meeting notice and agenda requirements of the Chacon-Moscone Bilingual Bicultural Education program qualify as "reasonable district administrative expenses" within the meaning of statute permitting school districts to claim funds for expenditures in reasonable district administrative expenses. West's Ann.Cal.Educ.Code § 52168(b).

[7] States 360 ⚡111

360 States

360III Property, Contracts, and Liabilities

360k111 k. State expenses and charges and statutory liabilities. Most Cited Cases

A reduction in the program funds that school districts and county may have wished to use exclusively for substantive activities in the Chacon-Moscone Bilingual Bicultural Education

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program would not in itself transform the related costs for meeting notices and agendas into a reimbursable state mandate. West's Ann.Cal. Const. Art. 13B, § 6; West's Ann.Cal.Educ.Code § 52160 et seq.; § 35147(b, c) (Repealed).

No appearance by Real Parties in Interest and Respondents Kern High School District and County of Santa Clara.

[8] Schools 345 ↪ 21

345 Schools

345II Public Schools

345II(B) Creation, Alteration, Existence, and Dissolution of Districts

345k21 k. Nature and status as corporations. Most Cited Cases

School districts are agencies of the state, not separate or distinct political entities.

[9] States 360 ↪ 111

360 States

360III Property, Contracts, and Liabilities

360k111 k. State expenses and charges and statutory liabilities. Most Cited Cases

Purpose of state's constitutional obligation to reimburse a local government whenever the legislature or any state agency mandates a new program or higher level of service on any local government 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. West's Ann.Cal. Const. Art. 13B, § 6.

***239*729**1204 Bill Lockyer, Attorney General, Andrea Lynn Hoch, Chief Assistant Attorney General, Manuel M. Medeiros and Louis R. Mauro, Assistant Attorneys *730 General, Catherine M. Van Aken and Leslie R. Lopez, Deputy Attorneys General, for Plaintiff and Appellant.

Paul M. Starkey, Camille Shelton, Sacramento, and Eric D. Feller for Defendant and Respondent.

Jo Anne Sawyerknoll, Sacramento, Jose A. Gonzales and Arthur M. Palkowitz, San Diego, for Real Party in Interest and Respondent San Deigo Unified School District.

Ruth Sorensen, Alturas, for California State Association of Counties, City of Buenaventura, City of Carlsbad, City of Dixon, City of Indian Wells, City of La Habra Heights, City of Merced, City of Monterey, City of Plymouth, City and County of San Francisco, City of San Luis Obispo, City of San Pablo, **1205 City of Tracy and City of Walnut Creek as Amici Curiae on behalf of Real Parties in Interest and Respondents.

Diana McDonough, San Rafael, Harold M. Freiman, San Ramon, Cynthia A. Schwerin, San Rafael, and Lozano Smith for California School Boards Association, though its Education Legal Alliance as ***240 Amici Curiae on behalf of Real Parties in Interest and Respondents.

GEORGE, C.J.

Article XIII B, section 6, of the California Constitution provides: "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...." (Hereafter XIII B, section 6.)

Real parties in interest—two public school districts and a county (hereafter claimants)—participate in various education-related programs that are funded by the state and, in some instances, by the federal government. Each of these underlying funded programs in turn requires participating public school districts to establish and utilize specified school councils and advisory committees. Statutory provisions enacted in the mid-1990's require that such school councils and advisory committees provide notice of meetings, and post agendas for those meetings. (See Gov.Code, § 54952; *731Ed.Code, § 35147.) We granted review to determine whether claimants have a right to reim-

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bursement from the state for their costs in complying with these statutory notice and agenda requirements.

We conclude, contrary to the Court of Appeal, that claimants are not entitled to reimbursement under the circumstances presented here. Our conclusion is based on the following determinations:

First, we reject claimants' assertion that they have been legally compelled to incur notice and agenda costs, and hence are entitled to reimbursement from the state, based merely upon the circumstance that the notice and agenda provisions are mandatory elements of education-related programs in which claimants have participated, without regard to whether a claimant's participation in the underlying program is voluntary or compelled. Second, we conclude that as to *eight* of the nine underlying funded programs here at issue, claimants have not been legally compelled to participate in those programs, and hence cannot establish a reimbursable state mandate as to those programs based upon a theory of legal compulsion. Third, assuming (without deciding) that claimants have been legally compelled to participate in *one* of the nine programs, we conclude that claimants nonetheless have no entitlement to reimbursement from the state for such expenses, because they have been free at all relevant times to use funds provided by the state for that program to pay required program expenses—including the notice and agenda costs here at issue.

Finally, we reject claimants' alternative contention that even if they have not been *legally* compelled to participate in the underlying funded programs, as a *practical* matter they have been compelled to do so and hence to incur notice and agenda-related costs. Although we do not foreclose the possibility that a reimbursable state mandate might be found in circumstances short of legal compulsion—for example, if the state were to impose a substantial penalty (independent of the program funds at issue) upon any local entity that declined to participate in a given program—claimants

here faced no such practical compulsion. Instead, although claimants argue that they have had “no true option or choice” other than to participate in the underlying funded educational programs, the asserted compulsion in this case stems only from the circumstance that claimants have found the benefits of various funded programs “too good to refuse”—even though, as a condition of program participation, they have been forced to incur some costs. ***241 On the facts presented, the cost of compliance with conditions of participation in these funded programs does not amount to a reimbursable state mandate.

Accordingly, we shall reverse the judgment of the Court of Appeal.

***732 **1206 I.**

A number of statutes establish various school-related educational programs, such as the School-Based Pupil Motivation and Maintenance Program and Dropout Recovery Act (Ed.Code, § 54720 et seq.), Programs to Encourage Parental Involvement (Ed.Code, § 11500 et seq.), and the federal Indian Education Program (20 U.S.C. § 7421 et seq. [former 25 U.S.C. § 2604 et seq.]). Under these statutes, participating school districts are granted state or federal funds to operate the program, and are required to establish school site councils or advisory committees that help administer the program. Program funding often is substantial—for example, on a statewide basis, funding provided by the state for school improvement programs (see Ed.Code, §§ 52010 et seq., 62000, 62000.2, subd. (b), 62002) for the 1998–1999 fiscal year totaled approximately \$394 million. (Cal. Dept. of Ed., Rep., Budget Act of 1998 (Nov.1998) p. 52.)

In the mid-1990's, the Legislature passed legislation designed to make the operations of the councils and advisory committees related to such programs more open and accessible to the public. First, effective April 1, 1994, the Legislature enacted Government Code section 54952, which expanded the reach of the Ralph M. Brown Act (Brown Act) (

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Gov.Code, § 54950.5 et seq.)—California's general open meeting law—to apply to all such official local advisory bodies.^{FN1} Second, effective July 21, 1994, Education Code section 35147 superceded Government Code section 54952, with respect to the application of the Brown Act to designated councils and advisory committees. Although the earlier (Government Code) statute had made *all* local government councils and advisory committees subject to *all* provisions of the Brown Act, the later (Education Code) statute generally exempts councils and advisory committees of nine specific programs from compliance with all provisions of the Brown Act, and imposes instead its own separately described requirement that all such councils and advisory committees related to those nine programs be open to the public, provide notice of meetings, and post meeting agendas.^{FN2}

FN1. Government Code section 54952, a provision of the Brown Act, provides in relevant part: "As used in this chapter, 'legislative body' means: [¶] (a) The governing body of a local agency or any other local body created by state or federal statute. [¶] (b) A commission, committee, board, or other body of a local agency, whether permanent or temporary, decision-making or advisory, created by charter, ordinance, resolution, or formal action of a legislative body...."

FN2. Education Code section 35147 provides in relevant part: "(a) Except as specified in this section, any meeting of the councils or committees specified in subdivision (b) is exempt from ... the Ralph M. Brown Act ... [¶] (b) The councils and schoolsite advisory committees established pursuant to Sections 52012, 52065, 52176, and 52852, subdivision (b) of Section 54425, Sections 54444.2, 54724, and 62002.5, and committees formed pursuant to Section 11503 or Section 2604 of Title 25 of the United States Code, are subject to

this section. [¶] (c) Any meeting held by a council or committee specified in subdivision (b) shall be open to the public and any member of the public shall be able to address the council or committee during the meeting on any item within the subject matter jurisdiction of the council or committee. Notice of the meeting shall be posted at the schoolsite, or other appropriate place accessible to the public, at least 72 hours before the time set for the meeting. The notice shall specify the date, time, and location of the meeting and contain an agenda describing each item of business to be discussed or acted upon. The council or committee may not take any action on any item of business unless that item appeared on the posted agenda or unless the council or committee members present, by unanimous vote, find that there is a need to take immediate action and that the need for action came to the attention of the council or committee subsequent to the posting of the agenda...."

The nine school site councils and advisory committees specified in subdivision (b), above, were established as part of the following programs: The school improvement program (Ed.Code, § 52010 et seq.; see *id.*, §§ 62000, 62000.2, subd. (b), 62002) [a general program that disburses funds for all aspects of school operation and performance]; the American Indian Early Childhood Education Program (Ed.Code, § 52060 et seq.); the Chacon-Moscone Bilingual Bicultural Education Act of 1976 (Ed.Code, § 52160 et seq.; see *id.*, 62000, 62000.2, subd. (d)); the School Based Program Coordination Act (Ed.Code, § 52850 et seq. [a program designed to coordinate various categorical aid programs]); the McAteer Act (Ed.Code, § 54400 et seq. [various compensatory education pro-

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grams for "disadvantaged minors"); the Migrant Children Education Programs (Ed.Code, § 54440 et seq.); the School Based Pupil Motivation and Maintenance Program and Dropout Recovery Act (Ed.Code, § 54720 et seq. [a program designed to address truancy and dropout issues]); the Programs to Encourage Parental Involvement (Ed.Code, § 11500 et seq.); and the federal Indian Education Program (20 U.S.C. § 7421 et seq. [former 25 U.S.C. § 2601 et seq.].)

***242 *733 **1207 Compliance with these notice and agenda rules in turn imposed various costs on the affected councils and committees. Claimants Kern High School District, San Diego Unified School District, and County of Santa Clara filed "test claims" (see Gov.Code, § 17521) with the Commission on State Mandates (Commission), seeking reimbursement for the costs incurred by school councils and advisory committees in complying with the new statutory notice and agenda requirements. (See generally *Kinlaw v. State of California* (1991) 54 Cal.3d 326, 331-333, 285 Cal.Rptr. 66, 814 P.2d 1308 [describing legislative procedures implementing Cal. Const. art. XIII B, § 6].) ^{FN3} In a statement of decision issued in mid-April 2002, the Commission found in favor of claimants. It concluded that the statutory notice and agenda requirements impose reimbursable state mandates for the costs of preparing meeting agendas, posting agendas, and providing the public an opportunity to address the respective council or committee.

FN3. In December 1994, Santa Clara County filed the first test claim, asserting that Government Code section 54952 imposed a reimbursable **state mandate**. In December 1995, Kern High School District filed a test claim asserting that Education Code section 35147 imposes a reimbursable **state mandate**. These two claims were consolidated, and San Diego Unified

School District was added as a coclaimant.

*734 Acting through the **Department of Finance**, the **State of California** (hereafter **Department of Finance** or **Department**) thereafter brought this administrative **mandate** proceeding under Government Code section 17559, subdivision (b), to challenge the **Commission's** decision. The San Diego Unified School District took the lead role on behalf of claimants; the Kern High School District and the County of Santa Clara did not appear in the court proceedings below and have not appeared in this court.

In November 2000, the trial court, agreeing with the **Commission**, denied the **mandate** petition.^{FN4} The **Department of Finance*****243 appealed, arguing that the school councils and advisory committees at issue serve categorical aid programs in which school districts participate "voluntarily," often as a condition of receiving **state** or federal program funds. The **Department of Finance** asserted that the **state** has not *compelled* school districts to participate in or accept funding for any of those underlying programs—and hence has not required the establishment of any of the councils and committees that serve the programs. Instead, the **Department of Finance** argued, the **state** merely has set out reasonable conditions and rules that must be adhered to: if a local entity elects to participate in a program and receive program funding. Accordingly, the **Department of Finance** asserted, because local entities are not required to undertake or continue to participate in the programs, the **state**, by enacting Government Code section 54952 and Education Code section 35147, has not imposed a "**mandate**," as that term is used in article XIII B, section 6. It follows, the **Department of Finance** asserted, that claimants have no right to reimbursement under article XIII B, section 6.

FN4. The trial court **stated**: "Two primary issues are raised in this matter. The first issue is whether the 1993 amendments to the Brown Act [that is, enactment of Govern-

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ment Code, section 54952] and the 1994 enactment of ... [Education Code] section 35147 **mandate** a new program or higher level of service. The Court concludes that they do. The second issue is whether a reimbursable **state mandate** is created only when an advisory council or committee which is subject to the Brown Act is required by **state law**. The Court concludes that it is not."

In a July 2002 decision, the Court of Appeal rejected the position taken by the **Department of Finance**. The appellate court concluded that a **state mandate** is established under article XIII B, section 6, when the local governmental entity has "no reasonable alternative" and "no true choice but to participate" in the program, and incurs the additional costs associated with an increased or higher level of service.^{FN5}

FN5. The Court of Appeal also concluded that Government Code section 54952 and Education Code section 35147 establish a "higher level of service" under article XIII B, section 6. We need not and do not review that determination here, and express no view on the validity of that conclusion.

**1208 We granted review to consider the Court of Appeal's construction of the term "state mandate" as it appears in article XIII B, section 6.

*735 II.

Article XIII A (adopted by the voters in 1978 as Proposition 13), limits the *taxing* authority of state and local government. Article XIII B (adopted by the voters in 1979 as Proposition 4) limits the *spending* authority of state and local government.

Article XIII B, section 6, provides as follows: "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." Article XIII B became operative on July 1, 1980. (*Id.*, § 10.)

We have observed that article XIII B, section 6, "recognizes that articles XIII A and XIII B severely restrict the taxing and spending powers of local governments. [Citation.] Its purpose 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 ***244 impose." (*County of San Diego v. State of California* (1997) 15 Cal.4th 68, 81, 61 Cal.Rptr.2d 134, 931 P.2d 312 (*County of San Diego*).) We also have observed that a reimbursable state mandate does not arise merely because a local entity finds itself bearing an "additional cost" imposed by state law. (*County of Los Angeles v. State of California* (1987) 43 Cal.3d 46, 55-57, 233 Cal.Rptr. 38, 729 P.2d 202.) The additional expense incurred by a local agency or school district arising as an "incidental impact of a law which applied generally to all ... entities" is not the "type of expense ... [that] the voters had in mind when they adopted section 6 of article XIII B." (*Lucia Mar Unified School Dist. v. Honig* (1988) 44 Cal.3d 830, 835, 244 Cal.Rptr. 677, 750 P.2d 318; see also *County of Fresno v. State of California* (1991) 53 Cal.3d 482, 487, 280 Cal.Rptr. 92, 808 P.2d 235; *City of Sacramento v. State of California* (1990) 50 Cal.3d 51, 70, 266 Cal.Rptr. 139, 785 P.2d 522 (*City of Sacramento*).^{FN6})

FN6. As we observed in *City of Sacramento, supra*, 50 Cal.3d at page 70, 266

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Cal.Rptr. 139, 785 P.2d 522, "extension of the subvention requirements to costs 'incidentally' imposed on local governments would require the Legislature to assess the fiscal effect on local agencies of each law of general application. Moreover, it would subject much general legislation to the supermajority vote required to pass a companion local-government revenue bill. Each such necessary appropriation would, in turn, cut into the *state's* article XIII B spending limit. ([Art. XIII B,] § 8, subd. (a).)" We reaffirmed that "nothing in the language, history, or apparent purpose of article XIII B suggested such far-reaching limitations on legitimate state power." (50 Cal.3d at p. 70, 266 Cal.Rptr. 139, 785 P.2d 522.)

The focus in many of the prior cases that have addressed article XIII B, section 6, has been upon the meaning of the terms "new program" or "increased level of service." In the present case, we are concerned with the meaning of state "mandate."

III.

A.

In its briefs, the Department of Finance asserts that article XIII B, section 6, reflects an intent on the part of the drafters and the electorate to limit reimbursement to costs that are forced upon local governments as a matter of legal compulsion. The Commission's briefs take a similar approach, arguing that reimbursement under the constitutional provision requires a showing that a local entity was "ordered or commanded" to incur added costs. At oral argument, both the Department and the Commission retreated somewhat from these positions, and suggested**1209 that legal compulsion may not be a necessary condition of a finding of a reimbursable state mandate in all circumstances. For the reasons explained below, although we shall analyze the legal compulsion issue, we find it unnecessary in this case to decide whether a finding of legal compulsion is *necessary* in order to establish a right

to reimbursement under article XIII B, section 6, because we conclude that even if there are some circumstances in which a state mandate may be found in the absence of legal compulsion, the circumstances presented in this case do not constitute such a mandate.

1.

The Department of Finance and the Commission maintain that the drafters of article XIII B, section 6, borrowed that provision's basic idea and structure—and the gist of its "state mandate" language—from then existing statutes. (See generally *Hayes v. Commission on State Mandates* (1992) 11 Cal.App.4th 1564, 1577–1581, 15 Cal.Rptr.2d 547.) At the time of ***245 the drafting and enactment of article XIII B, section 6, former Revenue and Taxation Code section 2231, subdivision (a) (currently Gov.Code, § 17561, subd. (a)) provided: "The state shall reimburse each local agency for all 'costs mandated by the state,' as defined in Section 2207...." And at that same time, former Revenue and Taxation Code section 2207 (currently Gov.Code, § 17514) provided: " 'Costs mandated by the state' means any increased costs which a local agency is required to incur as a result of the *737 following: [¶] (a) Any law enacted after January 1, 1973, which mandates a new program or an increased level of service of an existing program...."

As the Department of Finance observes, we frequently have looked to ballot materials in order to inform our understanding of the terms of a measure enacted by the electorate. (See, e.g., *County of Fresno v. State of California*, *supra*, 53 Cal.3d 482, 487, 280 Cal.Rptr. 92, 808 P.2d 235 [reviewing ballot materials concerning art. XIII B].) The Department stresses that the ballot materials pertaining to article XIII B in two places suggested that a state mandate comprises something that a local government entity is required or forced to do. The Legislative Analyst stated: " 'State mandates' are *requirements imposed* on local governments by legislation or executive orders." (Ballot Pamp., Special Statewide Elec. (Nov. 6, 1979) Prop. 4, p. 16, ital-

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ics added.) Similarly, the measure's proponents stated that the provision would "not allow the state governments to *force* programs on local governments without the state paying for them." (*Id.*, p. 18, arguments in favor of Prop. 4, capitalization removed, italics added.) The Department concludes that the ballot materials fail to suggest that a reimbursable state mandate might be found to exist outside the context of legal compulsion.

The Department of Finance and the Commission also assert that subsequent judicial construction of former Revenue and Taxation Code sections 2231 and 2207—upon which, as just discussed, article XIII B, section 6, apparently was based—suggests that a narrow meaning was accorded the term "state mandate" at the time article XIII B, section 6, was enacted. The Department relies primarily upon *City of Merced v. State of California* (1984) 153 Cal.App.3d 777, 200 Cal.Rptr. 642 (*City of Merced*). Claimants and amici curiae on their behalf assert that *City of Merced* either is distinguishable or was wrongly decided. We proceed to describe *City of Merced* at some length.

In *City of Merced, supra*, 153 Cal.App.3d 777, 200 Cal.Rptr. 642, the city wished either to purchase or to condemn (under its eminent domain authority) certain privately owned real property. If the city were to elect to proceed by eminent domain, it would be required by a then recent enactment (Code Civ. Proc., § 1263.510) to compensate the property owner for loss of its "business goodwill." The city did elect to proceed by eminent domain, and in April 1980 the Merced Superior Court issued a final order in condemnation, directing the city to pay the property owner for the latter's loss of business goodwill. The city did so and then sought reimbursement from the state, arguing that the new statutory requirement that it compensate for business goodwill amounted to a reimbursable state mandate. (*City of Merced*, at p. 780, 200 Cal.Rptr. 642.)

*738 **1210 The constitutional reimbursement provision contained in article XIII B, section 6, did

not become operative until July 1, 1980. Accordingly, the City of Merced sought reimbursement under the then existing statutory authority—Revenue and Taxation Code former sections 2231 and 2207—which, as noted, apparently had ***246 served as the model for the constitutional provision.

The State Board of Control—which at the time exercised the authority now exercised by the Commission—agreed with the City of Merced and found a reimbursable state mandate. (*City of Merced, supra*, 153 Cal.App.3d 777, 780, 200 Cal.Rptr. 642.) The city's approved claim for reimbursement "was included, along with other similar claims, as a [budget] line item in chapter 1090, Statutes of 1981." (*Ibid.*) The Legislature, however, refused to authorize the reimbursement, and directed the board not to accept, or submit, any future claim for reimbursement for business goodwill costs. (*Ibid.*)

The City of Merced then sought a writ of mandate commanding the Legislature to provide reimbursement. The trial court denied that request, and the Court of Appeal affirmed. The court concluded that, as a matter of law, the city's increased costs flowing from its election to condemn the property did not constitute a reimbursable state mandate. (*City of Merced, supra*, 153 Cal.App.3d 777, 781–783, 200 Cal.Rptr. 642.) The court reasoned: "[W]hether a city or county decides to exercise eminent domain is, essentially, an option of the city or county, rather than a mandate of the state. The fundamental concept is that the city or county is not required to exercise eminent domain. If, however, the power of eminent domain is exercised, then the city will be required to pay for loss of goodwill. Thus, payment for loss of goodwill is not a state-mandated cost." (*Id.*, at p. 783, 200 Cal.Rptr. 642.)

The court in *City of Merced, supra*, 153 Cal.App.3d 777, 200 Cal.Rptr. 642, found its construction of former Revenue and Taxation Code sections 2231 and 2207—as those statutory provisions read at the time they served as the model for article XIII B, section 6—to be confirmed by the subsequent legislative action amending former Rev-

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enue and Taxation Code section 2207 (and related former section 2207.5). As the court explained: "... Senate Bill No. 90 (Russell), 1979-1980 Regular Session ... added Revenue and Taxation Code section 2207, subdivision (h): [¶] 'Costs mandated by the state' means any increased costs which a local agency is required to incur as the result of the following: [¶] ... [¶] (h) Any statute enacted after January 1, 1973, or executive order issued after January 1, 1973, which adds new requirements to an existing optional program or service and thereby increases the cost of such program or service if the local agencies have no reasonable alternatives other than to continue the optional program. ' (City of Merced, supra, 153 Cal.App.3d 777, 783-784, 200 Cal.Rptr. 642, italics added.)

*739 (Of relevance here, Senate Bill No. 90 (1979-1980 Reg. Sess.) also added a substantively identical provision to former Revenue and Taxation Code section 2207.5—a specialized section that addressed reimbursable state mandates as they related to a school district.)^{FN7}

FN7. Revised section 2207.5 provided that "[c]osts mandated by the state' means any increased costs which a school district is required to incur as a result of ... [¶] ... [¶] (h) Any statute enacted after January 1, 1973, or executive order issued after January 1, 1978, which adds new requirements to an existing optional program or service and thereby increases the cost of such program or service if the school districts have no reasonable alternatives other than to continue the optional program. " (Stats.1980, ch. 1256, § 5, pp. 4248-4249, eff. July 1, 1981, italics added.)

The court in *City of Merced* continued: "Senate Bill No. 90 became effective on July 1, 1981, [more than a year] after plaintiff incurred the cost of business goodwill for which it seeks reimbursement. Subdivision (h) appears to have been included ***247 in the bill to provide for reimbursement of

increased costs in an optional program such as eminent domain when the local agency has no reasonable alternative to eminent domain. The legislative history of Senate Bill No. 90 supports the conclusion that subdivision (h) was added to Revenue and Taxation Code section 2207 to extend state liability rather than to clarify **1211 existing law. " (*City of Merced*, supra, 153 Cal.App.3d 777, 784, 200 Cal.Rptr. 642, italics added.)

After examining two legislative committee reports,^{FN8} the court in *City of Merced*, supra, 153 Cal.App.3d 777, 200 Cal.Rptr. 642, asserted that they "characterize Senate Bill No. 90 as expanding the definition of local reimbursable costs. The Legislative Analyst's Report ... on Senate Bill No. 90 similarly includes a statement that the bill expands the definition of state-mandated costs. Such characterizations of the purpose of Senate Bill No. 90 are consistent only with the conclusion that, until that bill was enacted, increased costs incurred in an optional program such as eminent domain were not state mandated. Thus the cost of business goodwill for which plaintiff was required [by Code of Civil Procedure, section 1263.510] to pay in April 1980, was not a state-mandated cost. It follows that the trial court properly denied the *740 petition for a writ of mandamus to compel payment of that cost." (*City of Merced*, supra, 153 Cal.App.3d 777, 785, 200 Cal.Rptr. 642, italics added.)

FN8. The court in *City of Merced* asserted: "The Report of the Assembly Revenue and Taxation Committee ... includes a statement: ' SB 90 further defines "mandated costs" in Sections 4 and 5 to include the following: [¶] ... [¶] 'e. Where a statute or executive order adds new requirements to an existing optional program, which increases costs if the local agency has no reasonable alternative than to continue that optional program.' (Rep., p. 1, italics in original.) [¶] Additionally, the Ways and Means Committee's Staff Analysis ... notes that Senate Bill No. 90: 'Expands the

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definition of *local* reimbursable costs mandated and paid by the state to include: [¶] ... [¶] e. Statutes or executive orders adding *new requirements to an existing optional program*, which increases costs if the local agency has no reasonable alternative than to continue that optional program.’ (P. 2, italics in original.)” (*City of Merced, supra*, 153 Cal.App.3d at p. 784, 200 Cal.Rptr. 642.)

In other words, the court in *City of Merced* concluded that former Revenue and Taxation Code sections 2231 and 2207, as they read at the time they served as the model for article XIII B, section 6, contemplated a narrow definition of reimbursable state mandate, and not the subsequently expanded definition of reimbursable state mandate found in the 1981 amendments to the Revenue and Taxation Code.^{FN9}

FN9. We need not, and do not, decide whether the court in *City of Merced, supra*, 153 Cal.App.3d 777, 200 Cal.Rptr. 642, correctly characterized the statutory history of the 1981 amendments to the Revenue and Taxation Code.

A few months after the Court of Appeal filed its opinion in *City of Merced, supra*, 153 Cal.App.3d 777, 200 Cal.Rptr. 642, the Legislature overhauled the law pertaining to **state mandates** and reimbursements by amending both the Revenue and Taxation Code and the Government Code. (Stats.1984, ch. 1459, p. 5113.) The **Department of Finance** and the **Commission** assert that two aspects of the legislative overhaul are particularly relevant to the issue we address here.

First, the **Department of Finance** and the **Commission** assert that the Legislature enacted a new section of the Government Code— section 17514—in order to implement the reimbursable-**state-mandate** directive of article XIII B, section 6.^{FN10} The *****248 Department** and the **Commission** assert that in enacting that provision, the Le-

gisature readopted the original, *narrow* definition of reimbursable **state mandate** found in the initial versions of former Revenue and Taxation Code section 2207—which, the **Department** and the **Commission** maintain, existed at the time article XIII B, section 6, was drafted and adopted, and which defined “costs **mandated by the state**” as those “which a local agency is *required* to incur.” (See Stats.1975, ch. 486, § 1.8, p. 997 [Rev. & Tax. Code, former § 2207]; Stats.1977, ch. 1135, § 5, p. 3646 [Rev. & Tax. Code, former § 2207]; Stats.1984, ch. 1459, § 1, p. 5114 [Gov.Code, § 17514], italics added.) This same statutory language also had been recently construed at that time in *City of Merced, supra*, 153 Cal.App.3d 777, 200 Cal.Rptr. 642, as recognizing ****1212** as a reimbursable state mandate only that imposed when the local entity is legally compelled to engage in the underlying practice or program.

FN10. Government Code section 17514 reads: “ ‘Costs mandated by the state’ means any increased costs which a local agency or school district is *required* to incur after July 1, 1980, as a result of any statute enacted on or after January 1, 1975, or any executive order implementing any statute enacted on or after January 1, 1975, which mandates a new program or higher level of service of an existing program within the meaning of Section 6 of Article XIII B of the California Constitution.” (Italics added.)

*741 Second, the Department of Finance and the Commission observe, in enacting Government Code section 17514, the Legislature also provided that the use of the broader definition contained in the *amended* versions of Revenue and Taxation Code former sections 2207 and 2207.5 (which became effective July 1, 1981) should be phased out, but that the definition could be used to determine claims that arose prior to 1985. (See Stats.1984, ch. 1459, § 1, p. 5123; 68 Ops.Cal.Atty.Gen. 224 (1985).)

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In other words, the Department of Finance and the Commission assert, in the Legislature's 1984 overhaul of the statutory scheme implementing article XIII B, section 6, the Legislature embraced and codified the narrow definition of reimbursable state mandate set out in former Revenue and Taxation Code section 2207 (and construed in *City of Merced*) as the appropriate test in implementing the constitutional provision. Moreover, the Department and the Commission maintain, the Legislature limited the continued use of the broader definition of a statutorily imposed reimbursable state mandate (set out in the amendments to former Revenue and Taxation Code sections 2207 and 2207.5, effective in mid-1981) to a small and ever-decreasing number of cases. Five years later, the Legislature repealed former Revenue and Taxation Code sections 2207 and 2207.5 (see Stats.1989, ch. 589, §§ 7 & 8, p. 1978)—thereby finally discarding the broad definition of statutorily imposed reimbursable state mandate found in subdivision (h) of each of those statutes.

As noted above, the Department of Finance and the Commission assert in their briefs that based upon the language of article XIII B, section 6, and the statutory and case law history described above, the drafters and the electorate must have intended that a reimbursable state mandate arises only if a local entity is "required" or "commanded"—that is, legally compelled—to participate in a program (or to provide a service) that, in turn, leads unavoidably to increasing the costs incurred by the entity. (*City of Merced, supra*, 153 Cal.App.3d 777, 783, 200 Cal.Rptr. 642; see also *Long Beach Unified Sch. Dist. v. State of California* (1990) 225 Cal.App.3d 155, 174, 275 Cal.Rptr. 449 [construing the term "mandates," for purposes of art. XIII B, § 6, "in the ordinary sense of 'orders' or 'commands'"]; ***249 *County of Sonoma v. Commission on State Mandates* (2000) 84 Cal.App.4th 1264, 1284, 101 Cal.Rptr.2d 784 (*County of Sonoma*) [Legislature's interpretation of art. XIII B, § 6, in Gov.Code, 17514, as limited to "costs which a ... school district is required to incur" is entitled to great

weight].) FN11

FN11. Although, as described immediately below (in pt. III.A.2.), the Commission attempts to defend on other grounds its determination below in favor of claimants, the Commission strongly disputes the Court of Appeal's broad interpretation of state mandate as encompassing circumstances in which a local entity is not "ordered or commanded" to perform a task that in turn requires it to incur additional costs.

*742 2.

Claimants and amici curiae on their behalf assert that even if "legal compulsion" is the governing standard, they meet that test because, they argue, claimants have been legally compelled to incur compliance costs under Government Code section 54952 and Education Code section 35147, subdivision (c). The Commission—but not the Department—supports claimants' proposed application of the legal compulsion test.

In so arguing, claimants focus upon the circumstance that a school district *that participates* in one of the underlying programs listed in Education Code section 35147, subdivision (b), must comply with program requirements, including the statutory notice and agenda obligations, set out in Government Code section 54952 and Education Code section 35147, subdivision (c). Claimants assert: "[O]nce [a district] participates in one of the educational programs at issue, it does not thereafter have the option of performing that activity in a manner that avoids incurring costs mandated by amended Government Code section 54952 and Education Code section 35147."

**1213 The Department of Finance, relying upon *City of Merced, supra*, 153 Cal.App.3d 777, 200 Cal.Rptr. 642, asserts that claimants err by focusing upon a school district's legal obligation to comply with program conditions, rather than focusing upon whether the school district has a legal ob-

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ligation to participate in the underlying program to which the conditions attach. As suggested above, the core point articulated by the court in *City of Merced* is that activities undertaken at the option or discretion of a local government entity (that is, actions undertaken without any legal compulsion or threat of penalty for nonparticipation) do not trigger a state mandate and hence do not require reimbursement of funds—even if the local entity is obliged to incur costs as a result of its discretionary decision to participate in a particular program or practice. (*Id.*, at p. 783, 200 Cal.Rptr. 642.) Claimants concede that *City of Merced* conflicts with their contrary view, but they assert that the opinion is distinguishable and ask us to decline to follow, or extend, that decision.

Claimants stress—as we acknowledged above that—*City of Merced*, *supra*, 153 Cal.App.3d 777, 200 Cal.Rptr. 642, was decided in the context of an eminent domain proceeding, and that the appellate court was engaged in construing the *statutory* reimbursement scheme rather than article XIII B, section 6. Claimants also assert that although the City of Merced had discretion whether or *743 not to exercise its power of eminent domain, and was under no compulsion to do so, in the present case “school site council and advisory committee meetings cannot be held in a manner that avoids application of [the requirements of] Government Code section 54952 and Education Code section 35147.”

[1] The points relied upon by claimants neither call into doubt nor persuasively distinguish ***250 *City of Merced*, *supra*, 153 Cal.App.3d 777, 200 Cal.Rptr. 642. The truer analogy between that case and the present case is this: In *City of Merced*, the city was under no legal compulsion to resort to eminent domain—but when it elected to employ that means of acquiring property, its obligation to compensate for lost business goodwill was not a reimbursable state mandate, because the city was not required to employ eminent domain in the first place. Here as well, if a school district elects to participate in or continue participation in any underlying vol-

untary education-related funded program, the district's obligation to comply with the notice and agenda requirements related to that program does not constitute a reimbursable state mandate.^{FN12}

FN12. The Commission further attempts to distinguish *City of Merced*, *supra*, 153 Cal.App.3d 777, 200 Cal.Rptr. 642, by observing that the eminent domain statute at issue in that case made clear, in the *same* statute that imposed the requirement that an entity employing eminent domain also compensate for lost business goodwill, the discretionary nature of the decision whether to acquire property by purchase or instead by eminent domain. The Commission argues that no such express statement concerning local government discretion is set out in the statutes here at issue. As we explain *post*, part III.A.3.a., however, the underlying program statutes at issue in this case (with one possible exception—see *post*, pt. III.A.3.b.) make it clear that school districts retain the discretion not to participate in any given underlying program—and, as we explain *post*, footnote 22, the circumstance that the notice and agenda requirements of these elective programs were enacted *after* claimants first chose to participate in the programs does not make claimants' choice to continue to participate in those programs any less voluntary.

[2] We therefore reject claimants' assertion that merely because they participate in one or more of the various education-related funded programs here at issue, the costs they incurred in complying with program conditions have been legally compelled and hence constitute reimbursable state mandates. We instead agree with the Department of Finance, and with *City of Merced*, *supra*, 153 Cal.App.3d 777, 200 Cal.Rptr. 642, that the proper focus under a legal compulsion inquiry is upon the nature of claimants' participation in the underlying programs

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themselves.

3.

[3] Turning to that question—and without deciding whether a finding of legal compulsion to participate in an underlying program is *necessary* in order to establish a right to reimbursement under article XIII B, section 6—we *744 conclude, upon review of the **1214 applicable statutes, that claimants are, and have been, free from legal compulsion as to eight of the nine underlying funded programs here at issue. As to one of the funded programs, we shall assume, for purposes of analysis, that a district's participation in the program is in fact legally compelled.

a.

It appears to be conceded that, as to most of the nine education-related funded programs at issue, school districts are not legally compelled to participate in those programs. For example, the American Indian Early Childhood Education Program (Ed.Code, § 52060 et seq.), which implements projects designed to develop and test educational models to increase reading and math competence of students in preschool and early grades, states that school districts “may apply” to be included in the project (*id.*, § 52063) and, if accepted to participate, will receive program funding (*id.*, § 52062). Education Code section 52065 in turn states that each school district that receives funds provided by section 52062 “shall establish a districtwide ***251 American Indian advisory committee for American Indian early childhood education.” Plainly, a school district's initial and continued participation in the program is voluntary, and the obligation to establish or maintain an advisory committee arises only if the district elects to participate in, or continue to participate in, the program. Although the language of most of the other implementing statutes varies, they generally follow this same approach, with the same result: Participation in most of the programs listed in Education Code section 35147 is voluntary, and the obligation to establish or maintain a site council or advisory committee arises only if a

district elects to participate in, or continue to participate in, the particular program.

[4] Although *claimants* do not assert that they have been legally compelled to participate in *any* underlying program for which they have sought reimbursement for their compliance costs—and, indeed, their briefing suggests the opposite ^{FN13}—the Commission and amicus curiae Education Legal Alliance assert that the school improvement program (a “sunsetted,” but still funded, program that disburses funds for all aspects of school operation and performance; Ed.Code, §§ 52012 et seq., 62000, 62000.2, subd. (b), 62002) legally compels school districts to establish site councils without regard to whether the district participates in the underlying funded program to which the site councils apply. The Commission and amici curiae rely upon Education Code section 52010, which states in relevant part: “*With the exception of *745 subdivisions (a) and (b) of Section 52011, the provisions of this chapter shall apply only to school districts and schools which participate in school improvement programs authorized by this article.*” (Italics added.) Section 52011, subdivision (b), in turn provides that “each school district shall: [¶] ... [¶] (b) *Adopt policies* to ensure that prior to scheduled phase-in, a school site council as described in Section 52012 is established at each school site to consider whether or not it wishes the local school to participate in the school improvement program.” (Italics added.)

FN13. Claimants at one point characterize themselves as having “*decided* to participate in the programs listed in Education Code section 35147.” (Italics in added.)

The Commission and amici curiae read these provisions as requiring all schools and school districts throughout the state to “establish a school site council even if the school [or district] does not participate in the school improvement program.” We disagree. Reasonably construed, the statutes require only that a school district adopt “policies” (i.e., a *plan*) “to ensure” that *if* the district elects to parti-

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cipate in the School Improvement Program, a school site council *will*, "prior to phase-in" of the districtwide program, exist at each school, so that each individual school will be able to decide whether it wishes to participate in the district's program. In other words, the statutes require that districts adopt policies or plans for school site councils—but the statutes do not require that districts adopt councils themselves unless the district first elects to participate in the underlying program.^{FN14}

FN14. Amicus curiae California School Boards Association suggests that provisions of two other programs—the School Based Program Coordination Act (Ed.Code, § 52850 et seq.) and the School Based Pupil Motivation and Maintenance Program and Dropout Recovery Act (Ed.Code, § 54720 et seq.)—require that site councils be established, whether or not the school district participates in the underlying program. In both instances, the statutes make it clear that "prior to a school beginning to develop a [program] plan," the district first must establish a local school site council that in turn will "consider whether or not it wishes the local school to participate in the" program. Amicus curiae misreads the statutes; in both instances, the statutes make it clear that these requirements apply "only to school districts and schools *which participate in*" the respective programs (see Ed.Code, §§ 52850, 54722, italics added), and each statutory scheme provides that school site councils "shall be established at each school *which participates in*" the program. (*Id.*, §§ 52852, 54722, italics added.)

***252 **1215 We therefore conclude that, as to eight of the nine funded programs, the statutory notice and agenda obligations exist and apply to claimants only because they have *elected* to participate in, or continue to participate in, the various

underlying funded programs—and hence to incur notice and agenda costs that are a condition of program participation. Accordingly, no reimbursable state mandate exists with regard to any of these programs based upon a theory that such costs were incurred under legal compulsion.^{FN15}

FN15. In this case, we have no occasion to decide whether a reimbursable state mandate would arise in a situation in which a local entity voluntarily has elected to participate in a program but also has committed to continue its participation for a specified number of years, and the state imposes additional requirements at a time when the local entity is not free to end its participation.

*746 b.

The Commission and amicus curiae Education Legal Alliance also assert that the Chacon–Moscone Bilingual Bicultural Education Act of 1976 (another "sunsetting," but still funded, program; Ed.Code, §§ 52160 et seq., 62000, 62000.2, subd. (d), 62002) legally compels school districts to establish advisory committees, regardless whether the district participates in the underlying funded program to which the advisory committees apply. The Commission and amicus curiae rely upon Education Code section 52176's command that each school district with more than 50 pupils of limited English language proficiency, and each school within that district with more than 20 pupils of such proficiency, "*shall* establish a districtwide [or individual school site] advisory committee on bilingual education." (*Id.*, subds. (a) & (b), italics added.)

The Department of Finance responds that because the Chacon–Moscone Bilingual Bicultural Education program sunsetted in 1987, school districts that have participated in that program since that date have done so not as a matter of legal compulsion, but by their own choice made when they applied for and were granted such program funds.

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We note some support for the Department's view. Education Code section 64000 et seq., which governs the funding application process, includes the "sunsetting" Chacon-Moscone Bilingual Bicultural Education program as one of many optional programs for which a district *may* seek funding. (*Id.*, subd. (a)(4).) But, the Commission argues, another statutory provision suggests that Chacon-Moscone Bilingual Bicultural Education program advisory committees are mandatory in any event. The Commission notes that section 62002.5 provides that advisory committees "which are in existence pursuant to statutes or regulations as of January 1, 1979, *shall continue* subsequent to termination of funding for the programs sunsetted by this chapter." (Italics added.)

[5] We need not, and do not, determine whether claimants have been legally compelled to participate in the Chacon-Moscone Bilingual Bicultural Education program, or to maintain a related advisory committee. Even if we assume for purposes of analysis that claimants have been legally compelled to participate in the Chacon-Moscone Bilingual Bicultural Education***253 program, we nevertheless conclude that under the circumstances here presented, *747 the costs necessarily incurred in complying with the notice and agenda requirements under that funded program do not entitle claimants to obtain reimbursement under article XIII B, section 6, because the state, in providing program funds to claimants, already has provided funds that may be used to cover the necessary notice- and agenda-related expenses.

**1216 [6] We note that, based upon the evaluations made by the Commission, the costs associated with the notice and agenda requirements at issue in this case appear rather modest.^{FN16} And, even more significantly, we have found nothing to suggest that a school district is precluded from using a portion of the funds obtained from the state for the implementation of the underlying funded program to pay the associated notice and agenda costs. Indeed, the Chacon-Moscone Bilingual Bi-

cultural Education program explicitly authorizes school districts to do so. (See Ed.Code, § 52168, subd. (b) ["School districts may claim funds appropriated for purposes of this article for expenditures in, but not limited to, the following categories: [¶] ... [¶] (6) Reasonable district administrative expenses...."].) We believe it is plain that the costs of complying with program-related notice and agenda requirements qualify as "[r]easonable district administrative expenses." Therefore, even if we assume for purposes of analysis that school districts have been legally compelled to participate in the funded Chacon-Moscone Bilingual Bicultural Education program, we view the state's provision of program funding as satisfying, in advance, any reimbursement requirement.

FN16. Costs of compliance with the notice and agenda requirements have been estimated as amounting to approximately \$90 per meeting for the 1994-1995 fiscal year, and incrementally larger amounts in subsequent years, up to \$106 per meeting for the 2000-2001 fiscal year, for each committee or advisory council. (See State Controller, State Mandated Costs Claiming Instrns. No.2001-08, School Site Councils and Brown Act Reform (June 4, 2001), Parameters and Guidelines (Mar. 29, 2001) [and implementing forms].) Under these formulae, a district that has 10 schools, each with one council or advisory committee that meets 10 times a year, would be forced to incur approximately \$9,000 to \$10,000 in costs to comply with statutory notice and agenda requirements. Presumably, such costs are minimal relative to the funds allocated by the state to the school district under these programs. (We hereby grant the Commission's request that we take judicial notice of these and related documents, and of the Commission's December 13, 2001 Statewide Cost Estimate for reimbursement to school districts of notice- and agenda-related expenses.)

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[7] It is conceivable, with regard to some programs, that increased compliance costs imposed by the state might become so great—or funded program grants might become so diminished—that funded program benefits would not cover the compliance costs, or that expenditure of granted program funds on administrative costs might violate a spending limitation set out in applicable regulations or statutes. In those circumstances, a compulsory program participant likely would be able to establish the existence of a reimbursable *748 state mandate under article XIII B, section 6. But that certainly is not the situation faced by claimants in this case. At most, claimants, by being compelled to incur notice and agenda compliance costs—and pay those costs from program funds—have suffered a relatively minor diminution of program funds available to them for substantive program purposes. The circumstance that the program funds claimants may have wished to use exclusively for substantive program activities are ***254 thereby reduced, does not in itself transform the related costs into a reimbursable state mandate. (See *County of Sonoma, supra*, 84 Cal.App.4th 1264, 101 Cal.Rptr.2d 784 [art. XIII B, § 6, provides no right of reimbursement when the state *reduces* revenue granted to local government].) Nor is there any reason to believe that use of granted program funds to pay the relatively modest costs here at issue would violate any applicable spending limitation.^{FN17}

FN17. With regard to the Chacon–Moscone Bilingual Bicultural Education program, claimants assert that “[s]tate regulations place a ceiling on the amount of program funds that may be expended for indirect costs at three percent of the district’s funding...” (See Cal.Code Regs., tit. 5, §§ 3900, subd. (g) & 3947, subd. (a).) As the Department observes, applicable statutory provisions appear to set the limit for such expenses for the *same* program at no more than 15 percent of granted program funds. (See Ed.Code, §§ 63000, subd. (d), 63001.) Even assuming,

for purposes of analysis, that the regulation, and not the statute, applies with regard to this program, it seems clear that the notice and agenda costs here at issue fall far below 3 percent of granted program funds. Indeed, claimants concede: “The notice and agenda costs at issue are administrative costs that appear to fall within [the regulatory] provisions.”

We therefore conclude that because claimants are and have been free to use funds **1217 from the Chacon–Moscone Bilingual Bicultural Education program to pay required program expenses (including the notice and agenda costs here at issue), claimants are not entitled under article XIII B, section 6, to reimbursement from the state for such expenses.

B.

Claimants contend that even if they have not been *legally compelled* to participate in most of the programs listed in Education Code section 35147, subdivision (b), and hence have not been *legally required* to incur the related notice and agenda costs, they nevertheless have been compelled as a practical matter to participate in those programs and hence to incur such costs. Claimants assert that school districts have “had no true option or choice but to participate in these [underlying education-related] programs. *This absence of a reasonable alternative to participation is a de facto mandate.*” As explained below, on the facts of this case, we disagree.

*749 1.

Claimants and amici curiae supporting them, relying upon this court’s broad interpretation of the federal mandate provision of article XIII B, section 9,^{FN18} in *City of Sacramento, supra*, 50 Cal.3d 51, 70–76, 266 Cal.Rptr. 139, 785 P.2d 522, assert that we should recognize and endorse such a broader construction of section 6 of that article—a construction that does not limit the definition of a reimbursable state mandate to circumstances of *legal* compulsion.

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FN18. That provision states: “ ‘Appropriations subject to limitation’ for each entity of government do not include: [¶] ... [¶] (b) Appropriations required to comply with mandates of the courts or the federal government which, without discretion, require an expenditure for additional services or which unavoidably make the provision of existing services more costly.”

In *City of Sacramento, supra*, 50 Cal.3d 51, 266 Cal.Rptr. 139, 785 P.2d 522, we considered whether various federal “incentives” for states to extend unemployment insurance coverage to all public employees constituted a reimbursable state mandate under article XIII B, section 6, or a federal mandate within the meaning of article XIII B, section 9.

We concluded in *City of Sacramento, supra*, 50 Cal.3d 51, 266 Cal.Rptr. 139, 785 P.2d 522, that there was no reimbursable ***255 state mandate under article XIII B, section 6, because the implementing state legislation did not impose any new or increased “program or service,” or “unique” requirement, upon local entities. (*City of Sacramento*, at pp. 66–70, 266 Cal.Rptr. 139, 785 P.2d 522.)

Turning to the question whether the state legislation constituted a “federal mandate” under article XIII B, section 9, we acknowledged in *City of Sacramento, supra*, 50 Cal.3d 51, 266 Cal.Rptr. 139, 785 P.2d 522, that there was no legal compulsion requiring the states to participate in the federal plan to extend unemployment insurance coverage to all public employees. We nevertheless found that the costs related to the program constituted a federal mandate, for purposes of article XIII B, section 9. Our opinion concluded that because the financial consequences to the state and its residents of failing to participate in the federal plan were so onerous and punitive—we characterized the consequences as amounting to “certain and severe federal penalties” including “double ... taxation” and other “draconian” measures (*City of Sacramento*, at p. 74,

266 Cal.Rptr. 139, 785 P.2d 522) —as a practical matter, for purposes of article XIII B, section 9, the state was mandated to participate in the federal plan to extend unemployment insurance coverage.

*750 Claimants, echoing the reasoning of the Court of Appeal below, assert that because this court in *City of Sacramento, supra*, 50 Cal.3d 51, 266 Cal.Rptr. 139, 785 P.2d 522, broadly construed the term “federal mandate”—to include not only the situation in which a state or local entity is itself legally compelled to participate in a program and thereby incur costs, but also the situation in which the governmental entity's participation in the federal program is the coerced result of severe penalties that would be imposed for noncompliance—consistency requires that we afford a similarly broad construction to the concept of a state mandate. In other words, claimants argue, the word “mandate,” used in **1218 two separate sections of article XIII B, should not be given two different meanings.

The Department and the Commission disagree. They assert that, to begin with, a finding of a *federal mandate* under section 9 of article XIII B has a wholly different purpose and effect as compared with a finding of a *state mandate* under section 6 of that article. The Department and the Commission argue that although a finding of a state mandate may result in reimbursement from the state to a local entity for costs incurred by the local entity, expenditures made in order to comply with a federal mandate are excluded from the constitutional spending cap imposed by article XIII B upon any affected state or local entity, because such expenditures are not considered to be an exercise of the state or local authority's discretionary spending authority.

Moreover, the Department and the Commission assert, our conclusion in *City of Sacramento, supra*, 50 Cal.3d 51, 266 Cal.Rptr. 139, 785 P.2d 522, regarding the proper construction of article XIII B, section 9, relied upon “crucial facts” (*City of Sacramento*, at p. 73, 266 Cal.Rptr. 139, 785 P.2d 522)

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that do not pertain to the wholly separate issue that we face here—the proper interpretation of article XIII B, section 6. They observe that, as we explained in *City of Sacramento*, when article XIII B was enacted:

“First, the power of the federal government to impose its direct regulatory will on state and local agencies was *then* sharply in doubt.^[FN19] Second, in conformity with ***256 this principle, the vast bulk of cost-producing federal influence on government at the state and local levels was by inducement or incentive rather than direct [legal] compulsion. That remains so to this day. [¶] Thus, if article XIII B's reference to ‘federal mandates’ were limited to strict legal compulsion by the federal government, it would have been largely superfluous. It is well settled that ‘constitutional ... enactments must receive a liberal, practical common-sense construction which will meet changed conditions and the growing needs of the people. [Citations.]...’ *751(*Amador Valley Joint Union High Sch. Dist. v. State Bd. of Equalization* (1978) 22 Cal.3d 208, 245, 149 Cal.Rptr. 239, 583 P.2d 1281.) While ‘[a] constitutional amendment should be construed in accordance with the natural and ordinary meaning of its words[,] [citation] [, t]he literal language of enactments may be disregarded to avoid absurd results and to fulfill the apparent intent of the framers. [Citations.]’ (*Ibid.*)” (*City of Sacramento, supra*, 50 Cal.3d 51, 73, 266 Cal.Rptr. 139, 785 P.2d 522, fn. omitted.)

FN19. See discussion in *City of Sacramento, supra*, 50 Cal.3d at pages 71–73, 266 Cal.Rptr. 139, 785 P.2d 522.

[8] The Department of Finance and the Commission argue that these factors have no bearing upon the proper interpretation of what constitutes a state mandate under article XIII B, section 6. They assert that, unlike the federal government, which for a time was severely restricted in its ability to directly impose legal requirements upon the states (see *City of Sacramento, supra*, 50 Cal.3d 51, 71–73, 266 Cal.Rptr. 139, 785 P.2d 522), the State

of California has suffered no such restriction, vis-à-vis local government entities, except in matters involving purely local affairs.^{FN20} Accordingly, the Department and the Commission argue, in contrast with the situation we faced when construing article XIII B, section 9, we would not render superfluous the restriction in section 6 of that article, were we narrowly to interpret its term “mandate” to include only programs in which local entities are legally compelled to participate.

FN20. Unlike the federal-state relationship, sovereignty is not an issue between state and local governments. Claimant school districts are agencies of the state, and not separate or distinct political entities. (See *California Teachers Assn. v. Hayes* (1992) 5 Cal.App.4th 1513, 1524, 7 Cal.Rptr.2d 699.)

We find it unnecessary to resolve whether our reasoning in *City of Sacramento, supra*, 50 Cal.3d 51, 266 Cal.Rptr. 139, 785 P.2d 522, applies with regard to the proper interpretation of the term “state mandate” in section 6 of article XIII B. Even assuming, for purposes of analysis only, that our construction of the term “federal mandate” in *City of Sacramento, supra*, 50 Cal.3d 51, 266 Cal.Rptr. 139, 785 P.2d 522, applies equally in ***1219 the context of article XIII, section 6, for reasons set out below we conclude that, contrary to the situation we described in that case, claimants here have not faced “certain and severe ... penalties” such as “double ... taxation” and other “draconian” consequences (*City of Sacramento, supra*, 50 Cal.3d at p. 74, 266 Cal.Rptr. 139, 785 P.2d 522), and hence have not been “mandated,” under article XIII, section 6, to incur increased costs.

2.

[9] As we observed in *County of San Diego, supra*, 15 Cal.4th 68, 81, 61 Cal.Rptr.2d 134, 931 P.2d 312, article XIII B, section 6's “purpose is to preclude the state from shifting *752 financial responsibility for carrying out governmental functions to local agencies, which are ‘ill equipped’ to

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assume increased financial responsibilities." In light of that purpose, we do not ***257 foreclose the possibility that a reimbursable state mandate under article XIII B, section 6, properly might be found in some circumstances in which a local entity is not legally compelled to participate in a program that requires it to expend additional funds.

As noted, claimants argue that they have had "no true option or choice" but to participate in the various programs here at issue, and hence to incur the various costs of compliance, and that "the absence of a reasonable alternative to participation is a de facto [reimbursable state] mandate." In the same vein, amici curiae on behalf of claimants emphasize that as a practical matter, many school districts depend upon categorical funding for various programs. Amicus curiae California State Association of Counties asks us to interpret article XIII B, section 6, as providing state reimbursement for programs that are "*indirectly* state mandated." (Italics added.) Amicus curiae Education Legal Alliance goes so far as to assert that unless we recognize a right to reimbursement for costs such as those here at issue, "California schools could be forced to [forgo] participation in important categorical programs that supply necessary financial and educational support to those segments of the student population that need the most assistance. Alternatively, California schools could be forced to cut other student programs or services to fund these procedural requirements."

The record in the case before us does not support claimants' characterization of the circumstances in which they have been forced to operate, and provides no basis for resolving the accuracy of amici curiae's warnings and predictions. Indeed, we are skeptical of the assertions of claimants and amici curiae.

As observed *ante* (fn.16), the costs associated with the notice and agenda requirements at issue in this case appear rather modest. Moreover, the parties have not cited, nor have we found, anything in the governing statutes or regulations, or in the re-

cord, to suggest that a school district is precluded from using a portion of the program funds obtained from the state to pay associated notice and agenda costs. As noted above, under the Chacon-Moscone Bilingual Bicultural Education program (Ed.Code, § 52168, subd. (b)(6)), such authority has been granted. As to three of the remaining programs here at issue, such authority also is explicit, or at least strongly implied. (See 20 U.S.C. § 7425(d) [federal Indian Education Program]; *753Ed. Code, §§ 63000, subds. (c), (g), 63001 [school improvement program and McAteer Act].) We do not perceive any reason why the Legislature would contemplate a different rule for any of the other programs here at issue, and claimants have advanced no such reason.^{FN21}

FN21. Nor is there any reason to believe that expenditure of granted program funds on the notice and agenda costs at issue would violate any spending limitation set out in applicable regulations or statutes. Claimants assert that with regard to the school improvement programs, state regulations (Cal.Code Regs., tit. 5, §§ 3900, subd. (b), 3947, subd. (a)) limit spending on administrative expenses to no more than 3 percent of granted program funds. As the Department observes, applicable statutory provisions appear to set the limit for such expenses for the *same* program at no more than 15 percent of granted program funds. (See Ed.Code, §§ 63000, subd. (c), 63001.) But even assuming, for purposes of analysis, that the regulations apply with regard to this program, claimants have made no showing that the notice and agenda costs here at issue exceed three percent of granted program funds. As noted *ante*, 134 Cal.Rptr.2d at p. 241, 68 P.3d at p. 1206, statewide program grants for the school improvement programs alone amounted to approximately \$394 million in fiscal year 1998-1999. According to the Commission, statewide notice and agenda costs for *all*

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nine of the programs here at issue amounted to only \$5.2 million during that same period. (See Com. on State Mandates, Adopted Statewide Cost Estimate, Dec. 13, 2001, p. 1.)

Similarly, claimants have not demonstrated that the notice and agenda costs here at issue exceed the administrative costs spending limitations set for the federal Indian Education Program (see 20 U.S.C. § 7425(d) [5 percent limitation]) and for the McAteer Act's "compensatory education programs" (see Ed.Code, §§ 63000, subs. (g), 63001 [15 percent limitation].)

***258 **1220 As to each of the optional funded programs here at issue, school districts are, and have been, free to decide whether to (i) continue to participate and receive program funding, even though the school district also must incur program-related costs associated with the notice and agenda requirements, or (ii) decline to participate in the funded program. Presumably, a school district will continue to participate only if it determines that the best interests of the district and its students are served by participation—in other words, if, *on balance*, the funded program, even with strings attached, is deemed beneficial. And, presumably, a school district will decline participation if and when it determines that the costs of program compliance outweigh the funding benefits.

In essence, claimants assert that their participation in the education-related programs here at issue is so beneficial that, as a practical matter, they feel they must participate in the programs, accept program funds, and—by virtue of Government Code section 54952 and Education Code section 35147—incur expenses necessary to comply with the procedural conditions imposed on program participants. Although it is completely understandable that a participant in a funded program may be disappointed when additional requirements (with their attendant costs) are imposed as a condition of *754

continued participation in the program, just as such a participant would be disappointed if the total amount of the annual funds provided for the program were reduced by legislative or gubernatorial action, the circumstance that the Legislature has determined that the requirements of an ongoing elective program should be modified does not render a local entity's decision whether to continue its participation in the modified program any less voluntary.^{FN22} (See *County of Sonoma, supra*, 84 Cal.App.4th 1264, 101 Cal.Rptr.2d 784 [art. XIII B, § 6, provides no right of reimbursement when the state *reduces* revenue granted to local government].) We reject the suggestion, implicit in claimants' argument, that the state cannot legally provide school districts with funds for voluntary programs, and then effectively reduce that funding grant by requiring school districts to incur expenses in order to meet conditions of program participation.

FN22. Claimants assert that the notice and agenda requirements were imposed for the first time by Government Code section 54952 and Education Code section 35147 in the mid-1990's—"after the school districts decided to participate in the programs listed in Education Code section 35147." Even if we assume, contrary to the opposing position of the Department of Finance, that claimants first were subjected to notice and agenda requirements only after their respective school districts elected to participate in the programs, a school district's *continued* participation in the programs would be no less voluntary. As noted above, school districts have been, and remain, legally free to decline to continue to participate in the eight programs here at issue.

In sum, the circumstances presented in the case before us do not constitute the type of non-legal compulsion that reasonably could constitute, in claimants' phrasing, a "de facto" reimbursable state

68 P.3d 1203

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mandate. Contrary to the situation that we described in *City of Sacramento, supra*, 50 Cal.3d 51, 266 Cal.Rptr. 139, 785 P.2d 522, ***259 a claimant that elects to discontinue participation in one of the programs here at issue does not face "certain and severe ... penalties" such as "double ... taxation" or other "draconian" consequences (*id.*, at p. 74, 266 Cal.Rptr. 139, 785 P.2d 522), but simply must adjust to the withdrawal of grant money along with the lifting of program obligations. Such circumstances do not constitute a reimbursable **1221 state mandate for purposes of article XIII B, section 6.

IV

For the reasons stated, we conclude that claimants have failed to establish that they are entitled to reimbursement under article XIII B, section 6, of the California Constitution, with regard to any of the program costs here at issue.

*755 The judgment of the Court of Appeal is reversed.

WE CONCUR: KENNARD, BAXTER, WERDEGAR, CHIN, BROWN and MORENO, JJ.

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END OF DOCUMENT

ATTACHMENT 33

Westlaw

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H

Court of Appeal, Fourth District, Division I, California.

BUILDING INDUSTRY ASSOCIATION OF SAN DIEGO COUNTY et al., Plaintiffs and Appellants,
v.

STATE WATER RESOURCES CONTROL BOARD et al., Defendants and Respondents,
San Diego Baykeeper et al., Interveners and Respondents.

No. D042385.

Dec. 7, 2004.

Certified for Partial Publication.^{FN1}

FN1. Pursuant to California Rules of Court, rule 976.1, this opinion is certified for publication with the exception of Discussion parts III, IV, V, VI and VII.

As Modified on Denial of Rehearing Jan. 4, 2005.
Review Denied March 30, 2005.^{FN*}

FN* Baxter, J., and Brown, J., dissented.

Background: Building industry association filed petition for writ of mandate against regional and state water control boards, challenging issuance of comprehensive municipal stormwater sewer permit, as including water quality standard provisions which allegedly were too stringent and impossible to satisfy, and so violative of federal Clean Water Act standard. Environmental groups intervened as defendants. The Superior Court, San Diego County, Wayne L. Peterson, J., denied petition. Association appealed.

Holding: The Court of Appeal, Haller, J., held that water boards were not prohibited by Clean Water Act "maximum extent practicable" standard of stormwater pollutant abatement from including provisions in permit which required that municipalities comply with state water quality standards.

Affirmed.

West Headnotes

[1] Administrative Law and Procedure 15A 749

15A Administrative Law and Procedure
15AV Judicial Review of Administrative Decisions
15AV(D) Scope of Review in General
15Ak749 k. Presumptions. Most Cited Cases

Administrative Law and Procedure 15A 750

15A Administrative Law and Procedure
15AV Judicial Review of Administrative Decisions
15AV(D) Scope of Review in General
15Ak750 k. Burden of Showing Error. Most Cited Cases

In exercising its independent judgment when reviewing an administrative proceeding, a trial court must afford a strong presumption of correctness concerning the administrative findings, and the party challenging the administrative decision bears the burden of convincing the court that the administrative findings are contrary to the weight of the evidence.

[2] Administrative Law and Procedure 15A 683

15A Administrative Law and Procedure
15AV Judicial Review of Administrative Decisions
15AV(A) In General
15Ak681 Further Review
15Ak683 k. Scope. Most Cited Cases

On review of a trial court's determination of a challenge to an administrative ruling, the Court of Appeal applies a substantial evidence standard when reviewing the trial court's factual determinations on the administrative record.

124 Cal.App.4th 866, 22 Cal.Rptr.3d 128, 34 Env'tl. L. Rep. 20,149, 04 Cal. Daily Op. Serv. 10,694, 2004 Daily Journal D.A.R. 14,492
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[3] Administrative Law and Procedure 15A 683

15A Administrative Law and Procedure
15AV Judicial Review of Administrative Decisions

15AV(A) In General
15Ak681 Further Review
15Ak683 k. Scope. Most Cited Cases

On review of a trial court's determination of a challenge to an administrative ruling, an appellate court conducts a de novo review of the trial court's legal determinations, and is also not bound by the legal determinations made by the agency.

[4] Statutes 361 219(1)

361 Statutes
361VI Construction and Operation
361VI(A) General Rules of Construction
361k213 Extrinsic Aids to Construction
361k219 Executive Construction
361k219(1) k. In General. Most Cited Cases

Court of Appeal gives appropriate consideration to an administrative agency's expertise underlying its interpretation of an applicable statute.

[5] Statutes 361 219(6.1)

361 Statutes
361VI Construction and Operation
361VI(A) General Rules of Construction
361k213 Extrinsic Aids to Construction
361k219 Executive Construction
361k219(6) Particular Federal Statutes
361k219(6.1) k. In General.

Most Cited Cases
In determining the meaning of the Clean Water Act and its amendments, federal courts generally defer to the construction of a statutory provision by the Environmental Protection Agency (EPA) if the disputed portion of the statute is ambiguous. Federal Water Pollution Control Act Amendments of 1972, § 101 et seq., 33 U.S.C.A. § 1251 et seq.

[6] Statutes 361 219(6.1)

361 Statutes
361VI Construction and Operation
361VI(A) General Rules of Construction
361k213 Extrinsic Aids to Construction
361k219 Executive Construction
361k219(6) Particular Federal Statutes
361k219(6.1) k. In General.

Most Cited Cases
Court of Appeal considers and gives due deference to statutory interpretations of Clean Water Act by regional and state water control boards. Federal Water Pollution Control Act Amendments of 1972, § 101 et seq., 33 U.S.C.A. § 1251 et seq.

[7] Environmental Law 149E 197

149E Environmental Law
149EV Water Pollution
149Ek194 Permits and Certifications
149Ek197 k. Conditions and Limitations. Most Cited Cases

Regional and state water control boards, in issuing comprehensive municipal stormwater sewer permit, were not prohibited by Clean Water Act "maximum extent practicable" standard of stormwater pollutant abatement from including provisions in permit which required that municipalities comply with state water quality standards; language of pertinent statute communicated basic principle that boards, which had been federally approved to issue permit, retained discretion to impose appropriate water pollution controls in addition to those that came within definition of "maximum extent practicable," this principle was consistent with legislative history and purpose of Act, and there was no showing that applicable water quality standards were unattainable. Federal Water Pollution Control Act Amendments of 1972, § 402(p)(3)(B)(iii), 33 U.S.C.A. § 1342(p)(3)(B)(iii).
See 4 Witkin, Summary of Cal. Law (9th ed. 1987) Real Property, §§ 66-69; Cal. Jur. 3d, Pollution and Conservation Laws, § 113 et seq.

[8] Statutes 361 200

124 Cal.App.4th 866, 22 Cal.Rptr.3d 128, 34 Env'tl. L. Rep. 20,149, 04 Cal. Daily Op. Serv. 10,694, 2004 Daily Journal D.A.R. 14,492

(Cite as: 124 Cal.App.4th 866, 22 Cal.Rptr.3d 128)

361 Statutes

361VI Construction and Operation
361VI(A) General Rules of Construction
361k187 Meaning of Language

361k200 k. Mistakes in Writing; Grammar, Spelling, or Punctuation. Most Cited
While punctuation and grammar should be considered in interpreting a statute, neither is controlling unless the result is in harmony with the clearly expressed intent of the Legislature.

[9] Statutes 361 ↪214

361 Statutes

361VI Construction and Operation
361VI(A) General Rules of Construction
361k213 Extrinsic Aids to Construction
361k214 k. In General. Most Cited

Cases

If the statutory language is susceptible to more than one reasonable interpretation, a court must look to a variety of extrinsic aids to interpreting the statute, including the ostensible objects to be achieved, the evils to be remedied, the legislative history, public policy, contemporaneous administrative construction, and the statutory scheme of which the statute is a part.

[10] Appeal and Error 30 ↪900

30 Appeal and Error

30XVI Review
30XVI(G) Presumptions
30k900 k. Nature and Extent in General.

Most Cited Cases

Appeal and Error 30 ↪901

30 Appeal and Error

30XVI Review
30XVI(G) Presumptions
30k901 k. Burden of Showing Error. Most

Cited Cases

All lower court judgments and orders are presumed correct, and persons challenging them on ap-

peal must affirmatively show reversible error.

[11] Appeal and Error 30 ↪757(3)

30 Appeal and Error

30XII Briefs
30k757 Statement of Case or of Facts
30k757(3) k. Statement of Evidence. Most Cited Cases

A party challenging the sufficiency of evidence to support a judgment on appeal must summarize, and cite to, all of the material evidence, not just the evidence favorable to his or her appellate positions.

[12] Administrative Law and Procedure 15A ↪750

15A Administrative Law and Procedure

15AV Judicial Review of Administrative Decisions

15AV(D) Scope of Review in General

15Ak750 k. Burden of Showing Error. Most Cited Cases

The party challenging the scope of an administrative permit has the burden of showing the agency abused its discretion or its findings were unsupported by the facts.

**130 Latham & Watkins, David L. Mulliken, Eric M. Katz, Paul N. Singarella, Kelly E. Richardson and Daniel P. Brunton, San Diego, for Plaintiffs and Appellants.

Bill Lockyer, Attorney General, Mary Hackenbracht, Assistant Attorney General, Carol A. Squire, David Robinson and Deborah Fletcher, Deputy Attorneys General, for Defendants and Respondents.

David S. Beckman, Heather L. Hoecherl, Los Angeles, and Anjali I. Jaiswal, for Interveners and Respondents.

Marco Gonzalez, for Intervener and Respondent San Diego BayKeeper.

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San Diego, for Surfrider Foundation, Waterkeeper Alliance, The Ocean Conservancy, Heal the Bay, Environmental Defense Center, Santa Monica Bay-Keeper, Orange County CoastKeeper, Ventura CoastKeeper, Environmental Health Coalition, Cal-Beach Advocates, San Diego Audubon Society, Endangered Habitats League, and Sierra Club, Amici Curiae on behalf of Defendants and Respondents, and Interveners and Respondents.

HALLER, J.

*871 This case concerns the environmental regulation of municipal storm sewers that carry excess water runoff to lakes, lagoons, rivers, bays, and the ocean. The waters flowing through these sewer systems have accumulated numerous harmful pollutants that are then discharged into the water body without receiving any treatment. To protect against the resulting water quality impairment, federal and state laws impose regulatory controls on storm sewer discharges. In particular, municipalities and other public entities are required to obtain, and comply with, a regulatory permit limiting the quantity and quality of water runoff that can be discharged from these storm sewer systems.

In this case, the California Regional Water Control Board, San Diego Region, (Regional Water Board) conducted numerous public hearings and then issued a comprehensive municipal storm sewer permit governing 19 local public entities. Although these entities did not bring an administrative challenge to the permit, one business organization, the Building Industry Association of San Diego County (Building Industry), filed an administrative appeal with the State Water Resources Control Board (State Water Board). After making some modifications to the permit, the State Water Board denied the appeal. Building Industry then petitioned for a writ of mandate in the superior court, asserting numerous claims, including that the permit violates state and federal law because the permit provisions are too stringent and impossible to satisfy. Three environmental groups intervened as defendants in the action. After a hearing, the trial court found

Building Industry failed to prove its claims and entered judgment in favor of the administrative agencies (the Water Boards) and the intervenor environmental groups.

On appeal, Building Industry's main contention is that the regulatory permit violates federal law because it allows the Water Boards to impose municipal storm sewer control measures more stringent than a federal standard known as "maximum extent practicable." (**13133 U.S.C. § 1342(p)(3)(B)(iii).)^{FN2} In the published portion of this opinion, we reject this contention, and conclude the Water Boards had the authority to include a permit provision requiring compliance with state water quality standards. In the unpublished portion of the opinion, we find Building Industry's additional contentions to be without merit. We affirm the judgment.

FN2. Further statutory references are to title 33 of the United States Code, unless otherwise specified.

*872 RELEVANT BACKGROUND INFORMATION

I. Summary of Relevant Clean Water Act Provisions

Before setting forth the factual background of this particular case, it is helpful to summarize the federal and state statutory schemes for regulating municipal storm sewer discharges.^{FN3}

FN3. The systems that carry untreated urban water runoff to receiving water bodies are known as "[m]unicipal separate storm sewer" systems (40 C.F.R. § 122.26(b)(8)), and are often referred to as "MS4s" (40 C.F.R. § 122.30). For readability, we will identify these systems as municipal storm sewers. To avoid confusion in this case, we will generally use descriptive names, rather than initials or acronyms, when referring to parties and concepts.

A. Federal Statutory Scheme

When the United States Congress first enacted the Federal Water Pollution Control Act in 1948,

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the Congress relied primarily on state and local enforcement efforts to remedy water pollution problems. (*Middlesex Cty. Sewerage Auth. v. Sea Clammers* (1981) 453 U.S. 1, 11, 101 S.Ct. 2615, 69 L.Ed.2d 435; *Tahoe-Sierra Preservation Council v. State Water Resources Control Bd.* (1989) 210 Cal.App.3d 1421, 1433, 259 Cal.Rptr. 132.) However, by the early 1970's, it became apparent that this reliance on local enforcement was ineffective and had resulted in the "accelerating environmental degradation of rivers, lakes, and streams..." (*Natural Resources Defense Council, Inc. v. Costle* (D.C.Cir.1977) 568 F.2d 1369, 1371 (*Costle*)); see *EPA v. State Water Resources Control Board* (1976) 426 U.S. 200, 203, 96 S.Ct. 2022, 48 L.Ed.2d 578.) In response, in 1972 Congress substantially amended this law by mandating compliance with various minimum technological effluent standards established by the federal government and creating a comprehensive regulatory scheme to implement these laws. (See *EPA v. State Water Resources Control Board, supra*, 426 U.S. at pp. 204-205, 96 S.Ct. 2022.) The objective of this law, now commonly known as the Clean Water Act, was to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." (§ 1251(a).)

The Clean Water Act employs the basic strategy of prohibiting pollutant emissions from "point sources" ^{FN4} unless the party discharging the pollutants obtains a permit, known as an NPDES ^{FNS} permit. (See *EPA v. State Water Resources Control Board, supra*, 426 U.S. at p. 205, 96 S.Ct. 2022.) It is "unlawful *873 for any person to discharge a pollutant without obtaining a permit and complying with its terms." (*Ibid.*; § 1311(a); see **132*Costle, supra*, 568 F.2d at p. 1375.) An NPDES permit is issued by the United States Environmental Protection Agency (EPA) or by a state that has a federally approved water quality program. (§ 1342(a), (b); *EPA v. State Water Resources Control Board, supra*, 426 U.S. at p. 209, 96 S.Ct. 2022.) Before an NPDES is issued, the federal or state regulatory agency must follow an

extensive administrative hearing procedure. (See 40 C.F.R. §§ 124.3, 124.6, 124.8, 124.10; see generally Wardzinski et al., *National Pollutant Discharge Elimination System Permit Application and Issuance Procedures*, in *The Clean Water Act Handbook* (Evans edit., 1994) pp. 72-74 (Clean Water Act Handbook).) NPDES permits are valid for five years. (§ 1342(b)(1)(B).)

FN4. The Clean Water Act defines a "point source" to be "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 operation, or vessel or other floating craft, from which pollutants are or may be discharged." (§ 1362(14).)

FN5. NPDES stands for National Pollution Discharge Elimination System.

Under the Clean Water Act, the proper scope of the controls in an NPDES permit depends on the applicable state water quality standards for the affected water bodies. (See *Communities for a Better Environment v. State Water Resources Control Bd.* (2003) 109 Cal.App.4th 1089, 1092, 1 Cal.Rptr.3d 76.) Each state is required to develop water quality standards that establish "the desired condition of a waterway." (*Ibid.*) A water quality standard for any given water segment has two components: (1) the designated beneficial uses of the water body; and (2) the water quality criteria sufficient to protect those uses. (*Ibid.*) As enacted in 1972, the Clean Water Act mandated that an NPDES permit require compliance with state water quality standards and that this goal be met by setting forth a specific "effluent limitation," which is a restriction on the amount of pollutants that may be discharged at the point source. (§§ 1311, 1362(11).)

Shortly after the 1972 legislation, the EPA promulgated regulations exempting most municipal storm sewers from the NPDES permit requirements. (*Costle, supra*, 568 F.2d at p. 1372; see *Defenders*

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of Wildlife v. Browner (9th Cir.1999) 191 F.3d 1159, 1163 (*Defenders of Wildlife* .). When environmental groups challenged this exemption in federal court, the Ninth Circuit held a storm sewer is a point source and the EPA did not have the authority to exempt categories of point sources from the Clean Water Act's NPDES permit requirements. (*Costle, supra*, 568 F.2d at pp. 1374-1383.) The *Costle* court rejected the EPA's argument that effluent-based storm sewer regulation was administratively infeasible because of the variable nature of storm water pollution and the number of affected storm sewers throughout the country. (*Id.* at pp. 1377-1382.) Although the court acknowledged the practical problems relating to storm sewer regulation, the court found the EPA had the flexibility under the Clean Water Act to design regulations that would overcome these problems. (*Id.* at pp. 1379-1383.)

*874 During the next 15 years, the EPA made numerous attempts to reconcile the statutory requirement of point source regulation with the practical problem of regulating possibly millions of diverse point source discharges of storm water. (*Defenders of Wildlife, supra*, 191 F.3d at p. 1163; see Gallagher, *Clean Water Act in Environmental Law Handbook* (Sullivan edit., 2003) p. 300 (Environmental Law Handbook); Eisen, *Toward a Sustainable Urbanism: Lessons from Federal Regulation of Urban Stormwater Runoff* (1995) 48 Wash. U.J. Urb. & Contemp. L. 1, 40-41 (*Regulation of Urban Stormwater Runoff*)).

Eventually, in 1987, Congress amended the Clean Water Act to add provisions that specifically concerned NPDES permit requirements for storm sewer discharges. (§ 1342(p); see **133 *Defenders of Wildlife, supra*, 191 F.3d at p. 1163; *Natural Resources Defense Council v. U.S. E.P.A.* (1992) 966 F.2d 1292, 1296.) In these amendments, enacted as part of the Water Quality Act of 1987, Congress distinguished between industrial and municipal storm water discharges. With respect to *industrial* storm water discharges, Congress provided that NP-

DES permits "shall meet all applicable provisions of this section and section 1311 [requiring the EPA to establish effluent limitations under specific timetables]" (§ 1342(p)(3)(A).) With respect to *municipal* storm water discharges, Congress clarified that the EPA had the authority to fashion NPDES permit requirements to meet water quality standards without specific numerical effluent limits and instead to impose "controls to reduce the discharge of pollutants to the maximum extent practicable" (§ 1342(p)(3)(B)(iii); see *Defenders of Wildlife, supra*, 191 F.3d at p. 1163.) Because the statutory language pertaining to municipal storm sewers is at the center of this appeal, we quote the relevant portion of the statute in full:

"(B) 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." (§ 1342(p)(3)(B).)

To ensure this scheme would be administratively workable, Congress placed a moratorium on many new types of required stormwater permits until 1994 (§ 1342(p)(1)), and created a phased approach to necessary municipal *875 stormwater permitting depending on the size of the municipality (§ 1342(p)(2)(D)). (See *Environmental Defense Center, Inc. v. U.S. E.P.A.* (9th Cir.2003) 344 F.3d 832, 841-842.)

B. State Statutory Scheme

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Three years before the 1972 Clean Water Act, the California Legislature enacted its own water quality protection legislation, the Porter-Cologne Water Quality Control Act (Porter-Cologne Act), seeking to "attain the highest water quality which is reasonable...." (Wat.Code, § 13000.) The Porter-Cologne Act created the State Water Board to formulate statewide water quality policy and 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 **134 [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. (*WaterKeepers Northern California v. State Water Resources Control Bd.* (2002) 102 Cal.App.4th 1448, 1453, 126 Cal.Rptr.2d 389.) Thus, the waste discharge re-

quirements issued by the regional water boards ordinarily also serve as NPDES permits under federal law. (Wat.Code, § 13374.)

II. *The NPDES Permit at Issue in this Case*

Under its delegated authority and after numerous public hearings, in February 2001 the Regional Water Board issued a 52-page NPDES permit *876 and Waste Discharge Requirements (the Permit) governing municipal storm sewers owned by San Diego County, the San Diego Unified Port District, and 18 San Diego-area cities (collectively, "Municipalities").^{FN6} The first 10 pages of the Permit contain the Regional Water Board's detailed factual findings. These findings describe the manner in which San Diego-area water runoff absorbs numerous harmful pollutants and then is conveyed by municipal storm sewers into local waters without any treatment. The findings state that these storm sewer discharges are a leading cause of water quality impairment in the San Diego region, endangering aquatic life and human health. The findings further state that to achieve applicable state water quality objectives, it is necessary not only to require municipalities to comply with existing pollution-control technologies, but also to require compliance with applicable "receiving water limits" (state water quality standards) and to employ an "iterative process" of "development, implementation, monitoring, and assessment" to improve existing technologies.

FN6. Under the Clean Water Act, entities responsible for NPDES permit conditions pertaining to their own discharges are referred to as "copermittees." (40 C.F.R. § 122.26(b)(1).) For clarity and readability, we shall refer to these entities as Municipalities.

Based on these factual findings, the Regional Water Board included in the Permit several overall prohibitions applicable to municipal storm sewer discharges. Of critical importance to this appeal, these prohibitions concern two categories of restrictions. First, the Municipalities are prohibited from

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discharging those pollutants "which have not been reduced to the *maximum extent practicable*..."^{FN7} (Italics added). Second, the Municipalities are **135 prohibited from discharging pollutants "which cause or contribute to exceedances of receiving water quality objectives ..." and/or that "cause or contribute to the violation of water quality standards..." This second category of restrictions (referred to in this opinion as the "Water Quality Standards provisions") essentially provide that a Municipality may not discharge pollutants if those pollutants would cause the receiving water body to exceed the applicable water quality standard. It is these latter restrictions that are challenged by Building Industry in this appeal.

FN7. The Permit does not precisely define this phrase, and instead, in its definition section, contains a lengthy discussion of the variable nature of the maximum extent practicable concept, referred to as MEP. A portion of this discussion is as follows: "[T]he definition of MEP is dynamic and will be defined by the following process over time: municipalities propose their definition of MEP by way of their [local storm sewer plan]. Their total collective and individual activities conducted pursuant to the [plan] becomes their proposal for MEP as it applies both to their overall effort, as well as to specific activities (e.g., MEP for street sweeping, or MEP for municipal separate storm sewer maintenance). In the absence of a proposal acceptable to the [Regional Water Board], the [Regional Water Board] defines MEP." The definition also identifies several factors that are "useful" in determining whether an entity has achieved the maximum extent practicable standard, including "Effectiveness," "Regulatory Compliance," "Public Acceptance," "Cost," and "Technical Feasibility."

*877 Part C of the Permit (as amended) qualifies the Water Quality Standards provisions by de-

tailoring a procedure for enforcing violations of those standards through a step-by-step process of "timely implementation of control measures ...," known as an "iterative" process. Under this procedure, when a municipality "caus[es] or contribute[s] to an exceedance of an applicable water quality standard," the municipality must prepare a report documenting the violation and describing a process for improvement and prevention of further violations. The municipality and the regional water board must then work together at improving methods and monitoring progress to achieve compliance. But the final provision of Part C states that "Nothing in this section shall prevent the [Regional Water Board] from enforcing any provision of this Order while the [municipality] prepares and implements the above report."

In addition to these broad prohibitions and enforcement provisions, the Permit requires the Municipalities to implement, or to require businesses and residents to implement, various pollution control measures referred to as "best management practices," which reflect techniques for preventing, slowing, retaining or absorbing pollutants produced by stormwater runoff. These best management practices include structural controls that minimize contact between pollutants and flows, and non-structural controls such as educational and public outreach programs. The Permit also requires the Municipalities to regulate discharges associated with new development and redevelopment and to ensure a completed project will not result in significantly increased discharges of pollution from storm water runoff.

III. Administrative and Trial Court Challenges

After the Regional Water Board issued the Permit, the Building Industry, an organization representing the interests of numerous construction-related businesses, filed an administrative challenge with the State Water Board. Although none of the Municipalities joined in the administrative appeal, Building Industry claimed its own independent standing based on its assertion that the Permit

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would impose indirect obligations on the regional building community. (See Wat.Code, § 13320 [permitting any "aggrieved person" to challenge regional water board action].) Among its numerous contentions, Building Industry argued that the Water Quality Standards provisions in the Permit require strict compliance with state water quality standards beyond what is "practicable" and therefore violate federal law.

In November 2001, the State Water Board issued a written decision rejecting Building Industry's appeal after making certain modifications to the Permit. (Cal. Wat. Resources Control Bd. Order WQ2001-15 (Nov. 15, 2001).) Of particular relevance here, the State Water Board modified the Permit to make clear that the iterative enforcement process applied to the Water Quality Standards provisions in the Permit. But *878 the State Water Board did not delete the Permit's provision stating **136 that the Regional Water Board retains the authority to enforce the Water Quality Standards provisions even if a Municipality is engaged in this iterative process.

Building Industry then brought a superior court action against the Water Boards, challenging the Regional Board's issuance of the Permit and the State Water Board's denial of Building Industry's administrative challenge.^{FN8} Building Industry asserted numerous legal claims, including that the Water Boards: (1) violated the Clean Water Act by imposing a standard greater than the "maximum extent practicable" standard; (2) violated state law by failing to consider various statutory factors before issuing the Permit; (3) violated the California Environmental Quality Act (CEQA) by failing to prepare an environmental impact report (EIR); and (4) made findings that were factually unsupported.

FN8. Several other parties were also named as petitioners: Building Industry Legal Defense Foundation, California Business Properties Association, Construction Industry Coalition for Water Quality, San Diego County Fire Districts Associ-

ation, and the City of San Marcos. However, because these entities were not parties in the administrative challenge, the superior court properly found they were precluded by the administrative exhaustion doctrine from challenging the administrative agencies' compliance with the federal and state water quality laws. Although these entities were named as appellants in the notice of appeal, they are barred by the exhaustion doctrine from asserting appellate contentions concerning compliance with federal and state water quality laws. However, as to any other claims (such as CEQA), these entities are proper appellants. For ease of reference and where appropriate, we refer to the appellants collectively as Building Industry.

Three environmental organizations, San Diego BayKeeper, Natural Resources Defense Council, and California CoastKeeper (collectively, Environmental Organizations), requested permission to file a complaint in intervention, seeking to uphold the Permit and asserting a direct and substantial independent interest in the subject of the action. Over Building Industry's objections, the trial court permitted these organizations to file the complaint and enter the action as parties-interveners.

After reviewing the lengthy administrative record and the parties' briefs, and conducting an oral hearing, the superior court ruled in favor of the Water Boards and Environmental Organizations (collectively, respondents). Applying the independent judgment test, the court found Building Industry failed to meet its burden to establish the State Water Board abused its discretion in approving the Permit or that the administrative findings are contrary to the weight of the evidence. In particular, the court found Building Industry failed to establish the Permit requirements were "impracticable under federal law or unreasonable under state law," and noted that there was evidence showing the Regional Water Board considered many practical aspects of

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the regulatory *879 controls before issuing the Permit. Rejecting Building Industry's legal arguments, the court also stated that under federal law the Water Boards had the discretion "to require strict compliance with water quality standards" or "to require less than strict compliance with water quality standards." The court also sustained several of respondents' evidentiary objections, including to documents relating to the legislative history of the Clean Water Act.

Building Industry appeals, challenging the superior court's determination that the Permit did not violate the federal Clean Water Act. In its appeal, Building Industry does not reassert its claim that the Permit violates state law, except for its contentions pertaining to CEQA.

DISCUSSION

I. Standard of Review

[1] A party aggrieved by a final decision of the State Water Board may obtain review of the decision by filing a timely **137 petition for writ of mandate in the superior court. (Wat.Code, § 13330, subd. (a).) Code of Civil Procedure section 1094.5 governs the proceedings, and the superior court must exercise its independent judgment in examining the evidence and resolving factual disputes. (Wat.Code, § 13330, subd. (d).) "In exercising its independent judgment, a trial court must afford a strong presumption of correctness concerning the administrative findings, and the party challenging the administrative decision bears the burden of convincing the court that the administrative findings are contrary to the weight of the evidence." (*Fukuda v. City of Angels* (1999) 20 Cal.4th 805, 817, 85 Cal.Rptr.2d 696, 977 P.2d 693.)

[2][3][4][5][6] In reviewing the trial court's factual determinations on the administrative record, a Court of Appeal applies a substantial evidence standard. (*Fukuda v. City of Angels*, *supra*, 20 Cal.4th at p. 824, 85 Cal.Rptr.2d 696, 977 P.2d 693.) However, in reviewing the trial court's legal determinations, an appellate court conducts a de novo review. (See *Alliance for a Better Downtown*

Millbrae v. Wade (2003) 108 Cal.App.4th 123, 129, 133 Cal.Rptr.2d 249.) Thus, we are not bound by the legal determinations made by the state or regional agencies or by the trial court. (See *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.) But we must give appropriate consideration to an administrative agency's expertise underlying its interpretation of an applicable statute.^{FN9} (*Ibid.*)

FN9. We note that in determining the meaning of the Clean Water Act and its amendments, federal courts generally defer to the EPA's statutory construction if the disputed portion of the statute is ambiguous. (See *Chevron U.S.A. v. Natural Res. Def. Council, Inc.* (1984) 467 U.S. 837, 842-844, 104 S.Ct. 2778, 81 L.Ed.2d 694 (*Chevron*)).) However, the parties do not argue this same principle applies to a state agency's interpretation of the Clean Water Act. Nonetheless, under governing state law principles, we do consider and give due deference to the Water Boards' statutory interpretations in this case. (See *Yamaha Corp. of America v. State Bd. of Equalization*, *supra*, 19 Cal.4th at pp. 7-8, 78 Cal.Rptr.2d 1, 960 P.2d 1031.)

*880 II. Water Boards' Authority to Enforce Water Quality Standards in NPDES Permit

Building Industry's main appellate contention is very narrow. Building Industry argues that two provisions in the Permit (the Water Quality Standards provisions) violate federal law because they prohibit the Municipalities from discharging runoff from storm sewers if the discharge would cause a water body to exceed the applicable water quality standard established under state law.^{FN10} Building Industry contends that under federal law the "maximum extent practicable" standard is the "exclusive" measure that may be applied to municipal storm sewer discharges and a regulatory agency may not require a Municipality to comply

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with a state water quality standard if the required controls exceed a "maximum extent practicable" standard.

FN10. These challenged Permit provisions state "Discharges from [storm sewers] which cause or contribute to exceedances of receiving water quality objectives for surface water or groundwater are prohibited" (Permit, § A.2), and "Discharges from [storm sewers] that cause or contribute to the violation of water quality standards ... are prohibited" (Permit, § C.1).

In the following discussion, we first reject respondents' contentions that Building Industry waived these arguments by failing to raise a substantial evidence challenge to the court's factual findings and/or **138 to reassert its state law challenges on appeal. We then focus on the portion of the Clean Water Act (§ 1342(p)(3)(B)(iii)) that Building Industry contends is violated by the challenged Permit provisions. On our de novo review of this legal issue, we conclude the Permit's Water Quality Standards provisions are proper under federal law, and Building Industry's legal challenges are unsupported by the applicable statutory language, legislative purpose, and legislative history.

A. Building Industry Did Not Waive the Legal Argument

Respondents (the Water Boards and Environmental Organizations) initially argue that Building Industry waived its right to challenge the Permit's consistency with the maximum extent practicable standard because Building Industry did not challenge the trial court's *factual* findings that Building Industry failed to prove any of the Permit requirements were "impracticable" or "unreasonable."

In taking this position, respondents misconstrue the nature of Building Industry's appellate contention challenging the Water Quality Standards provisions. Building Industry's contention concerns the scope of the authority given to the Regional Water Board under the Permit terms. Specifically, *881

Building Industry argues that the Regional Water Board does not have the authority to require the Municipalities to adhere to the applicable water quality standards because federal law provides that the "maximum extent practicable" standard is the exclusive standard that may be applied to storm sewer regulation. This argument—concerning the proper scope of a regulatory agency's authority—presents a purely legal issue, and is not dependent on the court's factual findings regarding the practicality of the specific regulatory controls identified in the Permit.

Respondents alternatively contend that Building Industry waived its right to challenge the propriety of the Water Quality Standards provisions under federal law because the trial court found the provisions were valid under state law and Building Industry failed to reassert its state law challenges on appeal. Under the particular circumstances of this case, we conclude Building Industry did not waive its rights to challenge the Permit under federal law.

Although it is well settled that the Clean Water Act authorizes states to impose water quality controls that are more stringent than are required under federal law (§ 1370; see *PUD No. 1 of Jefferson Cty. v. Washington Dept. of Ecology* (1994) 511 U.S. 700, 705, 114 S.Ct. 1900, 128 L.Ed.2d 716; *Northwest Environmental Advocates v. Portland* (9th Cir.1995) 56 F.3d 979, 989), and California law specifically allows the imposition of controls more stringent than federal law (Wat.Code, § 13377), the Water Boards made a tactical decision in the superior court to assert the Permit's validity based solely on federal law, and repeatedly made clear they were not seeking to justify the Permit requirements based on the Boards' independent authority to act under state law. On appeal, the Water Boards continue to rely primarily on federal law to uphold the Permit requirements, and their assertions that we may decide the matter based solely on state law are in the nature of asides rather than direct arguments. On this record, it would be improper to rely

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solely on state law to uphold the challenged Permit provisions.

B. The Water Quality Standards Requirement Does Not Violate Federal Law

[7] We now turn to Building Industry's main substantive contention on appeal—**139 that the Permit's Water Quality Standards provisions (fn.10, *ante*) violate federal law. Building Industry's contention rests on its interpretation of the 1987 Water Quality Act amendments containing NPDES requirements for municipal storm sewers. The portion of the relevant statute reads: "(B) Permits for discharges from municipal storm sewers ... [¶] ... [¶] (iii) shall require controls to reduce the discharge of pollutants to the *maximum extent practicable, including* management practices, control techniques and **882 system, design and engineering methods, and such other provisions as the [EPA] Administrator or the State determines appropriate for the control of such pollutants." (§ 1342(p)(3)(B)(iii), italics added.)

1. Statutory Language

Focusing on the first 14 words of subdivision (iii), Building Industry contends the statute means that the maximum extent practicable standard sets the upper limit on the type of control that can be used in an NPDES permit, and that each of the phrases following the word "*including*" identify examples of "maximum extent practicable" controls. (§ 1342(p)(3)(B)(iii), italics added.) Building Industry thus reads the final "and such other provisions" clause as providing the EPA with the authority only to include *other* types of "maximum extent practicable" controls in an NPDES storm sewer permit.

Respondents counter that the term "including" refers only to the three identified types of pollution control procedures—(1) "management practices"; (2) "control techniques"; and (3) "system, design and engineering methods"—and that the last phrase, "*and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants,*" provides the EPA (or

the approved state regulatory agency) the specific authority to go beyond the maximum extent practicable standard to impose effluent limitations or water-quality based standards in an NPDES permit. In support, respondents argue that because the word "system" in section 1342(p)(3)(B)(iii) is singular, it necessarily follows from parallel-construction grammar principles that the word "system" is part of the phrase "system, design and engineering methods" rather than the phrase "control techniques and system." Under this view and given the absence of a comma after the word "techniques," respondents argue that the "and such other provisions" clause cannot be fairly read as restricted by the "maximum extent practicable" phrase, and instead the "and such other provisions" clause is a separate and distinct clause that acts as a second direct object to the verb "require" in the sentence. (§ 1342(p)(3)(B)(iii).)

Building Industry responds that respondents' proposed statutory interpretation is "not logical" because if the "and such other provisions" phrase is the direct object of the verb "require," the sentence would not make sense. Building Industry states that "permits" do not generally "require" provisions; they "include" or "contain" them.

As a matter of grammar and word choice, respondents have the stronger position. The second part of Building Industry's proposed interpretation—"control techniques and system, design, and engineering methods"—without a comma after the word "techniques" does not logically serve as a **883 parallel construct with the "and such other provisions" clause. Moreover, we disagree that the "and such other provisions" clause cannot be a direct object to the word "require." (§ 1342(p)(3)(B)(iii).) Although it is not the clearest way of articulating the concept, the language of section 1342(p)(3)(B)(iii) does communicate the basic **140 principle that the EPA (and/or a state approved to issue the NPDES permit) retains the discretion to impose "appropriate" water pollution controls in addition to those that come within the

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definition of “ ‘maximum extent practicable.’ ” (*Defenders of Wildlife*, *supra*, 191 F.3d at pp. 1165–1167.) We find unpersuasive Building Industry's reliance on several statutory interpretation concepts, *ejusdem generis*, *noscitur a sociis*, and *expressio unius est exclusion alterius*, to support its narrower statutory construction.

2. *Purpose and History of Section 1342(p)(3)(B) (iii)*

[8][9] Further, “[w]hile punctuation and grammar should be considered in interpreting a statute, neither is controlling unless the result is in harmony with the clearly expressed intent of the Legislature.” (*In re John S.* (2001) 88 Cal.App.4th 1140, 1144, fn. 1, 106 Cal.Rptr.2d 476; see *Estate of Coffee* (1941) 19 Cal.2d 248, 251, 120 P.2d 661.) If the statutory language is susceptible to more than one reasonable interpretation, a court must also “look to a variety of extrinsic aids, including the ostensible objects to be achieved, the evils to be remedied, the legislative history, public policy, contemporaneous administrative construction, and the statutory scheme of which the statute is a part.” (*Nolan v. City of Anaheim* (2004) 33 Cal.4th 335, 340, 14 Cal.Rptr.3d 857, 92 P.3d 350.)

The legislative purpose underlying the Water Quality Act of 1987, and section 1342(p) in particular, supports that Congress intended to provide the EPA (or the regulatory agency of an approved state) the discretion to require compliance with water quality standards in a municipal storm sewer NPDES permit, particularly where, as here, that compliance will be achieved primarily through an iterative process.

Before section 1342(p) was enacted, the courts had long recognized that the EPA had the authority to require a party to comply with a state water quality standard even if that standard had not been translated into an effluent limitation. (See *EPA v. State Water Resources Control Board*, *supra*, 426 U.S. at p. 205, fn. 12, 96 S.Ct. 2022; *PUD No. 1 of Jefferson Cty. v. Washington Dept. of Ecology*, *supra*, 511 U.S. at p. 715, 114 S.Ct. 1900; *Northw-*

est Environmental Advocates v. Portland (9th Cir.1995) 56 F.3d 979, 987; *Natural Resources Defense Council v. U.S.E.P.A.* (9th Cir.1990) 915 F.2d 1314, 1316.) Specifically, section 1311(b)(1)(C) gave the regulatory agency the authority to impose “any more stringent limitation including those necessary to meet water quality standards,” and section 1342(a)(2) provided that “[t]he [EPA] Administrator shall *884 prescribe conditions for [NPDES] permits to assure compliance” with requirements identified in section 1342(a)(1), which encompass state water quality standards. The United States Supreme Court explained that when Congress enacted the 1972 Clean Water Act, it retained “[w]ater quality standards ... as a supplementary basis for 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. State Water Resources Control Board*, *supra*, 426 U.S. at p. 205, fn. 12, 96 S.Ct. 2022; see also *Arkansas v. Oklahoma* (1992) 503 U.S. 91, 101, 112 S.Ct. 1046, 117 L.Ed.2d 239.)

There is nothing in section 1342(p)(3)(B)(iii)'s statutory language or legislative history showing that Congress intended to eliminate this discretion when it amended the Clean Water Act in 1987. **141 To the contrary, Congress added the NPDES storm sewer requirements to strengthen the Clean Water Act by making its mandate correspond to the practical realities of municipal storm sewer regulation. As numerous commentators have pointed out, although Congress was reacting to the physical differences between municipal storm water runoff and other pollutant discharges that made the 1972 legislation's blanket effluent limitations approach impractical and administratively burdensome, the primary point of the legislation was to address these administrative problems while giving the administrative bodies the tools to meet the fundamental goals of the Clean Water Act in the context of stormwater pollution. (See *Regulation of Urban Stormwater Runoff*, *supra*, 48 Wash.U.J. Urb. &

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Contemp. L. at pp. 44–46; Environmental Law Handbook, *supra*, at p. 300; Clean Water Act Handbook, *supra*, at pp. 62–63.) In the 1987 congressional debates, the Senators and Representatives emphasized the need to prevent the widespread and escalating problems resulting from untreated storm water toxic discharges that were threatening aquatic life and creating conditions dangerous to human health. (See Remarks of Sen. Durenberger, 133 Cong. Rec. 1279 (Jan. 14, 1987); Remarks of Sen. Chaffee, 133 Cong. Rec. S738 (daily ed. Jan 14, 1987); Remarks of Rep. Hammerschmidt, 133 Cong. Rec. 986 (Jan. 8, 1987); Remarks of Rep. Roe, 133 Cong. Rec. 1006, 1007 (Jan. 8, 1987); Remarks of Sen. Stafford, 132 Cong. Rec. 32381, 32400 (Oct. 16, 1986).) This legislative history supports that in identifying a maximum extent practicable standard Congress did not intend to substantively bar the EPA/state agency from imposing a more stringent water quality standard if the agency, based on its expertise and technical factual information and after the required administrative hearing procedure, found this standard to be a necessary and workable enforcement mechanism to achieving the goals of the Clean Water Act.

To support a contrary view, Building Industry relies on comments by Minnesota Senator David Durenberger during the lengthy congressional *885 debates on the 1987 Water Quality Act amendments.^{FN11} (132 Cong. Rec. 32400 (Oct. 16, 1986); 133 Cong. Rec. S752 (daily ed. Jan. 14, 1987).) In the cited portions of the Congressional Record, Senator Durenberger states that NPDES permits “shall require controls to reduce the discharge of pollutants to the maximum extent practicable. Such controls include management practices, control techniques and systems, design and engineering methods, and such other provisions, as the Administrator determines appropriate for the control of pollutants in the stormwater discharge.” (*Ibid.*) When viewing these statements in context, it is apparent that the Senator was merely paraphrasing the words of the proposed statute and was not intending to address the issue of whether the max-

imum extent practicable standard was a regulatory ceiling or whether he believed the proposed amendments limited the EPA's existing discretion.^{FN12}

FN11. We agree with Building Industry that the trial court's refusal to consider this legislative history on the basis that it was not presented to the administrative agencies was improper. However, this error was not prejudicial because we apply a *de novo* review standard in interpreting the relevant statutes.

FN12. In the cited remarks, Senator Durenberger in fact expressed his dissatisfaction with the EPA's prior attempts to regulate municipal storm sewers. He pointed out, for example, that “[r]unoff from municipal separate storm sewers and industrial sites contain significant values of both toxic and conventional pollutants,” and that despite the Clean Water Act's “clear directive,” the EPA “has failed to require most stormwater point sources to apply for permits which would control the pollutants in their discharge.” (133 Cong. Rec. 1274, 1279–1280 (daily ed. Jan. 14, 1987).)

**142 Building Industry's reliance on comments made by Georgia Representative James Rowland, who participated in drafting the 1987 Water Quality Act amendments, is similarly unhelpful. During a floor debate on the proposed amendments, Representative Rowland noted that cities have “millions of” stormwater discharge points and emphasized the devastating financial burden on cities if they were required to obtain a permit for each of these points. (133 Cong. Rec. 522 (daily ed. Feb. 3, 1987).) Representative Rowland then explained that the amendments would address this problem by “allow[ing] communities to obtain far less costly single jurisdictionwide permits.” (*Ibid.*) Viewed in context, these comments were directed at the need for statutory provisions permitting the EPA to issue jurisdiction-wide permits thereby preventing unnecessary administrative costs to the cities, and do not

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reflect a desire to protect cities from the cost of complying with strict water quality standards when deemed necessary by the regulatory agency.

3. Interpretations by the EPA and Other Courts

Our conclusion that Congress intended section 1342(p)(3)(B)(iii) to provide the regulatory agency with authority to impose standards stricter than a "maximum extent practicable" standard is consistent with interpretations by *886 the EPA and the Ninth Circuit. In its final rule promulgated in the Federal Register, the EPA construed section 1342(p)(3)(B)(iii) as providing the administrative agency with the authority to impose water-quality standard controls in an NPDES permit if appropriate under the circumstances. Specifically, the EPA stated this statutory provision requires "controls to reduce the discharge of pollutants to the maximum extent practicable, and where necessary water quality-based controls ..." (55 Fed.Reg. 47990, 47994 (Nov. 16, 1990), italics added.) We are required to give substantial deference to this administrative interpretation, which occurred after an extensive notice and comment period. (See *ibid.*; *Chevron, supra*, 467 U.S. at pp. 842-844, 104 S.Ct. 2778.)

The only other court that has interpreted the "such other provisions" language of section 1342(p)(3)(B)(iii) has reached a similar conclusion. (*Defenders of Wildlife, supra*, 191 F.3d at pp. 1166-1167.) In *Defenders of Wildlife*, environmental organizations brought an action against the EPA, challenging provisions in an NPDES permit requiring several Arizona localities to adhere to various best management practice controls without requiring numeric effluent limitations. (*Id.* at p. 1161.) The environmental organizations argued that section 1342(p) did not allow the EPA to issue NPDES permits without requiring strict compliance with effluent limitations. (*Defenders of Wildlife, supra*, at p. 1161.) Rejecting this argument, the Ninth Circuit found section 1342(p)(3)(B)(iii)'s statutory language "unambiguously demonstrates that Congress did not require municipal storm-sewer discharges to comply strictly" with effluent limitations. (*Defend-*

ers of Wildlife, supra, at p. 1164.)

But in a separate part of the opinion, the *Defenders of Wildlife* court additionally rejected the reverse argument made by the affected municipalities (who were the interveners in the action) that "the EPA may not, under the [Clean Water Act], require strict compliance with state water-quality standards, through numerical limits or otherwise." (*Defenders of Wildlife, supra*, 191 F.3d at p. 1166.) The court stated: "Although Congress did not require**143 municipal storm-sewer discharges to comply strictly with [numerical effluent limitations], § 1342(p)(3)(B)(iii) states that '[p]ermits for discharges from municipal storm sewers ... shall require ... such other provisions as the Administrator ... determines appropriate for the control of such pollutants.' (Emphasis added.) That provision gives the EPA discretion to determine what pollution controls are appropriate.... [¶] Under that discretionary provision, the EPA has the authority to determine that ensuring strict compliance with state water-quality standards is necessary to control pollutants. The EPA also has the authority to require less than strict compliance with state water-quality standards.... Under 33 U.S.C. § 1342(p)(3)(B)(iii), the EPA's choice to include either management practices or numeric limitations in the permits was within its discretion. [Citations.]" (*Defenders of Wildlife, supra*, 191 F.3d at pp. 1166-1167, second italics added.) Although dicta, this *887 conclusion reached by a federal court interpreting federal law is persuasive and is consistent with our independent analysis of the statutory language.^{FN13}

FN13. Building Industry's reliance on two other Ninth Circuit decisions to support a contrary statutory interpretation is misplaced. (See *Natural Res. Def. Council, Inc. v. U.S.E.P.A.*, *supra*, 966 F.2d at p. 1308; *Environmental Defense Center, Inc. v. U.S. E.P.A.* (9th Cir.2003) 344 F.3d 832.) Neither of these decisions addressed the issue of the scope of a regulatory agency's authority to exceed the maximum

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extent practicable standard in issuing NPDES permits for municipal storm sewers.

To support its interpretation of section 1342(p)(3)(B)(iii), Building Industry additionally relies on the statutory provisions addressing nonpoint source runoff (a diffuse runoff not channeled through a particular source), which were also part of the 1987 amendments to the Clean Water Act. (§ 1329.) In particular, Building Industry cites to section 1329(a)(1)(C), which states, "The Governor of each State shall ... prepare and submit to the [EPA] Administrator for approval, a report which ... [¶] ... [¶] describes the process ... for identifying best management practices and measures to control each [identified] category ... of nonpoint sources and ... to reduce, to the *maximum extent practicable*, the level of pollution resulting from such category...." (Italics added.) Building Industry argues that because this "nonpoint source" statutory language expressly identifies only the maximum extent practicable standard, we must necessarily conclude that Congress meant to similarly limit the storm sewer point source pollution regulations to the maximum extent practicable standard.

The logic underlying this analogy is flawed because the critical language in the two statutory provisions is different. In the nonpoint source statute, Congress chose to include only the maximum extent practicable standard (§ 1329(a)(1)(C)); whereas in the municipal storm sewer provisions, Congress elected to include the "and such other provisions" clause (§ 1342(p)(3)(B)(iii)). This difference leads to the reasonable inference that Congress had a different intent when it enacted the two statutory provisions. Moreover, because of a fundamental difference between point and nonpoint source pollution, Congress has historically treated the two types of pollution differently and has subjected each type to entirely different requirements. (See *Pronsolino v. Nastri* (9th Cir.2002) 291 F.3d 1123, 1126-1127.) Given this different treatment, it would be improper to presume Congress intended to apply the same standard in both statutes. Building Industry's cita-

tion to comments during the 1987 congressional debates regarding nonpoint source regulation does **144 not support Building Industry's contentions.

**888 4. Contention that it is "Impossible" for Municipalities to Meet Water Quality Standards*

We also reject Building Industry's arguments woven throughout its appellate briefs, and emphasized during oral arguments, that the Water Quality Standards provisions violate federal law because compliance with those standards is "impossible." The argument is not factually or legally supported.

[10][11] First, there is no showing on the record before us that the applicable water quality standards are unattainable. The trial court specifically concluded that Building Industry failed to make a factual showing to support this contention, and Building Industry does not present a proper appellate challenge to this finding sufficient to warrant our reexamining the evidence. All judgments and orders are presumed correct, and persons challenging them must affirmatively show reversible error. (*Walling v. Kimball* (1941) 17 Cal.2d 364, 373, 110 P.2d 58.) A party challenging the sufficiency of evidence to support a judgment must summarize (and cite to) *all* of the material evidence, not just the evidence favorable to his or her appellate positions. (*In re Marriage of Fink* (1979) 25 Cal.3d 877, 887-888; 160 Cal.Rptr. 516, 603 P.2d 881; *People v. Dougherty* (1982) 138 Cal.App.3d 278, 282, 188 Cal.Rptr. 123.) Building Industry has made no attempt to comply with this well established appellate rule in its briefs.

In a supplemental brief, Building Industry attempted to overcome this deficiency by asserting that "[t]he record clearly establishes that [the Water Quality Standards provisions] are unattainable during the period the permit is in effect." This statement, however, is not supported by the proffered citation or by the evidence viewed in the light most favorable to the respondents. Further, the fact that many of the Municipalities' storm sewer discharges currently violate water quality standards does not mean that the Municipalities cannot comply with

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the standards during the five-year term of the Permit. Additionally, Building Industry's assertions at oral argument that the trial court never reached the "impossibility" issue and/or that respondents' counsel conceded the issue below are belied by the record, including the trial court's rejection of Building Industry's specific challenge to the proposed statement of decision on this very point.^{FN14}

FN14. Because we are not presented with a proper appellate challenge, we do not address the trial court's factual determinations in this case concerning whether it is possible or practical for a Municipality to achieve any specific Permit requirement.

[12] We reject Building Industry's related argument that it was respondents' burden to affirmatively show it is feasible to satisfy each of the applicable Water Quality Standards provisions. The party challenging the scope of an administrative permit, such as an NPDES, has the burden of *889 showing the agency abused its discretion or its findings were unsupported by the facts. (See *Fukuda v. City of Angels*, *supra*, 20 Cal.4th at p. 817, 85 Cal.Rptr.2d 696, 977 P.2d 693; *Huntington Park Redevelopment Agency v. Duncan* (1983) 142 Cal.App.3d 17, 25, 190 Cal.Rptr. 744.) Thus, it was not respondents' burden to affirmatively demonstrate it was possible for the Municipalities to meet the Permit's requirements.

Building Industry alternatively contends it was not required to challenge the facts underlying the trial court's determination that the Permit requirements were feasible**145 because the court's determination was wrong as a matter of law. Specifically, Building Industry asserts that a Permit requirement that is more stringent than a "maximum extent practicable" standard is, by definition, "not practicable" and therefore "technologically impossible" to achieve under any circumstances. Building Industry relies on a dictionary definition of "practicable," which provides that the word means "something that can be done; feasible," citing the 1996 version of "Webster's Encyclopedic Unabridged Dic-

tionary."

This argument is unpersuasive. The federal maximum extent practicable standard it is not defined in the Clean Water Act or applicable regulations, and thus the Regional Water Board properly included a detailed description of the term in the Permit's definitions section. (See *ante*, fn. 7.) As broadly defined in the Permit, the maximum extent practicable standard is a highly flexible concept that depends on balancing numerous factors, including the particular control's technical feasibility, cost, public acceptance, regulatory compliance, and effectiveness. This definition conveys that the Permit's maximum extent practicable standard is a term of art, and is not a phrase that can be interpreted solely by reference to its everyday or dictionary meaning. Further, the Permit's definitional section states that the maximum extent practicable standard "considers economics and is generally, but not necessarily, *less* stringent than BAT." (Italics added.) BAT is an acronym for "best available technology economically achievable," which is a technology-based standard for industrial storm water dischargers that focuses on reducing pollutants by treatment or by a combination of treatment and best management practices. (See *Texas Oil & Gas Ass'n v. U.S. E.P.A.* (5th Cir.1998) 161 F.3d 923, 928.) If the maximum extent practicable standard is generally "less stringent" than another Clean Water Act standard that relies on available technologies, it would be unreasonable to conclude that anything more stringent than the maximum extent practicable standard is necessarily impossible. In other contexts, courts have similarly recognized that the word "practicable" does not necessarily mean the most that can possibly be done. (See *Nat. Wildlife Federation v. Norton* (E.D.Cal.2004) 306 F.Supp.2d 920, 928, fn. 12 ["[w]hile the meaning of the term 'practicable' in the [Endangered Species Act] is not entirely clear, the term does not simply equate to 'possible'"]; *890 *Primavera Familienstiftung v. Askin* (S.D.N.Y.1998) 178 F.R.D. 405, 409 [noting that "impracticability does not mean impossibility, but rather difficulty or inconveni-

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ence"].)

We additionally question whether many of Building Industry's "impossibility" arguments are premature on the record before us. As we have explained, the record does not support that any required control is, or will be, impossible to implement. Further, the Permit allows the Regional Water Board to enforce water quality standards during the iterative process, but does not impose any obligation that the Board do so. Thus, we cannot determine with any degree of certainty whether this obligation would ever be imposed, particularly if it later turns out that it is not possible for a Municipality to achieve that standard.

Finally, we comment on Building Industry's repeated warnings that if we affirm the judgment, all affected Municipalities will be in immediate violation of the Permit because they are not now complying with applicable water quality standards, subjecting them to immediate and substantial civil penalties, and leading to a potential "shut down" of public operations. These doomsday arguments are unsupported. The Permit makes clear that Municipalities**146 are required to adhere to numerous specific controls (none of which are challenged in this case) and to comply with water quality standards through "timely implementation of control measures" by engaging in a cooperative iterative process where the Regional Water Board and Municipality work together to identify violations of water quality standards in a written report and then incorporate approved modified best management practices. Although the Permit allows the regulatory agencies to enforce the water quality standards during this process, the Water Boards have made clear in this litigation that they envision the ongoing iterative process as the centerpiece to achieving water quality standards. Moreover, the regulations provide an affected party reasonable time to comply with new permit requirements under certain circumstances. (See 40 C.F.R. § 122.47.) There is nothing in this record to show the Municipalities will be subject to immediate penalties for violation of wa-

ter quality standards.

We likewise find speculative Building Industry's predictions that immediately after we affirm the judgment, citizens groups will race to the courthouse to file lawsuits against the Municipalities and seek penalties for violation of the Water Quality Standards provisions.^{FN15} As noted, the applicable laws provide time for an affected entity to comply with new standards. Moreover, although we do not reach the enforcement issue in this case, we note the *891 Permit makes clear that the iterative process is to be used for violations of water quality standards, and gives the Regional Water Board the discretionary authority to enforce water quality standards during that process. Thus, it is not at all clear that a citizen would have standing to compel a municipality to comply with a water quality standard despite an ongoing iterative process. (See § 1365(a)(1)(2).)

FN15. The Clean Water Act allows a citizen to sue a discharger to enforce limits contained in NPDES permits, but requires the citizen to notify the alleged violator, the state, and the EPA of its intention to sue at least 60 days before filing suit, and limits the enforcement to nondiscretionary agency acts. (See § 1365(a)(1)(2).)

III.—VII. ^{FN*}

FN* See footnote 1, *ante*.

DISPOSITION

Judgment affirmed. Appellants to pay respondents' costs on appeal.

WE CONCUR: BENKE, Acting P.J., and AARON, J.

Cal.App. 4 Dist., 2004.
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END OF DOCUMENT

ATTACHMENT 34

Westlaw

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Opinion, 4 Cal.Rptr.3d 27, superseded.

Supreme Court of California

CITY OF BURBANK, Plaintiff and Appellant,

West Headnotes

v.

STATE WATER RESOURCES CONTROL BOARD et al., Defendants and Appellants.
City of Los Angeles, Plaintiff and Respondent,

[1] Environmental Law 149E ↪165

v.

State Water Resources Control Board et al., Defendants and Appellants.

149E Environmental Law
149EV Water Pollution
149Ek163 Constitutional Provisions, Statutes, and Ordinances

Nos. S119248, B151175, B152562.

April 4, 2005.

Rehearing Denied June 29, 2005.^{FN*}

149Ek165 k. Purpose. Most Cited Cases

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.

FN* Brown, J., did not participate therein.

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.

[2] Environmental Law 149E ↪197

149E Environmental Law
149EV Water Pollution
149Ek194 Permits and Certifications
149Ek197 k. Conditions and limitations.
Most Cited Cases

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.

States 360 ↪18.31

360 States
360I Political Status and Relations
360I(B) Federal Supremacy; Preemption
360k18.31 k. Environment; nuclear projects. Most Cited Cases

Judgment of Court of Appeal affirmed, and matter remanded.

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.

Brown, J., filed concurring opinion.

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§§ 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.

[3] Statutes 361 ↪ 181(1)

361 Statutes

361VI Construction and Operation

361VI(A) General Rules of Construction

361k180 Intention of Legislature

361k181 In General

361k181(1) k. In general. Most

Cited Cases

Statutes 361 ↪ 184

361 Statutes

361VI Construction and Operation

361VI(A) General Rules of Construction

361k180 Intention of Legislature

361k184 k. Policy and purpose of act.

Most Cited Cases

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.

[4] States 360 ↪ 18.5

360 States

360I Political Status and Relations

360I(B) Federal Supremacy; Preemption

360k18.5 k. Conflicting or conforming

laws or regulations. Most Cited Cases

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.

[5] Environmental Law 149E ↪ 197

149E Environmental Law

149EV Water Pollution

149Ek194 Permits and Certifications

149Ek197 k. Conditions and limitations.

Most Cited Cases

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.

***305 Bill Lockyer, Attorney General, Manuel M. Medeiros, State Solicitor General, Richard M. Frank and Tom Greene, Chief Assistant Attorneys General, Mary E. Hackenbracht, Assistant Attorney General, Marilyn H. Levin, Gregory J. Newmark and David S. Beckman, Deputy Attorneys General, for Defendants and Appellants.

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Dennis A. Barlow, City Attorney, and Carolyn A. Barnes, Assistant City Attorney, for Defendant and Appellant City of Burbank.

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Rockard J. Delgadillo, City Attorney, and Christopher M. Westhoff, Assistant City Attorney, for Plaintiff and Appellant City of Los Angeles.

Rutan & Tucker and Richard Montevideo, Costa Mesa, for Cities of Baldwin Park, Bell, Cerritos, Diamond Bar, Downey, Gardena, Montebello, Monterey Park, Paramount, Pico Rivera, Rosemead, San Gabriel, San Marino, Santa Fe Springs, Sierra Madre, Signal Hill, Temple City and West Covina, the California Building Industry Association and the Building Industry Legal Defense Foundation as Amici Curiae on behalf of Plaintiffs and Appellants.

Stoel Rives and Lawrence S. Bazel, San Francisco, for Western Coalition of Arid States as Amicus Curiae on behalf of Plaintiffs and Appellants.

Richards, Watson & Gershon and John J. Harris, Los Angeles, for the League of California Cities as Amicus Curiae on behalf of Plaintiffs and Appellants.

***306 Squire, Sanders & Dempsey, Joseph A. Meckes, San Francisco; David W. Burchmore; and Alexandra Dapolito Dunn, for Association of Metropolitan Sewerage Agencies as Amicus Curiae on behalf of Plaintiffs and Appellants.

Lewis, Brisbois, Bisgaard & Smith and B. Richard Marsh, Los Angeles, for County Sanitation Districts of Los Angeles County as Amicus Curiae on behalf of Plaintiffs and Appellants.

Fulbright & Jaworski, Colin Lennard, Patricia Chen, Los Angeles; Archer Norris and Peter W. McGaw, Walnut Creek, for California Association of Sanitation Agencies as Amicus Curiae on behalf of Plaintiffs and Appellants.

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

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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.)^{FN1} 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).^{FN2}

FN1. Further undesignated statutory references are to the Water Code.

FN2. 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).)

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

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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.^{FN3} 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).

FN3. 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).)

*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 ef-

fluent 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.

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*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.^{FN4} 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.^{FN5}

FN4. 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.

FN5. 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.

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

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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.^{FN6}

FN6: 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.

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 sec-

tion 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 ex-

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press 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 for-

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bids, 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.^{FN7}

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.^{FN8} 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.

FN7. 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.)

FN8. 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.

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 "

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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

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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 reduc-

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tion 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, fns. 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. Environmental 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 stand-

ard." (*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

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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 re-

view. [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.)

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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.^{FN1} 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.^{FN2} 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.

FN1. (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.)

FN2. 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.

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,"^{FN3} I write separately to set forth my concerns and concur in the judgment—*dubitante*.^{FN4}

FN3. Marvin Gaye (1971) "Inner City Blues."

FN4. 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.).)

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ATTACHMENT 35

Westlaw

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H

Court of Appeal, Fourth District, Division 2, California.

CITY OF RANCHO CUCAMONGA, Plaintiff and Appellant,

v.

REGIONAL WATER QUALITY CONTROL BOARD—SANTA ANA REGION et al., Defendants and Respondents;

County of San Bernardino et al., Real Parties in Interest and Respondents.

No. E037079.

Jan. 26, 2006.

As Modified Feb. 27, 2006.

Background: Cities filed petitions for writs of mandate to challenge the procedure by which municipal storm sewer permit was issued by regional water quality control board, the conditions imposed by permit, and the expense of permit requirements. The Superior Court, San Bernardino County, No. RCV 071613, Shahla Sabet, J., sustained without leave to amend the demurrer of State Water Resources Control Board to entire action, sustained demurrer as to four causes of action and granted motion to strike of the regional board, and denied petition for writ of mandate. City appealed.

Holdings: The Court of Appeal, Gaut, J., held that:

- (1) State Water Resources Control Board was not a proper party in lawsuit;
- (2) regional water quality control board could move to strike less than all causes of action;
- (3) substantial evidence supported regional water quality control board's findings in issuing permit; and
- (4) permit requirements were not overly prescriptive.

Affirmed.

West Headnotes

[1] Environmental Law 149E ↪ 657

149E Environmental Law

149EXIII Judicial Review or Intervention

149Ek657 k. Parties. Most Cited Cases

State Water Resources Control Board (State Board) was not a proper party in lawsuit filed by two cities against State Board and Regional Water Quality Control Board, challenging the procedure by which municipal storm sewer permit was adopted, the conditions imposed by permit, and the expense of permit requirements; permit was issued by regional board rather than state board, allegations failed to articulate any improper State Board conduct, and, challenge was barred by statute of limitations. West's Ann.Cal.Gov.Code § 11350; West's Ann.Cal.Water Code § 13330.

[2] Mandamus 250 ↪ 168(2)

250 Mandamus

250III Jurisdiction, Proceedings, and Relief

250k168 Evidence

250k168(2) k. Presumptions and burden of proof. Most Cited Cases

In exercising its independent judgment in deciding a petition for writ of mandate, a trial court must afford a strong presumption of correctness concerning administrative findings; since the trial court ultimately must exercise its own independent judgment, that court is free to substitute its own findings after first giving due respect to the agency's findings.

[3] Mandamus 250 ↪ 187.9(1)

250 Mandamus

250III Jurisdiction, Proceedings, and Relief

250k187 Appeal and Error

250k187.9 Review

250k187.9(1) k. Scope and extent in general. Most Cited Cases

On appeal from the trial court's decision on a petition for writ of mandate, the reviewing court

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determines whether substantial evidence supports the trial court's factual determinations.

[4] Mandamus 250 ↪ 187.9(1)

250 Mandamus

250III Jurisdiction, Proceedings, and Relief

250k187 Appeal and Error

250k187.9 Review

250k187.9(1) k. Scope and extent in general. Most Cited Cases

On appeal from the trial court's decision on a petition for writ of mandate, the trial court's legal determinations receive a de novo review with consideration being given to the agency's interpretations of its own statutes and regulations.

[5] Environmental Law 149E ↪ 666

149E Environmental Law

149EXIII Judicial Review or Intervention

149Ek666 k. Preservation of error in administrative proceeding. Most Cited Cases

In city's challenge to procedure by which municipal storm sewer permit was adopted, to conditions imposed by permit, and to expense of permit requirements, city waived its objections to the administrative record, and to specific pieces of evidence, by not making such objections before or at the time of the administrative hearing; city was given notice that the hearing on the permit would proceed as an informal administrative adjudication, and it could not claim that it was relieved of the obligation to object to the administrative record at the time of the hearing. West's Ann.Cal.Gov.Code § 11445.10 et seq.

[6] Administrative Law and Procedure 15A ↪ 108

15A Administrative Law and Procedure

15AII Administrative Agencies, Officers and Agents

15Ak103 Status and Character

15Ak108 k. Quasi-judicial. Most Cited Cases

The exercise of discretion to grant or deny a license, permit, or other type of application is a quasi-judicial function.

[7] Environmental Law 149E ↪ 673

149E Environmental Law

149EXIII Judicial Review or Intervention

149Ek673 k. Pleading, petition, or application. Most Cited Cases

Defendant regional water quality control board could move to strike less than all causes of action filed in suit cities to challenge the procedure by which municipal storm sewer permit was adopted, the conditions imposed by permit, and the expense of permit requirements, inasmuch as trial court had authority to strike only part of pleading. West's Ann.Cal.C.C.P. §§ 431.10, 436.

[8] Environmental Law 149E ↪ 230

149E Environmental Law

149EV Water Pollution

149Ek227 Evidence

149Ek230 k. Weight and sufficiency. Most Cited Cases

Substantial evidence supported regional water quality control board's findings in issuing municipal storm sewer permit; board adopted recommendations of its staff, which were based on previous permits and other reports, and which established that board did not simply copy similar permit for other counties.

[9] Administrative Law and Procedure 15A ↪ 489.1

15A Administrative Law and Procedure

15AIV Powers and Proceedings of Administrative Agencies, Officers and Agents

15AIV(D) Hearings and Adjudications

15Ak489 Decision

15Ak489.1 k. In general. Most Cited Cases

Administrative Law and Procedure 15A ↪ 791

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15A Administrative Law and Procedure

15AV Judicial Review of Administrative Decisions

15AV(E) Particular Questions, Review of

15Ak784 Fact Questions

15Ak791 k. Substantial evidence. Most

Cited Cases

An agency may rely upon the opinion of its staff in reaching decisions, and the opinion of staff may constitute substantial evidence.

[10] Environmental Law 149E ↪ 197

149E Environmental Law

149EV Water Pollution

149Ek194 Permits and Certifications

149Ek197 k. Conditions and limitations.

Most Cited Cases

Municipal storm sewer permit issued by regional water quality control board did not violate Clean Water Act by failing to include "safe harbor" provisions providing that, if permittee was in full compliance with permit conditions, it could not be found in violation of Clean Water Act; there was no statutory right to a "safe harbor" provision to be included as a term of the permit, and, in any event, such protection was already included in the Act. Clean Water Act, § 402(k), 33 U.S.C.A. § 1342(k).

[11] Environmental Law 149E ↪ 197

149E Environmental Law

149EV Water Pollution

149Ek194 Permits and Certifications

149Ek197 k. Conditions and limitations.

Most Cited Cases

Requirements contained in municipal storm sewer permit issued by regional water quality control board were not overly prescriptive and did not illegally dictate the manner of compliance; the federal Clean Water Act authorized imposition of permit conditions, and the permitting agency had discretion to decide what practices, techniques, methods, and other provisions were appropriate and necessary to control the discharge of pollutants. Clean Water Act, § 402(p)(3)(B)(iii), 33 U.S.C.A. §

1342(p)(3)(B)(iii).

See 12 Witkin, *Summary of Cal. Law* (10th ed. 2005) *Real Property*, §§ 892-896; *Cal. Jur.* 3d, *Pollution and Conservation Laws*, § 124 et seq.

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*1379 OPINION

GAUT, J.

1. Introduction

This case involves environmental regulation of municipal storm sewers that carry excess water runoff to the Santa Ana River as it passes through San Bernardino County on its way to the Pacific Ocean. Federal and state laws impose regulatory controls on storm sewer discharges. Municipalities are required to obtain and comply with a federal regulatory permit limiting the quantity and quality of water runoff that can be discharged from these storm sewer systems.

In this instance, the Regional Water Quality Control Board for the Santa Ana Region (the Regional Board) conducted public hearings and then issued a comprehensive 66-page municipal storm sewer permit governing 18 local *1380 public entities. Two permittees, the City of Rancho Cucamonga and the City of Upland, among others, filed an administrative appeal with the State Water Resources Control Board (the State Board.) The State Board summarily dismissed the appeal. The Cities of Rancho Cucamonga and Upland^{FN1} then filed a petition for writ of mandate and complaint against the State Board and the Regional Board.

FN1. Upland is not a party to this appeal.

The trial court sustained without leave to

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amend the demurrer of the State Board to the entire action. It sustained the demurrer as to four causes of action and granted the motion to strike of the Regional Board. After a hearing, the trial court denied the petition for writ of mandate.

Both procedurally and substantively, the City of Rancho Cucamonga challenges the conditions imposed by the NPDES ^{FN2} Permit and Waste Discharge Requirements (the 2002 permit). It contends the procedure by which the 2002 permit was adopted was not legal, that the 2002 permit's conditions are not appropriate for the area, and that the permit's requirements are too expensive. Because we conclude the permit was properly adopted and its conditions and requirements are appropriate, we reject these contentions.

FN2. The National Pollutant Discharge Elimination System.

2. The National Pollutant Discharge Elimination System

California cases have repeatedly explained the complicated web of federal and state laws and regulations concerning water pollution, especially storm sewer discharge into the public waterways. (*City of Burbank v. State Water Resources Control Bd.* (2005) 35 Cal.4th 613, 619–621, 26 Cal.Rptr.3d 304, 108 P.3d 862 (*Burbank*); *Building Industry Assn. of San Diego County v. State Water Resources Control Board* (2004) 124 Cal.App.4th 866, 872–875, 22 Cal.Rptr.3d 128 (*Building Industry*); *Communities for a Better Environment v. State Water Resources Control Board* (2003) 109 Cal.App.4th 1089, 1092–1094, 1 Cal.Rptr.3d 76 (*Communities*); ****453** *WaterKeepers Northern California v. State Water Resources Control Board* (2002) 102 Cal.App.4th 1448, 1451–1453, 126 Cal.Rptr.2d 389 (*WaterKeepers*)).

For purposes of this case, the important point is described by the California Supreme Court in *Burbank*: “Part of the federal Clean Water Act [33 U.S.C. § 1251 et seq.] is the National Pollutant Discharge Elimination System (NPDES), [t]he

primary means' for enforcing effluent limitations and standards under the Clean Water Act. *1381(*Arkansas v. Oklahoma* [(1992) 503 U.S. 91, 101, 112 S.Ct. 1046, 117 L.Ed.2d 239.]) 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.)” (*Burbank, supra*, 35 Cal.4th at p. 621, 26 Cal.Rptr.3d 304, 108 P.3d 862.)

California's Porter-Cologne Act (Wat.Code, § 13000 et seq.) establishes a statewide program for water quality control. Nine regional boards, overseen by the State Board, administer the program in their respective regions. (Wat.Code, §§ 13140, 13200 et seq., 13240, and 13301.) Water Code sections 13374 and 13377 authorize the Regional Board to issue federal NPDES permits for five-year periods. (33 U.S.C. § 1342, subd. (b)(1)(B).)

As discussed more fully in part 6 below, the state-issued NPDES permits are subject to the informal hearing procedures set forth for administrative adjudications. (Gov.Code, § 11445.10 et seq.; Cal.Code Regs., tit. 23, § 647 et seq.) The issuance of permits is specifically excluded from the procedures for administrative regulations and rulemaking. (Gov.Code, §§ 11340 et seq., 11352.)

3. Factual and Procedural Background

The Regional Board issued the first NPDES permit for San Bernardino County in 1990. The principal permittee was the San Bernardino Flood Control District (the District). The 1990 permit required the permittees to develop and implement pollution control measures, using “best management practices” and monitoring programs, to eliminate illegal discharges and connections, and to obtain any necessary legal authority to do so. The management programs could be existing or new.

In 1993, the District developed the NPDES

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Drain Area Management Program (DAMP).

The second NPDES permit was issued in 1996 and was based on the Report of Waste Discharge (ROWD) prepared by the principal permittee and co-permittees, including Rancho Cucamonga. The 1996 permit proposed extending the existing program, which included inspections of industrial and commercial sources; policies for development and redevelopment; better public education; and implementation of a monitoring program. It offered a commitment to reduce pollutants to the "maximum extent practicable."

In 2000, the permittees submitted another ROWD to renew their NPDES permit. The 2000 ROWD proposed continuing to implement and develop water quality management and monitoring programs.

*1382 Based on the 2000 ROWD, the Regional Board staff created five successive drafts of the 2002 permit, incorporating written comments by Rancho Cucamonga and others and comments made during two public workshops. Some of the comments addressed the economic considerations of anticipated prohibitive compliance costs.

The notice of the public hearing to consider adoption of the 2002 permit hearing **454 announced: "relevant Regional Board files are incorporated into the record;" the governing procedures were those for an informal hearing procedure as set forth in "Title 23, California Code of Regulations, Section 647 et seq.;" and "Hearings before the Regional Water Board are not conducted pursuant to Government Code section 11500 et seq.," the alternative formal hearing procedure for administrative adjudication. The notice was mailed to all permittees. The accompanying "fact sheet," which was publicly circulated, offered further information about the conduct and nature of the hearing and the legal and factual grounds for the Regional Board's recommendation to adopt the 2002 permit.

The informal public hearing was conducted on

April 26, 2002. Neither Rancho Cucamonga nor any of the permittees objected to the form or substance of the hearing. Ultimately, after a staff presentation and testimony, including a statement from Rancho Cucamonga's counsel, the Regional Board adopted the 2002 permit. After the State Board dismissed their administrative appeal, Rancho Cucamonga and Upland filed the instant action.

The operative pleading is the second amended petition for writ of mandate and complaint. The petition alleges that the State Board and the Regional Board acted illegally and in excess of their jurisdiction in developing, adopting and implementing the 2002 permit. Based on 26 pages of general allegations, the petition asserts eight causes of action, alleging the State Board and the Regional Board violated sections 13241, 13263, and 13360 of the Water Code (the Porter-Cologne Act); the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq.); the California Administrative Procedure Act (Gov.Code, §§ 11340 - 11529); the California Constitution; and the Federal Clean Water Act; and seeking declaratory and injunctive relief.

The State Board successfully opposed the action on demurrer. The Regional Board eliminated four causes of action, the fourth, fifth, seventh, and eighth by demurrer and motion to strike. On the remaining four causes of action, the trial court found in favor of the Regional Board.

*1383 4. *State Board's Demurrer.*

[1] Rancho Cucamonga maintains the trial court should not have sustained the demurrer of the State Board without leave to amend because the State Board is the ultimate authority on state-issued NPDES permits, and, therefore, was properly joined as a party: "Because the State Board has for all intents and purposes adopted the rules and policies of general application upon which the Permit is based, it is clearly a proper party to this action."

The difficulty with Rancho Cucamonga's theory of liability against the State Board is, to quote

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Gertrude Stein about the City of Oakland, "There is no there there." (Gertrude Stein, *Everybody's Autobiography*.) In other words, Rancho Cucamonga's allegations against the State Board lack any substance. Instead, Rancho Cucamonga launches an unspecified attack on the State Board without identifying any particular problems. The petition makes the unexceptional allegation that the State Board formulates general water control policy which it implements and enforces through regional boards. It also alleges the State Board has not complied with the Administrative Procedure Act but it does not identify any objectionable policies or how there is no compliance. Instead the petition complains about a State Board letter directing that all NPDES permits follow consistent principles regarding Standard Urban Storm Water Mitigation **455 Plans. Additionally, the petition maintains the 2002 permit included new reporting requirements and increased costs of compliance.

But the foregoing allegations did not articulate any improper State Board conduct. The 2002 permit, issued by the Regional Board and not by the State Board, is not subject to formal rule-making procedures. (Gov.Code, § 11352, subd. (b).) The State Board's letter, explaining a precedential decision concerning mitigation plans, is not an example of formal rule-making. (Gov.Code, § 11425.60, subd. (b).) By dismissing Rancho Cucamonga's administrative appeal concerning the 2002 permit, the State Board declined to become involved and the Regional Board's decision to issue the permit became final and subject to judicial review. (*People ex rel Cal. Regional Wat. Quality Control Bd. v. Barry* (1987) 194 Cal.App.3d 158, 177, 239 Cal.Rptr. 349.) But the State Board was not made a proper party by reason of its dismissal of the administrative appeal.

Furthermore, even if Rancho Cucamonga had identified any cognizable claim against the State Board, it would have been barred by the 30-day statute of limitations for challenging an improperly adopted State Board regulation or order. (

Wat.Code, § 13330; Gov.Code, § 11350.)

*1384 We hold the trial court properly sustained without leave to amend the State Board's demurrer to the second amended petition for writ of mandate and complaint.

5. Standard of Review for Petition for Writ of Mandate

[2] In deciding a petition for writ of mandate, the trial court exercises its independent judgment. (Code Civ. Proc., § 1094.5, subd. (c); Wat.Code, § 13330, subd. (d); *Building Industry, supra*, 124 Cal.App.4th at p. 879, 22 Cal.Rptr.3d 128.) But, "[i]n exercising its independent judgment, a trial court must afford a strong presumption of correctness concerning the administrative findings, ... Because the trial court ultimately must exercise its own independent judgment, that court is free to substitute its own findings after first giving due respect to the agency's findings." (*Fukuda v. City of Angels* (1999) 20 Cal.4th 805, 817-818, 85 Cal.Rptr.2d 696, 977 P.2d 693 (*Fukuda*)).

[3][4] On appeal, the reviewing court determines whether substantial evidence supports the trial court's factual determinations. (*Fukuda, supra*, 20 Cal.4th at p. 824, 85 Cal.Rptr.2d 696, 977 P.2d 693; *Building Industry, supra*, 124 Cal.App.4th at p. 879, 22 Cal.Rptr.3d 128.) The trial court's legal determinations receive a de novo review with consideration being given to the agency's interpretations of its own statutes and regulations. (*Building Industry, supra*, at p. 879, 22 Cal.Rptr.3d 128; *Nasha L.L.C. v. City of Los Angeles* (2004) 125 Cal.App.4th 470, 482, 22 Cal.Rptr.3d 772.)

6. Rancho Cucamonga's Objections to the Administrative Record and Lack of Notice

[5] The notice of the administrative hearing for adoption of the 2002 permit included the statement that the Regional Board's files would be incorporated as part of the record. Before trial on the writ petition, Rancho Cucamonga attempted to raise an omnibus objection to the entire administrative record and a specific objection to four documents,

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three studies about marine pollution and one economic study. The trial court ruled the objections had been waived by not making them before or at the time of the hearing. Applying the presumption of administrative regularity, we affirm the trial court's evidentiary ruling. **456 (*Mason v. Office of Administrative Hearings* (2001) 89 Cal.App.4th 1119, 1131, 108 Cal.Rptr.2d 102.)

The reasons given by Rancho Cucamonga as to why the trial court should have sustained its objections to all or part of the administrative record are that it did not waive its objections to the record because Rancho Cucamonga did not know the hearing was adjudicative; the Regional Board did not provide *1385 notice of an informal hearing (Gov.Code, § 11445.30); and Rancho Cucamonga never had an opportunity to object to the administrative record.

[6] As noted previously, Government Code section 11352, subdivision (b), makes the issuance of an NPDES permit exempt from the rulemaking procedures of the Administrative Procedure Act. Permit issuance is a quasi-judicial, not a quasi-legislative, rule-making proceeding: "The exercise of discretion to grant or deny a license, permit or other type of application is a quasi-judicial function." (*Sommerfield v. Helmick* (1997) 57 Cal.App.4th 315, 320, 67 Cal.Rptr.2d 51; *City of Santee v. Superior Court* (1991) 228 Cal.App.3d 713, 718, 279 Cal.Rptr. 22.)

Instead, the Regional Board correctly followed the administrative adjudication procedures (Gov.Code, § 11445.10 et seq.) and the companion regulations at California Code of Regulations, Title 23, sections 647 – 648.8 for informal adjudicative public hearings. These procedures were announced in the notice of hearing which also stated that Government Code section 11500 et seq., governing formal administrative adjudication hearings, would not apply, thus satisfying Government Code section 11445.30 requiring notice of an informal hearing procedure. At the time of the hearing, Rancho Cucamonga did not object to the informal procedure.

Rancho Cucamonga's effort to argue that federal notice requirements (40 C.F.R. § 124.8, subd. (b)(6)(ii) (2005)) should also have been followed fails because this involved a state-issued NPDES permit adopted according to California procedures.

Because Rancho Cucamonga was given notice that the hearing on the permit would proceed as an informal administrative adjudication, it cannot successfully argue it was relieved of the obligation to object to the administrative record at the time of the hearing. An informal administrative adjudication contemplates liberality in the introduction of evidence. (Cal. Code Regs., tit. 23, §§ 648, subd. (d) and 648.5.1.) If Rancho Cucamonga wished to object to the informal hearing procedures, including the liberal introduction of evidence, it should have raised its objections as provided by statute and regulation before or at the time of the hearing (Gov.Code, §§ 11445.30, 11445.40, and 11445.50; Cal. Code Regs., tit. 23, § 648.7), not a year later in the subsequent civil proceeding.

7. Economic Considerations for Issuance of NPDES Permit

Rancho Cucamonga's next assignment of error is that the Regional Board failed to consider the economic impact of the requirements of the 2002 permit by not conducting a cost-benefit analysis. Rancho Cucamonga relies on the California Supreme Court's *Burbank* opinion, in which the court held: "When ... a regional board is considering whether to make the pollutant restrictions in a wastewater discharge permit *more stringent* than federal law *1386 requires, California law allows the board to take into account economic factors, including the wastewater discharger's cost of compliance." (*Burbank, supra*, 35 Cal.4th at p. 618, 26 Cal.Rptr.3d 304, 108 P.3d 862.) Rancho Cucamonga contends that the 2002 permit exceeds federal requirements and that, therefore, this case should be remanded for a consideration of **457 economic factors. (See *ibid.*; Wat.Code, § 13241, subd. (d).)

The two problems with this argument are the

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trial court found there was no evidence that the 2002 permit exceeded federal requirements and Rancho Cucamonga does not explain now how it does so. There was also evidence that the 2002 permit was based on a fiscal analysis and a cost-benefit analysis. In the absence of the foundational predicate and in view of evidence that cost was considered, Rancho Cucamonga's contention on this point fails.

[7] We also reject Rancho Cucamonga's related procedural argument that the Regional Board's motion to strike was impermissible as piecemeal adjudication. (*Regan Roofing v. Superior Court* (1994) 24 Cal.App.4th 425, 432-436, 29 Cal.Rptr.2d 413, *Lilienthal & Fowler v. Superior Court* (1993) 12 Cal.App.4th 1848, 1851-1855, 16 Cal.Rptr.2d 458.) It is well recognized a court may strike all or part of a pleading as it did in this instance. (Code Civ. Proc., §§ 431.10 and 436; *PH II, Inc. v. Superior Court* (1995) 33 Cal.App.4th 1680, 1682-1683, 40 Cal.Rptr.2d 169.)

8. Substantial Evidence

[8] Rancho Cucamonga also challenges the trial court's independent factual determination that sufficient evidence supports the findings of the Regional Board. Rancho Cucamonga's main contention is that the 2002 permit was not distinctively crafted for San Bernardino County but, instead, copied a similar permit for other counties without identifying any particular water quality impairment in San Bernardino County caused by the permittees. In other words, no evidence in the record supports issuance of the 2002 permit and the trial court did not identify any such evidence in its statement of decision.

One problem with Rancho Cucamonga's foregoing argument is that the Clean Water Act requires an NPDES permit to be issued for *any* storm sewer discharge, whether there is any actual impairment in a particular region. (33 U.S.C. § 1342; *Communities, supra*, 109 Cal.App.4th at pp. 1092-1093, 1 Cal.Rptr.3d 76.) Therefore, Rancho Cucamonga's contention that the permit fails to

identify impaired water bodies in the region is beside the point.

In its statement of decision, the trial court discussed the inadequacy of the arguments and evidence cited by Rancho Cucamonga and concluded: "The San Bernardino Permit is based in part on the Basin Plan for this region. It is *1387 also based on the permittees' own reports and monitoring within this region.... It incorporates the permittees' management program, which is unique to these cities and county." The trial court included a citation to the 1993 DAMP report's "Geographic Description of the Drainage Area," which discusses the specific conditions present in San Bernardino County.

On appeal, Rancho Cucamonga faults the trial court for not presenting a more detailed description of the evidence supporting the issuance of the permit. We do not think the trial court, or this court, must bear that burden.

[9] First, "[a]n agency may ... rely upon the opinion of its staff in reaching decisions, and the opinion of staff has been recognized as constituting substantial evidence. (*Coastal Southwest Dev. Corp. v. California Coastal Zone Conservation Com.* (1976) 55 Cal.App.3d 525, 535-536, 127 Cal.Rptr. 775.)" (*Browning-Ferris Industries v. City Council* (1986) 181 Cal.App.3d 852, 866, 226 Cal.Rptr. 575.) Here the Regional Board adopted the recommendation of its staff in issuing the permit. And, as the record shows, the staff's recommendation was based on the previous 1990 and 1996 permits, the 1993 DAMP **458 report and the 2000 ROWD, the permittees' application for renewal of the 1996 permit, as well as more general water quality factors. The evidence contradicts Rancho Cucamonga's assertion, that "the Regional Board simply copied verbatim the NPDES Permit for North Orange County, a coastal region with markedly different water quality conditions and problems."

As part of the trial court's consideration of the petition for writ of mandate, Rancho Cucamonga

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and the Regional Board directed the court to review specific items of evidence contained in the administrative record. In its opposing brief, the Regional Board offered a detailed account of the evidence supporting the issuance of the permit. The trial court indicated it had reviewed the parties' submissions before ruling: It discussed the evidence at the hearing on the petition and referred to it in its statement of decision. (*Lala v. Maiorana* (1959) 166 Cal.App.2d 724, 731, 333 P.2d 862.) Rancho Cucamonga had the burden of showing the Board abused its discretion or its findings were not supported by the facts. (*Building Industry, supra*, 124 Cal.App.4th at pp. 887-888, 22 Cal.Rptr.3d 128.) To the extent it attempted to do so at the trial court level, it was not successful.

This court has independently reviewed the record with particular attention to the evidence as emphasized by the parties. We do not, however, find it incumbent upon us or the trial court to review the many thousands of pages submitted on appeal and identify the particular evidence that constitutes substantial evidence. Instead, we deem the trial court's findings sufficient and not affording any grounds for reversal. (*Building Industry, supra*, 124 Cal.App.4th at p. 888, 22 Cal.Rptr.3d 128; see *1388 *Weisz Trucking Co., Inc. v. Emil R. Wohl Construction* (1970) 13 Cal.App.3d 256, 264, 91 Cal.Rptr. 489; citing *Perry v. Jacobsen* (1960) 184 Cal.App.2d 43, 50, 7 Cal.Rptr. 177.)

9. Safe Harbor Provision

[10] As it did repeatedly below, Rancho Cucamonga maintains the 2002 permit violates section 402(k) of the Clean Water Act (33 U.S.C. § 1342, subd. (k)), because the permit does not include "safe harbor" language, providing that, if a permittee is in full compliance with the terms and conditions of its permit, it cannot be found in violation of the Clean Water Act. (*United States Public Interest Research Group v. Atlantic Salmon of Maine, LLC* (1st Cir.2003) 339 F.3d 23, 26; *EPA v. State Water Resources Control Bd.* (1976) 426 U.S. 200, 205, 96 S.Ct. 2022, 48 L.Ed.2d 578.) The trial court

found there was no statutory right to a "safe harbor" provision to be included as the term of the permit. We agree.

~~This seems like much ado about nothing because 33 U.S.C. § 1342, subdivision (k), already affords Rancho Cucamonga the protection it seeks: "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." Rancho Cucamonga does not cite any persuasive authority as to why this statutory protection had to be duplicated as a provision in the 2002 permit.~~

Furthermore, the 2002 permit complied with the State Board's Water Quality Order No. 99-05, a precedential decision requiring NPDES permits to omit "safe harbor" language used in earlier permits. A permit without "safe harbor" language was upheld in **459 *Building Industry, supra*, 124 Cal.App.4th at p. 877, 22 Cal.Rptr.3d 128. The trial court did not err.

10. Maximum Extent Practicable

Rancho Cucamonga protests that the 2002 permit's discharge limitations/prohibitions exceed the federal requirement that storm water dischargers should "reduce the discharge of pollutants to the maximum extent practicable." (33 U.S.C. § 1342; subd. (p)(3)(B)(iii).) The trial court, however, found there was no evidence presented that the 2002 permit exceeded federal requirements. Because there is no evidence, the issue presented is hypothetical and, therefore, premature. (*Building Industry, supra*, 124 Cal.App.4th at p. 890, 22 Cal.Rptr.3d 128.)

Additionally, as Rancho Cucamonga recognizes, *Building Industry* rejected the contention that a "regulatory permit violates federal law because it allows the Water Boards to impose municipal storm sewer control measures more *1389 stringent than a

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federal standard known as 'maximum extent practicable.' [Citation.] [Fn. omitted.] [W]e ... conclude the Water Boards had the authority to include a permit provision requiring compliance with state water quality standards." (*Building Industry, supra*, 124 Cal.App.4th at p. 871, 22 Cal.Rptr.3d 128.) The *Burbank* case, allowing for consideration of economic factors when federal standards are exceeded, does not alter the analysis in this case where there was no showing that federal standards were exceeded and where there was evidence that economic factors were considered. Furthermore, like the permit in *Building Industry*, the 2002 permit contemplates controlling discharge of pollutants to the maximum extent practicable through a "cooperative iterative process where the Regional Water Board and Municipality work together to identify violations of water quality standards." (*Building, supra*, at p. 889, 22 Cal.Rptr.3d 128.) The 2002 permit does not exceed the maximum extent practicable standard.

11. *The Requirements of the 2002 Permit*

[11] Rancho Cucamonga lastly complains the requirements of the 2002 permit are "overly prescriptive," illegally dictating the manner of compliance and improperly delegating to the permittees the inspection duties of the State Board and the Regional Board. Rancho Cucamonga's arguments contradict the meaning and spirit of the Clean Water Act.

In creating a permit system for dischargers from municipal storm sewers, Congress intended to implement actual programs. (*Natural Resources Defense Council, Inc. v. Costle* (D.C.Cir.1977) 568 F.2d 1369, 1375.) The Clean Water Act authorizes the imposition of permit conditions, including: "management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator of the State determines appropriate for the control of such pollutants." (33 U.S.C. § 1342, subd. (p)(3)(B)(iii).) The Act authorizes states to issue permits with conditions necessary to carry out its provisions. (33

U.S.C. § 1342, subd. (a)(1).) The permitting agency has discretion to decide what practices, techniques, methods and other provisions are appropriate and necessary to control the discharge of pollutants. (*NRDC v. EPA* (9th Cir.1992) 966 F.2d 1292, 1308.) That is what the Regional Board has created in the 2002 permit.

Rancho Cucamonga's reliance on Water Code section 13360 is misplaced because that code section involves enforcement and implementation of state water quality law, (Wat.Code, § 13300 et seq.) not compliance with the Clean Water Act (Wat.Code, § 13370 et seq.) The federal law **460 preempts the state law. (*Burbank, supra*, 35 Cal.4th at p. 626, 26 Cal.Rptr.3d 304, 108 P.3d 862.) The Regional Board must comply with federal law requiring detailed conditions for NPDES permits.

*1390 Furthermore, the 2002 permit does afford the permittees discretion in the manner of compliance. It is the permittees who design programs for compliance, implementing best management practices selected by the permittees in the DAMP report and approved by the Regional Board. Throughout the permit, the permittees are granted considerable autonomy and responsibility in maintaining and enforcing the appropriate legal authority; inspecting and maintaining their storm drain systems according to criteria they develop; establishing the priorities for their own inspection requirements; and establishing programs for new development. The development and implementation of programs to control the discharge of pollutants is left largely to the permittees.

More particularly, we agree with the Regional Board that the permit properly allocated some inspection duties to the permittees. As part of their ROWD application for a permit, the permittees proposed to "Conduct Inspection, Surveillance, and Monitoring. Carry out all inspections, surveillance, and monitoring procedures necessary to determine compliance and noncompliance with permit conditions including the prohibition on illicit discharges to the municipal storm drain system." The ROWD

135 Cal.App.4th 1377, 38 Cal.Rptr.3d 450, 36 Env'tl. L. Rep. 20,026, 06 Cal. Daily Op. Serv. 845, 06 Cal. Daily Op. Serv. 1699, 2006 Daily Journal D.A.R. 1126
(Cite as: 135 Cal.App.4th 1377, 38 Cal.Rptr.3d 450)

also discussed continuing existing inspection programs.

Water Code section 13383 provides that as part of compliance with the Clean Water Act, the Regional Board may establish inspection requirements for any pollutant discharger. Federal law, either expressly or by implication, requires NPDES permittees to perform inspections for illicit discharge prevention and detection; landfills and other waste facilities; industrial facilities; construction sites; certifications of no discharge; non-stormwater discharges; permit compliance; and local ordinance compliance. (40 C.F.R. 122.26, subds. (d), (g); 33 U.S.C. § 1342, subd. (p)(3)(B)(ii).) Permittees must report annually on their inspection activities. (40 C.F.R. § 122.42, subd. (c)(6) (2005).)

Rancho Cucamonga claims it is being required to conduct inspections for facilities covered by other state-issued general permits. Rancho Cucamonga and the other permittees are responsible for inspecting construction and industrial sites and commercial facilities within their jurisdiction for compliance with and enforcement of local municipal ordinances and permits. But the Regional Board continues to be responsible under the 2002 NPDES permit for inspections under the general permits. The Regional Board may conduct its own inspections but permittees must still enforce their own laws at these sites. (40 C.F.R. § 122.26, subd. (d)(2) (2005).)

**1391 12. Disposition*

Rancho Cucamonga is the only of the original 18 permittees still objecting to the 2002 NPDES permit. It has not successfully demonstrated that substantial evidence does not support the trial court's factual determinations or the trial court erred in its interpretation and application of state and federal law.

We affirm the judgment and order the prevailing parties to recover their costs on appeal.

HOLLENHORST, Acting P.J., and RICHLI, J.,

concur.

Cal.App. 4 Dist., 2006.
City of Rancho Cucamonga v. Regional Water Quality Control Bd.-Santa Ana Region
135 Cal.App.4th 1377, 38 Cal.Rptr.3d 450, 36 Env'tl. L. Rep. 20,026, 06 Cal. Daily Op. Serv. 845, 06 Cal. Daily Op. Serv. 1699, 2006 Daily Journal D.A.R. 1126

END OF DOCUMENT

ATTACHMENT 36

SUPERIOR COURT OF CALIFORNIA, COUNTY OF LOS ANGELES

DATE: 08/15/11

DEPT. 86

HONORABLE ANN I. JONES

JUDGE

N DIGIAMBATTISTA

DEPUTY CLERK

HONORABLE
2

JUDGE PRO TEM

A AYALA/COURTROOM ASST

ELECTRONIC RECORDING MONITOR

NONE

Deputy Sheriff

NONE

Reporter

11:30 am BS130730

Plaintiff
Counsel

STATE OF CA DEPT OF FINANCE ET
VS
COMMISSION ON STATE MANDATES

Defendant NO APPEARANCES
Counsel

NATURE OF PROCEEDINGS:

HEARING ON PETITION FOR WRIT OF MANDATE
RULING ON SUBMITTED MATTER

The court having taken the above matter under sub-
mission on August 10, 2011, now grants the petition
for writ of mandate for the reasons set forth in the
document entitled COURT'S RULING ON PETITION FOR WRIT
OF MANDATE HEARD ON AUGUST 10, 2011, signed and filed
this date.

Petitioner's exhibit 1 is ordered returned forthwith
to the party who lodged it, to be preserved without
alteration until a final judgment in this case and is
to be forwarded to the court of appeal in the event of
an appeal.

Counsel for petitioners is to prepare, serve and lodge
the proposed judgment within ten days. The judgment
will be held ten days for objections.

A copy of this minute order as well as the court's
Ruling are mailed via U.S. Mail to counsel of record
addressed as follows:

MICHAEL A.M. LAUFFER, ESQ., CALIF. ENVIRON. PROTECTION
AGENCY, 1001 I ST., 22ND FL., SACRAMENTO, CA 95814

JENNIFER F. NOVAK, DEPUTY ATTY GENERAL, 300 S. SPRING
ST., SUITE 1702, LOS ANGELES, CA 90013

MINUTES ENTERED
08/15/11
COUNTY CLERK

SUPERIOR COURT OF CALIFORNIA, COUNTY OF LOS ANGELES

DATE: 08/15/11

DEPT. 86

HONORABLE ANN I. JONES

JUDGE

N DIGIAMBATTISTA

DEPUTY CLERK

HONORABLE
2

JUDGE PRO TEM

A AYALA/COURTROOM ASST

ELECTRONIC RECORDING MONITOR

NONE

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NONE

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11:30 am BS130730

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STATE OF CA DEPT OF FINANCE ET
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COMMISSION ON STATE MANDATES

Defendant NO APPEARANCES
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SUPERIOR COURT OF THE STATE OF CALIFORNIA
FOR THE COUNTY OF LOS ANGELES

ORIGINAL FILED

AUG 15 2011

LOS ANGELES
SUPERIOR COURT

STATE OF CALIFORNIA DEPARTMENT)
OF FINANCE, ET AL)
Petitioners)

vs)

COUNTY OF LOS ANGELES, ET AL)
Respondents)

CASE NO. BS130730

COURT'S RULING ON PETITION FOR WRIT OF MANDATE HEARD ON
AUGUST 10, 2011

Petitioners State of California Department of Finance, the State Water Resource Control Board ("State Board") and the Los Angeles California Regional Water Quality Control Board ("Regional Board") seek to set aside a decision of the Respondent Commission of State Mandates ("Commission").

After considering the parties' briefs and relevant evidence¹, having heard argument and having taken the matter under submission, the Court rules as follows:

Statement of the Case

This case involves the efforts of the Real Parties in Interest to obtain a subvention of funds for costs resulting from an executive order mandated by a state agency and contained in a storm water permit issued in 2001 to these cities and other cities in Los Angeles County and the Los Angeles Flood Control District.

An understanding of the interplay of the varied regulatory schemes underlying these orders and permits is necessary to an evaluation of the matters before the Court.

1. Environmental Regulations Under the Clean Water Act.

In 1972, Congress passed the Clean Water Act. The Clean Water Act sought to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 33

¹ In addition to the administrative record, the court takes judicial notice of the matters sought to be noticed by Petitioners and Real Parties.

U.S.C. § 1251(a). The Clean Water Act prohibits the discharge of pollutants from “point sources” to waters of the United States unless provided for under the national Pollutant Discharge Elimination System (“NPDES”). 33 U.S.C. § 1311, 1342; Communities for a Better Environment v. State Water Resources Control Board, 109 Cal. App. 4th 1089, 1092-93 (2003).

Either the United States Environmental Protection Agency (“EPA”) or a U.S. EPA-approved state may issue NPDES permits.² 33 U.S.C. § 1342(a)(1) & (b). Congress concluded that the U.S. EPA could not only issue permits, but also allowed states to elect to take on that federal responsibility. Environmental Protection Agency v. California ex rel. State Water Resources Board, 426 U.S. 200, 219 (1976). California has the approval of the U.S. EPA to issue NPDES permits. Building Industry Association of San Diego County v. State Water Resources Control Board, 124 Cal. App. 4th 866, 875 (2004).

If a state elects to issue NPDES permits, it must ensure that the permits comply with many different federal requirements, including effluent limitations and national standards, and states must also provide for the continued inspection and monitoring of pollutants into the waters. 33 U.S.C. §§ 1342(b)(1), 1311, 1312, 1316, 1317, 1319(a)(1), (3) and 1365(a)(1). And, to ensure that the state programs comply with these federal mandates, the EPA maintains oversight and supervision of these programs. For example, the state must provide the U.S. EPA with proposed permits and notice of any action related to a discharger’s permit application. 33 U.S.C. § 1342(d)(1). The EPA may object to the permit and should the federal agency find that a state program does not comply with NPDES program guidelines, it may withdrawal approval of the state program. 33 U.S.C. § 1342(c)(3).

While many types of discharge require NPDES permits under the Clean Water Act, this case deals only with one type – discharge of pollutants through municipal storm sewer systems. This type of discharge is referred to as either MS4 or storm sewer systems. Controlling municipal storm water runoff is important because it constitutes one of the most significant sources of water pollution. Environmental Defense Center, Inc. v. EPA, 344 F.3d 832, 840 (9th Cir. 2003).

The Clean Water Act requires municipal storm water discharges, such those from the County of Los Angeles, “to reduce the discharge of pollutants to the maximum extent practicable,” including management practices, control techniques and system, design and

² In 1973, pursuant to an amendment to the Porter Cologne Water Quality Control Act, California became the first state to be approved by the U.S. EPA to administer the NPDES permit program. County Sanitation Dist. No. 2 of Los Angeles County v. County of Kern, 127 Cal. App. 4th 1544, 1565-66 (2005). As amended, the Porter-Cologne Act mandates that “waste discharge requirements for discharge from point sources to navigable waters shall be issued and administered in accordance with the currently applicable federal regulations for the . . . (NPDES) program.” 23 Cal. Code of Regulations § 2235.2. Nine regional boards, including the Los Angeles California Regional Water Quality Control Board, administer the program, with oversight by the State Board. See Water Code §§ 13140, 13200 et seq.. While the Porter-Cologne Act requires that Chapter 5.5 be “construed to ensure consistency with the requirements for state programs,” state regulators may impose restrictions in NPDES permits that go beyond the requirements of the Clean Water Act. Water Code section 13377.

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). The “maximum extent practicable” standard is a technology-forcing requirement designed to foster innovation. See, e.g., Chemical Mfrs. Ass’n v. Natural Resources Defense Council, 470 U.S. 116, 155-56 (1985).

But, unlike many other technology-based requirements, the U.S. EPA directed that permit writers would identify the municipal storm water requirements on a permit-by-permit basis.³ Natural Resources Defense Council v. U.S. EPA, 966 F.2d 1292, 1308 n. 17 (9th Cir. 1992); 55 Fed. Reg. 47990, 48043 (Nov. 16, 1990). “

“Unlike NPDES industrial wastewater permits which typically contain specific end-of-pipe effluent limits based on . . . available treatment technology, MS4 permits usually include programmatic requirements involving the implementation of best management practices (BMP) in order to reduce pollutants discharged to the maximum extent practicable (MEP).

(AR 3393). See also Natural Resources Defense Council, supra, 568 F. 2d at 1380. Federal regulations define these practices to mean, *inter alia*, “schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of ‘waters of the United States’.”⁴ 40 C.F.R. § 122.2. Permittees are often allowed flexibility in the types of BMP and activities implemented to meet permit requirements. (AR 3393).

Before discharging pollutants from point sources under an MS4 permit, a public entity must file an application that addresses, among other things, the management programs in place to reduce the discharge of pollution using the maximum extent practicable standard. 40 C.F.R. § 122.26 et seq. These management programs must address discharges into the storm system from both the general population and from industrial and construction activities within the jurisdiction. Id.

Starting in 1990,⁵ the Regional Board issued municipal storm water permits to the County of Los Angeles.⁵ At issue in this case is Regional Order No. 01-182, NPDES permit

³ Regulating storm water discharges is generally considered to be more difficult than regulating traditional point resources, e.g. effluent levels discharged at factories or from sanitary treatment systems. (AR 5151). These traditional point sources have engineered treatment systems and the NPDES permits for these facilities generally contain numeric effluent limitations that must be met at the end of the discharge pipe. (Id.) By contrast, municipal storm water systems require controls to reduce the discharge of pollutants to the maximum extent practicable. (Id.)

⁴ The U.S. EPA issues guidance documents that discuss the types of “best management practices.” At the time that the claims at issue in this case were considered by Commission, the U.S. EPA had an MS4 Program Evaluation Guide. (AR 3391-94). In that Guide, the EPA addressed inspections of businesses and refuse-related issues. (AR 3468-69, 3440).

⁵ Before 1990, storm water discharges were not regulated under either state or federal law. On June 18, 1990, the first permit (90-079) was issued. This NPDES permit for the discharge of municipal storm water

number CAS004001, adopted on December 31, 2001. (AR 3495-3576). As part of that permit, the Regional Board made 66 findings concerning the permit's factual and legal basis. (AR 3505-19). For example, the Regional Board found that the proposed permit "[was] intended to develop, achieve and implement a timely, comprehensive, cost-effective storm water pollution control program to reduce the discharge of pollutants in storm water to the Maximum Extent Practicable" (AR 3507).

2. Subvention and the Commission on State Mandates.

In November 1979, the voters adopted Proposition 4, which added article XIII B to the State Constitution. Hayes v. Commission on State Mandates, 11 Cal. App. 4th 1564, 1580 (1992). Article XIII B, called the "Gann limit," restricts the amounts that state and local governments may appropriate and spend each year from the proceeds of taxes. City of Sacramento v. State of California, 50 Cal. 3d 51, 58-59 (1990). Section 6 of article XIII B calls for state subvention by requiring the state to pay for any new governmental programs, or for higher levels of service under existing programs, that it imposes upon local governmental agencies. County of Los Angeles v. State of California, 43 Cal. 3d 46, 56 (1987).

But, constitutional subvention is not required when the costs implement federal law. Article XIII B, section 9, subdivision (b) excludes from the state or local spending limit any "appropriations required to comply with mandates of the . . . federal government." See also Sand Diego Unified School Dist. v. Commission on State Mandates, 33 Cal. 4th 859, 879-80 (2004) (the Gann limit provides for reimbursement of state-mandated costs, not federal ones). This prohibition against reimbursement for activities imposed by federal law is specifically stated in Government Code section 17556, subdivision (c). Redevelopment Agency of the City of San Marcos v. Commission on State Mandates, 55 Cal. App. 4th 976, 984 (1996). The Commission shall not find "costs mandated by the state" if "the statute or executive order "imposes a requirement that is mandated by federal law or regulation and results in costs mandated by the federal government, *unless the statute or executive order mandates costs that exceed the mandate in the federal law or regulation.*"⁶ Gov't Code section 17556, subdivision (c) (emphasis added).

The Commission on State Mandates is a quasi-judicial agency vested with the sole and exclusive authority to adjudicate all disputes over the existence and reimbursement of state-mandated programs within the meaning of article XIII B of the California Constitution. Kinlaw v. State of California, 54 Cal. 3d 326, 342-43 (1991). Local agencies file claims with the Commission for reimbursement of state-mandated costs under article XIII B, section 6. Gov't Code §§ 17551, 17560. The first claim filed by a local agency alleging that a statute or executive order imposes a reimbursable cost is a

was replaced on July 15, 1995 (96-054). (AR 3501). In addition, the State Board has issued two general NPDES permits for storm water discharges from industrial and construction sites. (AR 3511).

⁶ "Costs mandated by the federal government" is defined as "any increased costs incurred by a local agency or school district after January 1, 1975, in order to comply with the requirements of a federal statute or regulation." Gov't Code section 17514.

“test claim.” Gov’t Code § 17521. A public hearing is held on the test claim at which time evidence may be presented by the claimant, the Department of Finance, or any other state agency affected by the claim, and any interested organization or individual. Gov’t Code § 17555.

The Commission determines in the first instance if a state-mandated program exists. Gov’t Code § 17551. If so, the Commission adopts parameters and guidelines for the reimbursement of claims submitted by eligible claimants. Gov’t Code § 17557, subdivision (a). Thereafter, the Controller issues claiming instructions for each mandate that requires reimbursement. Gov’t Code § 17558, subdivisions (a) and (c). Judicial review of the final Commission decision is available through a petition for writ of mandate filed pursuant to Cal. Code of Civ. P. section 1094.5. Gov’t Code § 17559.

3. The Test Claims at Issue Here

The County of Los Angeles and several cities, who are the Real Parties in Interest, presented “test claims” to the Respondent Commission in September 2003. The Real Parties sought subvention of state funds for four requirements contained in the NPDES permit number CAS004001, adopted on December 31, 2001: (1) to place and maintain trace receptacles at transit stops; (2) to inspect certain commercial facilities; (3) to inspect certain industrial facilities; and (4) to inspect construction sites.⁷ (AR 13-14). These parties asserted that these requirements exceeded the federal mandate under the law and regulations of the Clean Water Act.

The Commission initially rejected the claims, citing Government Code section 17516(c), exempting from the term “executive order” any orders issued by regional quality control boards or the State Board. The Commission’s ruling was ultimately reversed by the Superior Court, and that decision was affirmed by the Court of Appeal. See also County of Los Angeles v. Commission on State Mandates, 150 Cal. App. 4th 898, 904 (2007).

The test claims were re-filed with the Commission. (AR 5557). On July 31, 2009, Respondent issued a Statement of Decision. (AR 5555- 5625). In relevant part, the Commission determined that the challenged permit provisions were not federal mandates. (AR 5574-5603). And, the Commission determined that the permit activities challenged here imposed new programs or higher level of services on the County of Los Angeles.⁸ (AR 5603-04).

With respect to the federal mandate findings, the Commission found that these four challenged provisions exceeded the requirements of the CWA and federal regulations and

⁷ None of these challenged requirements was proposed by the Real Parties when they applied for the NPDES permit at issue in this case. (AR 3663-3794). Rather, these requirements were added by the Regional Board, over the real parties’ objections. (AR 3553, 3533-338, 3546-49).

⁸ The Commission further found that the state was required to reimburse the real parties for the trash receptacle obligation, but not for the inspection obligations as the real parties had the ability to raise fees to pay for these inspections. This aspect of the Commission’s decision necessarily fails under the analysis described below, but will not be specifically considered as the subject of this petition involves whether these inspections are state mandates in the first instance, not whether they are properly reimbursable.

that the state "freely chose" to impose them on the Real Parties. (AR 5578, 5582-86). The Commission analyzed the federal regulations, including 40 CFR 122.26 *et seq*, and concluded that these rules did not expressly require the installation and maintenance of receptacles, or conducting certain inspections. (AR 5578, 5584, 5590, 5591, 5595, 5601). As for the conclusion that these four permit requirements were "new programs," the Commission noted that these activities were not contained in the previous permits issued to the County of Los Angeles, and were imposed only on local agencies and not on the general public. (AR 5603-04).

On July 20, 2010, Petitioners filed this Petition.

Standard of Review

Petitioner seeks review of the Board's decision under CCP section 1094.5. CCP section 1094.5 is the administrative mandamus provision which structures the procedure for judicial review of adjudicatory decisions rendered by administrative agencies. Topanga Ann's for a Scenic Community v. County of Los Angeles, 11 Cal. 3d 506, 514-15 (1974).

The pertinent issues under section 1094.5 are (1) whether the respondent has proceeded without jurisdiction, (2) whether there was a fair trial, and (3) whether there was a prejudicial abuse of discretion. CCP § 1094.5(b). An abuse of discretion is established if the respondent has not proceeded in the manner required by law, the decision is not supported by the findings, or the findings are not supported by the evidence. CCP § 1094.5(c).

A review of the Commission's factual determinations proceeds under the substantial evidence test. City of Richmond v. Commission on State Mandates, 64 Cal. App. 4th 1190, 1194-95 (1998). Applying that test, the Court must ensure that findings are legally relevant as well as supported by the evidence. See City and County of San Francisco v. Board of Permit Appeals, 207 Cal. App. 3d 1099, 1110 (1989). Substantial evidence review also includes a duty to determine whether the agency committed errors of law in applying the facts before it. *Id.* at 1111. Whether a statute creates a reimbursable state mandate is a question of law. Connell v. Superior Court, 59 Cal. App. 4th 382, 395 (1997); Long Beach Unified School Dist. v. State of California, 225 Cal. App. 3d 155, 174 (1990). Questions of law are subject to *de novo* review. City of Richmond, supra, 64 Cal. App. 4th at 1105.

An agency is presumed to have regularly performed its official duties. (Ev. Code § 664). The Petitioner, therefore, has the burden of proof to demonstrate wherein the proceedings were unfair, in excess of jurisdiction, or showed prejudicial abuse of discretion. Alford v. Pierno, 27 Cal. App. 3d 682, 691 (1972).

Analysis

Petitioners assert two arguments in support of their contention that the Commission erred and must be reversed. They shall be evaluated separately.

1. The Challenged Receptacle Requirement Is a Federal Mandate.

There is a two-step test to determine whether a particular program is mandated by federal law and not, therefore, subject to state subvention.

First, did the state have “no real choice” in deciding whether to comply with the federal act? Hayes, supra, 11 Cal. App. 4th at 1594. A federal mandate exists even if “the state has adopted an implementing statute or regulation pursuant to the federal mandate, so long as the state had no true choice in the manner of implementation of the federal mandate. Id. at 1593. But, “[t]his reasoning would not hold true where the manner of implementation of the federal program was left to the true discretion of the state.” Id. For example, in City of Sacramento, supra, 50 Cal. 3d at 73-74, the Supreme Court explained that certain regulatory standards imposed by the federal government are “coercive . . . in every practical sense.” But, there is no requirement of such compulsion under article XIII B. Id. at 76 (there is “no final test for ‘mandatory’ versus ‘optional’ compliance with federal law.”) Rather, the standard depends on a number of factors, such as the nature and purpose of the federal program; whether its design suggests an intention to coerce; when state participation began, and the practical consequences of non-participation, non-compliance or withdrawal. Id.

Second, did the program exceed the requirements of a compulsory federal law? San Diego Unified School Dist. v. Commission on State Mandates, 33 Cal. 4th 859, 880 (2004).

Petitioners assert that the Commission’s entire analysis is analytically defective as a matter of law. For the reasons set forth below, the Court agrees.

First, the Commission’s conclusion that the state has “freely chosen” to implement the storm water permit program is legally incorrect. The reasons given, *i.e.*, (1) that California “voluntarily adopts the [NPDES] permitting program” and (2) because federal law “does not expressly require states to have this program,” do not equate with a conclusion that the NPDES permitting program at issue here is optional.

A review of the Clean Water Act clearly dictates that NPDES permits issued – by either the U.S. EPA or a qualified state agency – are not voluntary. Federal law requires the County of Los Angeles to have an NPDES permit for municipal storm water discharges. That same federal law compels those permits to educe the discharge of pollutants to the maximum extent practicable.⁹ This federal statutory scheme mandates NPDES permitting, even if California took no action at all. And, if California did not administer its own water quality program through the Porter-Cologne Act, California’s dischargers,

⁹ Congress established the maximum extent practicable standard because municipal storm water runoff, unlike other pollutant discharges, could not be adequately addressed by blanket effluent limitations. Building Industry Ass’n of San Diego County v. State Water Resources Control Board, 124 Cal. App. 4th 866, 884 (2004).

both private and governmental, would still have to comply with federal law – and be directly regulated by the federal government.¹⁰

Second, there is no substantial evidence in the administrative record to support the Commission's conclusion that the state's mandate in this instance was inconsistent with or more stringent than the Clean Water Act's "maximum extent practicable" requirement.¹¹ Rather, the Commission simply concluded that the claimed permit requirements were in excess of federal mandates because they could not be located in certain identified federal regulations.¹² (AR 5584, 5591, 5595). Unless expressly dictated by an identifiable federal regulation, the Commission concluded that such requirements are state mandates.

The search for a comparable federal regulation as the pre-condition for finding a federal mandate utterly ignores and misapplies the flexible regulatory standard inherent in the Clean Water Act. The "maximum extent practicable standard" is designed to provide administrative bodies 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, 124 Cal. App. 4th 866, 884 (2004). That flexible standard was designed to allow permit writers 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.), *6. And, the flexible standard provides an agency to tailor permits to the "site-specific nature of MS4," and the ability

¹⁰ And, such an outcome would be clearly contrary to the Legislative intention behind Porter-Cologne. "It is in the interest of the people of the state, in order to avoid direct regulation by the federal government of persons already subject to regulation under state law pursuant to this division, to enact this chapter in order to authorize the state to implement the provisions of the Federal Water Pollution Control Act. Water Code § 13370, subdivision (c).

¹¹ The Real Parties assert that the State Board has held that the "maximum extent practicable" standard does not apply to permit requirements that address the entry of pollutants into the storm sewer system. See In the Matter of the Petitions of Building Industry Association of San Diego County and Western States Petroleum Association, State Water Board Order WQ 2001-15. A review of that case, however, fails to support that contention. The administrative decision presented different circumstances and involved different permit requirements. That order concerned an attempted prohibition on all discharges into the municipal storm sewer system until the pollutants had been reduced to the maximum extent practicable. The State Board found the order to broad because it restricted all discharges and, therefore, necessarily interfered with a flexible approach to the mix of pollutant reductions before reaching the storm sewer system, and after – so long as the overall reductions are to the maximum extent practicable. Water Quality Order WQ 2001-15 does not undermine the EPA's recognition that municipal storm water programs will include requirements that reduce pollutants before reaching the storm sewer, including *inter alia*, the capacity to direct permit requirements at the sources of pollution, rather than solely at the end of the pipe. City of Irving, *supra*, 10 EAD 111 at * 6. The Water Board Order simply did not consider the issue of whether the maximum extent practicable standard contained in the Clean Water Act prohibits control of discharges into a municipal storm sewer system.

¹² The Commission's reliance on Long Beach School Dist. v. State of California, 225 Cal. App. 3d 155, 173 (1990) is misplaced. In that case, the court concluded that a state executive order mandating desegregation was a state mandate because it required schools to provide a higher level of service than was required by the federal constitution. *Id.* at 187. In this case, the federal applicable law, *i.e.*, the maximum extent practicable standard, directly mandates the type of requirements included in the instant permit.

to direct permit requirements “at the sources of pollution in the MS4 rather than solely at the end of the pipe.” Id.

To ignore this flexible standard imposed and mandated under the Clean Water Act, and instead to require a comparable federal regulatory dictates, is legally erroneous.¹³ Under the Commission’s approach, a permit requirement that is merely practicable or easy (not even practicable to the maximum extent) would be a state mandate if the U.S. EPA failed to express the requirement as a regulation.¹⁴ Such an approach is clearly erroneous.

Third, the Commission erred in isolating a specific requirement to conclude that the issued NPDES permit was a state mandate. One permit provision cannot exceed the “maximum extent practicable” standard imposed by the Clean Water where the permit as a whole does not. (AR 3517). For example, the placement and maintenance of trash receptacles is fairly included within those management practices for maintaining public streets in such a way to reduce the impact on receiving waters of discharges from municipal sewer systems. See, e.g., 40 C.F.R. § 122.26(d)(2)(iv)(A)(3).

That the receptacle and inspection requirements were not included in previous permits issued by the County does not take this regulation out of the purview of the Clean Water Act. The U.S. EPA “anticipates that storm water management programs will evolve and mature over time.” 55 Fed. Reg. 48052. Thus, the permits for discharges from municipal separate storm sewer systems will be written to reflect changing conditions that result from program development and implementation and corresponding improvements in water quality. Id. Given that the federal regulatory scheme anticipates changing permit requirements, that these requirements have not yet been articulated does not mean that the requirement exceeds the “maximum extent practicable” standard.

As Petitioners argue, if litter and debris cannot be properly disposed of by persons waiting at transit stops, the inevitable downstream result will be the introduction of pollutants into the streets and, thereafter, into the storm drains – leading inevitably to the discharge of pollutants into the nearby waterways. It cannot be seriously doubted that the placement and maintenance of trash receptacles at transit stops will help prevent the introduction of these known contaminants into the water. As the trash receptacle requirement is an obvious remedy, it is clearly within the maximum extent practicable

¹³ “The permitting agency has discretion to decide what practices, techniques, methods, and other provisions are appropriate and necessary to control the discharge of pollutants.” City of Rancho Cucamonga v. Regional Water Quality Control Board-Santa Ana Region, 135 Cal. App. 4th 1377, 1389 (2006). The only requirement is that the Regional Board comply with federal law requiring detailed conditions for NPDES permits. Id.

¹⁴ While there may be other cases in which the state agencies may impose standards that clearly exceed those imposed under a “maximum extent practicable” approach to storm water pollutants in the Clean Water Act, this case does not present that situation. See, e.g., Water Code § 13377 (allowing for more stringent state effluent standards); 33 U.S.C. § 1370 (allowing for more stringent state pretreatment standards). See also City of Burbank v. State Water Resources Control Board, 35 Cal. 4th 613, 628 (2005). There is nothing in the administrative record here to support a conclusion that placing receptacles at transit stops is not practicable, much less not practicable to the maximum extent.

standard. In fact, the County's own proposal recommended minimizing trash from entering waterways by removing trash from open channels, and controlling litter and debris in the street. (AR 3677-78).

As the trash receptacle requirement of the NPDES permit is within the maximum extent practicable standard under the mandatory provisions of the Clean Water Act, it is imposed by federal law and is not subject to reimbursement under article XIII B, section 6 of the California Constitution.

2. The Inspection Provisions in the Permit Are Not State Mandates.

The remaining challenged permit activities related to the inspection of certain commercial and industrial facilities and construction sites. A portion of the permit pertains to inspections of commercial facilities, such as restaurants, automotive service facilities and retail gasoline stations. While each commercial property has unique inspection requirements, the permit requires that all facilities be inspected on a regular basis, twice during the five year permit period, to confirm that best management practices are being effectively implemented with the law. (AR 3533-36). Another portion of the permit requires the inspection of certain industrial facilities referred to in the permit as Phase I Facilities. (AR 3535-36). And, a third part of the permit provides that a program be implemented to control runoff from construction activity to storm drains at all construction sites within its jurisdiction. (AR 3546-47).

As with the receptacle requirement, these inspection mandates are clearly pursuant to the maximum extent practicable standard under the Clean Water Act.¹⁵ And, in addition, federal regulations also specifically contemplate inspections of industrial facilities (40 C.F.R. § 122.26 (d)(2)(iv)(B) & (C)), and construction sites (40 C.F.R. § 122.26 (d)(2)(iv)(D)). As discussed above, the Commission's rationale that these are not federal mandates because they are not expressly dictated by federal regulation is erroneous.¹⁶ (AR 5591, 5600). A federal mandate does not require explicit mention of every mandated activity. Rather, the relevant inquiry is whether these inspection activities fall within the Clean Water Act's maximum extent practicable standard. As there is nothing in the record to suggest that they exceed this standard, the Commission's conclusion to the contrary must fail.

¹⁵ The County of Los Angeles acknowledged that site inspections are within the maximum extent practicable standard because they recommended inspections in their permit applications as well. (AR 3671).

¹⁶ Nor does the Commission's reliance upon the existence of a statewide general industrial permit (GIASP) to negate the existence of a federal mandate make sense. (AR 5594). The issue properly framed is whether the inspection requirements are mandated under the federal Clean Water Act, not whether they may also be required under the GIASP permit. At most, "the GIASP permit may add additional inspections at the time and expense of the state." Opening Brief at 28. Although extensively argued to the Court, the existence of mutual inspection schemes does not constitute a derogation of state responsibilities to the real parties, in violation of Hayes. There is only a single question (asking for a certain permit number) that is obtained by the real parties under the existing permits that would otherwise be obtained by the state under its separate inspection obligations.

Nor are these inspections create requirements in excess of the federal mandate because they were not previously imposed.¹⁷ While they had not been previously required, this fact does not dictate the conclusion that they are not federal mandates. A requirement that the discharge of pollutants requires a NPDES permit is neither new nor different. And, the inclusion of new and advanced measures is clearly anticipated under the Clean Water Act. 55 Fed. Reg. 48052. As conditions and technologies change, the maximum extent practicable standard will similarly change. *Id.* Given that the federal regulatory scheme anticipates changing permit requirements, that these requirements have not yet been articulated does not mean that the requirement exceeds the "maximum extent practicable" standard.

Accordingly, these inspection requirements are federal, not state, mandates and are not subject to reimbursement under article XIII B, section 6 of the California Constitution.

Conclusion

For these reasons, the writ is GRANTED and the matter is remanded for further proceedings consistent with this decision and judgment.

Counsel for Petitioners is to submit to this Department a proposed judgment and a proposed writ within 10 days with a proof of service showing that copies were served on Respondent by hand delivery or fax. The Court will hold these documents for ten days before signing and filing the judgment and causing the clerk to issue the writ.

The administrative record is ordered returned to the party who lodged it to be preserved without alteration until a final judgment is rendered and to forward it to the Court of Appeal in the event of appeal.

The Court's ruling, signed and filed this date, shall be deemed to be the Court's Statement of Decision.

DATED: AUGUST 15, 2011

ANN I. JONES, JUDGE OF THE SUPERIOR COURT

¹⁷Although not previously required, the County of Los Angeles specifically included the inspection of commercial and industrial facilities in its application. (AR 3680-71). Essentially, the County admitted that its "site visit program" was clearly mandated under the maximum extent practicable standard. The County also included extensive and detailed measures relating to the control and containment of construction site wastes and erosion, including inspection of these sites. (AR 3672-74).

ATTACHMENT 37

BEFORE THE
COMMISSION ON STATE MANDATES
STATE OF CALIFORNIA

IN RE TEST CLAIM ON:

Los Angeles Regional Quality Control Board
Order No. 01-182
Permit CAS004001
Parts 4C2a., 4C2b, 4E & 4F5c3

Filed September 2, 2003, (03-TC-04)
September 26, 2003 (03-TC-19)
by the County of Los Angeles, Claimant

Filed September 30, 2003 (03-TC-20 &
03-TC-21) by the Cities of Artesia, Beverly
Hills, Carson, Norwalk, Rancho Palos Verdes,
Westlake Village, Azusa, Commerce, Vernon,
Bellflower, Covina, Downey, Monterey Park,
Signal Hill, Claimants

Case Nos.: 03-TC-04, 03-TC-19,
03-TC-20, 03-TC-21

*Municipal Stormwater and Urban Runoff
Discharges*

STATEMENT OF DECISION
PURSUANT TO GOVERNMENT CODE
SECTION 17500 ET SEQ.; TITLE 2,
CALIFORNIA CODE OF
REGULATIONS, DIVISION 2,
CHAPTER 2.5, ARTICLE 7.

(Adopted July 31, 2009)

STATEMENT OF DECISION

The Commission on State Mandates ("Commission") heard and decided this test claim during a regularly scheduled hearing on July 31, 2009. Leonard Kaye and Judith Fries appeared on behalf of the County of Los Angeles. Howard Gest appeared on behalf of the cities. Michael Lauffer appeared on behalf of the State Water Resources Control Board and the Regional Water Quality Control Board. Carla Castaneda and Susan Geanacou appeared on behalf of the Department of Finance. Geoffrey Brosseau appeared on behalf of the Bay Area Stormwater Management Agencies Association.

The law applicable to the Commission's determination of a reimbursable state-mandated program is article XIII B, section 6 of the California Constitution, Government Code section 17500 et seq., and related case law.

The Commission adopted the staff analysis to partially approve the test claim at the hearing by a vote of 4-2.

Summary of Findings

The consolidated test claim, filed by the County of Los Angeles and several cities, allege various activities related to placement and maintenance of trash receptacles at transit stops and inspections of various facilities to reduce stormwater pollution in compliance with a permit issued by the Los Angeles Regional Water Quality Control Board.

The Commission finds that the following activity in part 4F5c3 of the permit is a reimbursable state mandate on local agencies subject to the permit that are not subject to a trash total

maximum daily load:¹ “Place trash receptacles at all transit stops within its jurisdiction that have shelters no later than August 1, 2002, and at all transit stops within its jurisdiction no later than February 3, 2003. All trash receptacles shall be maintained as necessary.”

The Commission also finds that the remainder of the permit (parts 4C2a, 4C2b & 4E) does not impose costs mandated by the state within the meaning of article XIII B, section 6 of the California Constitution because the claimants have fee authority (under Cal. Const. article XI, § 7) within the meaning of Government Code section 17556, subdivision (d), sufficient to pay for the activities in those parts of the permit.

BACKGROUND

The claimants allege various activities related to placement and maintenance of trash receptacles at transit stops and inspections of restaurants, automotive service facilities, retail gasoline outlets, automotive dealerships, phase I industrial facilities (as defined) and construction sites to reduce stormwater pollution in compliance with a permit issued by the Los Angeles Regional Water Quality Control Board (LA Regional Board), a state agency.

History of the test claims

The test claims were filed in September 2003,² by the County of Los Angeles and several cities within it (the permit covers the Los Angeles County Flood Control District and 84 cities in Los Angeles County, all except Long Beach). The Commission originally refused jurisdiction over the permits based on Government Code section 17516’s definition of “executive order” that excludes permits issued by the State Water Resources Control Board (State Water Board) or Regional Water Quality Control Boards (regional boards). After litigation, the Second District Court of Appeal held that the exclusion of permits and orders of the State and Regional Water Boards from the definition of “executive order” is unconstitutional. The court issued a writ commanding the Commission to set aside the decision “affirming your Executive Director’s rejection of Test Claim Nos. 03-TC-04, 03-TC-19, 03-TC-20 and 03-TC-21” and to fully consider those claims.³

The County of Los Angeles and the cities re-filed their claims in October and November 2007. The claims were consolidated by the Executive Director in December 2008. Thus, the

¹ A Total Maximum Daily Load, or TMDL, is a calculation of the maximum amount of a pollutant that a waterbody can receive and still safely meet water quality standards.

² Originally, test claims 03-TC-04 (*Transit Trash Receptacles*) and 03-TC-19 (*Inspection of Industrial/Commercial Facilities*) were filed by the County of Los Angeles on September 5, 2003. Test claim 03-TC-21 (*Stormwater Pollution Requirements*) was filed by the Cities of Baldwin Park, Bellflower, Cerritos, Covina, Downey, Monterey Park, Pico Rivera, Signal Hill, South Pasadena, and West Covina on September 30, 2003. Test claim 03-TC-20 (*Waste Discharge Requirements*) was filed by Cities of Artesia, Beverly Hills, Carson, La Mirada, Monrovia, Norwalk, Rancho Palos Verdes, San Marino, and Westlake Village on September 30, 2003.

³ *County of Los Angeles v. Commission on State Mandates* (2007) 150 Cal.App.4th 898.

reimbursement period is as though the claims were filed in September 2003, i.e., beginning July 1, 2002.⁴

Before discussing the specifics of the permit, an overview of municipal stormwater pollution puts the permit in context.

Municipal stormwater

One of the main objectives of the permit is “to assure that stormwater discharges from the MS4 [Municipal Separate Storm Sewer Systems]⁵ shall neither cause nor contribute to the exceedance of water quality standards and objectives nor create conditions of nuisance in the receiving waters, and that the discharge of non-stormwater to the MS4 has been effectively prohibited.” (Permit, p. 13.)

Stormwater runoff flows untreated from urban streets directly into streams, lakes and the ocean. To illustrate the effect of stormwater⁶ on water pollution, the Ninth Circuit Court of Appeal has stated the following:

Storm water runoff is one of the most significant sources of water pollution in the nation, at times “comparable to, if not greater than, contamination from industrial and sewage sources.” [Citation omitted.] Storm sewer waters carry suspended metals, sediments, algae-promoting nutrients (nitrogen and phosphorus), floatable trash, used motor oil, raw sewage, pesticides, and other toxic contaminants into streams, rivers, lakes, and estuaries across the United States. [Citation omitted.] In 1985, three-quarters of the States cited urban storm water runoff as a major cause of waterbody impairment, and forty percent reported construction site runoff as a major cause of impairment. Urban runoff has been named as the foremost cause of impairment of surveyed ocean waters. Among the sources of storm water contamination are urban development, industrial facilities, construction sites, and illicit discharges and connections to storm sewer systems.⁷

⁴ Government Code section 17557, subdivision (e).

⁵ Municipal separate storm sewer means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, 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 to waters of the United States; (ii) Designed or used for collecting or conveying storm water; (iii) Which is not a combined sewer; and (iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2. (40 C.F.R. § 122.26 (b)(8).)

⁶ Storm water means “storm water runoff, snow melt runoff, and surface runoff and drainage.” (40 C.F.R. § 122.26 (b)(13).)

⁷ *Environmental Defense Center, Inc. v. U.S. E.P.A.* (2003) 344 F.3d 832, 840-841.

Because of the stormwater pollution problems described by the Ninth Circuit above, California and the federal government regulate stormwater runoff as described below.

California law

The California Supreme Court summarized the state statutory scheme and regulatory agencies applicable to this test claim as follows:

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.) 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.” (§ 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).

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).⁸

Much of what the regional board does, especially as pertaining to permits like the one in this claim, is based in federal law as described below.

Federal law

The Federal Clean Water Act (CWA) was amended in 1972 to implement a permitting system for all discharges of pollutants⁹ from point sources¹⁰ to waters of the United States, since

⁸ *City of Burbank v. State Water Resources Control Bd.* (2005) 35 Cal.4th 613, 619.

⁹ According to the federal regulations, “Discharge of a pollutant” means: (a) Any addition of any “pollutant” or combination of pollutants to “waters of the United States” from any “point source,” or (b) Any addition of any pollutant or combination of pollutants to the waters of the “contiguous zone” or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation. This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. This term does not include an addition of pollutants by any “indirect discharger.” (40 C.F.R. § 122.2.)

¹⁰ A point source is “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 operation, or vessel or other floating craft, from which pollutants are or may be discharged.” 33 U.S.C. § 1362(14).

discharges of pollutants are illegal except under a permit.¹¹ The permits, issued under the national pollutant discharge elimination system, are called NPDES permits. Under the CWA, each state is free to enforce its own water quality laws so long as its effluent limitations¹² are not “less stringent” than those set out in the CWA (33 USCA 1370). The California Supreme Court described NPDES permits as follows:

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.)¹³

In the Porter-Cologne Water Quality Control Act (Wat. Code, §§ 13370 et seq.), the Legislature found that the state should implement the federal law in order to avoid direct regulation by the federal government. The Legislature requires the permit program to be consistent with federal law, and charges the State and Regional Water Boards with implementing the federal program (Wat. Code, §§ 13372 & 13370). The State Water Resources Control Board (State Board) incorporates the regulations from the U.S. EPA for implementing the federal permit program, so both the Clean Water Act and U.S. EPA regulations apply to California’s permit program (Cal.Code Regs., tit. 23, § 2235.2).

When a regional board adopts an NPDES permit, it must adopt as stringent a permit as U.S. EPA would have (federal Clean Water Act, § 402 (b)). As the California Supreme Court stated:

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 a state-when imposing effluent limitations that are *more stringent*

¹¹ 40 Code of Federal Regulations, section 122.21 (a). The section applies to U.S. EPA-issued permits, but is incorporated into section 123.25 (the state program provision) by reference.

¹² *Effluent limitation* means any restriction imposed by the Director on quantities, discharge rates, and concentrations of “pollutants” which are “discharged” from “point sources” into “waters of the United States,” the waters of the “contiguous zone,” or the ocean. (40 C.F.R. § 122.2.)

¹³ *City of Burbank v. State Water Resources Control Bd.*, *supra*, 35 Cal.4th 613, 621. Actually, State and regional board permits allowing discharges into state waters are called “waste discharge requirements” (Wat. Code, § 13263).

than required by federal law-from taking into account the economic effects of doing so.¹⁴

Actions that dischargers must implement as prescribed in permits are commonly called “best management practices” or BMPs.¹⁵

Stormwater was not regulated by U.S. EPA in 1973 because of the difficulty of doing so. This exemption from regulation was overturned in *Natural Resources Defense Council v. Costle* (1977) 568 F.2d 1369, which ordered U.S. EPA to require NPDES permits for stormwater runoff. By 1987, U.S. EPA still had not adopted regulations to implement a permitting system for stormwater runoff. The Ninth Circuit Court of Appeals explained the next step as follows:

In 1987, to better regulate pollution conveyed by stormwater runoff, Congress enacted Clean Water Act § 402(p), 33 U.S.C. § 1342(p), “Municipal and Industrial Stormwater Discharges.” Sections 402(p)(2) and 402(p)(3) mandate NPDES permits for stormwater discharges “associated with industrial activity,” discharges from large and medium-sized municipal storm sewer systems, and certain other discharges. Section 402(p)(4) sets out a timetable for promulgation of the first of a two-phase overall program of stormwater regulation.¹⁶

NPDES permits are required for “A discharge from a municipal separate storm sewer system serving a population of 250,000 or more.”¹⁷ The federal Clean Water Act specifies the following criteria for municipal storm sewer system permits:

- (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.¹⁸

In 1990, U.S. EPA adopted regulations to implement Clean Water Act section 402(p), defining which entities need to apply for permits and the information to include in the permit application.

¹⁴ *City of Burbank v. State Water Resources Control Bd.*, *supra*, 35 Cal.4th 613, 627-628.

¹⁵ Best management practices, or BMPs, means “schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of “waters of the United States.” BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.” (40 CFR § 122.2.)

¹⁶ *Environmental Defense Center, Inc. v. U.S. E.P.A.*, *supra*, 344 F.3d 832, 841-842.

¹⁷ 33 USCA 1342 (p)(2)(C).

¹⁸ 33 USCA 1342 (p)(3)(B).

The permit application must propose management programs that the permitting authority will consider in adopting the permit. The management programs must include the following:

[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.¹⁹

General state-wide permits

In addition to the regional stormwater permit at issue in this claim, the State Board has issued two general statewide permits,²⁰ as described in the permit as follows:

To facilitate compliance with federal regulations, the State Board has issued two statewide general NPDES permits for stormwater discharges: one for stormwater from industrial sites [NPDES No. CAS000001, General Industrial Activity Storm Water Permit (GIASP)] and the other for stormwater from construction sites [NPDES No. CAS000002, General Construction Activity Storm Water Permit (GCASP)]. ... Facilities discharging stormwater associated with industrial activities and construction projects with a disturbed area of five acres or more are required to obtain individual NPDES permits for stormwater discharges, or to be covered by a statewide general permit by completing and filing a Notice of Intent (NOI) with the State Board. The U.S. EPA guidance anticipates coordination of the state-administered programs for industrial and construction activities with the local agency program to reduce pollutants in stormwater discharges to the MS4. The Regional Board is the enforcement authority in the Los Angeles Region for the two statewide general permits regulating discharges from industrial facilities and construction sites, and all NPDES stormwater and non-stormwater permits issued by the Regional Board. These industrial and construction sites and discharges are also regulated under local laws and regulations. (Permit, p. 11.)

The State Board has statutory fee authority to conduct inspections to enforce the general state-wide permits.²¹ The statewide permits are discussed in further detail in the analysis.

The Los Angeles Regional Board permit (Order No. 01-182. Permit CAS004001)

To obtain the permit, the County of Los Angeles, on behalf of all permittees, submitted on January 31, 2001 a Report of Waste Discharge, which constitutes a permit application, and a Stormwater Quality Management Program, which constituted the permittees' proposal for best management practices that would be required in the permit.²²

¹⁹ 40 Code of Federal Regulations section 122.26 (d)(2)(iv).

²⁰ A general permit means "an NPDES 'permit' issued under [40 CFR] §122.28 authorizing a category of discharges under the CWA within a geographical area." (40 CFR § 122.2.)

²¹ Water Code section 13260, subdivision (d)(2)(B)(i) - (iii).

²² State Water Resources Control Board, comments submitted April 18, 2008, page 8 and attachment 36.

The permit states that its objective is: “to protect the beneficial uses of receiving waters in Los Angeles County.”²³ The permit was upheld by the Second District Court of Appeal in 2006, which described it as follows:

The 72-page permit is divided into 6 parts. There is an overview and findings followed by a statement of discharge prohibitions; a listing of receiving water limitations; the Storm Water Quality Management Program; an explanation of special provisions; a set of definitions; and a list of what are characterized as standard provisions. The county, the flood control district, and the 84 cities are designated in the permit as the permittees.²⁴

After finding that “the county, the flood control district, and the 84 cities discharge and contribute to the release of pollutants from “municipal separate storm sewer systems” (storm drain systems)” and that the discharges were the subject of regional board permits in 1990 and 1996, the regional board found that the storm drain systems in the county discharged a host of specified pollutants into local waters. The permit summed up by stating: “Various reports prepared by the regional board, the Los Angeles County Grand Jury, and academic institutions indicated pollutants are threatening to or actually impairing the beneficial uses of water bodies in the Los Angeles region.”²⁵

The permit also specifies prohibited and allowable discharges, receiving water limitations, the implementation of the Storm Water Quality Management Program “requiring the use of best management practices to reduce pollutant discharge into the storm drain systems to the maximum extent possible.”²⁶ As the court described the permit:

In the prohibited discharges portion of the permit, the county and the cities were required to “effectively prohibit non-stormwater discharges” into their storm sewer systems. This prohibition contains the following exceptions: where the discharge is covered by a National Pollutant Discharge Elimination permit for non-stormwater emission; natural springs and rising ground water; flows from riparian habitats or wetlands; stream diversions pursuant to a permit issued by the

²³ Permit page 13. The permit also says: “This permit is intended to develop, achieve, and implement a timely comprehensive, cost-effective storm water pollution control program to reduce the discharge of pollutants in storm water to the Maximum Extent Practicable (MEP) from the permitted areas in the County of Los Angeles to the waters of the US subject to the Permittees’ jurisdiction.”

²⁴ *County of Los Angeles v. California State Water Resources Control Board* (2006) 143 Cal.App.4th 985, 990.

²⁵ *County of Los Angeles v. California State Water Resources Control Board*, *supra*, 143 Cal.App.4th 985, 990

²⁶ *County of Los Angeles v. California State Water Resources Control Board*, *supra*, 143 Cal.App.4th 985, 994.

regional board; “uncontaminated ground water infiltrations” ... and waters from emergency fire-fighting flows.²⁷

There is also a list of permissible discharges that are incidental to urban activity, as specified (e.g., landscape irrigation runoff, etc.). In the part on receiving water limitations, the permit prohibits discharges from storm sewer systems that “cause or contribute” to violations of “Water Quality Standards” objectives in receiving waters as specified in state and federal water quality plans. Storm or non-stormwater discharges from storm sewer systems which constitute a nuisance are also prohibited.²⁸

To comply with the receiving water limitations, the permittees must implement control measures in accordance with the permit.²⁹

The permittees are also to implement the Storm Water Quality Management Program (SQMP) that meets the standards of 40 Code of Federal Regulations, part 122.26(d)(2) (2000) and reduces the pollutants in stormwaters to the maximum extent possible with the use of best management practices. And the permittees must revise the SQMP to comply with specified total maximum daily load (TMDL) allocations.³⁰ If a permittee modified the countywide SQMP, it must implement a local management program. Each permittee is required by November 1, 2002, to adopt a stormwater and urban runoff ordinance. By December 2, 2002, each permittee must certify that it had the legal authority to comply with the permit through adoption of ordinances or municipal code modifications.³¹

²⁷ *County of Los Angeles v. California State Water Resources Control Board*, *supra*, 143 Cal.App.4th 985, 991-992.

²⁸ “‘Nuisance’ means anything that 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.” *Id.* at 992.

²⁹ If the Storm Water Quality Management Program did not assure compliance with the receiving water requirements, the permittee must immediately notify the regional board; submit a Receiving Water Limitations Compliance Report that describes the best management practices currently being used and proposed changes to them; submit an implementation schedule as part of the Receiving Water Limitations Compliance Report; and, after approval by the regional board, promptly implement the new best management practices. If the permittee makes these changes, even if there were further receiving water discharges beyond those addressed in the Water Limitations Compliance Report, additional changes to the best management practices need not be made unless directed to do so by the regional board. *Id.* at 993.

³⁰ A Total Maximum Daily Load, or TMDL, is a calculation of the maximum amount of a pollutant that a waterbody can receive and still safely meet water quality standards. See <<http://www.epa.gov/OWOW/tmdl>> as of October 3, 2008.

³¹ *County of Los Angeles v. California State Water Resources Control Board*, *supra*, 143 Cal.App.4th 985.

The permit gives the County of Los Angeles additional responsibilities as principal permittee, such as coordination of the SQMP and convening watershed management committees. In addition, the permit contains a development construction program under which permittees are to implement programs to control runoff from construction sites, with additional requirements imposed on sites one acre or larger, and more on those five acres or larger. Permittees are to eliminate all illicit connections and discharges to the storm drain system, and must document, track and report all cases.

In this claim, however, claimants only allege activities in parts 4C2a, 4C2b, 4E and 4F5c3 of the permit. These parts concern placement and maintenance of trash receptacles at transit stops, and inspections of restaurants, automotive service facilities, retail gasoline outlets, automotive dealerships, phase I industrial facilities (as defined) and construction sites, as quoted below.

Co-Claimants' Position

Co-claimants assert that parts 4C2a, 4C2b, 4E and 4F5c3 of the LA Regional Board's permit constitute a reimbursable state-mandate within the meaning of article XIII B, section 6, and Government Code section 17514.

Transit Trash Receptacles: Los Angeles County ("County") filed test claims 03-TC-04 and 03-TC-19. In 03-TC-04, *Transit Trash Receptacles*, filed by the County, and 03-TC-20, *Waste Discharge Requirements*, filed by the cities, the claimants allege the following activities as stated in the permit part 4F5c3 (Part 4, Special Provisions, F. Public Agency Activities Program, 5. Storm Drain Operation and Management):

- c. Permittees not subject to a trash TMDL³² shall: [¶]... [¶]
- (3) Place trash receptacles at all transit stops within its jurisdiction that have shelters no later than August 1, 2002, and at all transit stops within its jurisdiction no later than February 3, 2003. All trash receptacles shall be maintained as necessary.

Claimant County asserts that this permit condition requires the following:

1. Identifying all transit stops within its jurisdiction except for the Los Angeles River and Ballona Creek Watershed Management areas.
2. Selecting proper trash receptacle design and evaluating proper placement of trash receptacles.
3. Designing receptacle pad improvement, if needed.
4. Constructing and installing trash receptacle units.
5. Collecting trash and maintaining receptacles.

Inspection of Industrial and Commercial Facilities: In claim 03-TC-19, *Inspection of Industrial/Commercial Facilities*, filed by the County, and 03-TC-20, *Waste Discharge Requirements*, filed by the cities, claimants allege the following activities as stated in the permit parts 4C2a and 4C2b (Part 4, Special Provisions, C. Industrial/Commercial Facilities Control Program):

³² A Total Maximum Daily Load, or TMDL, is a calculation of the maximum amount of a pollutant that a waterbody can receive and still safely meet water quality standards. See <<http://www.epa.gov/OWOW/tmdl>> as of October 3, 2008.

2. Inspect Critical Sources – Each Permittee shall inspect all facilities in the categories and at a level and frequency as specified in the following subsections:

a) Commercial Facilities

(1) Restaurants

Frequency of Inspections: Twice during the 5-year term of the Order, provided that the first inspection occurs no later than August 1, 2004, and that there is a minimum interval of one year in between the first compliance inspection and the second compliance inspection.

Level of Inspections-: Each Permittee, in cooperation with its appropriate department (such as health or public works), shall inspect all restaurants within its jurisdiction to confirm that stormwater BMPs are being effectively implemented in compliance with State law, County and municipal ordinances, Regional Board Resolution 98-08, and the SQMP [Storm Water Quality Management Program].

At each restaurant, inspectors shall verify that the restaurant operator:

- has received educational materials on stormwater pollution prevention practices;
- does not pour oil and grease or oil and grease residue onto a parking lot, street or adjacent catch basin;
- keeps the trash bin area clean and trash bin lids closed, and does not fill trash bins with washout water or any other liquid;
- does not allow illicit discharges, such as discharge of washwater from floormats, floors, porches, parking lots, alleys, sidewalks and street areas (in the immediate vicinity of the establishment), filters or garbage/trash containers;
- removes food waste, rubbish or other materials from parking lot areas in a sanitary manner that does not create a nuisance or discharge to the storm drain.

(2) Automotive Service Facilities

Frequency of Inspections: Twice during the 5-year term of the Order, provided that the first inspection occurs no later than August 1, 2004, and that there is a minimum interval of one year in between the first compliance inspection and the second compliance inspection.

Level of Inspections: Each permittee shall inspect all automotive service facilities within its jurisdiction to confirm that stormwater BMPs are effectively implemented in compliance with County and municipal ordinances, Regional Board Resolution 98-08, and the SQMP. At each automotive service facility, inspectors shall verify that each operator:

- maintains the facility area so that it is clean and dry without evidence of excessive staining;
- implements housekeeping BMPs to prevent spills and leaks;
- properly discharges wastewaters to a sanitary sewer and/or contains wastewaters for transfer to a legal point of disposal;

- is aware of the prohibition on discharge of non-stormwater to the storm drain;
- properly manages raw and waste materials including proper disposal of hazardous waste;
- protects outdoor work and storage areas to prevent contact of pollutants with rainfall and runoff;
- labels, inspects, and routinely cleans storm drain inlets that are located on the facility's property; and
- trains employees to implement stormwater pollution prevention practices.

(3) Retail Gasoline Outlets and Automotive Dealerships

Frequency of Inspection: Twice during the 5-year term of the Order, provided that the first inspection occurs no later than August 1, 2004, and that there is a minimum interval of one year in between the first compliance inspection and the second compliance inspection.

Level of Inspection: Each Permittee shall confirm that BMPs are being effectively implemented at each RGO [Retail Gasoline Outlet] and automotive dealership within its jurisdiction, in compliance with the SQMP, Regional Board Resolution 98-08, and the Stormwater Quality Task Force Best Management Practice Guide for RGOs. At each RGO and automotive dealership, inspectors shall verify that each operator:

- routinely sweeps fuel-dispensing areas for removal of litter and debris, and keeps rags and absorbents ready for use in case of leaks and spills;
- is aware that washdown of facility area to the storm drain is prohibited;
- is aware of design flaws (such as grading that doesn't prevent run-on, or inadequate roof covers and berms), and that equivalent BMPs are implemented;
- inspects and cleans storm drain inlets and catch basins within each facility's boundaries no later than October 1st of each year;
- posts signs close to fuel dispensers, which warn vehicle owners/operators against "topping off" of vehicle fuel tanks and installation of automatic shutoff fuel dispensing nozzles;
- routinely checks outdoor waste receptacle and air/water supply areas, cleans leaks and drips, and ensures that only watertight waste receptacles are used and that lids are closed; and
- trains employees to properly manage hazardous materials and wastes as well as to implement other stormwater pollution prevention practices.

b) Phase I Facilities³³

Permittees need not inspect facilities that have been inspected by the Regional Board within the past 24 months. For the remaining Phase I facilities that the Regional Board has not inspected, each Permittee shall conduct compliance inspections as specified below.

Frequency of Inspection

Facilities in Tier 1 Categories:³⁴ Twice during the 5-year term of the Order, provided that the first inspection occurs no later than August 1, 2004, and that there is a minimum interval of one year in between the first compliance inspection and the second compliance inspection.

Facilities in Tier 2 Categories:³⁵ Twice during the 5-year term of the permit, provided that the first inspection occurs no later than August 1, 2004, Permittees need not perform additional inspections at those facilities determined to have no risk of exposure of industrial activity³⁶ to stormwater. For those facilities that do

³³ On page 62 of the permit, U.S. EPA Phase I Facilities are defined as "facilities in specified industrial categories that are required to obtain an NPDES permit for storm water discharges, as required by 40 CFR 122.26(c). These categories include: (i) facilities subject to storm water effluent limitation guidelines, new source performance standards, or toxic pollutant effluent standards (40 CFR N); (ii) manufacturing facilities; (iii) oil and gas/mining facilities; (iv) hazardous waste treatment, storage, or disposal facilities; (v) landfills, land application sites, and open dumps; (vi) recycling facilities; (vii) steam electric power generating facilities; (viii) transportation facilities; (ix) sewage or wastewater treatment works; (x) light manufacturing facilities.

³⁴ Attachment B of the Permit (pp. B-1 to B-2) lists the Tier 1 categories as follows (with Phase I facilities listed in italics): "*Municipal landfills ...; Hazardous Waste Treatment, Disposal and Recovery Facilities; Facilities Subject to SARA Title III ...; Restaurants; Wholesale trade (scrap, auto dismantling) ...; Automotive service facilities; Fabricated metal products ...; Motor freight ...; Chemical/allied products ...; Automotive Dealers/Gas Stations ...; Primary Metals.*"

³⁵ Attachment B of the Permit (pp. B-1 to B-2) lists the Tier 2 categories as follows (with Phase I facilities listed in italics): "*Electric/Gas/Sanitary ...; Air Transportation ...; Rubbers/Miscellaneous Plastics ...; Local/Suburban Transit ...; Railroad Transportation ...; Oil & Gas Extraction ...; Lumber/Wood Products ...; Machinery Manufacturing ...; Transportation Equipment ...; Stone, Clay, Glass, Concrete ...; Leather/Leather Products ...; Miscellaneous Manufacturing ...; Food and kindred Products ...; Mining of Nonmetallic Minerals ...; Printing and Publishing ...; Electric/Electronics ...; Paper and Allied Products ...; Furniture and Fixtures ...; Laundries ...; Instruments ...; Textile Mills Products ...; Apparel ...*"

³⁶ "Storm water discharge associated with industrial activity means the discharge from any conveyance that is used for collecting and conveying storm water and that is directly related to manufacturing, processing or raw materials storage areas at an industrial plant. ... The following categories of facilities are considered to be engaging in "industrial activity" for purposes of paragraph (b)(14): [¶]...[¶] (x) Construction activity including clearing, grading and excavation,

have exposure of industrial activities to stormwater, a Permittee may reduce that frequency of additional compliance inspections to once every 5 years, provided that the Permittee inspects at least 20% of the facilities in Tier 2 each year.

Level of Inspection: Each Permittee shall confirm that each operator:

- has a current Waste Discharge Identification (WDID) number for facilities discharging stormwater associated with industrial activity, and that a Storm Water Pollution Prevention Plan is available on-site, and
- is effectively implementing BMPs in compliance with County and municipal ordinances, Regional Board Resolution 98-08, and the SQMP.

Inspection of Construction Sites: In claims 03-TC-20 and 03-TC-21, *Waste Discharge Requirements*, the cities allege the activities in permit parts 4C2a, 4C2b, and 4F5c3, as listed in the test claims cited above, in addition to the following activities as stated in part 4E of the permit (Part 4, Special Provisions, E. Development Construction Program):

- For construction sites one acre or greater, each Permittee shall comply with all conditions in section E1 above and shall: ...

(b) Inspect all construction sites for stormwater quality requirements during routine inspections a minimum of once during the wet seasons. The Local SWPPP [Storm Water Pollution Prevention Plan] shall be reviewed for compliance with local codes, ordinances, and permits. For inspected sites that have not adequately implemented their Local SWPPP, a follow-up inspection to ensure compliance will take place within 2 weeks. If compliance has not been attained, the Permittee will take additional actions to achieve compliance (as specified in municipal codes). If compliance has not been achieved, and the site is also covered under a statewide general construction stormwater permit, each Permittee shall enforce their local ordinance requirements, and if non-compliance continues the Regional Board shall be notified for further joint enforcement actions.

Part 4E3 of the Order provides, in relevant part, as follows:

3. For sites five acres and greater, each Permittee shall comply with all conditions in Sections E1 and E2 and shall:

- a) require, prior to issuing a grading permit for all projects requiring coverage under the state general permit,³⁷ proof of a Waste Discharger Identification (WDID) number for filing a Notice of Intent (NOI) for coverage under the GCASP [General Construction

except operations that result in the disturbance of less than five acres of total land area. Construction activity also includes the disturbance of less than five acres of total land area that is a part of a larger common plan of development or sale if the larger common plan will ultimately disturb five acres or more;" [40 CFR §122.26 (b)(14), Emphasis added.]

³⁷ A general permit means "an NPDES 'permit' issued under [40 CFR] §122.28 authorizing a category of discharges under the CWA [Clean Water Act] within a geographical area." (40 CFR § 122.2.) California has issued one general permit for construction activity and one for industrial activity.

Activity Storm Water Permit]³⁸ and a certification that a SWPPP has been prepared by the project developer. A Local SWPPP may substitute for the State SWPPP if the Local SWPPP is at least as inclusive in controls and BMPs as the State SWPPP.

- b) Require proof of an NOI and a copy of the SWPPP at any time a transfer of ownership takes place for the entire development or portions of the common plan of development where construction activities are still on-going.
- c) ~~Use an effective system to track grading permits issued by each Permittee. To satisfy this requirement, the use of a database or GIS system is encouraged, but not required.~~

Both county and city claimants allege more than \$1000 in costs in each test claim to comply with the permit activities.

In comments submitted June 4, 2009 on the draft staff analysis, the County of Los Angeles asserts that local agencies do not have fee authority to collect trash from trash receptacles that must be placed at transit stops, and that voter approval under Proposition 218 would be required to do so. The County also argues that voter approval under Proposition 218 would be required for stormwater inspection costs, and cites as evidence the City of Santa Clarita's stormwater pollution prevention fee, as well as legislative proposals now in the legislature that would, if enacted, provide fee authority.

In comments submitted June 8, 2009 on the draft staff analysis, the cities disagree with the conclusion that they have fee authority to recoup the costs of the transit-stop trash receptacles, and disagree that they have fee authority to inspect facilities covered by the state-issued general stormwater permits, as discussed in more detail below.

State Agency Positions

Department of Finance: Finance, in comments filed March 27, 2008 on all four test claims, alleges that the permit does not impose a reimbursable mandate within the meaning of section 6 of article XIII B of the California Constitution because "The permit conditions imposed on the local agencies are required by federal laws" so they are not reimbursable pursuant to Government Code section 17556, subdivision (c). Finance asserts that "requirements of the permit are federally required to comply with the NPDES [National Pollutant Discharge Elimination System] program ... [and] is enforceable under the federal CWA [Clean Water Act]."

Finance also argues that the claimants had discretion over the activities and conditions to include in the permit application. The permittees submitted a Storm Water Quality Management Program prevention report with their applications, in which they had the option to use "best management practices" to identify alternative practices to reduce water pollution. Since the local agencies prescribed the activities to be included in the permit, the requirements are a downstream result of the local agencies' decision to include the particular activities in the permit. Finance cites the *Kern* case,³⁹ which held that if participation in the underlying program is voluntary, the resulting new consequential requirements are not reimbursable mandates.

³⁸ See page 11, paragraph 22 of the permit for a description of the statewide permits.

³⁹ *Department of Finance v. Commission on State Mandates (Kern High School Dist.)* (2003) 30 Cal.4th 727

Finally, Finance states that some local agencies are using fees for funding the claimed permit activities, so should the Commission find that the permit constitutes a reimbursable mandate, the fees should be considered as offsetting revenues.

Finance submitted comments on the draft staff analysis on June 19, 2009, agreeing that the local agencies have fee authority sufficient to pay for the mandated activities. Finance disagrees, however, with the portion of the analysis that finds that the activities are not federal mandates.

State Water Resources Control Board: The State Board filed comments on the four test claims on April 18, 2008, noting that the federal CWA mandates that municipalities apply for and receive permits regulating discharges of pollutants from their municipal separate storm sewer system (MS4) to waters of the United States. "Pursuant to federal regulations, the Permit contains numerous requirements for the cities and County to take actions to reduce the flow of pollutants into the rivers and the Bay, known as Best Management practices (BMPs)."

The State Board asserts that the permit is mandated on the local governments by federal law, and applies to many dischargers of stormwater, both public and private, so it is not unique to local governments. The federal mandate requires that the permit be issued to the local governments, and the specific requirements challenged are consistent with the minimum requirements of federal law. According to the State Board, even if the permit were interpreted as going beyond federal law, any additional state requirements are de minimis. And the costs are not subject to reimbursement because the programs were proposed by the cities and County themselves, and because they have the ability to fund these requirements through charges and fees and are not required to raise taxes.

In comments filed with the State Board on April 10, 2008 (attached to the State Board comments on the test claim), the United States Environmental Protection Agency (U.S. EPA) asserts that the permit conditions reduce pollutants to the "maximum extent practicable." The transit trash receptacle and inspection programs, according to U.S. EPA, are founded in section 402 (p) of the Clean Water Act, and are well within the scope of the federal regulations (40 CFR § 122.26 (d)(2)(iv)(A)(3)).

In its comments on the draft staff analysis submitted June 5, 2009, the State Board agrees with the conclusion and staff recommendation to deny the test claim, but disagrees with parts of the analysis. The State Board asserts that federal law: (1) requires local agencies to obtain NPDES permits from California Water Boards, and (2) mandates the permit, which is less stringent than permits for private industry. The State Board also states that the permit does not exceed the minimum federal mandate, as found by a court of appeal. Finally, the State Board argues that the federal stormwater law is one of general application, and therefore does not impose a state mandate.

Interested Party Positions

Bay Area Stormwater Management Agencies Association: In comments on the draft staff analysis received June 3, 2009 (although the letter is dated April 29, 2009) the Bay Area Stormwater Management Agencies Association (BASMAA) states that this matter is of statewide importance with broad implications, and fundamentally a matter of public finance. BASMAA also urges keeping the voters' objectives paramount. BASMAA agrees that the permit requirements are a new program or higher level of service and that the requirements go beyond the federal Clean Water Act's mandates. As for the portion of the draft staff analysis that

discusses local agency fee authority, BASMAA calls it “myopic” saying it “falls short in its consideration of all potentially relevant issues and appellate court precedents that need to be presented to the Commission to serve the interest of the public.” (Comments p. 3.) BASMAA contends that many permit requirements relate to local communities and their residents rather than specific business activities, and require public services that are essentially incident to real property ownership, and/or may only be financed via fees that remain subject to the Proposition 218 voting requirement or increased property taxes. BASMAA also states that many permit activities would fall on joint power authorities or special districts that have no fee authority, or for which exemptions from Proposition 218 would not be applicable. BASMAA requests that the analysis be revised to revisit the conclusions regarding “funded vs. unfunded” requirements, and to recognize and distinguish the many types of stormwater activities for which regulatory fees would not apply.

League of California Cities and California State Association of Counties (CSAC): In joint comments on the draft staff analysis received June 4, 2009, the League of Cities and CSAC agree with the draft staff analysis that the permit is a mandate, but question whether the *Connell and County of Fresno* decisions are still valid as applied to Government Code section 17556, subdivision (d), which prohibit the Commission from finding costs mandated by the state if the local agency has fee authority. This is because of the voters’ approval of Proposition 218 in 1996. The League and CSAC urge the Commission not to find that fee authority exists for local agencies (1) to the extent there may be doubt about whether a local agency has it, and (2) to the extent that there is no person upon which the local agency can impose the fee.

COMMISSION FINDINGS

The courts have found that article XIII B, section 6 of the California Constitution⁴⁰ recognizes the state constitutional restrictions on the powers of local government to tax and spend.⁴¹ “Its purpose 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.”⁴² A test claim statute or executive order may impose a reimbursable state-mandated program if it orders or commands a local agency or school district to engage in an activity or

⁴⁰ Article XIII B, section 6, subdivision (a), provides:

(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.

⁴¹ *Kern High School Dist.*, *supra*, 30 Cal.4th 727, 735.

⁴² *County of San Diego v. State of California (County of San Diego)*(1997) 15 Cal.4th 68, 81.

task.⁴³ In addition, the required activity or task must be new, constituting a “new program,” or it must create a “higher level of service” over the previously required level of service.⁴⁴

The courts have defined a “program” subject to article XIII B, section 6, of the California Constitution, as one that carries out the governmental function of providing public services, or a law that imposes unique requirements on local agencies or school districts to implement a state policy, but does not apply generally to all residents and entities in the state.⁴⁵ To determine if the program is new or imposes a higher level of service, the test claim legislation must be compared with the legal requirements in effect immediately before the enactment of the test claim legislation.⁴⁶ A “higher level of service” occurs when the new “requirements were intended to provide an enhanced service to the public.”⁴⁷

Finally, the newly required activity or increased level of service must impose costs mandated by the state.⁴⁸

The Commission is vested with exclusive authority to adjudicate disputes over the existence of state-mandated programs within the meaning of article XIII B, section 6.⁴⁹ In making its decisions, the Commission must strictly construe article XIII B, section 6, and not apply it as an “equitable remedy to cure the perceived unfairness resulting from political decisions on funding priorities.”⁵⁰

The permit provisions in the consolidated test claim are discussed separately to determine whether they are reimbursable state-mandates.

⁴³ *Long Beach Unified School Dist. v. State of California* (1990) 225 Cal.App.3d 155, 174.

⁴⁴ *San Diego Unified School Dist. v. Commission on State Mandates* (2004) 33 Cal.4th 859, 878 (*San Diego Unified School Dist.*); *Lucia Mar Unified School District v. Honig* (1988) 44 Cal.3d 830, 835-836 (*Lucia Mar*).

⁴⁵ *San Diego Unified School Dist.*, *supra*, 33 Cal.4th 859, 874, (reaffirming the test set out in *County of Los Angeles v. State of California* (1987) 43 Cal.3d 46, 56; *Lucia Mar*, *supra*, 44 Cal.3d 830, 835.)

⁴⁶ *San Diego Unified School Dist.*, *supra*, 33 Cal.4th 859, 878; *Lucia Mar*, *supra*, 44 Cal.3d 830, 835.

⁴⁷ *San Diego Unified School Dist.*, *supra*, 33 Cal.4th 859, 878.

⁴⁸ *County of Fresno v. State of California* (1991) 53 Cal.3d 482, 487; *County of Sonoma v. Commission on State Mandates* (2000) 84 Cal.App.4th 1265, 1284 (*County of Sonoma*); Government Code sections 17514 and 17556.

⁴⁹ *Kinlaw v. State of California* (1991) 54 Cal.3d 326, 331-334; Government Code sections 17551, 17552.

⁵⁰ *County of Sonoma*, *supra*, 84 Cal.App.4th 1265, 1280, citing *City of San Jose v. State of California* (1996) 45 Cal.App.4th 1802, 1817.

Issue 1: Are the permit provisions (Parts 4C2a, 4C2b, 4E, and 4F5c3) subject to article XIII B, section 6, of the California Constitution?

The issues discussed here are whether the permit provisions are an executive order within the meaning of Government Code section 17516, whether they are discretionary, and whether they constitute a federal mandate.

A. Are the permit provisions (Parts 4C2a, 4C2b, 4E, and 4F5c3) an executive order within the meaning of Government Code section 17516?

The Commission has jurisdiction over test claims involving statutes and executive orders as defined by Government Code section 17516, which defines an "executive order" for purposes of state mandates, as "any order, plan, requirement, rule, or regulation issued by any of the following:

- (a) The Governor.
- (b) Any officer or official serving at the pleasure of the Governor.
- (c) Any agency, department, board, or commission of state government."⁵¹

The LA Regional Water Board is a state agency.⁵² The permit it issued is both a plan for reducing water pollution, and contains requirements for local agencies toward that end. Therefore, the Commission finds that the permit is an executive order within the meaning of article XIII B, section 6 and Government Code section 17516.

B. Are the permit provisions (Parts 4C2a, 4C2b, 4E, and 4F5c3) the result of claimants' discretion?

The permit provisions require placing and maintaining trash receptacles at transit stops and inspecting specified facilities and construction sites.

The Department of Finance, in comments submitted March 27, 2008, asserts that the claimants had discretion over what activities and conditions to include in the permit application, so that any resulting costs are downstream of the claimant's decision to include those provisions in the permit. Thus, Finance argues that the costs are not mandated by the state.

Similarly, the State Board, in its April 18, 2008 comments, cites the Stormwater Quality Management Program (SQMP) submitted by the county that constituted the claimants' proposal for the BMPs required under the permit. The State Water Board refers to (on p. 28 of the SQMP) the county's proposal to "collect trash along open channels and encourage voluntary trash collection in natural stream channels." The State Water Board further states that the SQMP (pp. 22-23) contains the municipalities' proposal for (1) site visits to industrial and commercial facilities, including automotive service businesses and restaurants to verify evidence of BMP

⁵¹ Section 17516 also states: "'Executive order" does not include any order, plan, requirement, rule, or regulation issued by the State Water Resources Control Board or by any regional water quality control board pursuant to Division 7 (commencing with Section 13000) of the Water Code." The Second District Court of Appeal has held that this statutory language is unconstitutional. *County of Los Angeles v. Commission on State Mandates, supra*, 150 Cal.App.4th 898, 904.

⁵² Water Code section 13200 et seq.

implementation, and (2) maintaining a database of automotive and food service facilities including whether they have NPDES stormwater permit coverage.

Claimant County of Los Angeles, in its June 23, 2008 rebuttal comments (pp.3-4), stated whether or not most jurisdictions place transit receptacles at transit stops is not relevant to the existence of a state mandate because Government Code section 17565 provides that if a local agency has been incurring costs for activities that are subsequently mandated by the state, the activities are still subject to reimbursement. The County also states that the permit application only proposed an industrial/commercial *educational* site visit program, not an inspection program. The claimants allege that the inspection program was previously the state's duty, but that the permit shifted it to the local agencies.

Claimant cities in their June 28, 2008 comments also construe the SQMP proposal as involving only educational site visits, which they characterize as very different from compliance inspections. And cities assert that "nowhere in the Report of Waste Discharge do the applicants propose compliance inspections of facilities that hold general industrial and general construction stormwater permits for compliance with those permits." According to the cities, the city and county objected orally and in writing to the inspection permit provision.

In determining whether the permit provisions at issue are a downstream activity resulting from the discretionary decision by the local agencies, the following rule stated by the Supreme Court in the *Kern High School Dist.* case applies:

[A]ctivities undertaken at the option or discretion of a local government entity ... do not trigger a state mandate and hence do not require reimbursement of funds—even if the local entity is obliged to incur costs as a result of its discretionary decision to participate in a particular program or practice.⁵³

The Commission finds that the permit activities at issue were not undertaken at the option or discretion of the claimants. The claimants were required by state and federal law to submit the NPDES permit application in the form of a Report of Waste Discharge and SQMP. Submitting them was not discretionary. According to the record,⁵⁴ the county on behalf of all claimants, submitted on January 31, 2001 a Report of Waste Discharge (ROWD), which constitutes a permit application, and a SQMP, which constitutes the claimants' proposal for best management practices that would be required in the permit.

The duty to apply for an NPDES permit is not within the claimants' discretion. According to the federal regulation:

a) *Duty to apply.* (1) Any person⁵⁵ who discharges or proposes to discharge pollutants ... and who does not have an effective permit ... must submit a

⁵³ *Kern High School Dist.*, *supra*, 30 Cal.4th 727, 742.

⁵⁴ State Water Resources Control Board, comments submitted April 18, 2008, page 8 & attachment 36.

⁵⁵ *Person* means an individual, association, partnership, corporation, municipality, State or Federal agency, or an agent or employee thereof (40 CFR § 122.2).

complete application to the Director in accordance with this section and part 124 of this chapter.⁵⁶

Moreover, the ROWD (tantamount to an NPDES permit application) is required by California law, as follows: “Any person discharging pollutants or proposing to discharge pollutants to the navigable water of the United States within the jurisdiction of this state ... shall file a report of the discharge in compliance with the procedures set forth in Section 13260 ...”⁵⁷ Thus, submitting the ROWD is not discretionary.

Federal regulations also anticipate the filing of an application for a stormwater permit, which contains the information in the SQMP. The regulation states in part:

(d) *Application requirements for large and medium municipal separate storm sewer discharges.* The operator of a discharge from a large or medium municipal separate storm sewer or a municipal separate storm sewer that is designated by the Director under paragraph (a)(1)(v) of this section, may submit a jurisdiction-wide or system-wide permit application. Where more than one public entity owns or operates a municipal separate storm sewer within a geographic area (including adjacent or interconnected municipal separate storm sewer systems), such operators may be a coapplicant to the same application.⁵⁸

According to the permit, section 122.26, subdivision (d), of the federal regulations contains the essential components of the SQMP (p. 32), which is an enforceable element of the permit (p. 45). Section 122.26, subdivision (d)(2)(iv)(C), in the federal regulations is interpreted in the permit to “require that MS4 permittees implement a program to monitor and control pollutants in discharges to the municipal system from industrial and commercial facilities that contribute a substantial pollutant load to the MS4.” (p. 35.) In short, the claimants were required by law to submit the ROWD and SQMP, with specified contents.

Because the claimants do not voluntarily participate in the NPDES program, the Commission finds that the *Kern High School Dist.* case does not apply to the permit, the contents of which were not the result of the claimants’ discretion.

C. Are the permit provisions (Parts 4C2a, 4C2b, 4E, and 4F5c3) a federal mandate within the meaning of article XIII B, sections 6 and 9, subdivision (b)?

The next issue is whether the parts of the permit at issue are federally mandated, as asserted by the State Board and the Department of Finance (whose comments are detailed below). If so, the parts of the permit would not constitute a state mandate.

In *County of Los Angeles v. Commission on State Mandates*, the court stated as follows regarding this permit: “We are not convinced that the obligations imposed by a permit issued by a Regional Water Board necessarily constitute federal mandates under all circumstances.”⁵⁹ But after

⁵⁶ 40 Code of Federal Regulations, section 122.21 (a). The section applies to U.S. EPA-issued permits, but is incorporated into section 123.25 (the state program provision) by reference.

⁵⁷ Water Code section 13376.

⁵⁸ 40 Code of Federal Regulations, section 122.26 (d).

⁵⁹ *County of Los Angeles v. Commission on State Mandates, supra*, 150 Cal.App.4th 898, 914.

summarizing the arguments on both sides, the court declined to decide the issue, stating: “Resolution of the federal or state nature of these [permit] obligations therefore is premature and, thus, not properly before this court.”⁶⁰ The court agreed with the Commission (calling it an “inescapable conclusion”) that the federal versus state issues in the test claims must be addressed in the first instance by the Commission.⁶¹

The California Supreme Court has stated that “article XIII B, section 6, and the implementing statutes ... by their terms, provide for reimbursement only of *state-* mandated costs, not *federally* mandated costs.”⁶²

When analyzing federal law in the context of a test claim under article XII B, section 6, the court in *Hayes v. Commission on State Mandates* held that “[w]hen the federal government imposes costs on local agencies those costs are not mandated by the state and thus would not require a state subvention. Instead, such costs are exempt from local agencies’ taxing and spending limitations” under article XIII B.⁶³ When federal law imposes a mandate on the state, however, and the state “freely [chooses] to impose the costs upon the local agency as a means of implementing a federal program, then the costs are the result of a reimbursable state mandate regardless whether the costs were imposed upon the state by the federal government.”⁶⁴

Similarly, Government Code section 17556, subdivision (c), states that the Commission shall not find “costs mandated by the state” if “[t]he statute or executive order imposes a requirement that is mandated by a federal law or regulation and results in costs mandated by the federal government, unless the statute or executive order mandates costs that exceed the mandate in that federal law or regulation.”

In *Long Beach Unified School Dist. v. State of California*,⁶⁵ the court considered whether a state executive order involving school desegregation constituted a state mandate. The court held that the executive order required school districts to provide a higher level of service than required by federal constitutional or case law because the state requirements went beyond federal requirements.⁶⁶ The *Long Beach* court stated that unlike the federal law at issue, “the executive

⁶⁰ *Id.* at page 918.

⁶¹ *Id.* at page 917. The court cited *Lucia Mar Unified School Dist. v. Honig* (1988) 44 Cal. 3d 830, 837, in support.

⁶² *San Diego Unified School Dist. v. Commission on State Mandates*, *supra*, 33 Cal.4th 859, 879-880, emphasis in original.

⁶³ *Hayes v. Commission on State Mandates* (1992) 11 Cal. App. 4th 1564, 1593, citing *City of Sacramento v. State of California*, *supra*, 50 Cal.3d 51, 76; see also, Government Code sections 17513 and 17556, subdivision (c).

⁶⁴ *Hayes v. Commission on State Mandates*, *supra*, 11 Cal. App. 4th 1564, 1594.

⁶⁵ *Long Beach Unified School Dist. v. State of California*, *supra*, 225 Cal.App.3d 155.

⁶⁶ *Id.* at page 173.

Order and guidelines require specific actions ... [that were] required acts. These requirements constitute a higher level of service.”⁶⁷

In analyzing the permit under the federal Clean Water Act, we keep the following in mind. First, 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.⁶⁸ Second, the California Supreme Court has acknowledged that an NPDES permit may contain terms that are federally mandated and terms that exceed federal law.⁶⁹ The federal Clean Water Act also allows for more stringent measures, as follows:⁷⁰

Permits for discharges from municipal storm sewers [¶]... [¶] (iii) shall require controls to reduce the discharges of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the ... State determines appropriate for the control of such pollutants. (33 U.S.C.A. 1342 (p)(3)(B)(iii).)

As discussed further below, the Commission finds that the permit activities are not federally mandated because federal law does not require the permittees to install and maintain trash receptacles at transit stops, or require inspections of restaurants, automotive service facilities, retail gasoline outlets or automotive dealerships. As to inspecting phase I facilities or construction sites, the federal regulatory scheme authorizes states to perform the inspections under a general statewide permit, making it possible to avoid imposing a mandate on the local agencies to do so.

In its June 2009 comments on the draft staff analysis, the State Board disagrees that specific mandates in the permit exceed the federal requirements, the State Board argues:

This approach fails to recognize that NPDES storm water permits, whether issued by U.S. EPA or California’s Water Boards, are designed to translate the general federal mandate into specific programs and enforceable requirements. Whether issued by U.S. EPA or the California’s Water Boards, the federal NPDES permit will identify specific requirements for municipalities to reduce pollutants in their storm water to the maximum extent practicable. The federally required pollutant reduction is a federal mandate. ... The fact that state agencies have responsibility for specifying the federal permit requirements for municipalities does not convert the federal mandate into a state mandate.⁷¹

The Commission disagrees. Based on the *Long Beach Unified School Dist.* case discussed above and applied in the analysis below, the specific requirements in the permit may constitute a state mandate even though they are imposed in order to comply with the federal Clean Water Act.

⁶⁷ *Long Beach Unified School Dist. v. State of California*, *supra*, 225 Cal.App.3d 155, 173.

⁶⁸ 33 U.S.C. § 1370.

⁶⁹ *City of Burbank v. State Water Resources Control Board*, *supra*, 35 Cal.4th 613, 618, 628.

⁷⁰ 33 USCA section 1370.

⁷¹ State Board comments submitted June 2009, page 6.

Finance, in its June 2009 comments on the draft staff analysis, distinguishes this permit from the issue in the *Long Beach Unified School Dist.* case. According to Finance, in *Long Beach*, the courts had suggested certain steps and approaches that might help alleviate racial discrimination, although the state's executive order and guidelines required specific actions. But in this claim, federal law requires NPDES permits to include specific requirements.

The Commission agrees that NPDES permits are required to include specific measures. But as discussed in more detail below, those measures are not the same as the specific requirements at issue in this permit (in Parts 4C2a, 4C2b, 4E, and 4F5c3).

The State Board's June 2009 comments also discuss *County of Los Angeles v. State Water Resources Control Board*,⁷² which involved the same permit as in this test claim. The State Board asserts that this case holds, in an unpublished part, that "the permit did not exceed the federal minimum requirements for the MS4 program."⁷³ (Comments, p. 5.) The State Board asserts that the Commission is bound by this decision.

The Commission reads the *County of Los Angeles* case differently than the State Board. The plaintiffs (permittees and others) in that case challenged the permit on a variety of issues, including that the regional board did not have jurisdiction to issue it, and that it violated the California Environmental Quality Act. The court did not, however, discuss the permit conditions at issue in this test claim. In the portion cited by the State Board, the court was addressing the consideration of the permit's economic effects. One of the plaintiffs' challenges to the permit was that the regional board was required to consider the economic effects in issuing the permit. By alleging the regional board had not done so, the plaintiffs argued that the permit imposed conditions more stringent than required by the federal Clean Water Act. The court held that the plaintiff's contentions were waived for failure to set forth all the documents received by the regional board, and that the regional board had considered the costs and benefits of implementation of the permit. In other parts of the opinion, however, the court acknowledged the regional board's authority to impose permit restrictions beyond the "maximum extent feasible"⁷⁴

The *County of Los Angeles* case is silent on the permit provisions at issue in this claim⁷⁵ (Parts 4C2a, 4C2b, 4E, and 4F5c3) except when it said: "we need no [sic] address the parties'

⁷² *County of Los Angeles v. State Water Resources Control Board*, *supra*, 143 Cal.App.4th 985.

⁷³ The court's opinion, including the unpublished parts, are in attachment 26 of the State Board's comments submitted April 18, 2008.

⁷⁴ See page 18 of attachment 26 of the State Board's comments submitted April 18, 2008.

⁷⁵ In *County of Los Angeles*, the plaintiffs also challenged the following parts of the permit: (1) part 2.1 that deals with receiving water restrictions and that prohibits all water discharges that violate water quality standards or objectives regardless of whether the best management practices are reasonable; (2) part 3.C, which requires the permittees to revise their storm water quality management programs in order to implement the total maximum daily loads for impaired water bodies, and (3) parts 3.G and 4., which authorize the regional board to require strict requirements with numeric limits on pollutants which are incorporated into the total maximum daily load restrictions. The court held that these contentions were waived for failure to set forth all the

remaining contentions concerning trash receptacles.”⁷⁶ The court also said inspections under the permit were not unlawful. Nonetheless, the case is not binding on the Commission in deciding the issues in this claim.

California in the NPDES program: By way of background, under the federal statutory scheme, a stormwater permit may be administered by the Administrator of U.S. EPA or by a state-designated agency, but states are not required to have an NPDES program. Subdivision (b) of section 1324 of the federal Clean Water Act, the section that describes the NPDES program (and which, in subdivision (p), describes the requirements for the municipal stormwater system permits) states in part:

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 [of U.S. EPA] a full and complete description of the program it proposes to establish and administer under State law or under an interstate compact. [Emphasis added.]

And the federal stormwater statute states that the permits:

[S]hall 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 USCA § 1342 (p)(3)(B)(iii). [Emphasis added].)

The federal statutory scheme indicates that California is neither required to have an NPDES program nor to issue stormwater permits. According to section 1342 (p) quoted above, the Administrator of U.S. EPA would do so if California had no program. The California Legislature, when adopting the NPDES program⁷⁷ to comply with the Federal Water Pollution Control Act of 1972 stated the following findings and declaration in Water Code section 13370:

- (a) The Federal Water Pollution Control Act [citation omitted] as amended, provides for permit systems to regulate the discharge of pollutants ... to the navigable waters of the United States and to regulate the use and disposal of sewage sludge.
- (b) The Federal Water Pollution Control Act, as amended, provides that permits may be issued by states which are authorized to implement the provisions of that act.
- (c) It is in the interest of the people of the state, in order to avoid direct regulation by the federal government, of persons already subject to regulation under state law pursuant to this division, to enact this chapter in order to authorize the state to implement the

applicable evidence, and that the regional board has authority to impose restrictions beyond the maximum extent feasible.

⁷⁶ See page 22, attachment 26 of the State Board’s comments submitted April 18, 2008.

⁷⁷ Water Code section 13374 states: “The term ‘waste discharge requirements’ as referred to in this division is the equivalent of the term ‘permits’ as used in the Federal water Pollution Control Act, as amended.”

provisions of the Federal Water Pollution Control Act and acts amendatory thereof or supplementary thereto, and federal regulations and guidelines issued pursuant thereto, provided, that the state board shall request federal funding under the Federal Water Pollution Act for the purpose of carrying out its responsibilities under this program.

Based on this Water Code section 13370, in which California voluntarily adopts the permitting program, and on the federal statutes quoted above that authorize but do not expressly require states to have this program, the state has freely chosen⁷⁸ to effect the stormwater permit program.

Any further discussion in this analysis of federal "requirements" should be construed in the context of California's choice to participate in the federal regulatory NPDES program.

In its June 2009 comments on the draft staff analysis, the State Board argues as follows:

[T]he ... analysis treats the state's decision to *administer* the NPDES permit program in 1972 as the 'choice' referred to in *Hayes*. ... The state's 'choice' to administer the program in lieu of the federal government does not alter the federal requirement on municipalities to reduce pollutants in these discharges to the maximum extent practicable.⁷⁹

Finance, in its June 2009 comments, also disagrees with this part of the draft staff analysis, asserting that the duty to apply for a NPDES permit is required by federal law on public and private dischargers, which in this case are local agencies.

Even though California opted into the NPDES program, further analysis is needed to determine whether the federal regulations impose a mandate on the local agencies. To the extent that state requirements go beyond the federal requirements, there would be a state mandate.⁸⁰ Thus, the permit provisions (Parts 4C2a, 4C2b, 4E, and 4F5c3) are discussed below in context of the following federal law governing stormwater permits: Clean Water Act section 402(p) (33 USCA 1342 (p)(3)(B)) and Code of Federal Regulations, title 40, section 122.26.

Placing and maintaining trash receptacles at transit stops (part 4F5c3): This part of the permit states:

c. Permittees not subject to a trash TMDL⁸¹ shall: [¶]...[¶]

(3) Place trash receptacles at all transit stops within its jurisdiction that have shelters no later than August 1, 2002, and at all transit stops within its jurisdiction no later than February 3, 2003. All trash receptacles shall be maintained as necessary.

The comments of the State Water Board and U.S. EPA assert that the permit conditions merely implement a federal mandate under the federal Clean Water Act and its regulations. The U.S.

⁷⁸ *Hayes v. Commission on State Mandates, supra*, 11 Cal. App. 4th 1564, 1593-1594.

⁷⁹ State Board comments submitted June 2009, page 4.

⁸⁰ *Long Beach Unified School Dist. v. State of California, supra*, 225 Cal.App.3d 155, 173. Government Code section 17556, subdivision (b).

⁸¹ A Total Maximum Daily Load, or TMDL, is a calculation of the maximum amount of a pollutant that a waterbody can receive and still safely meet water quality standards.

EPA submitted a letter to the State Water Board regarding the permit conditions in April 2008, which the State Water Board attached to its comments. Regarding the trash receptacles, the letter states:

[M]aintaining trash receptacles at all public transit stops is well within the scope of these [Federal] regulations. Among the minimum controls required to reduce pollutants from runoff from commercial and residential areas are practices for “operating and maintaining public streets, roads, and highways ... [40 CFR] § 122.26(d)(2)(iv)(A)(3).”⁸²

U.S. EPA also cites EPA’s national menu of BMPs for stormwater management programs, “which recommends a number of BMPs to reduce trash discharges.” Among the recommendations is ‘improved infrastructure’ for trash management when necessary, which includes the placement of trash receptacles at appropriate locations based on expected need.”⁸³

The State Water Board, in comments filed April 18, 2008, states that part 4F of the permit (regarding trash receptacles) concerns “the municipalities’ own activities, as opposed to its regulation of discharges into its system by others.” The State Water Board cites the same section 122.26 regulation as U.S. EPA, and states that the requirements “reflect the federal requirement to reduce pollutants from the MS4 to the maximum extent practicable. It is federal law that animates the requirement and federal law that mandates specificity in describing the BMPs.” The State Water Board alleges that two appellate courts⁸⁴ have determined that the permit provisions constitute the “maximum extent practicable” standard, which is the minimum requirement under federal law.

The Department of Finance also asserts that the permit requirements are a federal mandate.

The County of Los Angeles, in comments filed June 23, 2008, states that “Nothing in the federal Clean Water Act requires the County to install trash receptacles at transit stops. Nothing in the federal regulations or the Clean Water Act itself imposes this obligation.” The county states that the U.S.EPA’s citation to BMPs for stormwater management programs “may be permitted under federal law ... and even encouraged as ‘reasonable expectations.’ But such requirements are not mandated on the County by federal law.” The County admits the existence of “an abundance of federal guidance and encouragement to have the County install and maintain trash receptacles at all public transit stops. But these are merely federal suggestions, not mandates.”

The city claimants, in comments filed June 25, 2008, also argue that the requirement for transit trash receptacles is not a federal mandate, stating that nothing in the Clean Water Act or the federal regulations requires cities to install trash receptacles at transit stops. City claimants also submit a survey of other municipal stormwater permits, finding that none of those issued by U.S. EPA required installation of trash receptacles at transit stops.

⁸² Letter from Alexis Strauss, Director, Water Division, U.S. EPA, to Tam M. Doduc, Chair, and Dorothy Rice, Executive Director, State Water Resources Control Board, April 10, 2008, page 3.

⁸³ *Id.* at page 3.

⁸⁴ The State Water Board cites: *City of Rancho Cucamonga v. Regional Water Quality Control Board- Santa Ana Region* (2006) 135 Cal.App.4th 1377; *County of Los Angeles v. California State Water Resources Control Board* (2006) 148 Cal.App.4th 985.

The federal law applicable to this issue is section 402 of the Clean Water Act, which states:

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 Administrator⁸⁵ or the State determines appropriate for the control of such pollutants. (33 USCA § 1342 (p)(3)(B).)

The applicable federal regulations state as follows:

- (d) Application requirements for large and medium municipal separate storm sewer discharges. The operator⁸⁶ of a discharge⁸⁷ from a large or medium municipal separate storm sewer or a municipal separate storm sewer that is designated by the Director under paragraph (a)(1)(v) of this section, may submit a jurisdiction-wide or system-wide permit application. ... Permit applications for discharges from large and medium municipal storm sewers or municipal storm sewers designated under paragraph (a)(1)(v) of this section shall include; [¶]...[¶]
- (2) Part 2 of the application shall consist of: [¶]...[¶]
- (iv) Proposed management program. A proposed management program covers the duration of the permit. It shall include 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

⁸⁵ Administrator means the Administrator of the United States Environmental Protection Agency, or an authorized representative. (40 CFR § 122.2.)

⁸⁶ "Owner or operator means the owner or operator of any "facility or activity" subject to regulation under the NPDES program." (40 CFR § 122.2.)

⁸⁷ "Discharge when used without qualification means the "discharge of a pollutant. *Discharge of a pollutant* means: (a) Any addition of any "pollutant" or combination of pollutants to "waters of the United States" from any "point source," or (b) Any addition of any pollutant or combination of pollutants to the waters of the "contiguous zone" or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation.

This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. This term does not include an addition of pollutants by any "indirect discharger." (40 CFR § 122.2.)

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. Separate proposed programs may be submitted by each coapplicant. Proposed programs may impose controls on a systemwide basis, a watershed basis, a jurisdiction basis, or on individual outfalls. Proposed programs will be considered by the Director when developing permit conditions to reduce pollutants in discharges to the maximum extent practicable. Proposed management programs shall describe priorities for implementing controls. Such programs shall be based on:

(A) A description of structural and source control measures⁸⁸ to reduce pollutants from runoff from commercial and residential areas that are discharged from the municipal storm sewer system that are to be implemented during the life of the permit, accompanied with an estimate of the expected reduction of pollutant loads and a proposed schedule for implementing such controls. At a minimum, the description shall include: [¶]...[¶]

(3) A description of practices 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. (40 CFR § 122.26(d)(2)(iv)(A)(3).) [Emphasis added.]

The Commission finds that the plain language of the federal statute (33 USCA § 1342 (p)(3)(B)) and regulation (40 CFR § 122.26 (d)(2)(iv)(A)(3)) does not require the permittees to install and maintain trash receptacles at transit stops.

Specifically, the state freely chose⁸⁹ to impose the transit trash receptacle requirement on the permittees because neither the federal statute nor the regulations require it. Nor do they require the permittees to implement “practices 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”⁹⁰ although the regulation requires a description of practices for doing so. Because installing and maintaining trash receptacles at transit stops is not expressly required of cities or counties or municipal separate storm sewer dischargers in the federal statutes or regulations, these are activities that “mandate costs that exceed the mandate in the federal law or regulation.”⁹¹

⁸⁸ Minimum control measures are defined in 40 CFR § 122.34 to include: 1) Public education and outreach on storm water impacts; (2) Public involvement/participation; (3) Illicit discharge detection and elimination. (4) Construction site storm water runoff control; (5) Post-construction storm water management in new development and redevelopment.; (6) Pollution prevention/good housekeeping for municipal operations.

⁸⁹ *Hayes v. Commission on State Mandates, supra*, 11 Cal. App. 4th 1564, 1593-1594.

⁹⁰ 40 CFR § 122.26(d)(2)(iv)(A)(3).

⁹¹ Government Code section 17556, subdivision (c).

In *Long Beach Unified School Dist. v. State of California*,⁹² the court considered whether a state executive order involving school desegregation constituted a state mandate. The court held that the executive order required school districts to provide a higher level of service than required by federal constitutional or case law because the state requirements went beyond federal requirements.⁹³ The *Long Beach Unified School District* court stated:

Where courts have suggested that certain steps and approaches may be helpful [in meeting constitutional and case law requirements] the executive Order and guidelines require *specific actions*. ...[T]he point is that these steps are no longer merely being suggested as options which the local school district may wish to consider but are required acts. These requirements constitute a higher level of service.⁹⁴ [Emphasis added.]

The reasoning of *Long Beach Unified School Dist.* is applicable to this claim. Although “operating and maintaining public streets, roads and highways and procedures for reducing the impact on receiving waters of discharges from municipal storm sewer systems...”⁹⁵ is a federal requirement on municipalities, the permit requirement to place trash receptacles at all transit stops and maintain them is an activity, like in *Long Beach Unified School Dist.*, that is a *specified action* going beyond federal law.⁹⁶

Neither of the cases cited by the State Water Board demonstrate that placing trash receptacles at transit stops is required by federal law. In *City of Rancho Cucamonga v. Regional Water Quality Control Board – Santa Ana Region*⁹⁷ the court upheld a stormwater permit similar to the one at issue in this claim. The City of Rancho Cucamonga challenged the permit on a variety of grounds, including that it exceeded the federal requirements for stormwater dischargers to “reduce the discharge of pollutants to the maximum extent practicable”⁹⁸ and that it was overly prescriptive. The court concluded that the permit did not exceed the maximum extent practicable standard and upheld the permit in all respects. There is no indication in that case, however, that the permit at issue required trash receptacles at transit stops. Similarly, in a suit regarding the same permit at issue in this case, the *Los Angeles County*⁹⁹ court dismissed various challenges to the permit, but made no mention of the permit’s transit trash receptacle provision.

⁹² *Long Beach Unified School Dist. v. State of California, supra*, 225 Cal.App.3d 155.

⁹³ *Id.* at page 173.

⁹⁴ *Long Beach Unified School Dist. v. State of California, supra*, 225 Cal.App.3d 155, 173.

⁹⁵ 40 Code of Federal Regulations, section 122.26 (d)(2)(iv)(A)(3).

⁹⁶ *Ibid.*

⁹⁷ *City of Rancho Cucamonga v. Regional Water Quality Control Board- Santa Ana Region, supra*, 135 Cal.App.4th 1377.

⁹⁸ 33 USCA section 1342 (p)(3)(B)(iii).

⁹⁹ *County of Los Angeles v. California State Water Resources Control Board, supra*, 143 Cal.App.4th 985.

Therefore, the Commission finds that placing and maintaining trash receptacles at all transit stops within the jurisdiction of each permittee, as specified, is not a federal mandate within the meaning of article XIII B, sections 6 and 9, subdivision (b).

Part 4F5c3 of the permit states as follows:

c. Permittees not subject to a trash TMDL shall: (3) Place trash receptacles at all transit stops within its jurisdiction that have shelters no later than August 1, 2002, and at all transit stops within its jurisdiction no later than February 3, 2003. All trash receptacles shall be maintained as necessary.

Based on the mandatory language (i.e., "shall") in part 4F5c3 of the permit, the Commission finds it is a state mandate for the claimants that are not subject to a trash TMDL to place trash receptacles at all transit stops within its jurisdiction that have shelters no later than August 1, 2002, and at all transit stops within its jurisdiction no later than February 3, 2003, and to maintain all trash receptacles as necessary.

Inspecting commercial facilities (part 4C2a): Section 4C2a of the permit requires inspections of restaurants, automotive service facilities, retail gasoline outlets and automotive dealerships as follows:

2. Inspect Critical Sources – Each Permittee shall inspect all facilities in the categories and at a level and frequency as specified in the following subsections:

(a) Commercial Facilities

(1) Restaurants

Frequency of Inspections: Twice during the 5-year term of the Order, provided that the first inspection occurs no later than August 1, 2004, and that there is a minimum interval of one year in between the first compliance inspection and the second compliance inspection.

Level of Inspections: Each Permittee, in cooperation with its appropriate department (such as health or public works), shall inspect all restaurants within its jurisdiction to confirm that stormwater BMPs are being effectively implemented in compliance with State law, County and municipal ordinances, Regional Board Resolution 98-08, and the SQMP. At each restaurant, inspectors shall verify that the restaurant operator:

- has received educational materials on stormwater pollution prevention practices;
- does not pour oil and grease or oil and grease residue onto a parking lot, street or adjacent catch basin;
- keeps the trash bin area clean and trash bin lids closed, and does not fill trash bins with washout water or any other liquid;
- does not allow illicit discharges, such as discharge of washwater from floormats, floors, porches, parking lots, alleys, sidewalks and street areas (in the immediate vicinity of the establishment), filters or garbage/trash containers;

- removes food waste, rubbish or other materials from parking lot areas in a sanitary manner that does not create a nuisance or discharge to the storm drain.

(2) Automotive Service Facilities

Frequency of Inspections: Twice during the 5-year term of the Order, provided that the first inspection occurs no later than August 1, 2004, and that there is a minimum interval of one year in between the first compliance inspection and the second compliance inspection.

Level of Inspections: Each permittee shall inspect all automotive service facilities within its jurisdiction to confirm that stormwater BMPs are effectively implemented in compliance with County and municipal ordinances, Regional Board Resolution 98-08, and the SQMP. At each automotive service facility, inspectors shall verify that each operator:

- maintains the facility area so that it is clean and dry without evidence of excessive staining;
- implements housekeeping BMPs to prevent spills and leaks;
- properly discharges wastewaters to a sanitary sewer and/or contains wastewaters for transfer to a legal point of disposal;
- is aware of the prohibition on discharge of non-stormwater to the storm drain;
- properly manages raw and waste materials including proper disposal of hazardous waste;
- protects outdoor work and storage areas to prevent contact of pollutants with rainfall and runoff;
- labels, inspects, and routinely cleans storm drain inlets that are located on the facility's property; and
- trains employees to implement stormwater pollution prevention practices.

(3) Retail Gasoline Outlets and Automotive Dealerships

Frequency of Inspection: Twice during the 5-year term of the Order, provided that the first inspection occurs no later than August 1, 2004, and that there is a minimum interval of one year in between the first compliance inspection and the second compliance inspection.

Level of Inspection: Each Permittee shall confirm that BMPs are being effectively implemented at each RGO and automotive dealership within its jurisdiction, in compliance with the SQMP, Regional Board Resolution 98-08, and the Stormwater Quality Task Force Best Management Practice Guide for RGOs. At each RGO and automotive dealership, inspectors shall verify that each operator:

- routinely sweeps fuel-dispensing areas for removal of litter and debris, and keeps rags and absorbents ready for use in case of leaks and spills;
- is aware that washdown of facility area to the storm drain is prohibited;
- is aware of design flaws (such as grading that doesn't prevent run-on, or inadequate roof covers and berms), and that equivalent BMPs are implemented;

- inspects and cleans storm drain inlets and catch basins within each facility's boundaries no later than October 1st of each year;
- posts signs close to fuel dispensers, which warn vehicle owners/operators against "topping off" of vehicle fuel tanks and installation of automatic shutoff fuel dispensing nozzles;
- routinely checks outdoor waste receptacle and air/water supply areas, cleans leaks and drips, and ensures that only watertight waste receptacles are used and that lids are closed; and
- trains employees to properly manage hazardous materials and wastes as well as to implement other stormwater pollution prevention practices. [¶]...[¶]

Level of Inspection: Each Permittee shall confirm that each operator:

- has a current Waste Discharge Identification (WDID) number for facilities discharging stormwater associated with industrial activity, and that a Storm Water Pollution Prevention Plan is available on-site, and
- is effectively implementing BMPs in compliance with County and municipal ordinances, Regional Board Resolution 98-08, and the SQMP.

The state asserts that these inspection requirements in permit part 4C2a are a federal mandate.

In comments filed April 18, 2008, the State Water Board quotes from the MS4 Program Evaluation Guide issued by U.S. EPA, asserting that it requires inspections of businesses. The State Water Board also states:

The federal regulations also specifically require local stormwater agencies, as part of their responsibilities under NPDES permits, to conduct inspections. [citing 40 CFR § 122.26(d)(2)(iv)(C).] Throughout the federal law, there are numerous requirements for entities that discharge pollutants to waters of the United States to monitor and inspect their facilities and their effluent. [citing Clean Water Act §402(b)(2)(B); 40 CFR § 122.44(i).] The claimants are the dischargers of pollutants into surface waters; as part of their permit allowing these dischargers they must conduct inspections.

Similarly, the April 10, 2008 letter from U.S. EPA to the State Water Board and attached to the Board's comments submitted April 18, 2008, states:

A program for commercial and industrial facility inspection and enforcement that includes restaurants and automobile facilities, would appear to be both practicable and effective. Such an inspection program ensures that stormwater discharges from such facilities are reducing their contribution of pollutants and that there are no non-stormwater discharges or illicit connections. Thus these programs are founded in both 402 (p)(3)(B)(ii) and (iii) and are well within the scope of 40 CFR § 122.26(d)(2)(iv)(A) and (B).

The County of Los Angeles, in its June 23, 2008 rebuttal comments, asserts that federal law requires prohibiting non-stormwater discharges into the storm sewers, and reducing the discharge of pollutants in stormwater to the maximum extent practicable (33 USC 1342(p)) but not inspecting restaurants, automotive service facilities, retail gas outlets, or automotive dealerships.

Only municipal landfills, hazardous waste treatment, disposal and recovery facilities and related facilities are required to be inspected (40 CFR § 122.26(d)(2)(iv)(C)).

In comments received June 25, 2008, the city claimants argue that the LA Regional Board freely chose to impose the permit requirements on the permittees, and make the following arguments: (1) The inspection obligations were not contained in two prior permits issued to the cities and the County—thus, the requirements are not federal mandates; (2) No federal statute or regulation requires the cities or the County to inspect restaurants, automotive service facilities, retail gas outlets, automotive dealerships or facilities that hold general industrial permits; (3) Stormwater NPDES permits issued by the U.S. EPA do not contain the requirement to inspect restaurants, auto service facilities, retail gas outlets and automotive dealerships, or require the extensive inspection of facilities that hold general industrial stormwater permits as contained in the Order [i.e. permit]; (4) The Administrator of U.S. EPA, as well as the head of the water division for U.S. EPA Region IX, have specifically stated that a municipality has an obligation under a stormwater permit only to assure compliance with local ordinances; the state retains responsibility to inspect for compliance with state law, including state-issued permits.

The city claimants dispute the State Board's contention that the court in *City of Rancho Cucamonga v. Regional Water Quality Control Board* (2006) 135 Cal.App.4th 1377 held that federal law required inspections like those at issue in the permit. The cities quote part of the *City of Rancho Cucamonga* case with the following emphasis:

Rancho Cucamonga and the other permittees are responsible for inspecting construction and industrial sites and commercial facilities within their jurisdiction for compliance with and enforcement of local municipal ordinances and permits. *But the Regional Board continues to be responsible under the 2002 NPDES permit for inspections under the general permits.* The Regional Board may conduct its own inspections but permittees must still enforce their own laws at these sites. (40 C.F.R. § 122.26, subd. (d)(2) (2005).)

In discussing the federal mandate issue, the applicable federal law is section 402 of the Clean Water Act, which states that municipal storm sewer system permits:

(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. (33 USCA § 1342 (p)(3)(B).)

The applicable federal regulations (40 CFR § 122.26 (d)(2)(iv)(B)&(C)) state as follows:

(d) Application requirements for large and medium municipal separate storm sewer discharges. The operator of a discharge from a large or medium municipal separate storm sewer or a municipal separate storm sewer that is designated by the Director under paragraph (a)(1)(v) of this section, may submit a jurisdiction-wide or system-wide permit application. Where more than one public entity owns or operates a municipal separate storm sewer within a geographic area (including adjacent or interconnected municipal separate storm sewer systems), such

operators may be a coapplicant to the same application. Permit applications for discharges from large and medium municipal storm sewers or municipal storm sewers designated under paragraph (a)(1)(v) of this section shall include; [¶]...[¶]

(2) Part 2 of the application shall consist of: [¶]...[¶]

(iv) Proposed management program. A proposed management program covers the duration of the permit. It shall include 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. Separate proposed programs may be submitted by each coapplicant. Proposed programs may impose controls on a systemwide basis, a watershed basis, a jurisdiction basis, or on individual outfalls. Proposed programs will be considered by the Director when developing permit conditions to reduce pollutants in discharges to the maximum extent practicable. Proposed management programs shall describe priorities for implementing controls. Such programs shall be based on: [¶]...[¶]

(B) A description of a program, including a schedule, 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. The proposed program shall include:

(1) A description of a program, including inspections, to implement and enforce an ordinance, orders or similar means to prevent illicit discharges to the municipal separate storm sewer system; this program description shall address all types of illicit discharges, however the following category of non-stormwater discharges or flows shall be addressed where such discharges are identified by the municipality as sources of pollutants to waters of the United States [¶]...[¶]

(C) A description of a program to monitor and control pollutants in stormwater 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. The program shall:

(1) Identify priorities and procedures for inspections and establishing and implementing control measures for such discharges. (40 C.F.R. § 122.26, subd. (d)(2)(iv)(B)(1) & (C)(1).) [Emphasis added.]

There is a requirement in subdivision (d)(2)(iv)(B)(1) for implementing and enforcing “an ordinance, orders, or similar means to prevent illicit discharges to the municipal separate storm system.” There is no express requirement in federal law, however, to inspect restaurants, automotive service facilities, retail gasoline outlets, or automotive dealerships. Nor does the

portion of the MS4 Program Evaluation Guide quoted by the State Water Board contain mandatory language to conduct inspections for these facilities.

In its April 2008 comments, the State Water Board argues that this reading of the regulations is not reasonable, and that U.S. EPA acknowledged that the initial selection by MS4s was only a starting point. In its comments (p.15), the State Water Board also states:

Because the federal mandate requires Water Boards to choose specific BMPs [Best Management Practices] that are included in MS4 permits as requirements, the 'discretion' exercised in selecting those BMPs is necessarily a part of the federal mandate. It is not comparable to the discretion that the courts in *Hayes* or *San Diego* spoke of, where the state truly had a 'free choice.' The Los Angeles Water Board was mandated by federal law to select BMPs that would result in compliance with the federal MEP [Maximum Extent Practicable] standard. ... Therefore, it is clear that the mere exercise of discretion in selecting BMPs does not create a reimbursable mandate.

The State Water Board would have the Commission read requirements into the federal law that are not there. The Commission, however, cannot read a requirement into a statute or regulation that is not on its face or its legislative history.¹⁰⁰

Based on the plain language of the federal regulations that are silent on the types of facilities at issue in the permit, the Commission finds that performing inspections at restaurants, automotive service facilities, retail gasoline outlets, or automotive dealerships, as specified in the permit, is not a federal mandate.

Moreover, the requirement to inspect the facilities listed in the permit is an activity, as in the *Long Beach Unified School Dist.* case discussed above,¹⁰¹ that is a specified action going beyond the federal requirement for inspections "to prevent illicit discharges to the municipal separate storm sewer system." (40 C.F.R. § 122.26, subd. (d)(2)(iv)(B)(1).) As such, the inspections are not federally mandated.

The permit states in part: "Each Permittee shall inspect all facilities in the categories and at a level and frequency as specified ..." Based on the mandatory language in part 4C2a of the permit, the Commission finds that this part is a state mandate on the claimants to perform the inspections at restaurants, automotive service facilities, retail gasoline outlets, and automotive dealerships at the frequency and levels specified in the permit.

Inspecting phase I industrial facilities (part 4C2b): Part 4C2b of the permit regarding phase I industrial facilities requires the following:

¹⁰⁰ *Gillett-Harris-Duranceau & Associates, Inc. v. Kemple* (1978) 83 Cal.App.3d 214, 219-220. "Rules governing the interpretation of statutes also apply to interpretation of regulations." *Diablo Valley College Faculty Senate v. Contra Costa Community College Dist.* (2007) 148 Cal.App.4th 1023, 1037.

¹⁰¹ *Long Beach Unified School Dist. v. State of California, supra*, 225 Cal.App.3d 155.

b) Phase I Facilities¹⁰²

Permittees need not inspect facilities that have been inspected by the Regional Board within the past 24 months. For the remaining Phase I facilities that the Regional Board has not inspected, each Permittee shall conduct compliance inspections as specified below.

Frequency of Inspection

Facilities in Tier 1 Categories:¹⁰³ Twice during the 5-year term of the Order, provided that the first inspection occurs no later than August 1, 2004, and that there is a minimum interval of one year in between the first compliance inspection and the second compliance inspection.

Facilities in Tier 2 Categories:¹⁰⁴ Twice during the 5-year term of the permit, provided that the first inspection occurs no later than August 1, 2004, Permittees need not perform additional inspections at those facilities determined to have no risk of exposure of industrial activity to stormwater. For those facilities that do have exposure of industrial activities to stormwater, a Permittee may reduce that frequency of additional compliance inspections to once every 5 years, provided that the Permittee inspects at least 20% of the facilities in Tier 2 each year.

Level of Inspection: Each Permittee shall confirm that each operator:

¹⁰² On page 62 of the permit, U.S. EPA Phase I Facilities are defined as “facilities in specified industrial categories that are required to obtain an NPDES permit for storm water discharges, as required by 40 CFR 122.26(c). These categories include: (i) facilities subject to storm water effluent limitation guidelines, new source performance standards, or toxic pollutant effluent standards (40 CFR N); (ii) manufacturing facilities; (iii) oil and gas/mining facilities; (iv) hazardous waste treatment, storage, or disposal facilities; (v) landfills, land application sites, and open dumps; (vi) recycling facilities; (vii) steam electric power generating facilities; (viii) transportation facilities; (ix) sewage or wastewater treatment works; (x) light manufacturing facilities.

¹⁰³ Attachment B of the permit (pp. B-1 to B-2) lists the Tier 1 categories as follows (with Phase I facilities listed in italics): “*Municipal landfills ...; Hazardous Waste Treatment, Disposal and Recovery Facilities; Facilities Subject to SARA Title III ...; Restaurants; Wholesale trade (scrap, auto dismantling) ...; Automotive service facilities; Fabricated metal products ...; Motor freight ...; Chemical/allied products ...; Automotive Dealers/Gas Stations ...; Primary Metals.*”

¹⁰⁴ Attachment B of the permit (pp. B-1 to B-2) lists the Tier 2 categories as follows (with Phase I facilities listed in italics): “*Electric/Gas/Sanitary ...; Air Transportation ...; Rubbers/Miscellaneous Plastics ...; Local/Suburban Transit ...; Railroad Transportation ...; Oil & Gas Extraction ...; Lumber/Wood Products ...; Machinery Manufacturing ...; Transportation Equipment ...; Stone, Clay, Glass, Concrete ...; Leather/Leather Products ...; Miscellaneous Manufacturing ...; Food and kindred Products ...; Mining of Nonmetallic Minerals ...; Printing and Publishing ...; Electric/Electronics ...; Paper and Allied Products ...; Furniture and Fixtures ...; Laundries ...; Instruments ...; Textile Mills Products ...; Apparel ...*”

- has a current Waste Discharge Identification (WDID) number for facilities discharging stormwater associated with industrial activity, and that a Storm Water Pollution Prevention Plan is available on-site, and is effectively implementing BMPs in compliance with County and municipal ordinances, Regional Board Resolution 98-08, and the SQMP.

The issue is whether these inspection requirements for phase I industrial facilities is a federal mandate. The governing federal regulation is 40 CFR section 122.26 (d)(2)(iv)(B)&(C), which is cited above. Specifically on point is subpart (C), which states that the proposed management program must include the following:

(C) A description of a program to monitor and control pollutants in stormwater 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. The program shall:

(1) Identify priorities and procedures for inspections and establishing and implementing control measures for such discharges; (40 C.F.R. § 122.26, subd. (d)(2)(iv)(B)(1) & (C)(1).) [Emphasis added.]

The phase I facilities in the permit are defined to include.

(i) facilities subject to storm water effluent limitation guidelines, new source performance standards, or toxic pollutant effluent standards (40 CFR N); (ii) manufacturing facilities; (iii) oil and gas/mining facilities; (iv) hazardous waste treatment, storage, or disposal facilities; (v) landfills, land application sites, and open dumps; (vi) recycling facilities; (vii) steam electric power generating facilities; (viii) transportation facilities; (ix) sewage or wastewater treatment works; (x) light manufacturing facilities. (Permit, p. 62)

And the Tier 1 facilities in the permit include municipal landfills, hazardous waste treatment, disposal and recovery facilities and facilities subject to SARA Title III (see permit attachment B, pp. B-1 to B-2). Thus, there is a federal requirement to inspect these phase I and tier 1 facilities in the permit. The issue is whether this requirement constitutes a federal mandate on local agencies. The Commission finds that it does not.

It is the state that mandates the phase I inspection and related activities in that the state freely chooses to impose the inspection and enforcement requirements on the local agency permittees.¹⁰⁵ This is because the federal regulatory scheme provides an alternative means of regulating and inspecting these industrial facilities under the state-enforced, statewide permit, as follows:

¹⁰⁵ *Hayes v. Commission on State Mandates, supra*, 11 Cal. App. 4th 1564, 1593-1594.

(c) Application requirements for stormwater discharges associated with industrial activity¹⁰⁶ and stormwater discharges associated with small construction activity -

(1) Individual application. Dischargers of stormwater associated with industrial activity and with small construction activity are required to apply for an individual permit or seek coverage under a promulgated stormwater general permit. Facilities that are required to obtain an individual permit, or any discharge of stormwater which the Director is evaluating for designation (see 124.52(c) of this chapter) under paragraph (a)(1)(v) of this section and is not a municipal storm sewer, shall submit an NPDES application in accordance with the requirements of § 122.21 as modified and supplemented by the provisions of this paragraph. [Emphasis added.]

The state has issued a statewide general activity industrial permit (GIASP) that is enforced through the regional boards.¹⁰⁷ This, along with the statewide construction permit, is described in the permit itself:

To facilitate compliance with federal regulations, the State Board has issued two statewide general NPDES permits for stormwater discharges: one for stormwater from industrial sites [NPDES No. CAS000001, General Industrial Activity Storm Water Permit (GIASP)] and the other for stormwater from construction sites [NPDES No. CAS000002, General Construction Activity Storm Water Permit (GCASP)]. The GCASP was reissued on August 19, 1999. The GIASP was reissued on April 17, 1997. Facilities discharging stormwater associated with industrial activities and construction projects with a disturbed area of five acres or more are required to obtain individual NPDES permits for stormwater discharges, or to be covered by a statewide general permit by completing and filing a Notice of Intent (NOI) with the State Board. The USEPA guidance anticipates coordination of the state-administered programs for industrial and construction activities with the local agency program to reduce pollutants in stormwater discharges to the MS4. The Regional Board is the enforcement authority in the Los Angeles Region for the two statewide general permits regulating discharges from industrial facilities and construction sites, and all NPDES stormwater and

¹⁰⁶ According to 40 CFR § 122.26, (b)(14): "Storm water discharge associated with industrial activity means the discharge from any conveyance that is used for collecting and conveying storm water and that is directly related to manufacturing, processing or raw materials storage areas at an industrial plant. ... The following categories of facilities are considered to be engaging in "industrial activity" for purposes of paragraph (b)(14): [¶]... [¶](x) Construction activity including clearing, grading and excavation, except operations that result in the disturbance of less than five acres of total land area. Construction activity also includes the disturbance of less than five acres of total land area that is a part of a larger common plan of development or sale if the larger common plan will ultimately disturb five acres or more."

¹⁰⁷ For example, page 2 of the Fact Sheet for the General Construction Activity Storm Water Permit states: "This General Permit shall be implemented and enforced by the nine California Regional Water Quality Control Boards (RWQCBs)."

non-stormwater permits issued by the Regional Board. These industrial and construction sites and discharges are also regulated under local laws and regulations.¹⁰⁸

There is nothing in the federal statutes or regulations that would prevent the state (rather than local agencies) from performing the inspections of industrial facilities (specified in part 4C2b of the permit) under the state-enforced general permit. Nor does federal law require the owner or operator of the discharge to perform these activities in part 4C2b of the permit. In fact, the State Board collects fees for the regional boards for performing inspections under the GIASP (see Wat. Code, § 13260, subd. (d)(2)(B)(ii)).

In its April 18, 2008 comments, the State Water Board asserts:

Because the federal mandate requires Water Boards to choose specific BMPs [Best Management Practices] that are included in MS4 permits as requirements, the 'discretion' exercised in selecting those BMPs is necessarily a part of the federal mandate. It is not comparable to the discretion that the courts in *Hayes* or *San Diego* spoke of, where the state truly had a 'free choice.' The Los Angeles Water Board was mandated by federal law to select BMPs that would result in compliance with the federal MEP [Maximum Extent Practicable] standard. ... Therefore, it is clear that the mere exercise of discretion in selecting BMPs does not create a reimbursable mandate.¹⁰⁹

The Commission disagrees. Inasmuch as the federal regulation (40 CFR § 122.26 (c)) authorizes coverage under a statewide general permit for the inspections of industrial activities, and the federal regulation (40 CFR § 122.26 (d)(2)(iv)(D)) does not expressly require those inspections to be performed by the county or cities (or the "owner or operator of the discharge") the Commission finds that the state has freely chosen¹¹⁰ to impose these activities on the permittees. Therefore, the Commission finds that there is no federal mandate on the claimants to perform inspections of phase I facilities as specified in part 4C2b of the permit.

As to whether the permit is a state mandate, part 4C2b contains the following mandatory language:

¹⁰⁸ Permit, page 11, paragraph 22.

¹⁰⁹ State Water Board comments, submitted April 18, 2008, page 15.

¹¹⁰ *Hayes v. Commission on State Mandates, supra*, 11 Cal. App. 4th 1564, 1593-1594.

b) Phase I Facilities¹¹¹

Permittees need not inspect facilities that have been inspected by the Regional Board within the past 24 months. For the remaining Phase I facilities that the Regional Board has not inspected, each Permittee shall conduct compliance inspections as specified below. [Emphasis added.]

Frequency of Inspection

Facilities in Tier 1 Categories:¹¹² Twice during the 5-year term of the Order, provided that the first inspection occurs no later than August 1, 2004, and that there is a minimum interval of one year in between the first compliance inspection and the second compliance inspection.

Facilities in Tier 2 Categories:¹¹³ Twice during the 5-year term of the permit, provided that the first inspection occurs no later than August 1, 2004, Permittees need not perform additional inspections at those facilities determined to have no risk of exposure of industrial activity¹¹⁴ to stormwater. For those facilities that do

¹¹¹ On page 62 of the permit, U.S. EPA Phase I Facilities are defined as “facilities in specified industrial categories that are required to obtain an NPDES permit for storm water discharges, as required by 40 CFR 122.26(c). These categories include: (i) facilities subject to storm water effluent limitation guidelines, new source performance standards, or toxic pollutant effluent standards (40 CFR N); (ii) manufacturing facilities; (iii) oil and gas/mining facilities; (iv) hazardous waste treatment, storage, or disposal facilities; (v) landfills, land application sites, and open dumps; (vi) recycling facilities; (vii) steam electric power generating facilities; (viii) transportation facilities; (ix) sewage or wastewater treatment works; (x) light manufacturing facilities.

¹¹² Attachment B of the permit (pp. B-1 to B-2) lists the Tier 1 categories as follows (with Phase I facilities listed in italics): “*Municipal landfills ...; Hazardous Waste Treatment, Disposal and Recovery Facilities; Facilities Subject to SARA Title III ...; Restaurants; Wholesale trade (scrap, auto dismantling) ...; Automotive service facilities; Fabricated metal products ...; Motor freight ...; Chemical/allied products ...; Automotive Dealers/Gas Stations ...; Primary Metals.*”

¹¹³ Attachment B of the permit (pp. B-1 to B-2) lists the Tier 2 categories as follows (with Phase I facilities listed in italics): “*Electric/Gas/Sanitary...; Air Transportation ...; Rubbers/Miscellaneous Plastics ...; Local/Suburban Transit ...; Railroad Transportation ...; Oil & Gas Extraction ...; Lumber/Wood Products...; Machinery Manufacturing ...; Transportation Equipment ...; Stone, Clay, Glass, Concrete ...; Leather/Leather Products...; Miscellaneous Manufacturing ...; Food and kindred Products...; Mining of Nonmetallic Minerals ...; Printing and Publishing ...; Electric/Electronics ...; Paper and Allied Products ...; Furniture and Fixtures ...; Laundries ...; Instruments...; Textile Mills Products ...; Apparel ...*”

¹¹⁴ “Storm water discharge associated with industrial activity means the discharge from any conveyance that is used for collecting and conveying storm water and that is directly related to manufacturing, processing or raw materials storage areas at an industrial plant. ... The following categories of facilities are considered to be engaging in "industrial activity" for purposes of paragraph (b)(14): [¶]...[¶] (x) Construction activity including clearing, grading and excavation,

have exposure of industrial activities to stormwater, a Permittee may reduce that frequency of additional compliance inspections to once every 5 years, provided that the Permittee inspects at least 20% of the facilities in Tier 2 each year.

Level of Inspection: Each Permittee shall confirm that each operator:

- has a current Waste Discharge Identification (WDID) number for facilities discharging stormwater associated with industrial activity, and that a Storm Water Pollution Prevention Plan is available on-site, and is effectively implementing BMPs in compliance with County and municipal ordinances, Regional Board Resolution 98-08, and the SQMP.

Based on this mandatory language to perform the inspections of phase I facilities as specified, the Commission finds that part 4C2b of the permit is a state-mandate.

Inspecting construction sites (part 4E): Part 4E of the permit contains the following requirements:

- Implement a program to control runoff from construction activity at all construction sites within each permittees jurisdiction, and ensure the specified minimum requirements are effectively implemented at all construction sites. (Permit, 4E1.)

For construction sites one acre or greater, each permittee shall:

- Require the preparation and submittal of a Local SWPPP [Storm Water Pollution Prevention Plan], with specified contents, for approval prior to issuing a grading permit for construction projects. (Permit, 4E2a.)
- Inspect all construction sites for stormwater quality requirements during routine inspections a minimum of once during the wet seasons. (Permit, 4E2b.)
- Review the Local SWPPP for compliance with local codes, ordinances, and permits. (Permit, 4E2b.)
- For inspected sites that have not adequately implemented their Local SWPPP, conduct a follow-up inspection to ensure compliance will take place within 2 weeks.
 - If compliance has not been attained, take additional actions to achieve compliance (as specified in municipal codes).
 - If compliance has not been achieved, and the site is also covered under a statewide general construction stormwater permit, enforce the local ordinance requirements, and
 - If non-compliance continues the Regional Board shall be notified for further joint enforcement actions. (Permit, 4E2b.)

except operations that result in the disturbance of less than five acres of total land area. Construction activity also includes the disturbance of less than five acres of total land area that is a part of a larger common plan of development or sale if the larger common plan will ultimately disturb five acres or more." [40 CFR §122.26 (b)(14), Emphasis added.]

- Require by March 10, 2003, before issuing a grading permit for all projects less than five acres requiring coverage under a statewide general construction stormwater permit, proof of a Waste Discharger Identification Number for filing a Notice of Intent for permit coverage and a certification that a SWPPP has been prepared by the project developer. A Local SWPPP may substitute for the State SWPPP if the Local SWPPP is at least as inclusive in controls and BMPs [Best Management Practices] as the State SWPPP (Permit, 4E2c.)
- For sites five acres and greater:
 - Require, prior to issuing a grading permit for all projects requiring coverage under the state general permit, proof of a Waste Discharger Identification (WDID) number for filing a Notice of Intent (NOI) for coverage under the GCASP [General Construction Activity Storm Water Permit] and a certification that a SWPPP has been prepared by the project developer. A Local SWPPP may substitute for the State SWPPP if the Local SWPPP is at least as inclusive in controls and BMPs as the State SWPPP.
 - Require proof of an Notice of Intent (NOI) and a copy of the SWPPP at any time a transfer of ownership takes place for the entire development or portions of the common plan of development where construction activities are still on-going.
 - Use an effective system to track grading permits issued by each permittee. (Permit, 4E3.)
- For projects subject to the GCASP [General Construction Activity Storm Water Permit], permittees shall refer non-filers (i.e., those projects which cannot demonstrate that they have a WDID number) to the Regional Board, within 15 days of making a determination. In making such referrals, permittees shall include, at a minimum, the following documentation: Project location; Developer; Estimated project size; and Records of communication with the developer regarding filing requirements. (Permit, 4E4b.)
- Train employees in targeted positions (whose jobs or activities are engaged in construction activities including construction inspection staff) regarding the requirements of the stormwater management program no later than August 1, 2002, and annually thereafter. For permittees with a population of 250,000 or more (2000 US Census), initial training shall be completed no later than February 3, 2003. Each permittee shall maintain a list of trained employees. (Permit, 4E5.)

The applicable federal regulation (40 CFR § 122.26 (d)(2)(iv)(D)) on the issue of whether the inspection of construction sites is a federal mandate is as follows:

(d) Application requirements for large¹¹⁵ and medium¹¹⁶ municipal separate storm sewer discharges. The operator¹¹⁷ of a discharge from a large or medium

¹¹⁵ “(4) Large municipal separate storm sewer system means all municipal separate storm sewers that are either: (i) Located in an incorporated place with a population of 250,000 or more as

municipal separate storm sewer or a municipal separate storm sewer that is designated by the Director under paragraph (a)(1)(v) of this section, may submit a jurisdiction-wide or system-wide permit application. ... Permit applications for discharges from large and medium municipal storm sewers or municipal storm sewers designated under paragraph (a)(1)(v) of this section shall include; [¶]...[¶]

(2) Part 2 of the application shall consist of: [¶]...[¶]

(iv) Proposed management program. A proposed management program covers the duration of the permit. It shall include 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. Separate proposed programs may be submitted by each coapplicant. Proposed programs may impose controls on a systemwide basis, a watershed basis, a jurisdiction basis, or on individual outfalls. Proposed programs will be considered by the Director when developing permit conditions to reduce pollutants in discharges to the maximum extent practicable. Proposed management programs shall describe priorities for implementing controls. Such programs shall be based on: [¶]...[¶]

(D) A description of a program to implement and maintain structural and non-structural best management practices to reduce pollutants in stormwater runoff

determined by the 1990 Decennial Census by the Bureau of the Census (Appendix F of this part); or (ii) Located in the counties listed in appendix H, except municipal separate storm sewers that are located in the incorporated places, townships or towns within such counties; or (iii) Owned or operated by a municipality other than those described in paragraph (b)(4)(i) or (ii) of this section and that are designated by the Director as part of the large or medium municipal separate storm sewer system due to the interrelationship between the discharges of the designated storm sewer and the discharges from municipal separate storm sewers described under paragraph (b)(4)(i) or (ii) of this section. ..." (40 CFR § 122.26 (b)(4).)

¹¹⁶ "(7) Medium municipal separate storm sewer system means all municipal separate storm sewers that are either: (i) Located in an incorporated place with a population of 100,000 or more but less than 250,000, as determined by the 1990 Decennial Census by the Bureau of the Census (Appendix G of this part); or (ii) Located in the counties listed in appendix I, except municipal separate storm sewers that are located in the incorporated places, townships or towns within such counties; or (iii) Owned or operated by a municipality other than those described in paragraph (b)(7)(i) or (ii) of this section and that are designated by the Director as part of the large or medium municipal separate storm sewer system due to the interrelationship between the discharges of the designated storm sewer and the discharges from municipal separate storm sewers described under paragraph (b)(7)(i) or (ii) of this section. ..." (40 CFR § 122.26 (b)(7).)

¹¹⁷ "Owner or operator means the owner or operator of any 'facility or activity' subject to regulation under the NPDES program." (40 CFR § 122.2.)

from construction sites to the municipal storm sewer system, which shall include:

[¶]...[¶]

(3) 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; and ...

[Emphasis added.]

The language of the federal regulation indicates a duty to inspect construction sites and enforce control measures as specified in part 4E of the permit. The *Rancho Cucamonga* case cited by the State Board also states that federal law requires NPDES permittees to inspect construction sites.¹¹⁸

The issue, however, is whether the federal requirements to inspect construction sites and enforce control measures amounts to a federal mandate on the local agencies. The Commission finds that it does not. First, the federal regulations quoted above do not specify the frequency or other specifics of the inspection program as the permit does. These are activities, as in the *Long Beach Unified School Dist.* case discussed above,¹¹⁹ that are specified actions going beyond the federal requirement for inspections “to prevent illicit discharges to the municipal separate storm sewer system.” (40 C.F.R. § 122.26, subd. (d)(2)(iv)(B)(1).) As such, it is not a federal mandate for the local agency permittees to inspect construction sites.

Moreover, it is the state that mandates the inspections of construction sites and related activities in that the state freely chooses to impose the inspection and enforcement requirements on the local agency permittees.¹²⁰ The federal regulations do not require: (1) a municipality to have a separate permit for construction activity or enforcement; or (2) that the inspections and related activities in part 4E of the permit be conducted by the owner or operator of the discharge. Rather, these activities may be conducted by the state under a state-wide, state-enforced, general permit, as stated in the federal stormwater regulation (40 CFR § 122.26 (c)), which states in part:

(c) Application requirements for stormwater discharges associated with industrial activity [includes construction activity of five or more acres] and stormwater discharges associated with small construction activity¹²¹ [construction activity from one to less than five acres]--

¹¹⁸ *City of Rancho Cucamonga v. Regional Water Quality Control Bd.-Santa Ana Region, supra*, 135 Cal.App.4th 1377, 1390.

¹¹⁹ *Long Beach Unified School Dist. v. State of California, supra*, 225 Cal.App.3d 155.

¹²⁰ *Hayes v. Commission on State Mandates, supra*, 11 Cal. App. 4th 1564, 1593-1594.

¹²¹ According to 40 CFR § 122.26, (b)(15): “Storm water discharge associated with small construction activity means the discharge of storm water from: (i) Construction activities including clearing, grading, and excavating that result in land disturbance of equal to or greater than one acre and less than five acres. Small construction activity also includes the disturbance of less than one acre of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than one and less than five acres. Small construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the facility. The

(1) Individual application. Dischargers of stormwater associated with industrial activity and with small construction activity are required to apply for an individual permit or seek coverage under a promulgated stormwater general permit. [Emphasis added.]

The state has issued a statewide general construction permit, as described on page 11 of the permit as quoted above, which is enforced through the regional boards.¹²² In fact, the State Board collects fees for the regional board for performing inspections under the GCASP (see Wat. Code, § 13260, subd. (d)(2)(B)(ii)).

There is nothing in the federal statutes or regulations that would prevent the state (rather than local agencies) from performing the inspection of construction sites and related activities (in part 4E of the permit) under the state-enforced general permit. Nor does federal law require the owner or operator of the discharge to perform these activities in part 4E of the permit. Therefore, the Commission finds that the requirement for local-agency permittees to inspect construction sites in section 4E of the permit is not a federal mandate.

The Commission finds that, based on the permit's mandatory language, the following activities in part 4E are state mandates on the permittees within the meaning of article XIII B, section 6:

- Implement a program to control runoff from construction activity at all construction sites within each permittee's jurisdiction, and ensure the specified minimum requirements are effectively implemented at all construction sites. (Permit, 4E1.)

For construction sites one acre or greater:

- Require the preparation of a Local SWPPP [Storm Water Pollution Prevention Plan], with specified contents, for approval prior to issuing a grading permit for construction projects. (Permit, 4E2a.)
- Inspect all construction sites for stormwater quality requirements during routine inspections a minimum of once during the wet seasons. (Permit, 4E2b.)
- Review the Local SWPPP for compliance with local codes, ordinances, and permits. (Permit, 4E2b.)
- For inspected sites that have not adequately implemented their Local SWPPP, conduct a follow-up inspection to ensure compliance will take place within 2 weeks.
 - If compliance has not been attained, take additional actions to achieve compliance (as specified in municipal codes).

Director may waive the otherwise applicable requirements in a general permit for a storm water discharge from construction activities that disturb less than five acres where: ...”

¹²² For example, page 2 of the Fact Sheet for the General Construction Activity Storm Water Permit states: “This General Permit shall be implemented and enforced by the nine California Regional Water Quality Control Boards (RWQCBs).”

- If compliance has not been achieved, and the site is also covered under a statewide general construction stormwater permit, enforce the local ordinance requirements, and
- If non-compliance continues, notify the Regional Board for further joint enforcement actions. (Permit, 4E2b.)
- Require by March 10, 2003, before issuing a grading permit for all projects less than five acres requiring coverage under a statewide general construction stormwater permit, proof of a Waste Discharger Identification Number for filing a Notice of Intent for permit coverage and a certification that a SWPPP has been prepared by the project developer. A Local SWPPP may substitute for the State SWPPP if the Local SWPPP is at least as inclusive in controls and BMPs [Best Management Practices] as the State SWPPP. (Permit, 4E2c.)
- For sites five acres and greater:
 - Require, prior to issuing a grading permit for all projects requiring coverage under the state general permit, proof of a Waste Discharger Identification (WDID) number for filing a Notice of Intent (NOI) for coverage under the GCASP [General Construction Activity Storm Water Permit] and a certification that a SWPPP has been prepared by the project developer. A Local SWPPP may substitute for the State SWPPP if the Local SWPPP is at least as inclusive in controls and BMPs as the State SWPPP.
 - Require proof of an Notice of Intent (NOI) and a copy of the SWPPP at any time a transfer of ownership takes place for the entire development or portions of the common plan of development where construction activities are still ongoing.
 - Use an effective system to track grading permits issued by each permittee. (Permit, 4E3.)
- For projects subject to the GCASP [General Construction Activity Storm Water Permit], permittees shall refer non-filers (i.e., those projects which cannot demonstrate that they have a WDID number) to the Regional Board, within 15 days of making a determination. In making such referrals, permittees shall include, at a minimum, the following documentation: Project location; Developer; Estimated project size; and Records of communication with the developer regarding filing requirements. (Permit, 4E4b.)
- Train employees in targeted positions (whose jobs or activities are engaged in construction activities including construction inspection staff) regarding the requirements of the stormwater management program no later than August 1, 2002, and annually thereafter. For permittees with a population of 250,000 or more (2000 US Census), initial training shall be completed no later than February 3, 2003. Each permittee shall maintain a list of trained employees. (Permit, 4E5.)

One of the requirements in part 4E3c of the permit is to: "Use an effective system to track grading permits issued by each permittee. To satisfy this requirement, the use of a database or

GIS system is encouraged, but not required.” The Commission finds that, based on the plain language of this provision, using an effective system to track grading permits is a state mandate, although use of a database or GIS system is not.

Overall, the Commission finds that the permit provisions (parts 4C2a, 4C2b, 4E & 4F5c3) are subject to article XIII B, section 6, of the California Constitution.

Issue 2: Do the transit trash receptacle and inspection permit provisions (Parts 4C2a, 4C2b, 4E, and 4F5c3) impose a new program or higher level of service?

The next issue is whether the permit provisions at issue, i.e., found above to be state-mandated, are a program, and whether they are a new program or higher level of service.

First, courts have defined a “program” for purposes of article XIII B, section 6, of the California Constitution, as one that carries out the governmental function of providing public services, or a law that imposes unique requirements on local agencies or school districts to implement a state policy, but does not apply generally to all residents and entities in the state.¹²³

The State Water Board, in its April 2008 comments, argues that the NPDES program is not a program because “the NPDES permit program, and the stormwater requirements specifically, are not peculiar to local government. Industrial and construction facilities must also obtain NPDES stormwater permits.”

In comments submitted June 25, 2008, the cities call the State Board’s argument inapposite, and cite the *Carmel Valley Fire Protection District* case¹²⁴ regarding whether the permit constitutes a “program.” According to claimant, “[t]he test is not whether the general program applies to both governmental and non-governmental entities. The test is whether the specific executive orders at issue apply to both government and non-governmental entities.”

The Commission finds that the permit activities constitute a program within the meaning of article XIII B, section 6. The permit activities are limited to local governmental entities. The permit defines the “permittees” as the County of Los Angeles and 84 incorporated cities within the Los Angeles County Flood Control District (Permit, p. 1 & attachment A). The permit lists no private entities as “permittees.” Moreover, the permit provides a service to the public by preventing or abating pollution in waterways and beaches in Los Angeles County. (Or as stated on page 13 of the permit: “The objective of this Order is to protect the beneficial uses of receiving waters in Los Angeles County.”) Therefore, the Commission finds that the permit is a program within the meaning of article XIII B, section 6.

In its comments on the draft staff analysis submitted June 5, 2009, the State Board disagrees with this conclusion because NPDES permits may also apply to private entities.

The State Board made this same argument in *County of Los Angeles v. Commission on State Mandates*, which the court addressed by stating: “[T]he applicability of permits to public and private dischargers does not inform us about whether a particular permit or an obligation

¹²³ *San Diego Unified School Dist.*, *supra*, 33 Cal.4th 859, 874, (reaffirming the test set out in *County of Los Angeles v. State of California*, *supra*, 43 Cal.3d 46, 56; *Lucia Mar*, *supra*, 44 Cal.3d 830, 835.)

¹²⁴ *Carmel Valley Fire Protection District v. State of California* (1987) 190 Cal.App.3d 521, 537.

thereunder imposed on local governments constitutes a state mandate necessitating subvention under article XIII B, section 6.¹²⁵

In other words, the issue is not whether NPDES permits generally constitute a “program” within the meaning of article XIII B, section 6. The only issue before the Commission is whether the permit in this test claim (Los Angeles Regional Quality Control Board Order No. 01-182, Permit CAS004001) constitutes a program because this permit is the only one over which the Commission has jurisdiction. Because they apply exclusively to local agencies, the Commission finds that the activities (parts 4C2a, 4C2b, 4E & 4F5c3) in this permit (Los Angeles Regional Quality Control Board Order No. 01-182, Permit CAS004001) constitute a program within the meaning of article XIII B, section 6.

The next step to determine whether the permit is a new program or higher level of service, the permit is compared to the legal requirements in effect immediately before its adoption.¹²⁶

The Commission finds that local agencies were not required by state or federal law to place and maintain trash receptacles at transit stops before the permit was adopted. Whether or not most cities or counties do so, as argued by the State Water Board in its April 2008 comments, is not relevant to finding a state-mandated new program or higher level of service because even if they do, Government Code section 17565 states: “If a local agency ... at its option, has been incurring costs which are subsequently mandated by the state, the state shall reimburse the local agency ... for those costs incurred after the operative date of the mandate.”

Because the transit trash receptacle requirement is newly mandated by the permit, and based on the plain language of part 4F5c3 of the permit, the Commission finds that it is a new program or higher level of service to place trash receptacles at transit stops and maintain them as specified in the permit.

For the same reason, the Commission finds that the inspections and enforcement activities at industrial and commercial facilities, including restaurants, automotive service facilities, retail gasoline outlets, automotive dealerships, and phase I facilities (in parts 4C2a & 4C2b of the permit) as well as inspection and enforcement at construction sites (in part 4E of the permit) are a new program or higher level of service. These were not required activities of the permittees prior to the permit’s adoption.

In sum, the Commission finds that all the permit provisions at issue in this test claim impose a new program or higher level of service within the meaning of article XIII B, section 6 of the California Constitution.

Issue 3: Do the transit trash receptacle and inspection permit provisions (Parts 4C2a, 4C2b, 4E & 4F5c3) impose costs mandated by the state within the meaning of Government Code sections 17514 and 17556?

¹²⁵ *County of Los Angeles v. Commission on State Mandates* (2007) 150 Cal.App.4th 898, 919.

¹²⁶ *San Diego Unified School Dist., supra*, 33 Cal.4th 859, 878; *Lucia Mar, supra*, 44 Cal.3d 830, 835.

The final issue is whether the permit provisions impose costs mandated by the state,¹²⁷ and whether any statutory exceptions listed in Government Code section 17556 apply to the test claims. Government Code section 17514 defines "cost mandated by the state" as follows:

[A]ny increased costs which a local agency or school district is required to incur after July 1, 1980, as a result of any statute enacted on or after January 1, 1975, or any executive order implementing any statute enacted on or after January 1, 1975, which mandates a new program or higher level of service of an existing program within the meaning of Section 6 of Article XIII B of the California Constitution.

Government Code section 17564 requires reimbursement claims to exceed \$1000 to be eligible for reimbursement.

In test claims 03-TC-20 and 03-TC-21, the cities' claimant representative declares (p. 24) that the cities will incur costs estimated to exceed \$1000 to implement the permit conditions.

In test claim 03-TC-04, the County of Los Angeles states (p. 18) that the costs in providing the services claimed "far exceed the minimum reimbursement amount of \$1000 per annum." In the attached declaration for *Transit Trash Receptacles*, the County declares (pp. 22-23) the following itemization of costs from December 13, 2001 to October 31, 2002:

- (1) Identify all transit stops in the jurisdiction: \$19,989.17;
- (2) Select proper trash receptacle design, evaluate proper placement, specification and drawing preparation: \$38,461.87;
- (3) Preliminary engineering works (construction contract preparation, specification reviewing process, bid advertising and awarding): \$19,662.02;
- (4) Construct and install trash receptacle units: \$230,755.58, construction management \$34,628.31;
- (5) Trash collection and receptacle maintenance in FY 2002-03, \$3,513.94, maintenance contractor costs for maintaining and collecting trash in FY 2002-03, \$93,982.50;
- (6) Projected costs for on-going maintenance in FY 2003-04, \$375,570.00.

Similarly, attached to claim 03-TC-19 (pp. 20-21) are declarations that itemize the County of Los Angeles' costs for *Inspection of Industrial/Commercial Facilities* program, from December 13, 2001 to September 15, 2003, as follows:

- (1) inspect 1744 restaurants: \$234,931.83;
- (2) inspect 1110 automotive service facilities: \$149,526.36;
- (3) inspect 249 retail gasoline outlets and automotive dealerships: \$33,542.45;
- (4) Identify and inspect all Phase I (387 Tier 1 and 543 Tier 2) facilities within the jurisdiction: \$125,155.31;
- (5) Total \$543,155.95.

¹²⁷ *Lucia Mar, supra*, 44 Cal.3d 830, 835; Government Code section 17514.

These declarations illustrate that the costs associated with the permit activities exceed \$1,000. The Commission, however, cannot find “costs mandated by the state” within the meaning of Government Code section 17514 if any exceptions in Government Code section 17556 apply, which is discussed below.

A. Did the claimants request the activities in the permit within the meaning of Government Code section 17556, subdivision (a)?

The first issue is whether the claimants requested the activities in the permit. The Department of Finance and the State Water Board both asserted that they did. As discussed above, the claimants were required to submit a Report of Waste Discharge and Stormwater Quality Management Plan before the permit was issued.

Government Code section 17556, subdivision (a), provides that the Commission shall not find costs mandated by the state if:

(a) The claim is submitted by a local agency ... that requested legislative authority for that local agency ... to implement the program specified in the statute, and that statute imposes costs upon that local agency or school district requesting the legislative authority. A resolution from the governing body or a letter from a delegated representative of the governing body of a local agency ... that requests authorization for that local agency ... to implement a given program shall constitute a request within the meaning of this subdivision.

Based on the language of the statute, section 17556, subdivision (a), does not apply because the permit is not a statute, the claimants did not request “legislative authority” to implement the permit, and the record lacks any resolutions adopted by the claimants. Therefore, the Commission finds that the claimants did not request the activities in the permit within the meaning of Government Code section 17556, subdivision (a).

B. Do the claimants have fee authority for the permit activities within the meaning of Government Code section 17556, subdivision (d)?

Government Code section 17556, subdivision (d), states:

The commission shall not find costs mandated by the state, as defined in Section 17514, in any claim submitted by a local agency ... if, after a hearing, the commission finds any one of the following: [¶]...[¶] (d) The local agency ... has the authority to levy service charges, fees, or assessments sufficient to pay for the mandated program or increased level of service.

The constitutionality of Government Code section 17556, subdivision (d), was upheld by the California Supreme Court in *County of Fresno v. State of California*,¹²⁸ in which the court held that the term “costs” in article XIII B, section 6, excludes expenses recoverable from sources other than taxes. The court stated:

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, supra*, 43 Cal.3d at p. 61.) The provision was intended to

¹²⁸ *County of Fresno v. State of California*, *supra*, 53 Cal.3d 482.

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* (1988) 44 Cal.3d 830, 836, fn. 6 [244 Cal.Rptr. 677, 750 P.2d 318].) Specifically, it was designed to protect the tax revenues of local governments from state mandates that would require expenditure of such revenues. Thus, although its language broadly declares that the “state shall provide a subvention of funds to reimburse ... local government for the costs [of a state-mandated new] program or higher level of service,” read in its textual and historical context section 6 of article XIII B requires subvention only when the costs in question can be recovered *solely from tax revenues*.

In view of the foregoing analysis, the question of the facial constitutionality of section 17556(d) under article XIII B, section 6, can be readily resolved. As noted, the statute provides that “The commission shall not find costs mandated by the state ... if, after a hearing, the commission finds that” the local government “has the authority to levy service charges, fees, or assessments sufficient to pay for the mandated program or increased level of service.” Considered within its context, the section effectively construes the term “costs” in the constitutional provision as excluding expenses that are recoverable from sources other than taxes. Such a construction is altogether sound. As the discussion makes clear, the Constitution requires reimbursement only for those expenses that are recoverable solely from taxes. It follows that section 17556(d) is facially constitutional under article XIII B, section 6.¹²⁹

In *Connell v. Superior Court*,¹³⁰ the dispute was whether local agencies had sufficient fee authority for a mandate involving increased purity of reclaimed wastewater used for certain types of irrigation. The court cited statutory fee authority for the reclaimed wastewater, and noted that the water districts did not dispute their fee authority. Rather, the water districts argued that they lacked “sufficient” fee authority in that it was not economically feasible to levy fees sufficient to pay the mandated costs. In finding the fee authority issue is a question of law, the court stated that Government Code section 17556, subdivision (d), is clear and unambiguous, in that its plain language precludes reimbursement where the local agency has the authority, i.e., the right or the power, to levy fees sufficient to cover the costs of the state-mandated program.” The court rejected the districts’ argument that “authority” as used in the statute should be construed as a “practical ability in light of surrounding economic circumstances” because that construction cannot be reconciled with the plain language of section 17556, and would create a vague standard not capable of reasonable adjudication. The court also said that nothing in the fee authority statute (Wat. Code, § 35470) limited the authority of the Districts to levy fees “sufficient” to cover their costs. Thus, the court concluded that the plain language of section

¹²⁹ *County of Fresno v. State of California*, *supra*, 53 Cal.3d 482, 487.

¹³⁰ *Connell v. Superior Court* (1997) 59 Cal.App.4th 382.

17556 made the fee authority issue solely a question of law, and that the water districts could not be reimbursed due to that fee authority.¹³¹

In its April 18, 2008 comments (p. 19), the State Board asserted that the claimants have fee authority to pay for the trash receptacle and inspection programs in the permit. Likewise, the Department of Finance, in its March 2008 comments, states that “some local agencies have set fees to be used toward funding the claimed permit activities” that should be considered offsetting revenues.

Los Angeles County, in its comments submitted in June 2008, states (p. 2) that it is “without sufficient fee authority to recover its costs.” The County points out that the state or regional board has fee authority in Water Code section 13260, subdivision (d)(2)(B)(iii) for inspections of industrial and commercial facilities, but those fees are not shared with the County or the cities.¹³² The County also states that the inspections are to determine compliance with the general industrial permit that is enforced by the regional boards.¹³³

In their comments received June 25, 2008, the city claimants assert that they do not have fee authority. The cities first note that, for facilities that hold state-issued general industrial or general construction stormwater permits, the state already imposes an annual fee and therefore has occupied the field (Wat. Code, § 13260, subd. (d)(2)(B)(iii)). The cities also relate the difficulty of imposing a fee for inspecting restaurants, automotive service facilities, retail gasoline outlets and automotive dealerships because, although the cities could enact a general businesses license on all businesses, “the cities could not charge other businesses for the cost of inspecting this subgroup without again running the risk of charging fees on the other businesses for services not related to regulation of them.” The cities also dispute the State Water Board’s assertion that transit users could be charged a fee for the transit trash receptacles because the County and cities do not operate the transit system.

¹³¹ *Connell v. Superior Court, supra*, 59 Cal.App.4th 382, 398-402.

¹³² Water Code section 13260, subdivision (d)(2)(B)(i) - (iii) states:

- (i) Notwithstanding subparagraph (A), the fees collected pursuant to this section from stormwater dischargers that are subject to a general industrial or construction stormwater permit under the national pollutant discharge elimination system (NPDES) shall be separately accounted for in the Waste Discharge Permit Fund. (ii) Not less than 50 percent of the money in the Waste Discharge Permit Fund that is separately accounted for pursuant to clause (i) is available, upon appropriation by the Legislature, for expenditure by the regional board with jurisdiction over the permitted industry or construction site that generated the fee to carry out stormwater programs in the region. (iii) Each regional board that receives money pursuant to clause (ii) shall spend not less than 50 percent of that money solely on stormwater inspection and regulatory compliance issues associated with industrial and construction stormwater programs.

¹³³ Page 3 of the General Industrial Permit states in part: “Following adoption of this General Permit, the Regional Water Boards shall enforce its provisions.”

In comments on the draft staff analysis submitted in June 2009, the League of California Cities and California State Association of Counties (CSAC) question whether the decisions in *Connell* (1997), and *County of Fresno* (1991), can any longer be cited as good authority for the constitutionality of Government Code section 17556, subdivision (d), given the voter-approval requirement of Proposition 218 (discussed below) added to the state Constitution in 1996. Proposition 218 requires, among other things, that new or increased property-related fees be approved by a majority of the affected property owners, or two-thirds registered voter approval, or weighted ballot approval by the affected property owners, except for property-related fees for sewer, water, or refuse collection services (Cal. Const., art. XIII D, § 6, subd. (c)).

The League and CSAC also urge the Commission, to the extent there may be legal doubt whether a local agency has the authority to impose a fee, to not find that the fee authority exception to reimbursement in Government Code section 17556, subdivision (d), applies.

The Commission disagrees with the League and CSAC. The Commission cannot ignore the precedents of *Connell* or *County of Fresno*, or find that they conflict with article XIII D of the California Constitution (Proposition 218), until the issue is decided by a court of law. With regards to Government Code section 17556, subdivision (d), article III, section 3.5 of the California Constitution forbids the Commission or any state agency from declaring a statute unenforceable or refusing to enforce it on the basis of its unconstitutionality unless an appellate court declares that it is unconstitutional. Since no appellate court has so declared, the Commission is bound to uphold and analyze the application of Government Code section 17556, subdivision (d), to this test claim.

The issue of local fee authority for the municipal stormwater permit activities, however, is one of first impression for the Commission. Although there are no authorities directly on point, some legal principles emerge that guide the analysis, as discussed below.

1. Local fee authority to inspect commercial and industrial and construction sites (parts 4C2a, 4C2b & 4E)

Fee authority to inspect under the police power: The law on local government fee authority begins with article XI, section 7, of the California Constitution, which states: “A county or city may make and enforce within its limits all local, police, sanitary, and other ordinances and regulations not in conflict with general laws.”

The Third District Court of Appeal has stated that article XI, section 7, includes the authority to impose fees. In *Mills v. Trinity County*,¹³⁴ a taxpayer challenged a county ordinance that imposed new and increased fees for county services in processing subdivision, zoning, and other land-use applications that had been adopted without the two-thirds affirmative vote of the county electors. In upholding the fees, the court stated:

[S]o long as the local enactments are not in conflict with general laws, the power to impose valid regulatory fees does not depend on legislatively authorized taxing power but exists pursuant to the direct grant of police power under article XI, section 7, of the California Constitution.¹³⁵

¹³⁴ *Mills v. County of Trinity* (1980) 108 Cal.App.3d 656.

¹³⁵ *Mills v. County of Trinity, supra*, 108 Cal.App.3d 656, 662.

In addition to the *Mills* case, courts have held that water pollution prevention is a valid exercise of government police power.¹³⁶ And municipal inspections in furtherance of sanitary regulations have been upheld as “an exercise of that branch of the police power which pertains to the public health.”¹³⁷

In *Sinclair Paint v. State Board of Equalization*,¹³⁸ the California Supreme Court upheld a fee imposed on manufacturers of paint that funded a child lead-poisoning program, ruling it was a regulatory fee and not a special tax requiring a two-thirds vote under article XIII A, section 4, of the California Constitution (Proposition 13). The court recognized that determining under Proposition 13 whether impositions were fees or taxes is a question of law. In holding that the fee on paint manufacturers was “regulatory” and not a special tax, the court stated:

From the viewpoint of general police power authority, we see no reason why statutes or ordinances calling on polluters or producers of contaminating products to help in mitigation or cleanup efforts should be deemed less “regulatory” in nature than the initial permit or licensing programs that allowed them to operate.

Viewed as a mitigating effects measure, [the fee] is comparable in character to several police power measures imposing fees to defray the actual or anticipated adverse effects of various business operations.¹³⁹ [Emphasis added.]

The *Sinclair Paint* court also recognized that regulatory fees help to prevent pollution when it stated: “imposition of ‘mitigating effects’ fees in a substantial amount ... also ‘regulates’ future conduct by deterring further manufacture, distribution, or sale of dangerous products, and by stimulating research and development efforts to produce safer or alternative products.”¹⁴⁰

Although the court’s holding in *Sinclair Paint* applied to a state-wide fee, the language it used (putting “ordinances” in the same category as “statutes”) recognizes that local agencies also have the police power to impose regulatory fees. Moreover, the court relied on local government police power cases in its analysis.¹⁴¹

¹³⁶ *Freeman v. Contra Costa County Water Dist.* (1971) 18 Cal.App.3d 404, 408.

¹³⁷ *Sullivan v. City of Los Angeles Dept. of Bldg. & Safety* (1953) 116 Cal.App.2d 807, 811.

¹³⁸ *Sinclair Paint v. State Board of Equalization* (1997) 15 Cal.4th 866.

¹³⁹ *Sinclair Paint v. State Board of Equalization*, *supra*, 15 Cal.4th 866, 877.

¹⁴⁰ *Sinclair Paint v. State Board of Equalization*, *supra*, 15 Cal.4th 866, 877.

¹⁴¹ *Sinclair Paint v. State Board of Equalization*, *supra*, 15 Cal.4th 866, 873. The Court stated: “Because of the close, ‘interlocking’ relationship between the various sections of article XIII A (Citation omitted) we believe these “special tax” cases [under article XIII A, § 3, state taxes] may be helpful, though not conclusive, in deciding the case before us. The reasons why particular fees are, or are not, “special taxes” under article XIII A, section 4, [local government taxes] may apply equally to section 3 cases.”

A regulatory fee is an imposition that funds a regulatory program¹⁴² and is “enacted for purposes broader than the privilege to use a service or to obtain a permit. ...the regulatory program is for the protection of the health and safety of the public.”¹⁴³ Courts will uphold regulatory fees if they comply with the following principles:

Fees charged for the associated costs of regulatory activities are not special taxes under an article XIII A section 4 analysis if the “fees do not exceed the reasonable cost of providing services necessary to the activity for which the fee is charged and [they] are not levied for unrelated revenue purposes.” [Citations omitted] “A regulatory fee may be imposed under the police power when the fee constitutes an amount necessary to carry out the purposes and provisions of the regulation.” [Citations omitted] “Such costs ... include all those incident to the issuance of the license or permit, investigation, inspection, administration, maintenance of a system of supervision and enforcement.” [Citations omitted] Regulatory fees are valid despite the absence of any perceived “benefit” accruing to the fee payers. [Citations omitted] Legislators “need only apply sound judgment and consider ‘probabilities according to the best honest viewpoint of informed officials’ in determining the amount of the regulatory fee.”¹⁴⁴ [Emphasis added.]

Local fees for inspections of commercial and industrial facilities, and construction sites, would be preventative and could be imposed to comply with the criteria the courts have used to uphold regulatory fees, articulated above. And the regulatory fees fall within the local police power to prevent, clean up, or mitigate pollution.

Therefore, pursuant to article XI, section 7, the Commission finds that the claimants have fee authority within the meaning of Government Code section 17556, subdivision (d), sufficient to carry out the mandated activities in parts 4C2a, 4C2b and 4E of the permit. Therefore, the Commission finds that there are no “costs mandated by the state” within the meaning of Government Code section 17514 and 17556 to perform the activities in those parts of the permit (commercial, phase I, and construction site inspections and related activities).

In fact, in June 2005, claimant Covina adopted stormwater inspection fees on restaurants, retail gasoline outlets, automotive service facilities, etc., as part of its business license fee, expressly for the purpose of complying with the permit at issue in this test claim.¹⁴⁵

Statutory fee authority to operate and maintain storm drains: Health and Safety Code section 5471 expressly authorizes cities and counties to charge fees for storm drainage maintenance and operation services:

¹⁴² *California Assn. of Prof. Scientists v. Dept. of Fish and Game* (2000) 79 Cal.App.4th 935, 950.

¹⁴³ *Ibid.*

¹⁴⁴ *California Assn. of Prof. Scientists v. Dept. of Fish and Game, supra*, 79 Cal.App.4th 935, 945.

¹⁴⁵ City of Covina, Resolution No. 05-6455.

[A]ny entity¹⁴⁶ shall have power, by an ordinance approved by a two-thirds vote of the members of the legislative body thereof, to prescribe, revise and collect, fees, tolls, rates, rentals, or other charges for services and facilities furnished by it, either within or without its territorial limits, in connection with its water, sanitation, storm drainage, or sewerage system. ... Revenues derived under the provisions in this section, shall be used only for the acquisition, construction, reconstruction, maintenance, and operation of water systems and sanitation, storm drainage, or sewerage facilities

The statute makes no mention of “inspecting” commercial or industrial facilities or construction sites. Rather, the fee revenues are used for “maintenance and operation” of storm drainage facilities. Thus, for the types of businesses regulated by the permit (restaurants, automotive service facilities, retail gasoline outlets, automotive dealerships, phase I facilities, as defined, and construction sites) the Commission cannot find that pursuant to Health and Safety Code section 5471, the claimants have fee authority “sufficient” to pay for the mandated inspection program within the meaning of Government Code section 17556. The statute’s “operation and maintenance” of storm drainage facilities does not encompass the state-mandated inspections of the facilities or construction sites specified in the permit.

2. Local fee authority under the police power and the Public Resources Code to place and maintain trash receptacles at transit stops (Permit, 4F5c3)

As discussed above, part 4F5c3 of the permit requires the County and cities to place and maintain trash receptacles at transit stops in their jurisdictions. Public Resources Code section 40059, subdivision (a), suggests that the County and cities have fee authority to perform this activity as follows:

(a) Notwithstanding any other provision of law, each county, city, district, or other local governmental agency may determine all of the following: (1) Aspects of solid waste 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 statute gives local governments the authority over the “nature, location and extent of providing solid waste handling services” and is broad enough to encompass “placing and maintaining” receptacles at transit stops. The statute also provides local governments with broad authority over the “level of services, charges and fees.”

The draft staff analysis determined that the claimants had fee authority under Public Resources Code section 40059 and the police power (Cal. Const. art. XI, § 7) to install and maintain trash receptacles at transit stops and recommended that the Commission deny the test claim with respect to part 4F5c3 of the permit.

¹⁴⁶ Entity is defined to include “counties, cities and counties, cities, sanitary districts, county sanitation districts, sewer maintenance districts, and other public corporations and districts authorized to acquire, construct, maintain and operate sanitary sewers and sewerage systems.” Health and Safety Code section 5470, subdivision (e).

The city claimants, in June 2009 comments on the draft staff analysis, argue that section 40059, subdivision (a), does not apply here because it was adopted as a "savings provision" in legislation establishing the Integrated Waste Management Board (IWMB) in order to ensure that local trash collection agreements would not be affected by the IWMB legislation. The cities also cite *Waste Resources Technologies v. Department of Public Health* (1994) 23 Cal.app.4th 299, which held that the statute reflected the Legislature's intent to allow for local regulation of waste collection. According to the cities, the statute "was not intended as an *imprimatur* for local agencies to assess fees on their residents or on businesses to pay for the costs of trash generated by transit users when that requirement was established not as a matter of local choice but rather state mandate." (Comments, p. 7.)

The cities also argue that a valid fee must have a causal connection or nexus between the person or entity paying the fee, and the benefit or burden being addressed. Claimants assert that there is no group on which the claimants can assess a fee that has a relationship with the trash receptacles because the burden is created by the transit riders but benefits the public at large. City claimants also argue that they cannot assess fees on transit agencies or increase transit fares to recoup the cost of installing and maintaining trash receptacles because they have no authority to do so. As an example, the claimants cite the Metropolitan Transit Authority's (the largest public transit operator in Los Angeles County) authority to set fares (Pub. Util. Code, § 30638) that rests exclusively with the MTA's board.

As to the police power, City claimants argue that they cannot use it to assess fees on property owners or businesses for the cost of transit trash receptacles because doing so would collect more than the actual cost of the collection and thereby create a special tax that would require a two-thirds vote (Cal. Const. art. XIII A, § 4). And according to the claimants, they do not have statutory fee authority to assess property owners for the cost of installing and maintaining trash receptacles. Finally, claimants assert that a fee on property owners for transit stop trash receptacles, even if it were not a special tax, would require a vote under Proposition 218 (Cal. Const., art. XIII D).

The County of Los Angeles, in its June 2009 comments on the draft staff analysis, argues that local agencies do not have fee authority over bus operators, and for support cites *Biber Electric Co. v. City of San Carlos* (1960) 181 Cal.App.2d 342, which held that a local fee would conflict with a general state Vehicle Code provision. The County also asserts that no fee could be imposed on bus riders because the pollution prevention would benefit all county residents, not only those riding buses, and that such a fee would require a vote under Proposition 218 because the fee's purpose would be excluding trash from storm drains rather than routine collection.

The League of California Cities and CSAC, in their June 2009 comments on the draft staff analysis, criticize the conclusion that fee authority exists for transit trash receptacles because the analysis does not discuss upon whom the fee would be imposed. They also dispute the application of the *Connell* case because the issue is not whether the fee is economically feasible, but whether it is legally feasible. The League and CSAC point out that local agencies have no authority to impose the fee on transit agencies or their ridership, and that Proposition 218 imposes procedural and substantive requirements on adjacent business owners and residences, so that the local agency could not impose the fee or assessment on them without their consent. Thus, the League and CSAC argue that the local agencies do not have fee authority pursuant to

Government Code section 17556, subdivision (d): “sufficient to pay for the mandated program or increased level of service.”

After considering these arguments, the Commission agrees that Government Code section 17556, subdivision (d), does not apply to the placement and maintenance of transit trash receptacles as specified in the permit because the claimants do not have the authority to impose fees.

Michael Lauffer was asked at the Commission hearing on July 31, 2009, why the transit trash requirement in the permit was not imposed on transit agencies. Mr. Lauffer testified that transit agencies were not named historically on the permits, and that the Board, at the time it established the requirements, thought it was appropriate to place them on municipalities. He also testified that nothing would prevent the municipalities under the permit from working with Metropolitan Transit Authority (MTA) to cooperatively implement the transit trash requirement, or to have the MTA carry out the primary obligation for meeting it. He added that the transit stops were public facilities, the language used in the federal regulations, which is why the permit included the requirement to place the trash receptacles there.¹⁴⁷

Because the trash receptacles are required to be placed at transit stops that would typically be on city property (sidewalks)¹⁴⁸ or transit district property (for bus or metro or subway stations), there are no entities on which the claimants would have authority to impose the fees. The plain language of Public Resources Code section 40059 provides no fee authority over transit districts or transit riders, and the Metropolitan Transit Authority’s fee statutes grant fee authority exclusively to its board (Pub. Util. Code, §§ 30638 & 130051.12).

Additionally, the claimants do not have fee authority under the police power because they do not provide the “services necessary to the activity for which the fee is charged.”¹⁴⁹

Thus, the Commission finds that part 4F5c3 of the permit imposes costs mandated by the state within the meaning of Government Code section 17514 and 17556.

The remainder of this analysis addresses the arguments raised by the claimants that their local fee authority for inspections would be preempted by a statute granting the state fee authority, and that a local fee would be a special tax. The application of Proposition 218 on the fee authority for inspection is also discussed.

¹⁴⁷ Commission on State Mandates, Public Hearing, Reporter’s Transcript of Proceedings, July 31, 2009, pages 52-53.

¹⁴⁸ “The general rule views the sidewalk as part of the street; it ... holds the city liable for pedestrian injuries caused by the dangerous condition of the sidewalk.” *Low v. City of Sacramento* (1970) 7 Cal.App.3d 826, 832.

¹⁴⁹ *California Assn. of Prof. Scientists v. Dept of Fish and Game, supra*, 79 Cal.App.4th, 935, 945.

3. Local fee authority to inspect industrial or construction sites (parts 4C2a, 4C2b & 4E) performed under the statewide general permits would not be preempted by state fee authority in Water Code section 13260, subdivision (b)(2)(B)

In their comments submitted in June 2008 (p. 14), the city claimants argue that the permittees cannot impose fees for inspections of industrial or commercial or construction sites as follows:

[W]ith respect to facilities that hold state-issued general industrial or general construction stormwater permits, the state had occupied the field. ...[T]he state already imposes an annual fee on general industrial and general construction stormwater permittees. That fee is explicitly designated, in part, to cover inspections of these facilities and regulatory compliance. Water Code § 13260(d)(2)(B).

This state fee thus preempts any fee that the Cities or County could charge for inspection of these facilities.

The cities also assert that in 2001, the regional board initiated negotiation of a contract with the County whereby the regional board would pay the County to perform inspections of facilities that held general industrial stormwater permits (the 'Phase I facilities') on the regional board's behalf. Immediately after the permit was issued, the regional board terminated those negotiations.

In comments submitted in June 2009 on the draft staff analysis, city claimants clarify that their comments "are not directed towards the claimants' ability to assess fees for inspections of the other commercial establishments, i.e., restaurants and automotive service facilities, retail gasoline outlets and automobile dealerships, or Phase I facilities or construction sites that are not required to hold a state-issued general industrial or general construction stormwater permit."

According to the city claimants, fees for inspecting the phase I industrial facilities and construction sites under the statewide permits (the GIASP and GCASP) would be preempted by state fee authority in Water Code section 13260, under which the State Board collects fees for inspecting those sites. The city claimants state the fact that the specific destination of the funds from the fees in Water Code section 13260, subdivision (d)(2)(iii) is spelled out is evidence of intent that the Legislature fully occupied the field for inspections of GIASP and GCASP permit holders.

Because the fee authority to inspect commercial facilities (identified in the permit as restaurants, automotive service facilities, retail gasoline outlets and automotive dealerships) is not contested by the city claimants, the discussion below is limited to industrial and construction site inspections performed under the statewide permits concurrently with the permit at issue in this claim.

The California Supreme Court has outlined the following rules as to when a statute preempts a local ordinance by fully occupying the field:

A local ordinance *enters a field fully occupied* by state law in either of two situations-when the Legislature "expressly manifest[s]" its intent to occupy the legal area or when the Legislature "impliedly" occupies the field. (*Sherwin-Williams, supra*, 4 Cal.4th at p. 898, 16 Cal.Rptr.2d 215, 844 P.2d 534; see also 8 Witkin, Summary of Cal. Law (10th ed. 2005) Constitutional Law, § 986, p.

551[“[W]here the Legislature has manifested an intention, expressly or by implication, wholly to occupy the field ... municipal power [to regulate in that area] is lost.”].)

When the Legislature has not expressly stated its intent to occupy an area of law, we look to whether it has *impliedly* done so. This occurs in three situations: when “ (1) the subject matter has been so fully and completely covered by general law as to clearly indicate that it has become exclusively a matter of state concern; (2) the subject matter has been partially covered by general law couched in such terms as to indicate clearly that a paramount state concern will not tolerate further or additional local action; or (3) the subject matter has been partially covered by general law, and the subject is of such a nature that the adverse effect of a local ordinance on the transient citizens of the state outweighs the possible benefit to the locality.” (*Sherwin-Williams, supra*, 4 Cal.4th at p. 898, 16 Cal.Rptr.2d 215, 844 P.2d 534.)¹⁵⁰

The state statute at issue, the stormwater fee statute, in subdivision (d) of section 13260 of the Water Code, reads in pertinent part:

(d)(1)(A) Each person who is subject to subdivision (a) [who discharges waste that affects the quality of waters of the state] or (c) shall submit an annual fee according to a fee schedule established by the state board.

(B) The total amount of annual fees collected pursuant to this section shall equal that amount necessary to recover costs incurred in connection with the issuance, administration, reviewing, monitoring, and enforcement of waste discharge requirements and waivers of waste discharge requirements.

(C) Recoverable costs include, but are not limited to, costs incurred in reviewing waste discharge reports, prescribing terms of waste discharge requirements and monitoring requirements, enforcing and evaluating compliance with waste discharge requirements and waiver requirements, conducting surface water and groundwater monitoring and modeling, analyzing laboratory samples, and reviewing documents prepared for the purpose of regulating the discharge of waste, and administrative costs incurred in connection with carrying out those actions. [¶]...[¶]

(2) Subject to subparagraph (B), any fees collected pursuant to this section shall be deposited in the Waste Discharge Permit Fund which is hereby created. The money in the fund is available for expenditure by the state board, upon appropriation by the Legislature, for the purposes of carrying out this division.

(B) (i) Notwithstanding subparagraph (A), the fees collected pursuant to this section from stormwater dischargers that are subject to a general industrial or construction stormwater permit under the national pollutant discharge elimination system (NPDES) shall be separately accounted for in the Waste Discharge Permit Fund.

¹⁵⁰ *O'Connell v. City of Stockton* (2007) 41 Cal.4th 1061, 1068. Emphasis in original.

(ii) Not less than 50 percent of the money in the Waste Discharge Permit Fund that is separately accounted for pursuant to clause (i) is available, upon appropriation by the Legislature, for expenditure by the regional board with jurisdiction over the permitted industry or construction site that generated the fee to carry out stormwater programs in that region. (iii) Each regional board that receives money pursuant to clause (ii) shall spend not less than 50 percent of that money solely on stormwater inspection and regulatory compliance issues associated with industrial and construction stormwater programs. (Wat. Code, § 13260, subds. (d)(1) & (d)(2).) [Emphasis added.]

The State Water Board has adopted regulations to implement the stormwater fee that include fee schedules based on the threat to water quality and a complexity rating.¹⁵¹ At the hearing on July 31, 2009, Michael Lauffer of the State Water Board testified that the fee is established annually by the State Board, based on the legislative appropriation for the boards to carry out their responsibilities. Mr. Lauffer testified that the annual fee for industrial facilities under this Water Code statute is \$833, and the fee for construction facilities is variable, starting at \$238, plus \$24 per acre, with a cap of \$2,600.¹⁵²

The issue is whether Water Code section 13260, subdivision (d)(1) and (d)(2), preempts local fee authority. In resolving this, we look for express or implied preemption or intent to occupy the field.¹⁵³

First, there is no express intent on the face of the Water Code statute to preempt any local fee ordinance because the statute is silent on local fees. As to implied intent to occupy the field of law, the Supreme Court has stated that it may be found if:

(1) the subject matter has been so fully and completely covered by general law as to clearly indicate that it has become exclusively a matter of state concern; (2) the subject matter has been partially covered by general law couched in such terms as to indicate clearly that a paramount state concern will not tolerate further or additional local action; or (3) the subject matter has been partially covered by general law, and the subject is of such a nature that the adverse effect of a local ordinance on the transient citizens of the state outweighs the possible benefit to the locality.¹⁵⁴

The city claimants, in their comments on the draft staff analysis submitted in June 2009, argue as follows with regard to Water Code section 13260:

Here, the Legislature adopted a statute that specifically established a mechanism for fees to be assessed on GIASP and GCASP holders, for those funds to be

¹⁵¹ Fees for NPDES permits for municipal separate stormwater sewer systems are in subdivision (b) of section 2200 of title 23 of the California Code of Regulations.

¹⁵² Commission on State Mandates, Public Hearing, Reporter's Transcript of Proceedings, July 31, 2009, page 111.

¹⁵³ *O'Connell v. City of Stockton*, *supra*, 41 Cal.4th 1061, 1068.

¹⁵⁴ *O'Connell v. City of Stockton*, *supra*, 41 Cal.4th 1061, 1068.

segregated and sent to the regional boards, and for a specified amount of those funds (“not less than 50 percent of the money”) to be used by the regional boards “solely” on stormwater inspection and regulatory compliance issues associated with industrial and construction stormwater programs. Water Code section 13260(d)(2)(iii). Such a specific determination as to the destination of the funds for the purposes of inspection and compliance evidences the intent of the Legislature that the issue of funding for GIASP and GCASP inspections be “fully occupied.”

The Commission disagrees. Specific determination of funds is not a factor the courts use to determine whether a state statute fully occupies the field. Applying the Supreme Court’s factors from the *O’Connell v. City of Stockton* case, the subject matter of stormwater fees has not been “so fully and completely covered by general law as to clearly indicate that it has become exclusively a matter of state concern.”¹⁵⁵ The Water Code’s single fee statute for state permit holders does not rise to that level. Second, the Commission cannot find that “the subject matter has been partially covered by general law couched in such terms as to indicate clearly that a paramount state concern will not tolerate further or additional local action.”¹⁵⁶ No clear indication of a paramount state concern can be found on the face of the Water Code fee statute. And the third instance does not apply because the subject is not “of such a nature that the adverse effect of a local ordinance on the transient citizens of the state outweighs the possible benefit to the locality.”

The legislative history of the Water Code provision does not indicate any intent to occupy the field. The legislative history of the amendment to require 50 percent of the fees to be used for stormwater inspection and regulatory compliance issues indicated as follows:

...California's 1994 Water Quality Inventory Report states that storm waters and urban run-off are the leading sources of pollution in California estuaries and ocean waters. Proponents argue that non-compliance is rampant, with approximately 10,000 industries in the Los Angeles area alone who are required but have failed to obtain storm water permits. Further, proponents point out that the Los Angeles Regional Water Quality Control Board has only two staff to contact, educate, and control each site and question whether adequate revenues are returned to the regional boards for this program.¹⁵⁷

The Legislature acknowledged that the state inspections at the time the statute was enacted were inadequate to prevent the pollution that the statewide permits were intended to prevent.

And the regional board, via the permit, acknowledges the role of both local regulation and state regulation under the general permits. Page 11 of the permit states:

¹⁵⁵ *O’Connell v. City of Stockton, supra*, 41 Cal.4th 1061, 1068.

¹⁵⁶ *Ibid.*

¹⁵⁷ Senate Rules Committee, Office of Senate Floor Analyses, third reading analysis of Assem. Bill No. 1186 (1997-1998 Reg. Sess.) as amended August 6, 1997.

The U.S. EPA guidance anticipates coordination of the state-administered programs for industrial and construction activities with the local agency program to reduce pollutants in stormwater discharges to the MS4. The Regional Board is the enforcement authority in the Los Angeles Region for the two statewide general permits regulating discharges from industrial facilities and construction sites, and all NPDES stormwater and non-stormwater permits issued by the Regional Board. These industrial and construction sites and discharges are also regulated under local laws and regulations.

As to inspection of construction sites, section 4E of the permit states:

If compliance has not been achieved, and the site is also covered under a statewide general construction stormwater permit, each Permittee shall enforce their local ordinance requirements, and if non-compliance continues the Regional Board shall be notified for further joint enforcement actions.

Moreover, the Water Code statute provides broader fee authority than a local inspection fee. The statute requires the regional board to “spend not less than 50 percent of that money solely on stormwater inspection and regulatory compliance issues associated with industrial and construction stormwater programs.” (Wat. Code, § 13260, subd. (d)(2)(iii). Emphasis added.) Because the fees for GIASP and GCASP permit holders may also be spent on “regulatory compliance issues” in addition to the inspections, the Commission cannot find that a local fee ordinance would duplicate or be “coextensive” with state fee authority, and therefore cannot find that the state fee statute occupies the field. A local fee would merely partially overlap with the state fee.

As for the phase I facilities¹⁵⁸ subject to inspection, the inspections do not occupy the field because the permit specifies that these need not be inspected if the regional board has inspected them within the past 24 months.

According to the State Board’s April 2008 comments, the overlapping fees were envisioned by U.S./EPA.

In addition to the requirements for permits issued to municipalities, the Water Boards are also mandated to issue permits to entities that discharge stormwater “associated with industrial activity.” (fn. CWA § 402(p)(2)(B)). As part of its responsibilities for its in lieu program, the State Boards must administer and enforce all of its permits. (fn. CWA § 402(p).) The State Water Board has issued

¹⁵⁸ On page 62 of the permit, U.S. EPA Phase I Facilities are defined as “facilities in specified industrial categories that are required to obtain an NPDES permit for storm water discharges, as required by 40 CFR 122.26(c). These categories include: (i) facilities subject to storm water effluent limitation guidelines, new source performance standards, or toxic pollutant effluent standards (40 CFR N); (ii) manufacturing facilities; (iii) oil and gas/mining facilities; (iv) hazardous waste treatment, storage, or disposal facilities; (v) landfills, land application sites, and open dumps; (vi) recycling facilities; (vii) steam electric power generating facilities; (viii) transportation facilities; (ix) sewage or wastewater treatment works; (x) light manufacturing facilities.

permits for industrial and construction discharges of stormwater, and the Los Angeles Water Board administers those permits within its jurisdiction. Therefore, the Los Angeles Water Board does conduct inspections at businesses in Los Angeles County to ensure compliance with the state permits. In addition, the MS4 Permit requires the permittees also to conduct inspections. This approach, which may result in two different entities inspecting the same businesses to review stormwater practices, was specifically envisioned and required by U.S. EPA in adopting its stormwater regulations.

U.S./EPA, in its "MS4 Program Evaluation Guidance" document, acknowledged regulation at both the local and state levels as follows:¹⁵⁹

In addition to regulation of construction site stormwater at the local level, EPA regulations also require construction sites disturbing greater than one acre to obtain an NPDES permit. This permit can be issued by the state permitting authority or EPA, depending on whether the state has been delegated the NPDES authority. This dual regulation of construction sites at both the local and state or federal level can be confusing to permittees and construction operators.¹⁶⁰

In fact, as to inspection duties and costs under two permit systems, one court has stated regarding a permit similar to the one in this claim:

Rancho Cucamonga and the other permittees are responsible for inspection construction and industrial sites and commercial facilities within their jurisdiction for compliance with the enforcement of local municipal ordinance and permits. But the Regional Board continues to be responsible under the 2002 NPDES permit for inspections under the general permits.¹⁶¹

The reasoning of the *City of Rancho Cucamonga* case is instructive because a local regulatory fee could be used for local-government inspections, and the state fee is for state or regional inspections under the general statewide permits.

The state permit program and local inspection program under the regional board's permit can be viewed as two programs with similar, overlapping goals. Viewed in this way, the fees for two sets of inspections for construction sites (or for phase I facilities not inspected by the regional board within the past two years) would not necessarily exceed the costs of both sets of inspections.

In short, a local regulatory fee ordinance that provided for inspections of the industrial facilities and construction sites specified in the permit (parts 4C2a, 4C2b & 4E) would not be preempted

¹⁵⁹ State Water Resources Control Board, comments submitted April 18, 2008, attachment 33.

¹⁶⁰ *Ibid.*

¹⁶¹ *City of Rancho Cucamonga v. Regional Water Quality Control Board, supra*, 135 Cal.App.4th 1377. The test claim record is silent as to the number of facilities within the permit area that are subject to the General Industrial Activity Storm Water Permit, or how many construction sites within the permit area are subject to the General Construction Activity Storm Water Permit.

by the state fee authority in Water Code section 13260 or in title 23 of the California Code of Regulations.

4. Local fee authority to inspect industrial or construction sites covered under the state permits would not be a “special tax” under article XIII A, section 4, of the California Constitution

In their June 2008 rebuttal comments, the city claimants assert that they do not have sufficient fee authority under Government Code section 17556, subdivision (d). They focus on facilities that hold state-issued general industrial or construction stormwater permits and pay the state-imposed fees pursuant to Water Code section 13260, arguing that an additional local fee for inspecting these facilities would be considered a special tax. According to the city claimants:

In order for a fee to be considered a “fee” as opposed to a “special tax,” the fee cannot exceed the reasonable cost of providing the services necessary for which the fee is charged. See *Mills v. County of Trinity* (1980) 108 Cal.App.3d 656, 659-660. Any fee assessed by the Cities or the County for inspection of these facilities would be a double assessment, and thus run afoul of this rule.

The city claimants, in their June 2009 comments on the draft staff analysis, again assert that forcing claimants to recover their costs for inspecting the state-permitted GIASP and GCASP facilities and sites, the regional board is creating a special tax on holders of those state permits.

Special taxes are governed by article XIII A, section 4, of the California Constitution:

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.

Government Code section 50076 states that a fee is not a special tax under article XIII A, section 4, if the fees are: (1) “charged in connection with regulatory activities which fees do not exceed the reasonable cost of providing services necessary to the activity for which the fee is charged,” and (2) “are not levied for unrelated revenue purposes.” The California Supreme Court has reaffirmed this rule.¹⁶²

The Commission finds that a local regulatory stormwater fee, if appropriately calculated and charged, would not be a special tax within the meaning of article XIII A, section 4. There is no evidence in the record that a local regulatory fee charged for the stormwater inspections would exceed the reasonable cost of providing the inspections and related services or would otherwise violate the criteria in section 50076.

As the court stated in the *Connell v. Superior Court* case discussed above:

¹⁶² *Sinclair Paint v. State Board of Equalization, supra*, 15 Cal.4th at p. 876: “[T]he term “special taxes” in article XIII A, section 4, does not embrace fees charged in connection with regulatory activities which fees do not exceed the reasonable cost of providing services necessary to the activity for which the fee is charged and which are not levied for unrelated revenue purposes.”

The [Water] Districts argue any fees levied by the districts “cannot exceed the cost to the local agency to provide such service,” because such excessive fees would constitute a special tax. However, the districts fail to explain how this is an issue. No one is suggesting the districts levy fees that exceed their costs.¹⁶³

Similarly, in this claim no one is suggesting that the local agencies levy regulatory fees that exceed their costs. Therefore, the Commission finds that a local regulatory fee for stormwater would not be a “special tax” under article XIII A, section 4, of the California Constitution for the activities at issue in the permit.

5. The local fee to inspect industrial and construction sites would not be subject to voter approval under article XIII D (Proposition 218) of the California Constitution

Some local government fees are subject to voter approval under article XIII D of the California Constitution, as added by Proposition 218 (1996). Article XIII D defines a property-related fee or charge as any levy other than an ad valorem tax, a special tax, or an assessment, imposed by an agency on a parcel or a person as an incident of property ownership, including a user fee or charge for a property-related service. Among other things, new or increased property-related fees require a majority-vote of the affected property owners, or two-thirds registered voter approval, or weighted ballot approval by the affected property owners (article XIII D, § 6, subd. (c)). Exempt from voter approval, however, are property-related fees for sewer, water, or refuse collection services (*Ibid*).

In 2002, an appellate court decision in *Howard Jarvis Taxpayers Association v. City of Salinas* (2002) 98 Cal.App.4th 1351, found that a city's charges on developed parcels to fund stormwater management were property-related fees, and were not covered by Proposition 218's exemption for "sewer" or "water" services. This means that an election would be required to impose storm water fees if they are imposed “as an incident of property ownership.”

The Commission finds that local fees for inspections of phase I facilities, restaurants, retail gasoline outlets, automotive dealerships, etc., would not be subject to the vote requirement of Proposition 218. In a case involving inspections of apartments in the City of Los Angeles in which a fee was charged to landlords, the California Supreme Court ruled that the regulatory fee for inspecting apartments was not a “levy ... upon a parcel or upon a person as an incident of property ownership, including a user fee or charge for a property-related service”¹⁶⁴ within the meaning of Proposition 218. The court interpreted the phrase “incident of property ownership” as follows:

The foregoing language means that a levy may not be imposed on a property owner as such-i.e., in its capacity as property owner-unless it meets constitutional prerequisites. In this case, however, the fee is imposed on landlords not in their capacity as landowners, but in their capacity as business owners. The exaction at issue here is more in the nature of a fee for a business license than a charge

¹⁶³ *Connell v. Superior Court, supra*, 59 Cal.App.4th 382, 402.

¹⁶⁴ That is the definition of “fee” or “charge” in article XIII D, section 2, subdivision (e).

against property. It is imposed only on those landowners who choose to engage in the residential rental business, and only while they are operating the business.¹⁶⁵

[¶]...[¶] In other words, taxes, assessments, fees, and charges are subject to the constitutional strictures when they burden landowners *as landowners*. The [City of Los Angeles'] ordinance does not do so: it imposes a fee on its subjects by virtue of their ownership of a business-i.e., because they are landlords.¹⁶⁶

Following the reasoning of the *Apartment Assoc.* case, the inspection fees on restaurants, retail gasoline outlets, automotive dealerships, phase I facilities, etc., like the fee in *Apartment Assoc.*, would not be imposed on landowners as landowners, nor as an incident of property ownership, but by virtue of business ownership. Thus, the inspection fee would fall outside the voter requirement of Proposition 218.

As to the fees for inspecting construction sites, the Commission finds that they too would not be subject to Proposition 218's voter requirement. Article XIII D of the California Constitution states that it shall not be construed to "affect existing laws relating to the imposition of fees or charges as a condition of property development."¹⁶⁷

Moreover, the California Supreme Court, in determining whether water connection fees are within the purview of Proposition 218, reasoned that "water service" fees were within the meaning of "property-related services" but "water connection" fees were not.

Rather, we conclude that a water service fee is a fee or charge under article XIII D if, but only if, it is imposed "upon a person as an incident of property ownership." (Art. XIII D, § 2, subd. (e).) A fee for ongoing water service through an existing connection is imposed "as an incident of property ownership" because it requires nothing other than normal ownership and use of property. But a fee for making a new connection to the system is not imposed "as an incident of property ownership" because it results from the owner's voluntary decision to apply for the connection.¹⁶⁸

The Supreme Court's reasoning applies to local stormwater fees for inspecting construction sites. That is, the fee would not be an incident of property ownership because it results from the owner's voluntary decision to build on or develop the property. Therefore, the Commission finds that local inspection fees for stormwater compliance at construction sites would not be within the purview of the election requirement of Proposition 218. A recent report by the Office of the Legislative Analyst concurs with this conclusion.¹⁶⁹

¹⁶⁵ *Apartment Assoc. of Los Angeles County v. City of Los Angeles* (2001) 24 Cal.4th 830, 839-840.

¹⁶⁶ *Id.* at 842 [Emphasis in original.]

¹⁶⁷ Article XIII D, section 1, subdivision (b).

¹⁶⁸ *Richmond v. Shasta Community Services Dist.* (2004) 32 Cal.4th 409, 427.

¹⁶⁹ "Local governments finance stormwater clean-up services from revenues raised from a variety of fees and, less frequently, through taxes. Property owner fees for stormwater services typically require approval by two-thirds of the voters, or a majority of property owners.

In its June 2009 comments, the County disagrees that stormwater pollution fees would not be subject to the voter requirement in Proposition 218, or that fee authority exists. In support, the County points to unadopted legislation pending in the current or in past legislative sessions that would provide fee authority or expressly exempt stormwater fees from the Proposition 218 voting requirement. For example SCA 18 (2009) would add “stormwater and urban runoff management” fees to those expressly exempted from the vote requirement in article XIII D, putting them in the same category as trash and sewer fees. SB 2058 (2002) would have required the regional water boards to share their fees with counties and cities. And SB 210 (2009) would provide cities and counties with stormwater regulatory or user-based fee authority.

The Commission finds that the unadopted legislative proposals cited by the County are unconvincing to show a lack of regulatory fee authority for business inspections as discussed above. First, courts have said that “As evidence of legislative intent, unadopted proposals have been held to have little value.”¹⁷⁰ Second, if they were enacted, the legislative proposals would grant broader fee authority than is found in this analysis. For example, SCA 18, by adding a stormwater exception from the vote requirement in Proposition 218, would authorize *user* fees on residential property for stormwater and urban runoff programs, whereas this analysis addresses the much narrower issue of *regulatory* fees on businesses for inspections. Likewise, SB 2058 would have required the State Board’s permit fees to be shared with “counties and cities” for the broad purpose of carrying out stormwater programs rather than for the narrower purpose of inspecting businesses. And SB 210 would likewise provide fee authority that is broader than regulatory fees; as the May 28, 2009 version expressly states in proposed section 16103, subdivision (c), of the Water Code: “The fees authorized under subdivision (a) may be imposed as user-based or regulatory fees consistent with this chapter.” In short, the legislative proposals cited by the County do not indicate that fee authority does not exist. Rather, the proposals would, if enacted, provide broader fee authority than now exists.

In comments received June 3, 2009, the Bay Area Stormwater Management Agencies Association (BASMAA) contends that many permit requirements relate to local communities and their residents rather than specific business activities, and require public services that are essentially incident to real property ownership, and/or may only be financed via fees that remain subject to the voting requirements of Proposition 218 or increased property taxes. BASMAA also states that many permit activities would fall on joint power authorities or special districts that have no fee authority, or for which exemptions from Proposition 218 would not be applicable. BASMAA requests that the analysis be revised to revisit the conclusions regarding “funded vs. unfunded” requirements, and to recognize and distinguish the many types of stormwater activities for which regulatory fees would not apply.

Developer fees and fees imposed on businesses that contribute to urban runoff, in contrast, are not restricted by Proposition 218 and may be approved by a vote of the governing body. Taxes for stormwater services require approval by two-thirds of the electorate.” Office of the Legislative Analyst. *California’s Water: An LAO Primer* (October 22, 2008) page 56.

¹⁷⁰ *County of Sacramento v. State Water Resources Control Board* (2007) 153 Cal.App.4th 1579, 1590.

The Commission disagrees. BASMAA raises issues that are outside the scope of the portions of the Los Angeles stormwater permit (parts 4C2a, 4C2b, 4E & 4Fc3) that were pled by the test claimants. Because the Commission's jurisdiction is limited by those parts of the permit pled in the test claim, it cannot opine on other issues outside the pleadings, even if it would raise issues closely related to other NPDES permits (or even other parts of this NPDES permit).

In sum, the Commission finds that the inspections and related activities at issue in the Los Angeles stormwater permit are not subject to voter approval in article XIII D of the California Constitution (Proposition 218), so a regulatory fee ordinance for stormwater inspections would not be subject to voter approval.

Given the existence of local regulatory fee authority under the police power (Cal. Const, art. XI, § 7), and lacking any evidence or information to the contrary, the Commission finds that the claimants' authority to adopt a regulatory fee is sufficient (pursuant to Gov. Code, § 17556, subd. (d)) to pay for the inspections of restaurants, automotive service facilities, retail gasoline outlets, automotive dealerships, phase I facilities, as defined, and construction sites, and related activities specified in the permit. Therefore, for the inspections and related activities at issue, the Commission finds that there are no "costs mandated by the state" within the meaning of Government Code sections 17514 and 17556.

CONCLUSION

For the reasons discussed above, the Commission finds that the following activity in part 4F5c3 of the permit is a reimbursable state mandate within the meaning of Government Code sections 17514 and 17556: For local agencies subject to the permit that are not subject to a trash TMDL¹⁷¹ to: "Place trash receptacles at all transit stops within its jurisdiction that have shelters no later than August 1, 2002, and at all transit stops within its jurisdiction no later than February 3, 2003. All trash receptacles shall be maintained as necessary."

The Commission also finds that the remainder of the permit (parts 4C2a, 4C2b & 4E) does not impose costs mandated by the state within the meaning of article XIII B, section 6 of the California Constitution because the claimants have fee authority (under Cal. Const. article XI, § 7) within the meaning of Government Code section 17556, subdivision (d), sufficient to pay for the activities in those parts of the permit.

¹⁷¹ A Total Maximum Daily Load, or TMDL, is a calculation of the maximum amount of a pollutant that a waterbody can receive and still safely meet water quality standards.

Abbreviations

BMP - Best management practice
CWA - Clean Water Act
GCASP - General Construction Activity Storm Water Permit
GIASP - General Industrial Activity Storm Water Permit
MS4 - Municipal Separate Storm Sewer Systems
NOI - Notice of Intent for coverage under the GCASP
NPDES - national pollutant discharge elimination system
RGO - Retail Gasoline Outlet
ROWD - Report of Waste Discharge
SQMP - Storm Water Quality Management Program
SWPPP - Storm Water Pollution Prevention Plan
TMDL - Total Maximum Daily Load
U.S. EPA - United States Environmental Protection Agency
WDID - Waste Discharger Identification

ATTACHMENT 38

BEFORE THE
COMMISSION ON STATE MANDATES
STATE OF CALIFORNIA

IN RE TEST CLAIM ON:

San Diego Regional Water Quality Control
Board Order No. R9-2007-0001
Permit CAS0108758
Parts D.1.d.(7)-(8), D.1.g., D.3.a.(3), D.3.a.(5),
D.5, E.2.f, E.2.g, F.1, F.2, F.3, I.1, I.2, I.5,
J.3.a.(3)(c)iv-viii & x-xv, and L.

Filed June 20, 2008, by the County of
San Diego, Cities of Carlsbad, Del Mar,
Imperial Beach, Lemon Grove, Poway,
San Marcos, Santee, Solana Beach, Chula
Vista, Coronado, Del Mar, El Cajon, Encinitas,
Escondido, Imperial Beach, La Mesa, Lemon
Grove, National City, Oceanside, San Diego,
and Vista, Claimants.

Case No.: 07-TC-09

*Discharge of Stormwater Runoff -
Order No. R9-2007-0001*

STATEMENT OF DECISION
PURSUANT TO GOVERNMENT CODE
SECTION 17500 ET SEQ.; TITLE 2,
CALIFORNIA CODE OF
REGULATIONS, DIVISION 2,
CHAPTER 2.5, ARTICLE 7.

(Adopted on March 26, 2010)

STATEMENT OF DECISION

The Commission on State Mandates ("Commission") heard and decided this test claim during a regularly scheduled hearing on March 26, 2010. Tim Barry, John VanRhyn, Helen Peak, Shawn Hagerty and James Lough appeared on behalf of the claimants. Elizabeth Jennings appeared on behalf of the State Water Resources Control Board. Carla Shelton and Susan Geanacou appeared on behalf of the Department of Finance.

The law applicable to the Commission's determination of a reimbursable state-mandated program is article XIII B, section 6 of the California Constitution, Government Code section 17500 et seq., and related case law.

The Commission adopted the staff analysis to partially approve the test claim at the hearing by a vote of 6-1.

Summary of Findings

The test claim, filed by the County of San Diego and several cities, alleges various activities related to reducing stormwater pollution in compliance with a permit issued by the San Diego Regional Water Quality Control Board, a state agency.

The Commission finds that the following activities in the permit (as further specified on pp. 122-132 below) are a reimbursable state-mandated new program or higher level of service within the meaning of article XIII B, section 6 of the California Constitution:

- street sweeping (permit part D.3.a(5));
- street sweeping reporting (part J.3.a.(3)(c) x-xv);
- conveyance system cleaning (part D.3.a.(3));
- conveyance system cleaning reporting (J.3.a.(3)(c)(iv)-(viii));
- educational component (part D.5.a.(1)-(2) & D.5.b.(1)(c)-(d) & D.5.(b)(3));
- watershed activities and collaboration in the Watershed Urban Runoff Management Program (part E.2.f & E.2.g);
- Regional Urban Runoff Management Program (parts F.1., F.2. & F.3);
- program effectiveness assessment (parts I.1 & I.2);
- long-term effectiveness assessment (part I.5) and
- all permittee collaboration (part L.1.a.(3)-(6)).

The Commission also finds that the following test claim activities are not reimbursable because the claimants¹ have fee authority sufficient (within the meaning of Gov. Code § 17556, subd. (d)) to pay for them: hydromodification management plan (part D.1.g) and low-impact development (parts D.1.d.(7) & D.1.d.(8)), as specified below.

Further, the Commission finds the following would be identified as offsetting revenue in the parameters and guidelines:

- Any fees or assessments approved by the voters or property owners for any activities in the permit, including those authorized by Public Resources Code section 40059 for street sweeping or reporting on street sweeping, and those authorized by Health and Safety Code section 5471, for conveyance-system cleaning, or reporting on conveyance-system cleaning; and
- Any proposed fees that are not subject to a written protest by a majority of parcel owners and that are imposed for street sweeping.
- Effective January 1, 2010, fees imposed pursuant to Water Code section 16103 only to the extent that a local agency voluntarily complies with Water Code section 16101 by developing a watershed improvement plan pursuant to Statutes 2009, chapter 577, and the Regional Board approves the plan and incorporates it into the test claim permit to satisfy the requirements of the permit.

BACKGROUND

The claimants allege various activities for reducing stormwater pollution in compliance with a permit issued by the California Regional Water Quality Control Board, San Diego Region, (Regional Board), a state agency. Before discussing the specifics of the permit, an overview of the permit's purpose, and municipal stormwater pollution in general, puts the permit in context.

¹ In this analysis, claimants and the permit term "copermitees" are used interchangeably, even though two of the copermitees (the San Diego Unified Port District and San Diego County Regional Airport Authority) are not claimants. The following are the claimants and copermitees that are subject to the permit requirements: Carlsbad, Chula Vista, Coronado, Del Mar, El Cajon, Encinitas, Escondido, Imperial Beach, La Mesa, Lemon Grove, National City, Oceanside, Poway, San Diego, San Marcos, Santee, Solana Beach, Vista, County of San Diego.

Municipal Stormwater

The purpose of the permit is to specify “requirements necessary for the copermitees² to reduce the discharge of pollutants in urban runoff to the maximum extent practicable (MEP).” Each of the copermitees or dischargers “owns or operates a municipal separate storm sewer system (MS4),³ through which it discharges urban runoff into waters of the United States within the San Diego region.”

Stormwater⁴ runoff flowing untreated from urban streets directly into creeks, streams, rivers, lakes and the ocean, creates pollution, as the Ninth Circuit Court of Appeal has stated:

Storm water runoff is one of the most significant sources of water pollution in the nation, at times “comparable to, if not greater than, contamination from industrial and sewage sources.” [Citation omitted.] Storm sewer waters carry suspended metals, sediments, algae-promoting nutrients (nitrogen and phosphorus), floatable trash, used motor oil, raw sewage, pesticides, and other toxic contaminants into streams, rivers, lakes, and estuaries across the United States. [Citation omitted.] In 1985, three-quarters of the States cited urban storm water runoff as a major cause of waterbody impairment, and forty percent reported construction site runoff as a major cause of impairment. Urban runoff has been named as the foremost cause of impairment of surveyed ocean waters. Among the sources of storm water contamination are urban development, industrial facilities, construction sites, and illicit discharges and connections to storm sewer systems.⁵

Because of these stormwater pollution problems described by the Ninth Circuit, both California and the federal government regulate stormwater runoff.

California Law

The California Supreme Court summarized the state statutory scheme and regulatory agencies applicable to this test claim as follows:

² “Copermitees” are entities responsible for National Pollutant Discharge Elimination System (NPDES) permit conditions pertaining to their own discharges. (40 C.F.R. § 122.26 (b)(1).)

³ Municipal separate storm sewer system means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, 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 to waters of the United States; (ii) Designed or used for collecting or conveying storm water; (iii) Which is not a combined sewer; and (iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2. (40 C.F.R. § 122.26 (b)(8).)

⁴ Storm water means “storm water runoff, snow melt runoff, and surface runoff and drainage.” (40 C.F.R. § 122.26 (b)(13).)

⁵ *Environmental Defense Center, Inc. v. U.S. E.P.A.* (2003) 344 F.3d 832, 840-841.

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.) 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.” (§ 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.)

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).⁶

In California, wastewater discharge requirements established by the regional boards are the equivalent of the NPDES permits [national pollutant discharge elimination system] required by federal law. (§ 13374).⁷

As to waste discharge requirements, section 13377 of the California Water Code states:

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.

Much of what the Regional Board does, especially that pertains to permits like the one in this claim, is based in the federal Clean Water Act.

Federal Law

The Federal Clean Water Act (CWA) was amended in 1972 to implement a permitting system for all discharges of pollutants⁸ from point sources⁹ to waters of the United States, since

⁶ *City of Burbank v. State Water Resources Control Bd.* (2005) 35 Cal.4th 613, 619.

⁷ *Id.* at page 621. State and regional board permits allowing discharges into state waters are called “waste discharge requirements.” (Wat. Code, § 13263).

⁸ According to the federal regulations, “Discharge of a pollutant” means: (a) Any addition of any “pollutant” or combination of pollutants to “waters of the United States” from any “point source,” or (b) Any addition of any pollutant or combination of pollutants to the waters of the “contiguous zone” or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation. This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead to a treatment works; and discharges through pipes, sewers, or other

discharges of pollutants are illegal except under a permit.¹⁰ The permits, issued under the national pollutant discharge elimination system, are called NPDES permits. Under the CWA, each state is free to enforce its own water quality laws so long as its effluent limitations¹¹ are not “less stringent” than those set out in the CWA (33 USCA 1370). The California Supreme Court described NPDES permits as follows:

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.)¹²

In the Porter-Cologne Water Quality Control Act (Wat. Code, §§ 13370 et seq.), the Legislature found that the state should implement the federal law in order to avoid direct regulation by the federal government. The Legislature requires the permit program to be consistent with federal law, and charges the State and Regional Water Boards with implementing the federal program (Wat. Code, §§ 13372 & 13370). The State Water Resources Control Board (State Board) incorporates the regulations from the U.S. EPA for implementing the federal permit program, so both the Clean Water Act and U.S. EPA regulations apply to California’s permit program (Cal.Code Regs., tit. 23, § 2235.2).

When a Regional Board adopts an NPDES permit, it must adopt as stringent a permit as U.S. EPA would have (federal Clean Water Act, § 402 (b)). As the California Supreme Court stated:

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

conveyances, leading into privately owned treatment works. This term does not include an addition of pollutants by any “indirect discharger.” (40 C.F.R. § 122.2.)

⁹ A point source is “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 operation, or vessel or other floating craft, from which pollutants are or may be discharged.” 33 U.S.C. § 1362(14).

¹⁰ 40 Code of Federal Regulations, section 122.21 (a). The section applies to U.S. EPA-issued permits, but is incorporated into section 123.25 (the state program provision) by reference.

¹¹ *Effluent limitation* means any restriction imposed by the Director on quantities, discharge rates, and concentrations of “pollutants” which are “discharged” from “point sources” into “waters of the United States,” the waters of the “contiguous zone,” or the ocean. (40 C.F.R. § 122.2.)

¹² *City of Burbank v. State Water Resources Control Bd.*, *supra*, 35 Cal.4th 613, 621. State and regional board permits allowing discharges into state waters are called “waste discharge requirements” (Wat. Code, § 13263).

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 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.¹³

Actions that dischargers must implement as prescribed in permits are commonly called “best management practices” or BMPs.¹⁴

Stormwater was not regulated by U.S. EPA in 1973 because of the difficulty of doing so. This exemption from regulation was overturned in *Natural Resources Defense Council v. Costle* (1977) 568 F.2d 1369, which ordered U.S. EPA to require NPDES permits for stormwater runoff. By 1987, U.S. EPA still had not adopted regulations to implement a permitting system for stormwater runoff. The Ninth Circuit Court of Appeals explained the next step as follows:

In 1987, to better regulate pollution conveyed by stormwater runoff, Congress enacted Clean Water Act § 402(p), 33 U.S.C. § 1342(p), “Municipal and Industrial Stormwater Discharges.” Sections 402(p)(2) and 402(p)(3) mandate NPDES permits for stormwater discharges “associated with industrial activity,” discharges from large and medium-sized municipal storm sewer systems, and certain other discharges. Section 402(p)(4) sets out a timetable for promulgation of the first of a two-phase overall program of stormwater regulation.¹⁵

NPDES permits are required for “A discharge from a municipal separate storm sewer system serving a population of 250,000 or more.”¹⁶ The federal Clean Water Act specifies the following criteria for municipal storm sewer system permits:

- (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.¹⁷

¹³ *City of Burbank v. State Water Resources Control Bd.*, *supra*, 35 Cal.4th 613, 627-628.

¹⁴ Best management practices are “schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of “waters of the United States.” BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.” (40 CFR § 122.2.)

¹⁵ *Environmental Defense Center, Inc. v. U.S. E.P.A.*, *supra*, 344 F.3d 832, 841-842.

¹⁶ 33 USCA section 1342 (p)(2)(C).

¹⁷ 33 USCA section 1342 (p)(3)(B).

In 1990, U.S. EPA adopted regulations to implement Clean Water Act section 402(p), defining which entities need to apply for permits and the information to include in the permit application. The permit application must propose management programs that the permitting authority will consider in adopting the permit. The management programs must include the following:

[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.¹⁸

General State-Wide Permits

In addition to the regional stormwater permit at issue in this claim, the State Board has issued two general statewide permits,¹⁹ as described in the permit as follows:

In accordance with federal NPDES regulations and to ensure the most effective oversight of industrial and construction site discharges, discharges of runoff from industrial and construction sites are subject to dual (state and local) storm water regulation. Under this dual system, the Regional Board is responsible for enforcing the General Construction Activities Storm Water Permit, SWRCB Order 99-08 DWQ, NPDES No. CAS000002 (General Construction Permit) and the General Industrial Activities Storm Water Permit, SWRCB Order 97-03 DWQ, NPDES No. CAS000001 (General Industrial Permit), and each municipal Copermittee is responsible for enforcing its local permits, plans, and ordinances, which may require the implementation of additional BMPs than required under the statewide general permits.

The State and Regional Boards have statutory fee authority to conduct inspections to enforce the general statewide permits.²⁰

The Regional Board Permit (Order No. R9-2007-001, Permit CAS0108758)

Under Part A, "Basis for the Order," the permit states:

This Order Renews National Pollutant Discharge Elimination System (NPDES) Permit No. CAS0108758, which was first issued on July 16, 1990 (Order No. 90-42), and then renewed on February 21, 2001 (Order No. 2001-01). On August 25, 2005, in accordance with Order NO. 2001-01, the County of San Diego, as the Principal Permittee, submitted a Report of Waste Discharge (ROWD) for renewal of their MS4 Permit.

Attachment B of the permit (part 7(q)) states that "This Order expires five years after adoption." Attachment B also says (part 7 (r)) that the terms and conditions of the permit "are automatically

¹⁸ 40 Code of Federal Regulations section 122.26 (d)(2)(iv).

¹⁹ A general permit means "an NPDES 'permit' issued under [40 CFR] §122.28 authorizing a category of discharges under the CWA within a geographical area." (40 CFR § 122.2.)

²⁰ Water Code section 13260, subdivision (d)(2)(B)(i) - (iii).

continued pending issuance of a new permit if all requirements of the federal NPDES regulations on the continuation of the expired permits (40 CFR 122.6) are complied with.”²¹

Part J.2.d. of the permit requires the Principal Permittee (County of San Diego) to “submit to the Regional Board, no later than 210 days in advance of the expiration of this order, a report of Waste Discharge (ROWD) as an application for issuance of new waste discharge requirements.” The permit specifies the contents of the ROWD.

The permit is divided into 16 sections. It prohibits discharges from MS4s that contain pollutants that “have not been reduced to the maximum extent practicable” as well as discharges “that cause or contribute to the violation of water quality standards.” The permit also prohibits non-storm water discharges unless they are authorized by a separate NPDES permit, or fall within specified exemptions. The copermittees are required to “establish, maintain, and enforce adequate legal authority to control pollutant discharges into and from its MS4 through ordinance, statute, permit, contract or similar means.” The copermittees are also required to develop and implement an updated Jurisdictional Urban Runoff Management Program (JURMP) for their jurisdictions that meets the requirements specified in the permit as well as a Watershed Urban Runoff Management Program (watersheds are defined in the permit) and a Regional Urban Runoff Management Program, each of which are to be assessed annually and reported on. Annual fiscal analyses are also required of the copermittees. The principal permittee has additional responsibilities, as specified.

The Regional Board prepared a 115-page Fact Sheet/Technical Report for this permit in which are listed, among other things, Regional Board findings, the federal law, and the reasons for the various permit requirements.

The 2001 version of the Regional Board’s permit (treated as prior law in this analysis) was challenged by the Building Industry Association of San Diego County, among others. They alleged that the permit provisions violate federal law because they prohibit the municipalities from discharging runoff from storm sewers if the discharge would cause a water body to exceed the applicable water quality standard established under state law.²² The court held that the Clean Water Act’s “maximum extent practicable” standard did not prevent the water boards from including provisions in the permit that required municipalities to comply with state water quality standards.²³

Attached to the claimants’ February 2009 comments is a document entitled “Comparison Between the Requirement of Tentative Order 2001-01, the Federal NPDES Storm Water Regulations, the Existing San Diego Municipal Storm Water Permit (Order 90-42), and Previous Drafts of the San Diego Municipal Stormwater Permit” that compares the 2001 permit with the 1990 and earlier permits. One of the document’s conclusions regarding the 2001 permit is: “40% of the requirements in Tentative Order 2001-01 which ‘exceed the federal regulations’ are based

²¹ California Code of Regulations, title 23, section 2235.4.

²² *Building Industry Assoc. of San Diego County v. State Water Resources Control Board* (2004) 124 Cal.App.4th 866, 880.

²³ *Id.* at page 870.

almost exclusively on (1) guidance documents developed by USEPA and (2) SWRCB's [State Board's] orders describing statewide precedent setting decision on MS4 permits."

Claimants' Position

Claimants assert that various parts of the Regional Board's 2007 permit constitute a reimbursable state mandate within the meaning of article XIII-B, section 6, and Government Code section 17514. The parts of the permit pled by claimants are quoted below:

I. Regional Requirements for Urban Runoff Management Programs

A. Copermittee collaboration

Parts F.2. and F.3. (F. Regional Urban Runoff Management Program) of the permit provide:

Each Copermittee shall collaborate with the other Copermittees to develop, implement, and update as necessary a Regional Urban Runoff Management Program. The Regional Urban Runoff Management Program shall meet the requirements of section F of this Order, reduce the discharge of pollutants²⁴ from the MS4 to the MEP, and prevent urban runoff²⁵ discharges from the MS4 from causing or contributing to a violation of water quality standards.²⁶ The Regional Urban Runoff Management Program shall, at a minimum: [¶]...[¶]

2. Develop the standardized fiscal analysis method required in section G of this Order.²⁷

3. Facilitate the assessment of the effectiveness of jurisdictional, watershed,²⁸ and regional programs.

²⁴ Pollutant is defined in Attachment C of the permit as "Any agent that may cause or contribute to the degradation of water quality such that a condition of pollution or contamination is created or aggravated."

²⁵ Urban Runoff is defined in Attachment C of the permit as "All flows in a storm water conveyance system and consists of the following components: (1) storm water (wet weather flows) and (2) non-storm water illicit discharges (dry weather flows).

²⁶ Water Quality Standards is defined in Attachment C of the permit as "The beneficial uses (e.g., swimming, fishing, municipal drinking water supply, etc.) of water and the water quality objectives necessary to protect those uses.

²⁷ Section G requires the permittees to "collectively develop a standardized method and format for annually conducting and reporting fiscal analyses of their urban runoff management programs in their entirety (including jurisdictional, watershed, and regional activities)." Specific components of the method and time tables are specified in the permit (Permit parts G.2 & G.3).

²⁸ Watershed is defined in Attachment C of the permit as "That geographical area which drains to a specified point on a water course, usually a confluence of streams or rivers (also known as a drainage area, catchment, or river basin)."

Part L (All Copermittee Collaboration) of the Permit states:

1. Each Copermittee collaborate [sic] with all other Copermittees regulated under this Order to address common issues, promote consistency among Jurisdictional Urban Runoff Management Programs and Watershed Urban Runoff Management Programs, and to plan and coordinate activities required under this Order.

a. Management structure – All Copermittees shall jointly execute and submit to the Regional Board no later than 180 days after adoption of this Order, a Memorandum of Understanding, Joint Powers Authority, or other instrument of formal agreement which at a minimum:

- (1) Identifies and defines the responsibilities of the Principal Permittee²⁹ and Lead Watershed Permittees;³⁰
- (2) Identifies Copermittees and defines their individual and joint responsibilities, including watershed responsibilities;
- (3) Establishes a management structure to promote consistency and develop and implement regional activities;
- (4) Establishes standards for conducting meetings, decision-making, and cost-sharing.
- (5) Provides guidelines for committee and workgroup structure and responsibilities;
- (6) Lays out a process for addressing Copermittee non-compliance with the formal agreement;
- (7) Includes any and all other collaborative arrangements for compliance with this order.

Claimants stated that the Copermittees' costs to comply with this activity for fiscal year 2007-2008 was \$260,031.29.

B. Copermittee collaboration – Regional Residential Education Program Development and Implementation

Part F.1 of the Permit provides:

The Regional Urban Runoff Management Program shall, at a minimum:

1. Develop and implement a Regional Residential Education Program. The program shall include:
 - a. Pollutant specific education which focuses educational efforts on bacteria, nutrients, sediment, pesticides, and trash. If a different pollutant is determined to be more critical for the education program, the pollutant can be substituted for one of these pollutants.
 - b. Education efforts focused on the specific residential sources of the pollutants listed in section F.1.a.

²⁹ The Principal Permittee is the County of San Diego.

³⁰ According to the permit: "Watershed Copermittees shall identify the Lead Watershed Permittee for their WMA [Watershed Management Area]."

Claimants stated that the Copermittees' costs to comply with this activity was \$131,250 in fiscal year 2007-2008.

C. Hydromodification³¹

Part D.1.g. of the Permit (D. Jurisdictional Urban Runoff Management Program, 1. Development Planning Component, g. Hydromodification – Limits on Increases of Runoff Discharge Rates and Durations) states:

g. HYDROMODIFICATION – LIMITATIONS ON INCREASES OF RUNOFF DISCHARGE RATES AND DURATIONS

Each Copermittee shall collaborate with the other Copermittees to develop and implement a hydromodification management plan (HMP) to manage increases in runoff discharge rates and durations from all priority development projects,³²

³¹ Hydromodification is defined in Attachment C of the permit as “The change in the natural watershed hydrologic processes and runoff characteristics (i.e., interception, infiltration, overland flow, interflow and groundwater flow) caused by urbanization or other land use changes that result in increased stream flows and sediment transport. In addition, alteration of stream and river channels, installation of dams and water impoundments, and excessive streambank and shoreline erosion are also considered hydromodification, due to their disruption of natural watershed hydrologic processes.”

Hydromodification is also defined as changes in the magnitude and frequency of stream flows as a result of urbanization, and the resulting impacts on the receiving channels in terms of erosion, sedimentation and degradation of in-stream habitat.” *Draft Hydromodification Management Plan for San Diego County*, page 4. <http://www.projectcleanwater.org/pdf/susmp/sd_hmp_2009.pdf> as of May 28, 2009 .

³² According to the permit, “Priority Development Projects” are: a) all new Development Projects that fall under the project categories or locations listed in section D.1.d.(2), and b) those redevelopment projects that create, add or replace at least 5,000 square feet of impervious surfaces on an already developed site that falls under the project categories or locations listed in section D.1.d.(2).

[¶]...[¶] [Part D.1.d.(2):] (2) Priority Development Project Categories (a) Housing subdivisions of 10 or more dwelling units. This category includes single-family homes, multi-family homes, condominiums, and apartments. (b) Commercial developments greater than one acre. This category is defined as any development on private land that is not for heavy industrial or residential uses where the land area for development is greater than one acre. The category includes, but is not limited to: hospitals; laboratories and other medical facilities; educational institutions; recreational facilities; municipal facilities; commercial nurseries; multi-apartment buildings; car wash facilities; mini-malls and other business complexes; shopping malls; hotels; office buildings; public warehouses; automotive dealerships; airfields; and other light industrial facilities. (c) Developments of heavy industry greater than one acre. This category includes, but is not limited to, manufacturing plants, food processing plants, metal working facilities, printing plants, and fleet storage areas (bus, truck, etc.). (d) Automotive repair shops. This category is defined as a facility that is categorized in any one of the following Standard Industrial Classification (SIC) codes: 5013, 5014, 5541, 7532-7534, or 7536-7539. (e) Restaurants. This

where such increased rates and durations are likely to cause increased erosion³³ of channel beds and banks, sediment pollutant generation, or other impacts to beneficial uses³⁴ and stream habitat due to increased erosive force. The HMP, once approved by the Regional Board, shall be incorporated into the local SUSMP [Standard Urban Storm Water Mitigation Plan]³⁵ and implemented by each Copermittee so that post-project runoff discharge rates and durations shall not exceed estimated pre-project discharge rates and durations where the increased discharge rates and durations will result in increased potential for

category is defined as a facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (SIC code 5812), where the land area for development is greater than 5,000 square feet. Restaurants where land development is less than 5,000 square feet shall meet all SUSMP requirements except for structural treatment BMP and numeric sizing criteria requirement D.1.d.(6)(c) and hydromodification requirement D.1.g. (f) All hillside development greater than 5,000 square feet. This category is defined as any development which creates 5,000 square feet of impervious surface which is located in an area with known erosive soil conditions, where the development will grade on any natural slope that is twenty-five percent or greater.

(g) Environmentally Sensitive Areas (ESAs). All development located within or directly adjacent to or discharging directly to an ESA (where discharges from the development or redevelopment will enter receiving waters within the ESA), which either creates 2,500 square feet of impervious surface on a proposed project site or increases the area of imperviousness of a proposed project site to 10% or more of its naturally occurring condition. "Directly adjacent" means situated within 200 feet of the ESA. "Discharging directly to" means outflow from a drainage conveyance system that is composed entirely of flows from the subject development or redevelopment site, and not commingled with flows from adjacent lands. (h) Parking lots 5,000 square feet or more or with 15 or more parking spaces and potentially exposed to urban runoff. Parking lot is defined as a land area or facility for the temporary parking or storage of motor vehicles used personally, for business, or for commerce. (i) Street, roads, highways, and freeways. This category includes any paved surface that is 5,000 square feet or greater used for the transportation of automobiles, trucks, motorcycles, and other vehicles. (j) Retail Gasoline Outlets (RGOs). This category includes RGOs that meet the following criteria: (a) 5,000 square feet or more or (b) a projected Average Daily Traffic (ADT) of 100 or more vehicles per day.

³³ Erosion is defined in Attachment C of the permit as "When land is diminished or worn away due to wind, water, or glacial ice. Often the eroded debris (silt or sediment) becomes a pollutant via storm water runoff. Erosion occurs naturally but can be intensified by land clearing activities such as farming, development, road building and timber harvesting."

³⁴ Beneficial Uses is defined in Attachment C of the permit as "the uses of water necessary for the survival or well being of man, plants, and wildlife. These uses of water serve to promote tangible and intangible economic, social, and environmental goals. ... "Beneficial Uses" are equivalent to "Designated Uses" under federal law." (Wat. Code, § 13050, subd. (f).)

³⁵ The Standard Urban Storm Water Mitigation Plan is defined in Attachment C of the permit as "A plan developed to mitigate the impacts of urban runoff from Priority Development Projects."

erosion or other significant adverse impacts to beneficial uses, attributable to changes in the discharge rates and durations.

(1) The HMP shall:

(a) Identify a standard for channel segments which receive urban runoff discharges from Priority Development Projects. The channel standard shall maintain the pre-project erosion and deposition characteristics of channel segments receiving urban runoff discharges from Priority Development Projects as necessary to maintain or improve the channel segments' stability conditions.

(b) Utilize continuous simulation of the entire rainfall record to identify a range of runoff flows for which Priority Development Project post-project runoff flow rates and durations³⁶ shall not exceed pre-project runoff flow rates and durations,³⁷ where the increased flow rates and durations will result in increased potential for erosion or other significant adverse impacts to beneficial uses, attributable to changes in the flow rates and durations. The lower boundary of the range of runoff flows identified shall correspond with the critical channel flow³⁸ that produces the critical shear stress that initiates channel bed movement or that erodes the toe of channel banks. The identified range of runoff flows may be different for specific watersheds, channels, or channel reaches.

(c) Require Priority Development Projects to implement hydrologic control measures so that Priority Development Projects' post-project runoff flow rates and durations (1) do not exceed pre-project runoff flow rates and durations for the range of runoff flows identified under section D.1.g.(1)(b), where the increased flow rates and durations will result in increased potential for erosion or other significant adverse impacts to beneficial uses, attributable to changes in the flow rates and durations, and (2) do not result in channel conditions which do not meet the channel standard developed under section D.1.g.(1)(a) for channel segments downstream of Priority Development Project discharge points.

³⁶ Flow duration is defined in Attachment C of the permit as "The long-term period of time that flows occur above a threshold that causes significant sediment transport and may cause excessive erosion damage to creeks and streams (not a single storm event duration). ... Flow duration within the range of geomorphologically significant flows is important for managing erosion.

³⁷ Attachment C of the permit defines "Pre-project or pre-development runoff conditions (discharge rates, durations, etc.) as "Runoff conditions that exist onsite immediately before the planned 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."

³⁸ Critical channel flow, according to Attachment C of the permit, is "the channel flow that produces the critical shear stress that initiates bed movement or that erodes the toe of channel banks. When measuring Q_c [critical channel flow], it should be based on the weakest boundary material – either bed or bank."

(d) Include other performance criteria (numeric or otherwise) for Priority Development Projects as necessary to prevent urban runoff from the projects from increasing erosion of channel beds and banks, silt pollutant generation, or other impacts to beneficial uses and stream habitat due to increased erosive force.

(e) Include a review of pertinent literature.

(f) Include a protocol to evaluate potential hydrograph change impacts to downstream watercourses from Priority Development Projects.

(g) Include a description of how the Copermittees will incorporate the HMP requirements into their local approval processes.

(h) Include criteria on selection and design of management practices and measures (such as detention, retention, and infiltration) to control flow rates and durations and address potential hydromodification impacts.

(i) Include technical information supporting any standards and criteria proposed.

(j) Include a description of inspections and maintenance to be conducted for management practices and measures to control flow rates and durations and address potential hydromodification impacts.

(k) Include a description of pre- and post-project monitoring and other program evaluations to be conducted to assess the effectiveness of implementation of the HMP.

(l) Include mechanisms for addressing cumulative impacts within a watershed on channel morphology.

(m) Include information on evaluation of channel form and condition, including slope, discharge, vegetation, underlying geology, and other information, as appropriate.

(2) The HMP may include implementation of planning measures (e.g., buffers and restoration activities, including revegetation, use of less-impacting facilities at the point(s) of discharge, etc.) to allow expected changes in stream channel cross sections, vegetation, and discharge rates, velocities, and/or durations without adverse impacts to channel beneficial uses. Such measures shall not include utilization of non-naturally occurring hardscape materials such as concrete, riprap, gabions, etc.

(3) Section D.1.g.(1)(c) does not apply to Development Projects³⁹ where the project discharges stormwater runoff into channels or storm drains where the preexisting channel or storm drain conditions result in minimal potential for erosion or other impacts to beneficial uses. Such situations may include discharges into channels that are concrete-lined or significantly hardened (e.g.,

³⁹ Development projects, according to Attachment C of the permit, are "New development or redevelopment with land disturbing activities; structural development, including construction or installation of a building or structure, the creation of impervious surfaces, public agency projects, and land subdivision."

with rip-rap, sackrete, etc.) downstream to their outfall in bays or the ocean; underground storm drains discharging to bays or the ocean; and construction of projects where the sub-watersheds below the projects' discharge points are highly impervious (e.g., >70%) and the potential for single-project and/or cumulative impacts is minimal. Specific criteria for identification of such situations shall be included as a part of the HMP. However, plans to restore a channel reach may reintroduce the applicability of HMP controls, and would need to be addressed in the HMP.

(4) HMP Reporting

The Copermittees shall collaborate to report on HMP development as required in section J.2.a of this Order.⁴⁰

(5) HMP Implementation

180 days after approval of the HMP by the Regional Board, each Copermittee shall incorporate into its local SUSMP and implement the HMP for all applicable Priority Development Projects. Prior to approval of the HMP by the Regional Board, the early implementation of measures likely to be included in the HMP shall be encouraged by the Copermittees.

(6) Interim Hydromodification Criteria for Projects Disturbing 50 Acres or More

Within 365 days of adoption of this Order, the Copermittees shall collectively identify an interim range of runoff flow rates for which Priority Development Project post-project runoff flow rates and durations shall not exceed pre-project runoff flow rates and durations (Interim Hydromodification Criteria), where the increased discharge flow rates and durations will result in increased potential for erosion or other significant adverse impacts to beneficial uses, attributable to changes in flow rates and durations. Development of the Interim Hydromodification Criteria shall include identification of methods to be used by Priority Development Projects to exhibit compliance with the criteria, including continuous simulation of the entire rainfall record. Starting 365 days after adoption of this Order and until the final Hydromodification Management Plan standard and criteria are implemented, each Copermittee shall require Priority Development Projects disturbing 50 acres or more to implement hydrologic controls to manage post-project runoff flow rates and durations as required by the Interim Hydromodification Criteria. Development Projects disturbing 50 acres or more are exempt from this requirement when:

(a) the project would discharge into channels that are concrete-lined or significantly hardened (e.g., with rip-rap, sackrete, etc.) downstream to their outfall in bays or the ocean;

⁴⁰ Section J.2.a of the permit requires collaborating with other copermittees to develop the HMP, and submitting it for approval by the Regional Board. Part J.2.a also includes timelines for HMP completion and approval.

(b) the project would discharge into underground storm drains discharging directly to bays or the ocean; or

(c) the project would discharge to a channel where the watershed areas below the project's discharge points are highly impervious (e.g. >70%).

Claimants stated that the total cost of this activity is \$1.05 million, of which \$630,000 was spent in fiscal year 2007-2008, and the remaining \$420,000 will be spent in fiscal year 2008-2009.

D. Low-Impact Development⁴¹ ("LID") and Standard Urban Storm Water Mitigation Plan ("SMUSP")

Part D.1.d. of the Permit (D. Jurisdictional Urban Runoff Management Program, 1. Development Planning Component, d. Standard Urban Storm Water Mitigation Plans – Approval Process Criteria and Requirements for Priority Development Projects), paragraphs (7) and (8) state as follows:

(7) Update of SUSMP BMP Requirements

The Copermittees shall collectively review and update the BMP requirements that are listed in their local SUSMPs. At a minimum, the update shall include removal of obsolete or ineffective BMPs, addition of LID and source control BMP⁴² requirements that meet or exceed the requirements of sections D.1.d.(4)⁴³ and D.1.d.(5),⁴⁴ and addition of LID BMPs that can be used for treatment, such as bioretention cells, bioretention swales, etc. The update shall also add appropriate LID BMPs to any tables or discussions in the local SUSMPs addressing pollutant removal efficiencies of treatment control BMPs.⁴⁵ In addition, the update shall

⁴¹ Low Impact Development (LID) is defined in Attachment C of the permit as "A storm water management and land development strategy that emphasizes conservation and the use of on-site natural features integrated with engineered, small-scale hydrologic controls to more closely reflect pre-development hydrologic functions."

⁴² Source Control BMPs are defined in Attachment C of the permit as "Land use or site planning practices, or structural or nonstructural measures that aim to prevent urban runoff pollution by reducing the potential for contamination at the source of pollution. Source control BMPs minimize the contact between pollutants and urban runoff."

⁴³ Part D.1.d.(4) of the permit includes LID BMP requirements: "Each Copermittee shall require each Priority Development Project to implement LID BMPs which will collectively minimize directly connected impervious areas and promote infiltration at Priority Development Projects:" The Permit lists various LID site design BMPs that must be implemented at all Priority Development Projects, and other LID BMPs that must be implemented at all Priority Development Projects "where applicable and feasible."

⁴⁴ Part D.1.d.(5), regarding "Source control BMP Requirements" requires permittees to require each Priority Development Project to implement source control BMPs that must "Minimize storm water pollutants of concern in urban runoff" and include five other specific criteria.

⁴⁵ A treatment control BMP, according to Attachment C of the permit, is "Any engineered system designed to remove pollutants by simple gravity settling of particulate pollutants,

include review, and revision where necessary, of treatment control BMP pollutant removal efficiencies.

(8) Update of SUSMPs to Incorporate LID and Other BMP Requirements

(a) In addition to the implementation of the BMP requirements of sections D.1.d.(4-7) within one year of adoption of this Order, the Copermittees shall also develop and submit an updated Model SUSMP that defines minimum LID and other BMP requirements to be incorporated into the Copermittees' local SUSMPs for application to Priority Development Projects. The purpose of the updated Model SUSMP shall be to establish minimum standards to maximize the use of LID practices and principles in local Copermittee programs as a means of reducing stormwater runoff. It shall meet the following minimum requirements:

- i. Establishment of LID BMP requirements that meet or exceed the minimum requirements listed in section D.1.d.(4) above.
- ii. Establishment of source control BMP requirements that meet or exceed the minimum requirements listed in section D.1.d.(5) above.
- iii. Establishment of treatment control BMP requirements that meet or exceed the minimum requirements listed in section D.1.d.(6) above.
- iv. Establishment of siting, design, and maintenance criteria for each LID and treatment control BMP listed in the Model SUSMP, so that implemented LID and treatment control BMPs are constructed correctly and are effective at pollutant removal and/or runoff control. LID techniques, such as soil amendments, shall be incorporated into the criteria for appropriate treatment control BMPs.
- v. Establishment of criteria to aid in determining Priority Development Project conditions where implementation of each LID BMP listed in section D.1.d.(4)(b) is applicable and feasible.
- vi. Establishment of a requirement for Priority Development Projects with low traffic areas and appropriate or amendable soil conditions to construct a portion of walkways, trails, overflow parking lots, alleys, or other low-traffic areas with permeable surfaces, such as pervious concrete, porous asphalt, unit pavers, and granular materials.
- vii. Establishment of restrictions on infiltration of runoff from Priority Development Project categories or Priority Development Project areas that generate high levels of pollutants, if necessary.

(b) The updated Model SUSMP shall be submitted within 18 months of adoption of this Order. If, within 60 days of submittal of the updated Model SUSMP, the Copermittees have not received in writing from the Regional Board either

(1) a finding of adequacy of the updated Model SUSMP or (2) a modified schedule for its review and revision, the updated Model SUSMP shall be deemed adequate, and the Copermittees shall implement its provisions in accordance with section D.1.d.(8)(c) below.

filtration, biological uptake, media absorption or any other physical, biological, or chemical process.”

(c) Within 365 days of Regional Board acceptance of the updated Model SUSMP, each Copermittee shall update its local SUSMP to implement the requirements established pursuant to section D.1.d.(8)(a). In addition to the requirements of section D.1.d.(8)(a), each Copermittee's updated local SUSMP shall include the following:

- i. A requirement that each Priority Development Project use the criteria established pursuant to section D.1.d.(8)(a)v to demonstrate applicability and feasibility, or lack thereof, of implementation of the LID BMPs listed in section D.1.d.(4)(b).
- ii. A review process which verifies that all BMPs to be implemented will meet the designated siting, design, and maintenance criteria, and that each Priority Development Project is in compliance with all applicable SUSMP requirements.

Claimants stated that the total cost of this activity is \$52,200 to be spent in fiscal year 2007-2008.

E. Long Term Effectiveness Assessment

Part I.5 (I. Program Effectiveness Assessment) of the permit states:

5. Long-term Effectiveness Assessment

- a. Each Copermittee shall collaborate with the other Copermittees to develop a Longterm Effectiveness Assessment (LTEA), which shall build on the results of the Copermittees' August 2005 Baseline LTEA. The LTEA shall be submitted by the Principal Permittee to the Regional Board no later than 210 days in advance of the expiration of this Order.
- b. The LTEA shall be designed to address each of the objectives listed in section I.3.a.(6) of this Order, and to serve as a basis for the Copermittees' Report of Waste Discharge for the next permit cycle.
- c. The LTEA shall address outcome levels 1-6, and shall specifically include an evaluation of program implementation to changes in water quality (outcome levels 5 and 6).⁴⁶
- d. The LTEA shall assess the effectiveness of the Receiving Waters Monitoring Program in meeting its objectives and its ability to answer the five core management questions. This shall include assessment of the frequency of monitoring conducted through the use of power analysis and other pertinent statistical methods. The power analysis shall identify the frequency and intensity of sampling needed to identify a 10% reduction in the concentration of constituents causing the high priority water quality problems within each watershed over the next permit term with 80% confidence.
- e. The LTEA shall address the jurisdictional, watershed, and regional programs, with an emphasis on watershed assessment.

The claimants state that this activity is budgeted to cost \$210,000.

⁴⁶ See footnote 50, page 21.

II. Jurisdictional Urban Runoff Management Program

A. Street Sweeping

Part D.3.a.(5) of the Permit (D.3 Existing Development Component, a. Municipal) provides:

(5) Sweeping of Municipal Areas

Each Copermittee shall implement a program to sweep improved (possessing a curb and gutter) municipal roads, streets, highways, and parking facilities. The program shall include the following measures:

- (a) Roads, streets, highways, and parking facilities identified as consistently generating the highest volumes of trash and/or debris shall be swept at least two times per month.
- (b) Roads, streets, highways, and parking facilities identified as consistently generating moderate volumes of trash and/or debris shall be swept at least monthly.
- (c) Roads, streets, highways, and parking facilities identified as generating low volumes of trash and/or debris shall be swept as necessary, but no less than once per year.

Part J.3.a.(3)(c)x-xv (J. Reporting, 3. Annual Reports, a. jurisdictional urban runoff management program annual reports (3) Minimum contents (c) Municipal) requires annual reports to include the following:

- x. Identification of the total distance of curb-miles of improved roads, streets, and highways identified as consistently generating the highest volumes of trash and/or debris, as well as the frequency of sweeping conducted for such roads, streets, and highways.
- xi. Identification of the total distance of curb-miles of improved roads, streets, and highways identified as consistently generating moderate volumes of trash and/or debris, as well as the frequency of sweeping conducted for such roads, streets, and highways.
- xii. Identification of the total distance of curb-miles of improved roads, streets, and highways identified as consistently generating low volumes of trash and/or debris, as well as the frequency of sweeping conducted for such roads, streets, and highways.
- xiii. Identification of the total distance of curb-miles swept.
- xiv. Identification of the number of municipal parking lots, the number of municipal parking lots swept, and the frequency of sweeping.
- xv. Amount of material (tons) collected from street and parking lot sweeping.

Claimants state the following costs for this activity: in fiscal year 2007-2008: Equipment: \$2,080,245, Staffing: \$1,014,321, Contract costs: \$382,624; for 2008-2009: Equipment: \$3,566,139 (for 2008-2012), Staffing \$1,054,893 (4% increase), Contract costs: \$382,624.

B. Conveyance System Cleaning

Part D.3.a.(3) of the Permit (D.3. Existing Development Component, a. Municipal) provides:

(3) Operation and Maintenance of Municipal Separate Storm Sewer System and Structural Controls

(a) Each Copermittee shall implement a schedule of inspection and maintenance activities to verify proper operation of all municipal structural treatment controls designed to reduce pollutant discharges to or from its MS4s and related drainage structures.

(b) Each Copermittee shall implement a schedule of maintenance activities for the MS4 and MS4 facilities (catch basins, storm drain inlets, open channels, etc). The maintenance activities shall, at a minimum, include:

- i. Inspection at least once a year between May 1 and September 30 of each year⁴⁷ for all MS4 facilities that receive or collect high volumes of trash and debris. All other MS4 facilities shall be inspected at least annually throughout the year.
- ii. Following two years of inspections, any MS4 facility that requires inspection and cleaning less than annually may be inspected as needed, but not less than every other year.
- iii. Any catch basin or storm drain inlet that has accumulated trash and debris greater than 33% of design capacity shall be cleaned in a timely manner. Any MS4 facility that is designed to be self cleaning shall be cleaned of any accumulated trash and debris immediately. Open channels shall be cleaned of observed anthropogenic litter⁴⁸ in a timely manner.
- iv. Record keeping of the maintenance and cleaning activities including the overall quantity of waste removed.
- v. Proper disposal of waste removed pursuant to applicable laws.
- vi. Measures to eliminate waste discharges during MS4 maintenance and cleaning activities.

Part J.3.a.(3)(c) iv-viii (J. Reporting, 3. Annual Reports, a. jurisdictional urban runoff management program annual reports (3) Minimum contents (c) Municipal) requires annual reports to include the following:

- iv. Identification of the total number of catch basins and inlets, the number of catch basins and inlets inspected, the number of catch basins and inlets found with accumulated waste exceeding cleaning criteria, and the number of catch basins and inlets cleaned.
- v. Identification of the total distance (miles) of the MS4, the distance of the MS4 inspected, the distance of the MS4 found with accumulated waste exceeding cleaning criteria, and the distance of the MS4 cleaned.

⁴⁷ According to Attachment C of the permit, May 1 through September 30 is the dry season.

⁴⁸ Attachment C of the permit defines "anthropogenic litter" as "trash generated from human activities, not including sediment."

- vi. Identification of the total distance (miles) of open channels, the distance of the open channels inspected, the distance of the open channels found with anthropogenic litter, and the distance of open channels cleaned.
- vii. Amount of waste and litter (tons) removed from catch basins, inlets, the MS4, and open channels, by category.
- viii. Identification of any MS4 facility found to require inspection less than annually following two years of inspection, including justification for the finding.

The claimants state that this activity costs \$3,456,087 in fiscal year 2007-2008, and increases 4% in subsequent years.

C. Program Effectiveness Assessment

Part I.1 and I.2 of the permit states:

1. Jurisdictional

a. As part of its Jurisdictional Urban Runoff Management Program, each Copermittee shall annually assess the effectiveness of its Jurisdictional Urban Runoff Management Program implementation. At a minimum, the annual effectiveness assessment shall:

(1) Specifically assess the effectiveness of each of the following:

(a) Each significant jurisdictional activity/BMP or type of jurisdictional activity/BMP implemented;

(b) Implementation of each major component of the Jurisdictional Urban Runoff Management Program (Development Planning, Construction, Municipal, Industrial/Commercial, Residential, Illicit Discharge⁴⁹ Detection and Elimination, and Education); and

(c) Implementation of the Jurisdictional Urban Runoff Management Program as a whole.

(2) Identify and utilize measurable targeted outcomes, assessment measures, and assessment methods for each of the items listed in section I.1.a.(1) above.

(3) Utilize outcome levels 1-6⁵⁰ to assess the effectiveness of each of the items listed in section I.1.a.(1) above, where applicable and feasible.

⁴⁹ Illicit discharge, as defined in Attachment C of the permit, is “any discharge to the MS4 that is not composed entirely of storm water except discharges pursuant to a NPDES permit and discharges resulting from firefighting activities [40 C.F.R. 122.26 (b)(2)].”

⁵⁰ Effectiveness assessment outcome levels are defined in Attachment C of the permit as follows: Effectiveness assessment outcome level 1 – Compliance with Activity-based Permit Requirements – Level 1 outcomes are those directly related to the implementation of specific activities prescribed by this Order or established pursuant to it. Effectiveness assessment outcome level 2 – Changes in Attitudes, Knowledge, and Awareness – Level 2 outcomes are measured as increases in knowledge and awareness among target audiences such as residents, business, and municipal employees. Effectiveness assessment outcome level 3 – Behavioral

(4) Utilize monitoring data and analysis from the Receiving Waters Monitoring Program to assess the effectiveness each of the items listed in section I.1.a.(1) above, where applicable and feasible.

(5) Utilize Implementation Assessment,⁵¹ Water Quality Assessment,⁵² and Integrated Assessment,⁵³ where applicable and feasible.

b. Based on the results of the effectiveness assessment, each Copermittee shall annually review its jurisdictional activities or BMPs to identify modifications and improvements needed to maximize Jurisdictional Urban Runoff Management Program effectiveness, as necessary to achieve compliance with section A of this Order. The Copermittees shall develop and implement a plan and schedule to address the identified modifications and improvements. Jurisdictional activities/BMPs that are ineffective or less effective than other comparable jurisdictional activities/BMPs shall be replaced or improved upon by implementation of more effective jurisdictional activities/BMPs. Where monitoring data exhibits persistent water quality problems that are caused or contributed to by MS4 discharges, jurisdictional activities or BMPs applicable to the water quality problems shall be modified and improved to correct the water quality problems.

c. As part of its Jurisdictional Urban Runoff Management Program Annual Reports, each Copermittee shall report on its Jurisdictional Urban Runoff

Changes and BMP Implementation – Level 3 outcomes measure the effectiveness of activities in affecting behavioral change and BMP implementation. Effectiveness assessment outcome level 4 – Load Reductions – Level 4 outcomes measure load reductions which quantify changes in the amounts of pollutants associated with specific sources before and after a BMP or other control measure is employed. Effectiveness assessment outcome level 5 – Changes in Urban Runoff and Discharge Quality – Level 5 outcomes are measured as changes in one or more specific constituents or stressors in discharges into or from MS4s. Effectiveness assessment outcome level 6 – Changes in Receiving Water Quality – Level 6 outcomes measure changes to receiving water quality resulting from discharges into and from MS4s, and may be expressed through a variety of means such as compliance with water quality objectives or other regulatory benchmarks, protection of biological integrity [i.e., ecosystem health], or beneficial use attainment.

⁵¹ Implementation Assessment is defined in Attachment C of the permit as an “Assessment conducted to determine the effectiveness of copermittee programs and activities in achieving measureable targeted outcomes, and in determining whether priority sources of water quality problems are being effectively addressed.”

⁵² Water Quality Assessment is defined in Attachment C of the permit as an “Assessment conducted to evaluate the condition of non-storm water discharges, and the water bodies which receive these discharges.”

⁵³ Integrated Assessment is defined in Attachment C of the permit as an “Assessment to be conducted to evaluate whether program implementation is properly targeted to and resulting in the protection and improvement of water quality.”

Management Program effectiveness assessment as implemented under each of the requirements of sections I.1.a and I.1.b above.

2. Watershed

a. As part of its Watershed Urban Runoff Management Program, each watershed group of Copermittees (as identified in Table 4)⁵⁴ shall annually assess the effectiveness of its Watershed Urban Runoff Management Program implementation. At a minimum, the annual effectiveness assessment shall:

(1) Specifically assess the effectiveness of each of the following:

- (a) Each Watershed Water Quality Activity implemented;
- (b) Each Watershed Education Activity implemented; and
- (c) Implementation of the Watershed Urban Runoff Management Program as a whole.

(2) Identify and utilize measurable targeted outcomes, assessment measures, and assessment methods for each of the items listed in section I.2.a.(1) above.

(3) Utilize outcome levels 1-6 to assess the effectiveness of each of the items listed in sections I.2.a.(1)(a) and I.2.a.(1)(b) above, where applicable and feasible.

(4) Utilize outcome levels 1-4 to assess the effectiveness of implementation of the Watershed Urban Runoff Management Program as a whole, where applicable and feasible.

(5) Utilize outcome levels 5 and 6 to qualitatively assess the effectiveness of implementation of the Watershed Urban Runoff Management Program as a whole, focusing on the high priority water quality problem(s) of the watershed. These assessments shall attempt to exhibit the impact of Watershed Urban Runoff Management Program implementation on the high priority water quality problem(s) within the watershed.

(6) Utilize monitoring data and analysis from the Receiving Waters Monitoring Program to assess the effectiveness each of the items listed in section I.2.a.(1) above, where applicable and feasible.

(7) Utilize Implementation Assessment, Water Quality Assessment, and Integrated Assessment, where applicable and feasible.

b. Based on the results of the effectiveness assessment, the watershed Copermittees shall annually review their Watershed Water Quality Activities, Watershed Education Activities, and other aspects of the Watershed Urban Runoff Management Program to identify modifications and improvements needed to maximize Watershed Urban Runoff Management Program effectiveness, as

⁵⁴ Table 4 of the permit divides the copermittees into nine watershed management areas. For example, the San Luis Rey River watershed management area lists the city of Oceanside, Vista and the County of San Diego as the responsible watershed copermittees. Table 4 also lists the hydrologic units and major receiving water bodies.

necessary to achieve compliance with section A of this Order.⁵⁵ The Copermittees shall develop and implement a plan and schedule to address the identified modifications and improvements. Watershed Water Quality Activities/Watershed Education Activities that are ineffective or less effective than other comparable Watershed Water Quality Activities/Watershed Education Activities shall be replaced or improved upon by implementation of more effective Watershed Water Quality Activities/Watershed Education Activities. Where monitoring data exhibits persistent water quality problems that are caused or contributed to by MS4 discharges, Watershed Water Quality Activities and Watershed Education Activities applicable to the water quality problems shall be modified and improved to correct the water quality problems.

c. As part of its Watershed Urban Runoff Management Program Annual Reports, each watershed group of Copermittees (as identified in Table 4) shall report on its Watershed Urban Runoff Management Program effectiveness assessment as implemented under each of the requirements of section I.2.a and I.2.b above.

Claimants state that this activity in I.1. and I.2 costs \$392,363 in fiscal year 2007-2008, is expected to increase to \$862,293 in fiscal year 2008-2009, and is expected to increase 4% annually thereafter.

D. Educational Surveys and Tests

Part D.5 of the permit (under D. Jurisdictional Urban Runoff Management Program) states:

5. Education Component

Each Copermittee shall implement an education program using all media as appropriate to (1) measurably increase the knowledge of the target communities regarding MS4s, impacts of urban runoff on receiving waters, and potential BMP solutions for the target audience; and (2) to measurably change the behavior of target communities and thereby reduce pollutant releases to MS4s and the environment. At a minimum, the education program shall meet the requirements of this section and address the following target communities:

- Municipal Departments and Personnel
- Construction Site Owners and Developers
- Industrial Owners and Operators
- Commercial Owners and Operators
- Residential Community, General Public, and School Children

a. GENERAL REQUIREMENTS

(1) Each Copermittee shall educate each target community on the following topics where appropriate:

⁵⁵ Section A is "Prohibitions and Receiving Water Limitations."

Table 3. Education

Laws, Regulations, Permits, & Requirements	Best Management Practices
<ul style="list-style-type: none"> • Federal, state, and local water quality laws and regulations • Statewide General NPDES Permit for Storm Water Discharges Associated with Industrial Activities (Except Construction). • Statewide General NPDES Permit for Storm Water Discharges Associated with Construction Activities • Regional Board’s General NPDES Permit for Ground Water Dewatering • Regional Board’s 401 Water Quality Certification Program • Statewide General NPDES Utility Vault Permit • Requirements of local municipal permits and ordinances (e.g., storm water and grading ordinances and permits) 	<ul style="list-style-type: none"> • Pollution prevention and safe alternatives • Good housekeeping (e.g., sweeping impervious surfaces instead of hosing) • Proper waste disposal (e.g., garbage, pet/animal waste, green waste, household hazardous materials, appliances, tires, furniture, vehicles, boat/recreational vehicle waste, catch basin/ MS4 cleanout waste) • Non-storm water disposal alternatives (e.g., all wash waters) • Methods to minimized the impact of land development and construction • Erosion prevention • Methods to reduce the impact of residential and charity car-washing • Preventive Maintenance • Equipment/vehicle maintenance and repair • Spill response, containment, and recovery • Recycling • BMP maintenance
General Urban Runoff Concepts	Other Topics
<ul style="list-style-type: none"> • Impacts of urban runoff on receiving waters • Distinction between MS4s and sanitary sewers • BMP types: facility or activity specific, LID, source control, and treatment control • Short-and long-term water quality impacts associated with urbanization (e.g., land-use decisions, development, construction) • Non-storm water discharge prohibitions • How to conduct a storm water inspections 	<ul style="list-style-type: none"> • Public reporting mechanisms • Water quality awareness for Emergency/ First Responders • Illicit Discharge Detection and Elimination observations and follow-up during daily work activities • Potable water discharges to the MS4 • Dechlorination techniques • Hydrostatic testing • Integrated pest management • Benefits of native vegetation • Water conservation • Alternative materials and designs to maintain peak runoff values • Traffic reduction, alternative fuel use

(2) Copermittee educational programs shall emphasize underserved target audiences, high-risk behaviors, and “allowable” behaviors and discharges, including various ethnic and socioeconomic groups and mobile sources.

b. SPECIFIC REQUIREMENTS

(1) Municipal Departments and Personnel Education

(a) Municipal Development Planning – Each Copermittee shall implement an education program so that its planning and development review staffs (and ~~Planning Boards and Elected Officials, if applicable~~) have an understanding of:

- i. Federal, state, and local water quality laws and regulations applicable to Development Projects;
- ii. The connection between land use decisions and short and long-term water quality impacts (i.e., impacts from land development and urbanization);
- iii. How to integrate LID BMP requirements into the local regulatory program(s) and requirements; and
- iv. Methods of minimizing impacts to receiving water quality resulting from development, including:

- [1] Storm water management plan development and review;
- [2] Methods to control downstream erosion impacts;
- [3] Identification of pollutants of concern;
- [4] LID BMP techniques;
- [5] Source control BMPs; and
- [6] Selection of the most effective treatment control BMPs for the pollutants of concern.

(b) Municipal Construction Activities – Each Copermittee shall implement an education program that includes annual training prior to the rainy season so that its construction, building, code enforcement, and grading review staffs, inspectors, and other responsible construction staff have, at a minimum, an understanding of the following topics, as appropriate for the target audience:

- i. Federal, state, and local water quality laws and regulations applicable to construction and grading⁵⁶ activities.
- ii. The connection between construction activities and water quality impacts (i.e., impacts from land development and urbanization and impacts from construction material such as sediment).
- iii. Proper implementation of erosion and sediment control and other BMPs to minimize the impacts to receiving water quality resulting from construction activities.
- iv. The Copermittee's inspection, plan review, and enforcement policies and procedures to verify consistent application.
- v. Current advancements in BMP technologies.
- vi. SUSMP Requirements including treatment options, LID BMPs, source control, and applicable tracking mechanisms.

⁵⁶ Attachment C of the permit defines grading as “the cutting and/or filling of the land surface to a desired slope or elevation.”

(c) Municipal Industrial/Commercial Activities - Each Copermittee shall train staff responsible for conducting storm water compliance inspections and enforcement of industrial and commercial facilities at least once a year. Training shall cover inspection and enforcement procedures, BMP implementation, and reviewing monitoring data.

(d) Municipal Other Activities – Each Copermittee shall implement an education program so that municipal personnel and contractors performing activities which generate pollutants have an understanding of the activity specific BMPs for each activity to be performed.

(2) New Development and Construction Education

As early in the planning and development process as possible and all through the permitting and construction process, each Copermittee shall implement a program to educate project applicants, developers, contractors, property owners, community planning groups, and other responsible parties. The education program shall provide an understanding of the topics listed in Sections D.5.b.(1)(a) and D.5.b.(1)(b) above, as appropriate for the audience being educated. The education program shall also educate project applicants, developers, contractors, property owners, and other responsible parties on the importance of educating all construction workers in the field about stormwater issues and BMPs through formal or informal training.

(3) Residential, General Public, and School Children Education

Each Copermittee shall collaboratively conduct or participate in development and implementation of a plan to educate residential, general public, and school children target communities. The plan shall evaluate use of mass media, mailers, door hangers, booths at public events, classroom education, field trips, hands-on experiences, or other educational methods.

Claimants state that this activity in D.5 will cost \$62,617 in fiscal year 2007-2008, and is expected to increase to \$171,319 in fiscal year 2008-2009, and rise 4% annually thereafter.

III. Watershed Urban Runoff Management Program

A. Copermittee Collaboration

Parts E.2.f and E.2.g of the permit state:

2. Each Copermittee shall collaborate with other Copermittees within its WMA(s) [Watershed Management Area] as in Table 4 below to develop and implement an updated Watershed Urban Runoff Management Program for each watershed. Each updated Watershed Urban Runoff Management Program shall meet the requirements of section E of this Order, reduce the discharge of pollutants from the MS4 to the MEP, and prevent urban runoff discharges from the MS4 from causing or contributing to a violation of water quality standards. At a minimum, each Watershed Urban Runoff Management Program shall include the elements described below: [¶]...[¶]

f. Watershed Activities⁵⁷

(1) The Watershed Copermittees shall identify and implement Watershed Activities that address the high priority water quality problems in the WMA. Watershed Activities shall include both Watershed Water Quality Activities and Watershed Education Activities. These activities may be implemented individually or collectively, and may be implemented at the regional, watershed, or jurisdictional level.

(a) Watershed Water Quality Activities are activities other than education that address the high priority water quality problems in the WMA. A Watershed Water Quality Activity implemented on a jurisdictional basis must be organized and implemented to target a watershed's high priority water quality problems or must exceed the baseline jurisdictional requirements of section D of this Order.

(b) Watershed Education Activities are outreach and training activities that address high priority water quality problems in the WMA.

(2) A Watershed Activities List shall be submitted with each updated Watershed Urban Runoff Management Plan (WURMP) and updated annually thereafter. The Watershed Activities List shall include both Watershed Water Quality Activities and Watershed Education Activities, along with a description of how each activity was selected, and how all of the activities on the list will collectively abate sources and reduce pollutant discharges causing the identified high priority water quality problems in the WMA.

(3) Each activity on the Watershed Activities List shall include the following information:

- (a) A description of the activity;
- (b) A time schedule for implementation of the activity, including key milestones;
- (c) An identification of the specific responsibilities of Watershed Copermittees in completing the activity;
- (d) A description of how the activity will address the identified high priority water quality problem(s) of the watershed;
- (e) A description of how the activity is consistent with the collective watershed strategy;
- (f) A description of the expected benefits of implementing the activity; and
- (g) A description of how implementation effectiveness will be measured.

(4) Each Watershed Copermittee shall implement identified Watershed Activities pursuant to established schedules. For each Permit year, no less than two Watershed Water Quality Activities and two Watershed Education Activities shall be in an active implementation phase. A Watershed Water Quality Activity is in an active implementation phase when significant pollutant load reductions, source

⁵⁷ In their rebuttal comments submitted in February 2009, claimants mention part E.(3) of the permit that requires a detailed description of each activity on the Watershed Activities List. Part E.(3), however, was not in the test claim so staff makes no findings on it.

abatement, or other quantifiable benefits to discharge or receiving water quality can reasonably be established in relation to the watershed's high priority water quality problem(s). Watershed Water Quality Activities that are capital projects are in active implementation for the first year of implementation only. A Watershed Education Activity is in an active implementation phase when changes in attitudes, knowledge, awareness, or behavior can reasonably be established in target audiences.

g. Copermittee Collaboration

Watershed Copermittees shall collaborate to develop and implement the Watershed Urban Runoff Management Programs. Watershed Copermittee collaboration shall include frequent regularly scheduled meetings.

Claimants state that the copermittees' staffing costs for watershed program implementation in fiscal year 2007-2008 is \$1,033,219 and is expected to increase to \$1,401,765 in fiscal year 2008-2009, and are expected to increase four percent annually. For consultant services, the costs are \$599,674 in fiscal year 2007-2008 and are expected to be \$657,101 in 2008-2009, and are expected to rise five percent annually. For Watershed Urban Runoff Management Program implementation, claimants allege that the cost in fiscal year 2008-2009 is \$1,053,880.

Claimants filed a 60-page rebuttal to Finance's and the State Board's comments on February 9, 2009, which is addressed in the analysis below.

Claimant County of San Diego filed comments on the draft staff analysis in January 2010 that disagrees with the findings regarding fee authority for certain permit activities involving development. These arguments are discussed further below.

State Agency Positions

Department of Finance: In comments filed November 16, 2008, Finance alleges that the permit does not impose a reimbursable mandate within the meaning of section 6 of article XIII B of the California Constitution because the permit conditions are required by federal laws so they are not reimbursable pursuant to Government Code section 17556, subdivision (c). Finance asserts that the State and Regional Water Boards "act on behalf of the federal government to develop, administer, and enforce the NPDES program in compliance with Section 402 of the CWA." Finance also states that more activities were included in the 2007 permit than the prior permit because "it appears ... they were necessary to comply with federal law."

Finance also argues that the claimants had discretion over the activities and conditions to include in the permit application. The copermittees elected to use "best management practices" to identify alternative practices to reduce water pollution. Since the local agencies proposed the activities to be included in the permit, the requirements are a downstream result of the local agencies' decision to include the particular activities in the permit. Finance cites the *Kern* case,⁵⁸ which held that if participation in the underlying program is voluntary, the resulting new consequential requirements are not reimbursable mandates.

⁵⁸ *Department of Finance v. Commission on State Mandates (Kern High School Dist.)* (2003) 30 Cal.4th 727.

As to the claimants' identifying NPDES permits approved by other states to show the permit exceeds federal law, Finance states that this "demonstrates the variation envisioned by the federal authority in granting the administering agencies flexibility to address specific regional needs in the most practical manner."

Finally, Finance states that some local agencies are using fees for funding the claimed permit activities, so should the Commission find that the permit constitutes a reimbursable mandate, the fees should be considered as offsetting revenues.

Finance commented on the draft staff analysis in February 2010, echoing the comments of the State Board, which are summarized and addressed below.

State Water Resources Control Board: The State Board and Regional Board filed joint comments on the test claim on October 27, 2008, alleging that the permit is mandated on the local agencies by federal law, and that it is not unique to government because NPDES permits apply to private dischargers also. The State Board also states that the requirements are consistent with the minimum requirements of federal law, but even if the permit is interpreted as going beyond federal law, any additional state requirements are de minimis. In addition, the State Board alleges that the costs are not subject to reimbursement because most of the programs were proposed by the cities and County themselves, and because the claimants may comply with the permit requirements by charging fees and are not required to raise taxes.

The State Board further comments that the 2007 permit mirrors or is identical to the requirements in the 2001 permit, only providing more detail to the requirements already in existence and to implement the MEP performance standard. Like earlier permits, the 2007 permit implements the federal standard of reducing pollutants from the MS4 to the MEP (maximum extent practicable), but according to the State Board, "what *has* changed in successive permits is the level of specificity included in the permit to define what constitutes MEP." [Emphasis in original.] The State Board asserts that this level of specificity does not make the permit a state mandate, but that even if it is, the additional requirements are de minimis. The State Board also states that the local agencies have fee authority to pay for the permit requirements.

The State Board also addresses specific allegations in the test claim, as discussed below.

The State Board submitted comments on the draft staff analysis in January 2010, arguing that the test claim should not be reimbursable because (1) federal law requires local agencies to obtain NPDES permits from California Water Boards; (2) federal law mandates the permit that was issued, which is less stringent than permits for private industry; (3) the draft staff analysis incorrectly applies the *Hayes* case because the state did not shift the cost of the federal mandate to the local agencies; rather the federal mandate was imposed directly on local agencies and not on the state; (4) the permit provisions are not in addition to, but are required by federal law; (5) even though municipalities are singled out in the federal storm water law, the law is one of general application; and (6) potential limitations on the exercise of fee authority due to Proposition 218 do not invalidate claimants' fee authority because Government Code section 17556, subdivision (d), does not require unlimited or unilateral fee authority. These arguments are addressed below.

Interested Party Comments

Bay Area Stormwater Management Agencies Association (BASMAA): In comments submitted February 4, 2009, BASMAA speaks generally about California's municipal stormwater permitting program, stating that "increased requirements entail both new programs and higher levels of service." BASMAA also states:

[T]he State essentially asserts that the federal minimum for stormwater permitting is anything one of its Water Boards says it is. Likewise, the State's assertion that its 'discretion to exceed MEP [the maximum extent practicable standard] originates in federal law' and 'requires [it], as a matter of law, to include other such permit provisions as it deems appropriate' is nothing more than an oxymoron that begs the question of what the federal Clean Water Act actually mandates rather than allows a delegated state permit writer to require as a matter of discretion. [Emphasis in original.]

BASMAA emphasizes that the water boards have wide discretion in determining the content of a municipal stormwater permit beyond the federal minimum requirements, and says that the boards need to work "proactively and collaboratively" with local governments in "prioritizing and phasing in actions that realistically can be implemented given existing and projected local revenues."

League of California Cities (League) and California State Association of Counties (CSAC):

The League and CSAC filed joint comments on the draft staff analysis on January 26, 2010, expressing support for it "and its recognition of the constraints placed on cities and counties with respect to adopting new or increased property-related fees."

The League and CSAC disagree, however, with the finding that the hydromodification management plan (HMP, part D.1.g.), the requirement to include low impact development (LID) in the Standard Urban Stormwater Mitigation Plans (SUSMPs) (part D.1.d.(7)-(8)), and parts of the education component (part D.5) are not reimbursable because the claimants have fee authority (under Gov. Code, § 66000 et seq., The Mitigation Fee Act) sufficient to pay for them. The League and CSAC point out examples where a city or county constructs a priority development project for which no third party is available upon whom to assess a fee. They also assert that for these city or county projects, a nexus requirement cannot be demonstrated "because no private development impact have generated the need for the projects."

COMMISSION FINDINGS

The courts have found that article XIII B, section 6 of the California Constitution⁵⁹ recognizes the state constitutional restrictions on the powers of local government to tax and spend.⁶⁰ "Its

⁵⁹ Article XIII B, section 6, subdivision (a), provides:

- (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

purpose 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."⁶¹ A test claim statute or executive order may impose a reimbursable state-mandated program if it orders or commands a local agency or school district to engage in an activity or task.⁶²

In addition, the required activity or task must be new, constituting a "new program," or it must create a "higher level of service" over the previously required level of service.⁶³

The courts have defined a "program" subject to article XIII B, section 6, of the California Constitution, as one that carries out the governmental function of providing public services, or a law that imposes unique requirements on local agencies or school districts to implement a state policy, but does not apply generally to all residents and entities in the state.⁶⁴ To determine if the program is new or imposes a higher level of service, the test claim legislation must be compared with the legal requirements in effect immediately before the enactment of the test claim legislation.⁶⁵ A "higher level of service" occurs when the new "requirements were intended to provide an enhanced service to the public."⁶⁶

Finally, the newly required activity or increased level of service must impose costs mandated by the state.⁶⁷

The Commission is vested with exclusive authority to adjudicate disputes over the existence of state-mandated programs within the meaning of article XIII B, section 6.⁶⁸ In making its

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.

⁶⁰ *Kern High School Dist.*, *supra*, 30 Cal.4th 727, 735.

⁶¹ *County of San Diego v. State of California (County of San Diego)*(1997) 15 Cal.4th 68, 81.

⁶² *Long Beach Unified School Dist. v. State of California* (1990) 225 Cal.App.3d 155, 174.

⁶³ *San Diego Unified School Dist. v. Commission on State Mandates* (2004) 33 Cal.4th 859, 878 (*San Diego Unified School Dist.*); *Lucia Mar Unified School District v. Honig* (1988) 44 Cal.3d 830, 835-836 (*Lucia Mar*).

⁶⁴ *San Diego Unified School Dist.*, *supra*, 33 Cal.4th 859, 874, (reaffirming the test set out in *County of Los Angeles v. State of California* (1987) 43 Cal.3d 46, 56; *Lucia Mar*, *supra*, 44 Cal.3d 830, 835.)

⁶⁵ *San Diego Unified School Dist.*, *supra*, 33 Cal.4th 859, 878; *Lucia Mar*, *supra*, 44 Cal.3d 830, 835.

⁶⁶ *San Diego Unified School Dist.*, *supra*, 33 Cal.4th 859, 878.

⁶⁷ *County of Fresno v. State of California* (1991) 53 Cal.3d 482, 487; *County of Sonoma v. Commission on State Mandates* (2000) 84 Cal.App.4th 1265, 1284 (*County of Sonoma*); Government Code sections 17514 and 17556.

decisions, the Commission must strictly construe article XIII B, section 6, and not apply it as an "equitable remedy to cure the perceived unfairness resulting from political decisions on funding priorities."⁶⁹

The permit provisions in the test claim are discussed separately to determine whether they are reimbursable state-mandates.

Issue 1: Is the permit subject to article XIII B, section 6, of the California Constitution?

The issues discussed here are whether the permit provisions are an executive order within the meaning of Government Code section 17516, whether they are discretionary, whether they constitute a program, and whether they are a federal mandate or a state-mandated new program or higher level of service.

A. Is the permit an executive order within the meaning of Government Code section 17516?

The Commission has jurisdiction over test claims involving statutes and executive orders as defined by Government Code section 17516, which describes "executive order" for purposes of state mandates, as "any order, plan, requirement, rule, or regulation issued by any of the following: (a) The Governor. (b) Any officer or official serving at the pleasure of the Governor. (c) Any agency, department, board, or commission of state government."⁷⁰

The California Regional Water Board, San Diego Region, is a state agency.⁷¹ The permit it issued is a plan for reducing water pollution, and contains requirements for local agencies toward that end. Therefore, the Commission finds that the permit is an executive order within the meaning of article XIII B, section 6 and Government Code section 17516.

B. Is the permit the result of claimants' discretion?

The permit requires claimants to undertake various activities to reduce stormwater pollution in compliance with a permit issued by the Regional Board.

The Department of Finance, in comments submitted November 6, 2008, asserts that the claimants "had the option to use best management practices that would identify alternative practices to reduce pollution in water to the maximum extent practicable" Finance asserts that the claimants proposed permit requirements when they submitted the application for the permit,

⁶⁸ *Kinlaw v. State of California* (1991) 54 Cal.3d 326, 331-334; Government Code sections 17551, 17552.

⁶⁹ *County of Sonoma, supra*, 84 Cal.App.4th 1265, 1280, citing *City of San Jose v. State of California* (1996) 45 Cal.App.4th 1802, 1817.

⁷⁰ Section 17516 also states: "'Executive order" does not include any order, plan, requirement, rule, or regulation issued by the State Water Resources Control Board or by any regional water quality control board pursuant to Division 7 (commencing with Section 13000) of the Water Code." The Second District Court of Appeal has held that this statutory language is unconstitutional. *County of Los Angeles v. Commission on State Mandates, supra*, 150 Cal.App.4th 898, 904.

⁷¹ Water Code section 13200 et seq.

and that increased costs due to downstream activities of an underlying discretionary activity are not reimbursable.

Similarly, the State Board, in its October 27, 2008 comments, states that the copermitees proposed the concepts that were incorporated into and form the basis of the permit provisions for which they now seek reimbursement.

In rebuttal comments submitted February 9, 2009, claimants dispute that the Report of Waste Discharge (ROWD, or permit application) “represents a copermitee proposal for 2007 Permit content or that the adopted 2007 Permit is ‘based on the ROWD.’” According to claimants, the 2007 permit provisions “were not taken directly from, nor are they generally consistent with the intent of, most of the specific ROWD content upon which the state contends they are based.”

In determining whether the permit provisions at issue are a downstream activity resulting from the discretionary decision by the local agencies, the following rule stated by the Supreme Court in the *Kern High School Dist.* case applies:

[A]ctivities undertaken at the option or discretion of a local government entity ... do not trigger a state mandate and hence do not require reimbursement of funds—even if the local entity is obliged to incur costs as a result of its discretionary decision to participate in a particular program or practice.⁷²

The Commission finds that the permit activities at issue were not undertaken at the option or discretion of the claimants. The claimants are required by law to submit the NPDES permit application in the form of a Report of Waste Discharge.⁷³ Submitting it is not discretionary, as shown in the following federal regulation:

a) *Duty to apply.* (1) Any person⁷⁴ who discharges or proposes to discharge pollutants ... and who does not have an effective permit ... must submit a complete application to the Director in accordance with this section and part 124 of this chapter.⁷⁵

Moreover, the ROWD (tantamount to an NPDES permit application) is required by California law, as follows: “Any person discharging pollutants or proposing to discharge pollutants to the navigable water of the United States within the jurisdiction of this state ... shall file a report of the discharge in compliance with the procedures set forth in Section 13260 ...”⁷⁶ Thus, submitting the ROWD is not discretionary because the claimants are required to do so by both federal and California law.

⁷² *Kern High School Dist.*, *supra*, 30 Cal.4th 727, 742.

⁷³ The Report of Waste Discharge is attachment 36 of the State Water Resources Control Board comments submitted October 2008.

⁷⁴ *Person* means an individual, association, partnership, corporation, municipality, State or Federal agency, or an agent or employee thereof (40 CFR § 122.2).

⁷⁵ 40 Code of Federal Regulations, section 122.21 (a). The section applies to U.S. EPA-issued permits, but is incorporated into section 123.25 (the state program provision) by reference.

⁷⁶ Water Code section 13376.

In addition to federal and state law, the 2001 permit required submission of the ROWD. The 2007 permit, under Part A "Basis for the Order," states: "On August 25, 2005, in accordance with Order No. 2001-01 [the 2001 Permit], the County of San Diego, as the Principal Permittee, submitted a Report of Waste Discharge (ROWD) for renewal of their MS4 Permit."⁷⁷

And although the ROWD provides a basis for some (but not all) of the 2007 permit provisions at issue in this test claim, there is a substantial difference between what was included in the claimants' ROWD and the specific requirements the Regional Board adopted (e.g., copermittee collaboration, parts F.2., F.3 & L, Regional Residential Education Program Development, part F.1., Low Impact Development, part D.1.d(7)-(8), long-term effectiveness assessment, part I.5, program effectiveness assessment, parts I.1 & I.2, educational surveys and tests, part D.5, and the Watershed Urban Runoff Management Program, parts E.2.f & E.2.g). Other permit activities were not proposed in the ROWD (e.g., hydromodification, part D.1.g., street sweeping, parts D.2.a(5) & J.3.a(3)(c)x-xv, conveyance system cleaning, part D.3.a(3) & J.3.a(3)(c)iv-viii).

Because the claimants do not voluntarily participate in the NPDES program, the Commission finds that the *Kern High School Dist.* case does not apply to the permit, the contents of which are not the result of the claimants' discretion.

C. Does the permit constitute a program within the meaning of article XIII B, section 6 of the California Constitution?

As to whether the permit provisions in the test claim constitute a "program," courts have defined a "program" for purposes of article XIII B, section 6, of the California Constitution, as one that carries out the governmental function of providing public services, or a law that imposes unique requirements on local agencies or school districts to implement a state policy, but does not apply generally to all residents and entities in the state.⁷⁸

The State Board, in its October 2008 comments, argues that the NPDES program is not a program because the NPDES permit program, and the stormwater requirements specifically, are not peculiar to local government in that industrial and construction facilities must also obtain NPDES stormwater permits.

The State Board reiterates this argument in its January 2010 comments, asserting that the draft analysis "fails to consider that private entities, as well as certain state ... and ... federal agencies also receive NPDES permits for storm water discharges." The State Board and Finance also cite *City of Richmond v. Commission on State Mandates* (1998) 64 Cal.App.4th 1190, for the proposition that "where municipalities have separate but not more stringent requirements than private entities, there is no program subject to reimbursement." Finance, in its February 2010 comments, asserts that "the requirements within the test claim permit apply generally to state and private dischargers."

⁷⁷ The 2001 Permit is attached to the State Water Resources Control Board, comments submitted October 2008, Attachment 25.

⁷⁸ *San Diego Unified School Dist.*, *supra*, 33 Cal.4th 859, 874, (reaffirming the test set out in *County of Los Angeles v. State of California*, *supra*, 43 Cal.3d 46, 56; *Lucia Mar*, *supra*, 44 Cal.3d 830, 835.)

Claimants, in their February 2009 rebuttal comments, disagree with the State Board and assert that an MS4 permit is unique to government and subject to unique regulations. Claimants cite the definition of an MS4 in 40 C.F.R. § 122.26(b)(8) as “a conveyance or system of conveyances ... owned or operated by a State, city, town, borough, county, parish, district, association, or other public body” Claimants argue that prohibiting “non-stormwater discharges into the storm sewers”⁷⁹ is a uniquely government function that provides for the health, safety, and welfare of the citizens in a community. Claimants also point out that the federal regulations for MS4 permits are in 40 C.F.R. §122.26(d), while the regulations pertaining to private industrial dischargers are in 40 C.F.R. § 122.26(c), different regulations that apply the Best Available Technology standard rather than the Maximum Extent Practicable standard imposed on MS4s.

The Commission finds that the permit activities constitute a program within the meaning of article XIII B, section 6. In *County of Los Angeles v. Commission on State Mandates*, the State Board argued that an NPDES permit⁸⁰ issued by the Los Angeles Regional Water Quality Control Board does not constitute a “program.” The court dismissed this argument, stating: “[T]he applicability of permits to public and private dischargers does not inform us about whether a particular permit or an obligation thereunder imposed on local governments constitutes a state mandate necessitating subvention under article XIII B, section 6.”⁸¹ In other words, whether the law regarding NPDES permits generally constitute a “program” within the meaning of article XIII B, section 6 is not relevant. The only issue before the Commission is whether the permit in this test claim constitutes a program.

The permit activities in this claim (order no. R9-2007-001, NPDES no. CAS0108758) are limited to the local governmental entities specified in the permit. The permit defines the “permittees” as the County of San Diego and 18 incorporated cities, along with the San Diego Unified Port District and San Diego County Regional Airport Authority.⁸² No private entities are regulated under this permit, so it is not a law (or executive order) of general application. That fact distinguishes this claim from the *City of Richmond* case cited by Finance and the State Board, in which the workers’ compensation law was found to be one of general application. The same cannot be said of the permit in this claim (order no. R9-2007-001, NPDES no. CAS0108758) because no private entities are regulated by it.

Moreover, the permit provides a service to the public by preventing or abating pollution in waterways and beaches in San Diego County. As stated in the permit: “This order specifies requirements necessary for the Copermittees to reduce the discharge of pollutants in urban runoff to the maximum extent practicable.”

⁷⁹ 33 U.S.C. § 1342(p)(3).

⁸⁰ Los Angeles Regional Quality Control Board Order No. 01-182, Permit CAS004001. The Commission issued a decision on parts 4C2a, 4C2b, 4E and 4Fc3 of this permit (test claims 03-TC-09, 03-TC-19, 03-TC-20, 03-TC-21) at its July 31, 2009 hearing.

⁸¹ *County of Los Angeles v. Commission on State Mandates* (2007) 150 Cal.App.4th 898, 919.

⁸² The cities are Carlsbad, Chula Vista, Coronado, Del Mar, El Cajon, Encinitas, Escondido, Imperial Beach, La Mesa, Lemon Grove, National City, Oceanside, Poway, San Diego, San Marcos, Santee, Solana Beach, and Vista.

Thus, the permit carries out the governmental function of providing public services, and also imposes unique requirements on local agencies in San Diego County to implement a state policy that does not apply generally to all residents and entities in the state. Therefore, the Commission finds that the permit is a program within the meaning of article XIII B, section 6.

D. Are the permit provisions in the test claim a federal mandate or a state-mandated new program or higher level of service?

The next issue is whether the parts of the permit alleged in the test claim are a state mandate, or federally mandated, as asserted by the State Board and the Department of Finance. If so, the permit would not constitute a state mandate. The California Supreme Court has stated that “article XIII B, section 6, and the implementing statutes ... by their terms, provide for reimbursement only of *state-mandated* costs, not *federally* mandated costs.”⁸³

Also discussed is whether the permit is a new program or higher level of service. To determine whether the permit is a new program or higher level of service, the permit is compared to the legal requirements in effect immediately before its adoption, in this case, the 2001 permit.⁸⁴

When analyzing federal law in the context of a test claim under article XIII B, section 6, the court in *Hayes v. Commission on State Mandates* held that “[w]hen the federal government imposes costs on local agencies those costs are not mandated by the state and thus would not require a state subvention. Instead, such costs are exempt from local agencies’ taxing and spending limitations” under article XIII B.⁸⁵ When federal law imposes a mandate on the state, however, and the state “freely [chooses] to impose the costs upon the local agency as a means of implementing a federal program, then the costs are the result of a reimbursable state mandate regardless whether the costs were imposed upon the state by the federal government.”⁸⁶

Similarly, Government Code section 17556, subdivision (c), states that the Commission shall not find “costs mandated by the state” if “[t]he statute or executive order imposes a requirement that is mandated by a federal law or regulation and results in costs mandated by the federal government, unless the statute or executive order mandates costs that exceed the mandate in that federal law or regulation.”

In *Long Beach Unified School Dist. v. State of California*,⁸⁷ the court considered whether a state executive order involving school desegregation constituted a state mandate. The regulations required, for example, conducting mandatory biennial racial and ethnic surveys, developing a reasonably feasible plan every four years to alleviate and prevent segregation to include specifics

⁸³ *San Diego Unified School Dist. v. Commission on State Mandates*, *supra*, 33 Cal.4th 859, 879-880, emphasis in original.

⁸⁴ *San Diego Unified School Dist.*, *supra*, 33 Cal.4th 859, 878; *Lucia Mar*, *supra*, 44 Cal.3d 830, 835.

⁸⁵ *Hayes v. Commission on State Mandates* (1992) 11 Cal. App. 4th 1564, 1593, citing *City of Sacramento v. State of California*, *supra*, 50 Cal.3d 51, 76; see also, Government Code sections 17513 and 17556, subdivision (c).

⁸⁶ *Hayes v. Commission on State Mandates*, *supra*, 11 Cal. App. 4th 1564, 1594.

⁸⁷ *Long Beach Unified School Dist. v. State of California*, *supra*, 225 Cal.App.3d 155.

elements, and taking mandatory steps to involve the community including public hearings. The state argued that its Executive Order did not mandate a new program because school districts in California have a constitutional duty to make an effort to eliminate racial segregation in the public schools. The court held that the executive order did require school districts to provide a higher level of service than required by federal constitutional or case law because the state requirements went beyond federal requirements imposed on school districts.⁸⁸ The court stated:

A review of the Executive Order and guidelines shows that a higher level of service is mandated because their requirements go beyond constitutional and case law requirements. ...[T]he executive Order and guidelines require specific actions ... [that were] required acts. These requirements constitute a higher level of service.”⁸⁹

In analyzing the permit under the federal Clean Water Act, we keep the following in mind. First, 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.⁹⁰ The federal Clean Water Act allows for more stringent state-imposed measures, as follows:

Permits for discharges from municipal storm sewers [¶]...[¶] (iii) shall require controls to reduce the discharges of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the ... State determines appropriate for the control of such pollutants. (33 U.S.C.A. 1342 (p)(3)(B)(iii).)

Second, the California Supreme Court has acknowledged that an NPDES permit may contain terms that are federally mandated and terms that exceed federal law.⁹¹

California in the NPDES program: Under the federal statutory scheme, a stormwater permit may be administered by the Administrator of U.S. EPA or by a state-designated agency, but states are not required to have an NPDES program. Subdivision (b) of section 1324 of the federal Clean Water Act, which describes the NPDES program (and subdivision (p), which describes the requirements for the municipal stormwater system permits) states in part:

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 [of U.S. EPA] a full and complete description of the program it proposes to establish and administer under State law or under an interstate compact. [Emphasis added.]

And the federal stormwater statute states that the permits:

[S]hall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and

⁸⁸ *Id.* at 173.

⁸⁹ *Ibid.*

⁹⁰ 33 U.S.C. section 1370.

⁹¹ *City of Burbank v. State Water Resources Control Board, supra*, 35 Cal.4th 613, 618, 628.

system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants. (33 USCA § 1342 (p)(3)(B)(iii). [Emphasis added].)

The federal statutory scheme indicates that California is not required to have its own NPDES program nor to issue stormwater permits. According to section 1342 (p) quoted above, the Administrator of U.S. EPA would do so if California had no program. The California Legislature, when adopting the NPDES program⁹² to comply with the Federal Water Pollution Control Act of 1972, stated the following findings and declaration in Water Code section 13370:

- (a) The Federal Water Pollution Control Act [citation omitted] as amended, provides for permit systems to regulate the discharge of pollutants ... to the navigable waters of the United States and to regulate the use and disposal of sewage sludge.
- (b) The Federal Water Pollution Control Act, as amended, provides that permits may be issued by states which are authorized to implement the provisions of that act.
- (c) It is in the interest of the people of the state, in order to avoid direct regulation by the federal government, of persons already subject to regulation under state law pursuant to this division, to enact this chapter in order to authorize the state to implement the provisions of the Federal Water Pollution Control Act and acts amendatory thereof or supplementary thereto, and federal regulations and guidelines issued pursuant thereto, provided, that the state board shall request federal funding under the Federal Water Pollution Act for the purpose of carrying out its responsibilities under this program.

Based on this statute, in which California voluntarily adopts the permitting program, and on the federal statutes quoted above that authorize but do not expressly require states to have this program, the state has freely chosen⁹³ to effect the stormwater permit program. Further discussion in this analysis of federal "requirements" should be construed in the context of California's choice to participate in the federal regulatory NPDES program.

Finance, in its February 2010 comments on the draft staff analysis, states:

The state's role as a permitting authority acting on behalf of the federal government negates the existence of a state mandate because the test claim permit is issued in compliance with federal law. ...[N]o state mandate exists if the state requirements, in the absence of state statute, would still be imposed upon local agencies by federal law.

Similarly, the State Board's January 2010 comments argue that the *Hayes* case is distinguishable from this test claim because NPDES permits do not impose a federal mandate on the state. Rather, federal law requires municipalities to comply with the permit. The State Board also states:

⁹² Water Code section 13374 states: "The term 'waste discharge requirements' as referred to in this division is the equivalent of the term 'permits' as used in the Federal water Pollution Control Act, as amended."

⁹³ *Hayes v. Commission on State Mandates*, *supra*, 11 Cal. App. 4th 1564, 1593-1594.

This [draft staff analysis'] approach fails to recognize that NPDES storm water permits, whether issued by U.S. EPA or California's Water Boards, are designed to translate the general federal mandate into specific programs and enforceable requirements. Whether issued by U.S. EPA or the California's Water Boards, the federal NPDES permit will identify specific requirements for municipalities to reduce pollutants in their storm water to the maximum extent practicable. The federally required pollutant reduction is a federal mandate. ... The fact that state agencies have responsibility for specifying the federal permit requirements for municipalities does not indicate that requirements extend beyond federal law, as in *Long Beach*, or convert the federal mandate into a state mandate.⁹⁴

The Commission disagrees. As discussed above, the federal Clean Water Act⁹⁵ authorizes states to impose more stringent measures than required by federal law. The California Supreme Court has also recognized that permits may include state-imposed, in addition to federally required measures.⁹⁶ Those state measures that may constitute a state mandate if they "exceed the mandate in ... federal law."⁹⁷ Thus, although California opted into the NPDES program, further analysis is needed to determine whether the state requirements exceed the federal requirements imposed on local agencies.

The permit provisions are discussed below in context of the following federal law governing stormwater permits: Clean Water Act section 402 (p) (33 USCA 1342 (p)(3)(B)) and Code of Federal Regulations, title 40, section 122.26. The federal stormwater statute states:

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 Administrator⁹⁸ or the State determines appropriate for the control of such pollutants. (33 USCA § 1342 (p)(3)(B)).

The issues are whether the parts of the permit in the test claim are federal mandates or state mandates, and whether they are a new program or higher level of service.

⁹⁴ State Board comments submitted January 2010.

⁹⁵ 33 U.S.C. sections 1370 and 1342 (p)(3)(B)(iii).

⁹⁶ *City of Burbank v. State Water Resources Control Board*, *supra*, 35 Cal.4th 613, 618, 628.

⁹⁷ Government Code section 17556, subdivision (b). *Long Beach Unified School Dist. v. State of California*, *supra*, 225 Cal.App.3d 155, 173.

⁹⁸ Administrator means the Administrator of the United States Environmental Protection Agency, or an authorized representative. (40 CFR § 122.2.)

I. Jurisdictional Urban Runoff Management Program and Reporting (Parts D & J)

Part D of the permit describes the Jurisdictional Urban Runoff Management Program (JURMP) of which each copermitee "shall develop and implement" an updated version (p.15). Part J of the permit ("Reporting") requires the JURMP to be updated and revised to include specified information. The test claim includes parts D.1.g (hydromodification management plan), D.1.d.(7)-(8) (low-impact development or LID), D.3.a(5) (street sweeping) and J.3.a(3)x-xv (reporting on street sweeping), D.3.a(3) (conveyance system cleaning) and J.3.a(3)(c)(iv)-(viii) (reporting on conveyance system cleaning), and D.5 (educational surveys and tests).

Hydromodification (part D.1.g): Part D.1 of the permit is entitled "Development Planning." Part D.1.g. requires developing and implementing, in collaboration with other copermitees, a hydromodification management plan (HMP) "to manage increases in runoff discharge rates and durations from all Priority Development Projects."⁹⁹ Priority development projects can include both private projects, and municipal (city or county) projects. The purpose of the HMP is:

⁹⁹ According to the permit, Priority Development Projects are: a) all new Development Projects that fall under the project categories or locations listed in section D.1.d.(2), and b) those redevelopment projects that create, add or replace at least 5,000 square feet of impervious surfaces on an already developed site that falls under the project categories or locations listed in section D.1.d.(2)..

[¶]...[¶] [Section D.1.d.(2):] (2) Priority Development Project Categories (a) Housing subdivisions of 10 or more dwelling units. This category includes single-family homes, multi-family homes, condominiums, and apartments. (b) Commercial developments greater than one acre. This category is defined as any development on private land that is not for heavy industrial or residential uses where the land area for development is greater than one acre. The category includes, but is not limited to: hospitals; laboratories and other medical facilities; educational institutions; recreational facilities; municipal facilities; commercial nurseries; multi-apartment buildings; car wash facilities; mini-malls and other business complexes; shopping malls; hotels; office buildings; public warehouses; automotive dealerships; airfields; and other light industrial facilities. (c) Developments of heavy industry greater than one acre. This category includes, but is not limited to, manufacturing plants, food processing plants, metal working facilities, printing plants, and fleet storage areas (bus, truck, etc.). (d) Automotive repair shops. This category is defined as a facility that is categorized in any one of the following Standard Industrial Classification (SIC) codes: 5013, 5014, 5541, 7532-7534, or 7536-7539. (e) Restaurants. This category is defined as a facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (SIC code 5812), where the land area for development is greater than 5,000 square feet. Restaurants where land development is less than 5,000 square feet shall meet all SUSMP requirements except for structural treatment BMP and numeric sizing criteria requirement D.1.d.(6)(c) and hydromodification requirement D.1.g. (f) All hillside development greater than 5,000 square feet. This category is defined as any development which creates 5,000 square feet of impervious surface which is located in an area with known erosive soil conditions, where the development will grade on any natural slope that is twenty-five percent or greater. (g) Environmentally Sensitive Areas (ESAs). All development located within or directly adjacent to or discharging directly to an ESA (where discharges from the development or redevelopment

[T]o manage increases in runoff discharge rates and durations from all Priority Development Projects, where such rates and durations are likely to cause increased erosion of channel beds and banks, sediment pollutant generation, or other impacts to beneficial uses and stream habitat due to increased erosive force.

Hydromodification is defined in Attachment C of the permit as "The change in the natural watershed hydrologic processes and runoff characteristics (i.e., interception, infiltration, overland flow, interflow and groundwater flow) caused by urbanization or other land use changes that result in increased stream flows and sediment transport. In addition, alteration of stream and river channels, installation of dams and water impoundments, and excessive streambank and shoreline erosion are also considered hydromodification, due to their disruption of natural watershed hydrologic processes."¹⁰⁰

As detailed in the permit and on pages 12-17 above, the HMP must have specified content, including "a description of how the copermitees will incorporate the HMP requirements into their local approval processes." Also required is collaborative reporting on the HMP and implementation 180 days after the HMP is approved by the Regional Water Board, with earlier implementation encouraged.

According to the State Board's comments submitted in October 2008 the requirement to develop and implement a HMP is necessary to meet the minimum federal MEP standard. The Board states that "broad federal legal authority is contained in CWA sections 402(p)(3)(B)(ii)-(iii), CWA section 402(a), and in 40 C.F.R. sections 122.26 (d)(2)(i)(B)-(C), (E), and (F), 131.12, and 122.26(d)(2)(iv)(A)(2), which states:

will enter receiving waters within the ESA), which either creates 2,500 square feet of impervious surface on a proposed project site or increases the area of imperviousness of a proposed project site to 10% or more of its naturally occurring condition. "Directly adjacent" means situated within 200 feet of the ESA. "Discharging directly to" means outflow from a drainage conveyance system that is composed entirely of flows from the subject development or redevelopment site, and not commingled with flows from adjacent lands. (h) Parking lots 5,000 square feet or more or with 15 or more parking spaces and potentially exposed to urban runoff. Parking lot is defined as a land area or facility for the temporary parking or storage of motor vehicles used personally, for business, or for commerce. (i) Street, roads, highways, and freeways. This category includes any paved surface that is 5,000 square feet or greater used for the transportation of automobiles, trucks, motorcycles, and other vehicles. (j) Retail Gasoline Outlets (RGOs). This category includes RGOs that meet the following criteria: (a) 5,000 square feet or more or (b) a projected Average Daily Traffic (ADT) of 100 or more vehicles per day.

¹⁰⁰ It is also defined as "changes in the magnitude and frequency of stream flows as a result of urbanization, and the resulting impacts on the receiving channels in terms of erosion, sedimentation and degradation of in-stream habitat." Draft Hydromodification Management Plan for San Diego County, page 4. <http://www.projectcleanwater.org/pdf/susmp/sd_hmp_2009.pdf> as of May 28, 2009.

(d) Application requirements for large and medium municipal separate storm sewer discharges. The operator¹⁰¹ of a discharge¹⁰² from a large or medium municipal separate storm sewer or a municipal separate storm sewer that is designated by the Director under paragraph (a)(1)(v) of this section, may submit a jurisdiction-wide or system-wide permit application. ... Permit applications for discharges from large and medium municipal storm sewers or municipal storm sewers designated under paragraph (a)(1)(v) of this section shall include; [¶]... [¶]

(2) *Part 2.* Part 2 of the application shall consist of: [¶]... [¶]

(iv) *Proposed management program.* A proposed management program covers the duration of the permit. It shall include 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. Separate proposed programs may be submitted by each coapplicant. Proposed programs may impose controls on a systemwide basis, a watershed basis, a jurisdiction basis, or on individual outfalls. Proposed programs will be considered by the Director when developing permit conditions to reduce pollutants in discharges to the maximum extent practicable. Proposed management programs shall describe priorities for implementing controls. Such programs shall be based on:

(A) A description of structural and source control measures to reduce pollutants from runoff from commercial and residential areas that are discharged from the municipal storm sewer system that are to be implemented during the life of the permit, accompanied with an estimate of the expected reduction of pollutant loads and a proposed schedule for implementing such controls. At a minimum, the description shall include: [¶]... [¶]

¹⁰¹ “*Owner or operator* means the owner or operator of any “facility or activity” subject to regulation under the NPDES program.” (40 CFR § 122.2)

¹⁰² “*Discharge* when used without qualification means the “discharge of a pollutant. *Discharge of a pollutant* means: (a) Any addition of any “pollutant” or combination of pollutants to “waters of the United States” from any “point source,” or (b) Any addition of any pollutant or combination of pollutants to the waters of the “contiguous zone” or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation.

This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. This term does not include an addition of pollutants by any “indirect discharger.” (40 CFR § 122.2.)

(2) 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. ...

The State Board also cited the U.S. Supreme Court decision, *P.U.D. No. 1 v. Washington Department of Ecology* (1994) 511 U.S. 700, for the state's authority to regulate flow under the federal Clean Water Act in order to protect water quality standards.

In response, the claimants' February 2009 comments state that the permit's Fact Sheet did not cite any federal authorities to justify the HMP portion of the permit, and that none exists. Claimants also assert that no other jurisdiction in the United States that was surveyed for the claim has a permit that requires a HMP. Claimants call the HMP requirement a flood control measure that is not a requirement in any other permit outside of California, and that the HMP exceeds the federal requirements and constitutes a state mandate. Claimants also point to the language in section 122.26(d)(2)(iv)(A)(2) that they say is:

[A]imed directly at controlling pollutant discharges from an MS4 that originate in areas of new development. [The regulation] does not mention the need to include controls to reduce the *volume* of storm water discharged from these areas. ... controls designed only to limit volume are not expressly required.

As to the *P.U.D. No. 1 v. Washington Department of Ecology* decision cited by the State Board, the claimants distinguish it as being decided under section 401 of the Clean Water Act, wherein the permit was issued under section 402. Claimants state that the *P.U.D.* case recognized state authority under the Clean Water Act rather than a federal mandate.

The Commission agrees with claimants about the applicability of the *P.U.D.* case, which determined whether the state of Washington's environmental agency properly conditioned a permit for a federal hydroelectric project on the maintenance of specific minimum stream flows to protect salmon and steelhead runs. The U.S. Supreme Court determined that Washington could do so, but the decision was based on section 401 of the Clean Water Act, which involves certifications and wetlands. Even if the decision could be applied to section 402 NPDES permits, it merely recognized state authority to regulate flows. The issue here is not whether the state has authority to regulate flows, but whether a federal mandate requires it. This was not addressed in the *P.U.D.* decision.

Overall, there is nothing in the federal regulations that requires a municipality to adopt or implement a hydromodification plan. Thus, the HMP requirement in the permit "exceed[s] the mandate in that federal law or regulation."¹⁰³ As in *Long Beach Unified School Dist. v. State of California*,¹⁰⁴ the permit requires specific actions, i.e., required acts that go beyond the requirements of federal law. In adopting these permit provisions, the state has freely chosen¹⁰⁵ to

¹⁰³ Government Code section 17556, subdivision (c).

¹⁰⁴ *Long Beach Unified School Dist. v. State of California*, *supra*, 225 Cal.App.3d 155.

¹⁰⁵ *Hayes v. Commission on State Mandates*, *supra*, 11 Cal. App. 4th 1564, 1593-1594.

impose these requirements. Thus, the Commission finds that part D.1.g. of the permit is not a federal mandate.

All of part D.1.g. of the permit requires the HMP to have specified contents except part D.1.g.(2), which states that the HMP “*may* include implementation of planning measures ...” as specified. As the plain language of this part does not require the implementation of planning measures, the Commission finds that part D.1.g.(2) of the permit is not a state mandate.

The Commission also finds that HMP is not a state mandate for municipal (city or county) projects that are priority development projects, such as a hospital, laboratory or other medical facility, recreational facility, airfield, parking lot, street, road, highway, and freeway, a project over an acre, and a project located in an environmentally sensitive area.¹⁰⁶ Although these projects would be subject to the compliance with HMP requirements, there is no legal requirement to build municipal projects.¹⁰⁷ Thus, municipal projects are built by cities or counties voluntarily, and their decision triggers the requirements to comply with the HMP. In *Kern High School Dist.*,¹⁰⁸ the California Supreme Court decided whether the state must reimburse the costs of school site councils and advisory committees complying with the Brown (Open Meetings) Act for schools who participate in various school-related education programs. The court determined that participation in the underlying school site council program was not legally compelled and so mandate reimbursement was not required for the downstream compliance with the Brown Act. The court said:

Activities undertaken at the option or discretion of a local government entity (that is, actions undertaken without any legal compulsion or threat of penalty for nonparticipation) do not trigger a state mandate and hence do not require reimbursement of funds—even if the local entity is obliged to incur costs as a result of its discretionary decision to participate in a particular program or practice.¹⁰⁹

As with the voluntary programs in *Kern*, there is no requirement for municipalities to undertake any of the priority development projects described in the permit. Thus, the Commission finds that the costs of complying with the HMP in part D.1.g., is not a state mandate for priority development projects undertaken by a city or county.

Based on the mandatory language of the remainder of part D.1.g. of the permit (except part D.1.g.(2) and except for municipal projects), the Commission finds that it is a state mandate on the claimants to do the following:

¹⁰⁶ The County of San Diego, in its January 2010 comments on the draft staff analysis, raises the issue of its fee authority for municipal projects. The League of California Cities, in its January 2010 comments on the draft staff analysis, also discusses municipal projects, citing examples “where a city or county constructs a Priority Development Project for which no third party is available to assess a fee against.”

¹⁰⁷ California Constitution, article XI, section 7. “A county or city may make and enforce within its limits all local, police, sanitary, and other ordinances and regulations not in conflict with general laws.”

¹⁰⁸ *Kern High School Dist.*, *supra*, 30 Cal.4th 727.

¹⁰⁹ *Kern High School Dist.*, *supra*, 30 Cal.4th 727, 742.

Each Copermittee shall collaborate with the other Copermittees to develop and implement a Hydromodification Management Plan (HMP) to manage increases in runoff discharge rates and durations from all Priority Development Projects, where such increased rates and durations are likely to cause increased erosion of channel beds and banks, sediment pollutant generation, or other impacts to beneficial uses and stream habitat due to increased erosive force. The HMP, once approved by the Regional Board, shall be incorporated into the local SUSMP [Standard Urban Storm Water Mitigation Plan] and implemented by each Copermittee so that post-project runoff discharge rates and durations shall not exceed estimated pre-project discharge rates and durations where the increased discharge rates and durations will result in increased potential for erosion or other significant adverse impacts to beneficial uses, attributable to changes in the discharge rates and durations.

(1) The HMP shall:

(a) Identify a standard for channel segments which receive urban runoff discharges from Priority Development Projects. The channel standard shall maintain the pre-project erosion and deposition characteristics of channel segments receiving urban runoff discharges from Priority Development Projects as necessary to maintain or improve the channel segments' stability conditions.

(b) Utilize continuous simulation of the entire rainfall record to identify a range of runoff flows for which Priority Development Project post-project runoff flow rates and durations shall not exceed pre-project runoff flow rates and durations, where the increased flow rates and durations will result in increased potential for erosion or other significant adverse impacts to beneficial uses, attributable to changes in the flow rates and durations. The lower boundary of the range of runoff flows identified shall correspond with the critical channel flow that produces the critical shear stress that initiates channel bed movement or that erodes the toe of channel banks. The identified range of runoff flows may be different for specific watersheds, channels, or channel reaches.

(c) Require Priority Development Projects to implement hydrologic control measures so that Priority Development Projects' post-project runoff flow rates and durations (1) do not exceed pre-project runoff flow rates and durations for the range of runoff flows identified under section D.1.g.(1)(b), where the increased flow rates and durations will result in increased potential for erosion or other significant adverse impacts to beneficial uses, attributable to changes in the flow rates and durations, and (2) do not result in channel conditions which do not meet the channel standard developed under section D.1.g.(1)(a) for channel segments downstream of Priority Development Project discharge points.

(d) Include other performance criteria (numeric or otherwise) for Priority Development Projects as necessary to prevent urban runoff from the projects from increasing erosion of channel beds and banks, silt pollutant generation, or other impacts to beneficial uses and stream habitat due to increased erosive force.

- (e) Include a review of pertinent literature.
- (f) Include a protocol to evaluate potential hydrograph change impacts to downstream watercourses from Priority Development Projects.
- (g) Include a description of how the Copermitees will incorporate the HMP requirements into their local approval processes.
- (h) Include criteria on selection and design of management practices and measures (such as detention, retention, and infiltration) to control flow rates and durations and address potential hydromodification impacts.
- (i) Include technical information supporting any standards and criteria proposed.
- (j) Include a description of inspections and maintenance to be conducted for management practices and measures to control flow rates and durations and address potential hydromodification impacts.
- (k) Include a description of pre- and post-project monitoring and other program evaluations to be conducted to assess the effectiveness of implementation of the HMP.
- (l) Include mechanisms for addressing cumulative impacts within a watershed on channel morphology.
- (m) Include information on evaluation of channel form and condition, including slope, discharge, vegetation, underlying geology, and other information, as appropriate.

[¶]...[¶]

(3) Section D.1.g.(1)(c) does not apply to Development Projects where the project discharges stormwater runoff into channels or storm drains where the preexisting channel or storm drain conditions result in minimal potential for erosion or other impacts to beneficial uses. Such situations may include discharges into channels that are concrete-lined or significantly hardened (e.g., with rip-rap, sackrete, etc.) downstream to their outfall in bays or the ocean; underground storm drains discharging to bays or the ocean; and construction of projects where the sub-watersheds below the projects' discharge points are highly impervious (e.g., >70%) and the potential for single-project and/or cumulative impacts is minimal. Specific criteria for identification of such situations shall be included as a part of the HMP. However, plans to restore a channel reach may reintroduce the applicability of HMP controls, and would need to be addressed in the HMP.

(4) HMP Reporting

The Copermitees shall collaborate to report on HMP development as required in section J.2.a of this Order.¹¹⁰

¹¹⁰ Section J.2.a of the permit requires collaborating with other copermitees to develop the HMP, and submitting it for approval by the Regional Board. Part J.2.a also includes timelines for HMP completion and approval.

(5) HMP Implementation

180 days after approval of the HMP by the Regional Board, each Copermittee shall incorporate into its local SUSMP and implement the HMP for all applicable Priority Development Projects. Prior to approval of the HMP by the Regional Board, the early implementation of measures likely to be included in the HMP shall be encouraged by the Copermittees.

(6) Interim Hydromodification Criteria for Projects Disturbing 50 Acres or More

Within 365 days of adoption of this Order, the Copermittees shall collectively identify an interim range of runoff flow rates for which Priority Development Project post-project runoff flow rates and durations shall not exceed pre-project runoff flow rates and durations (Interim Hydromodification Criteria), where the increased discharge flow rates and durations will result in increased potential for erosion or other significant adverse impacts to beneficial uses, attributable to changes in flow rates and durations. Development of the Interim Hydromodification Criteria shall include identification of methods to be used by Priority Development Projects to exhibit compliance with the criteria, including continuous simulation of the entire rainfall record. Starting 365 days after adoption of this Order and until the final Hydromodification Management Plan standard and criteria are implemented, each Copermittee shall require Priority Development Projects disturbing 50 acres or more to implement hydrologic controls to manage post-project runoff flow rates and durations as required by the Interim Hydromodification Criteria. Development Projects disturbing 50 acres or more are exempt from this requirement when:

- (a) The project would discharge into channels that are concrete-lined or significantly hardened (e.g., with rip-rap, sackcrete, etc.) downstream to their outfall in bays or the ocean;
- (b) The project would discharge into underground storm drains discharging directly to bays or the ocean; or
- (c) The project would discharge to a channel where the watershed areas below the project's discharge points are highly impervious (e.g. >70%).

As to whether part D.1.g. of the permit (except for D.1.g.(2)) is a new program or higher level of service, the claimants, in their February 2009 comments, assert that it is.

The 2001 Permit only included general statements regarding the need to control downstream erosion with post construction BMPs. The 2007 Permit increased these requirements by requiring the copermittees to, among other things, draft and implement interim and long-term hydromodification plans, and impose specific, strict post construction BMPs on new development projects within their jurisdiction.

The State Board, in its October 2008 comments, argues that part D.1 "expands upon and makes more specific the hydromodification requirements in the 2001 Permit."

Finance argues, in its February 2010 comments on the draft staff analysis, that the entire permit is not a new program or higher level of service because additional activities, beyond those

required by the 2001 permit, are necessary for the claimants to continue to comply with the federal Clean Water Act and reduce pollutants to the Maximum Extent Practicable.

The Commission disagrees with Finance. This analysis measures the 2007 permit against the 2001 permit to determine which provisions are a new program or higher level of service. Under the standard urged by Finance, anything the state imposes under the permit would not be a new program or higher level of service. The Commission does not read the federal Clean Water Act so broadly. In *Building Industry Assoc. of San Diego County v. State Water Resources Control Board* (2004) 124 Cal.App.4th 866, the court held that the Clean Water Act's "maximum extent practicable" standard did not prevent the water boards from including provisions in the permit that required municipalities to comply with state water quality standards.¹¹¹

The Regional Board prepared a Fact Sheet/Technical Report¹¹² for the permit that lists the federal authority and reasons the permit provisions were adopted. Regarding part D.1.g. of the permit, the Fact Sheet/Technical Report does not expressly mention the 2001 permit, but states:

This section of the Order expands the requirements for control of hydromodification caused by changes in runoff resulting from development and urbanization. Expansion of these requirements is needed due to the current lack of a clear standard for controlling hydromodification resulting from modification. While the Model SUSMP¹¹³ [adopted in 2002] developed by the Copermittees requires project proponents to control hydromodification, it provides no standard or performance criteria for how this is to be achieved.

The Commission finds that part D.1.g. of the permit (except for D.1.g.(2)) with respect to private priority development projects is a new program or higher level of service. The Fact Sheet/Technical Report describes the section as an "expansion" of hydromodification control requirements. The 2001 permit (in part F.1.b.(2)(j)) included only the following on hydromodification:

Downstream Erosion – As part of the model SUSMP [Standard Urban Storm Water Mitigation Plan] and the local SUSMPs, the Copermittees shall develop criteria to ensure that discharges from new development and significant redevelopment maintain or reduce pre-development downstream erosion and protect stream habitat. At a minimum, criteria shall be developed to control peak storm water discharge rates and velocities in order to maintain or reduce pre-development downstream erosion and protect stream habitat. Storm water discharge volumes and durations should also be considered.

The requirements in the 2007 permit, however, are much more expansive and detailed, requiring development and implementation of a hydromodification management plan (HMP) to be approved by the Regional Board. And while the 2001 permit contained a broad description of

¹¹¹ *Building Industry Assoc. of San Diego County v. State Water Resources Control Board*, *supra*, 124 Cal.App.4th 866, 870.

¹¹² The Fact Sheet/Technical Report was attached to the test claim.

¹¹³ According to the Fact Sheet/Technical Report, the Model SUSMP was completed and adopted in 2002.

the criteria required, part D.1.g. of the 2007 permit contains a detailed description of the contents of the HMP, including identifying standards for channel segments, using continuous simulation of the entire rainfall record to identify runoff flows, requiring priority development projects to implement hydrologic control measures, including other performance criteria for priority development projects to prevent urban runoff from the projects, and 9 other components to include in the HMP. Therefore, the Commission finds that part D.1.g. of the permit (except for D.1.g.(2)) is a new program or higher level of service over the 2001 permit.

In sum, the Commission finds that part D.1.(g) of the permit (except for D.1.g.(2)) is a state-mandated new program or higher level of service for private priority development projects. Reimbursement is not required for complying with the HMP for municipal priority development projects.

B. Low Impact Development (LID) and Standard Urban Storm Water Mitigation Plan (part D.1.d.): Also under part D.1 “Development Planning” is part D.1.d, which requires the copermitees to review and update their SUSMPs (Standard Urban Storm Water Mitigation Plans)¹¹⁴ and (in paragraphs 7 and 8) add low impact development (LID) and source control BMP requirements for each priority development project, and to implement the updated SUSMP, as specified on pages 17-19 above. The purpose of LID is to “collectively minimize directly connected impervious areas and promote infiltration at Priority Development Projects.” LID best management practices include draining a portion of impervious areas into pervious areas prior to discharge into the storm drain, and constructing portions of priority development projects with permeable surfaces (*Id.*)

According to the State Board’s comments submitted in October 2008, the requirement in part D.1.d. is necessary to meet the minimum federal MEP standard, and is supported by 40 C.F.R. section 122.26 (d)(2)(iv)(A)-(D), part of which is quoted in the discussion of hydromodification above. Part (d)(2)(iv)(A)(2) of the regulation requires part of the permit application to include:

- (2) 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.

The State Board asserts that these regulations “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.” The Board cites a decision of the Washington Pollution Control Hearings Board that found that permit provisions to promote but not require low impact development “failed to satisfy the federal MEP standard and Washington state law because it ... did not require LID at the parcel and subdivision level.”

In their February 2009 rebuttal comments, the claimants assert: “while federal regulations require the large MS4 permits to include programs to reduce the discharge of pollutants from the

¹¹⁴ The Permit defines the Standard Urban Storm Water Mitigation Plan as “A plan developed to mitigate the impacts of urban runoff from Priority Development Projects.”

MS4 that originate in areas of new development, federal regulations do not require or even mention LID or LID principles.” And “while requiring post-construction controls that limit pollutant discharges originating in areas of new development is clearly within the requirements of Section 122.26(d)(2)(iv)(A), the 2007 Permit’s specific LID requirements are not.” Claimants also address the Washington State Pollution Control Board decision by noting that the Board’s decision “explicitly recognized that LID requirements are not federally mandated.” The claimants also point out EPA-issued NPDES permits in Washington, D.C. and Albuquerque, New Mexico that make no reference to LID.

The Commission finds nothing in the federal regulation (40 C.F.R. § 122.26) that requires local agencies to collectively review and update the BMP requirements listed in their SUSMPs, or to develop, submit and implement “an updated Model SUSMP” that defines minimum LID and other BMP requirements for incorporation into the SUSMPs. Thus, the LID requirements in the permit “exceed the mandate in that federal law or regulation.”¹¹⁵ As in *Long Beach Unified School Dist. v. State of California*,¹¹⁶ the permit requires specific actions, i.e., required acts that go beyond the requirements of federal law. In adopting these permit provisions, the state has freely chosen¹¹⁷ to impose these requirements. Thus, the Commission finds that part D.1.d. of the permit is not a federal mandate.

The Commission further finds that the LID requirements are not a state-mandated program for municipal projects for the same reason as discussed in the HMP discussion above: there is no requirement for cities or counties to build priority development projects, which would trigger the downstream requirement to comply with parts D.1.d.(7) and D.1.d.(8) of the permit, the LID portions of the permit.

As to non-municipal projects, however, because of the mandatory language on the face of the permit, the Commission finds that part D.1.d. of the permit is a state mandate for the claimants to do all of the following:

(7) Update of SUSMP BMP Requirements

The Copermittees shall collectively review and update the BMP requirements that are listed in their local SUSMPs. At a minimum, the update shall include removal of obsolete or ineffective BMPs, addition of LID and source control BMP requirements that meet or exceed the requirements of sections D.1.d.(4) and D.1.d.(5), and addition of LID BMPs that can be used for treatment, such as bioretention cells, bioretention swales, etc. The update shall also add appropriate LID BMPs to any tables or discussions in the local SUSMPs addressing pollutant removal efficiencies of treatment control BMPs. In addition, the update shall include review, and revision where necessary, of treatment control BMP pollutant removal efficiencies.

¹¹⁵ Government Code section 17556, subdivision (c).

¹¹⁶ *Long Beach Unified School Dist. v. State of California*, *supra*, 225 Cal.App.3d 155.

¹¹⁷ *Hayes v. Commission on State Mandates*, *supra*, 11 Cal. App. 4th 1564, 1593-1594.

(8) Update of SUSMPs to Incorporate LID and Other BMP Requirements

(a) In addition to the implementation of the BMP requirements of sections D.1.d.(4-7) within one year of adoption of this Order, the Copermitees shall also develop and submit an updated Model SUSMP that defines minimum LID and other BMP requirements to be incorporated into the Copermitees' local SUSMPs for application to Priority Development Projects. The purpose of the updated Model SUSMP shall be to establish minimum standards to maximize the use of LID practices and principles in local Copermitee programs as a means of reducing stormwater runoff. It shall meet the following minimum requirements:

- i. Establishment of LID BMP requirements that meet or exceed the minimum requirements listed in section D.1.d.(4) above.¹¹⁸
- ii. Establishment of source control BMP requirements that meet or exceed the minimum requirements listed in section D.1.d.(5) above.¹¹⁹
- iii. Establishment of treatment control BMP requirements that meet or exceed the minimum requirements listed in section D.1.d.(6) above.¹²⁰
- iv. Establishment of siting, design, and maintenance criteria for each LID and treatment control BMP listed in the Model SUSMP, so that implemented LID and treatment control BMPs are constructed correctly and are effective at pollutant removal and/or runoff control. LID techniques, such as soil amendments, shall be incorporated into the criteria for appropriate treatment control BMPs.
- v. Establishment of criteria to aid in determining Priority Development Project conditions where implementation of each LID BMP listed in section D.1.d.(4)(b) is applicable and feasible.
- vi. Establishment of a requirement for Priority Development Projects with low traffic areas and appropriate or amendable soil conditions to construct a portion of walkways, trails, overflow parking lots, alleys, or other low-traffic areas with permeable surfaces, such a pervious concrete, porous asphalt, unit pavers, and granular materials.
- vii. Establishment of restrictions on infiltration of runoff from Priority Development Project categories or Priority Development Project areas that generate high levels of pollutants, if necessary.

¹¹⁸ Part D.1.d.(4) of the permit includes LID BMP requirements: "Each Copermitee shall require each Priority Development Project to implement LID BMPs which will collectively minimize directly connected impervious areas and promote infiltration at Priority Development Projects." The Permit lists various LID site design BMPs that must be implemented at all Priority Development Projects, and other LID BMPs that must be implemented at all Priority Development Projects "where applicable and feasible."

¹¹⁹ Part D.1.d.(5) of the permit lists source control BMP requirements.

¹²⁰ Part D.1.d.(6) of the permit lists treatment control BMP requirements.

(b) The updated Model SUSMP shall be submitted within 18 months of adoption of this Order. If, within 60 days of submittal of the updated Model SUSMP, the Copermittees have not received in writing from the Regional Board either (1) a finding of adequacy of the updated Model SUSMP or (2) a modified schedule for its review and revision, the updated Model SUSMP shall be deemed adequate, and the Copermittees shall implement its provisions in accordance with section D.1.d.(8)(c) below.

(c) Within 365 days of Regional Board acceptance of the updated Model SUSMP, each Copermittee shall update its local SUSMP to implement the requirements established pursuant to section D.1.d.(8)(a). In addition to the requirements of section D.1.d.(8)(a), each Copermittee's updated local SUSMP shall include the following:

- i. A requirement that each Priority Development Project use the criteria established pursuant to section D.1.d.(8)(a)v to demonstrate applicability and feasibility, or lack thereof, of implementation of the LID BMPs listed in section D.1.d.(4)(b).
- ii. A review process which verifies that all BMPs to be implemented will meet the designated siting, design, and maintenance criteria, and that each Priority Development Project is in compliance with all applicable SUSMP requirements.

The State Board, in its October 2008 comments on the test claim, argues that the requirements in part D.1.d.(7) of the permit are not a new program or higher level of service because they "merely add definition to the scope of the local SUSMP already required in the 2001 Permit (see Section F.1.b.(2))." As to part D.1.d.(8), the State Board asserts that it:

[P]rovides a framework for the Copermittees to develop criteria to be used in the application of LID requirements to Priority Development Projects. The Copermittees must develop their LID programs through an update to the Model SUSMP, the document that guides (and guided the 2001 Permit cycle) post-construction BMP implementation at Priority Development Projects.

According to the State Board, these parts of the permit are not a new program or higher level of service because they merely add additional detail in implementing the same minimum federal MEP standard and add specificity to already existing BMPs.

The claimants, in their February 2009 comments, assert that by adding requirements and increasing the specificity of existing requirements, the 2007 LID permit requirements are a new program or higher level of service.

The Commission finds that part D.1.d.(7) is a new program or higher level of service because it calls for a collective review and update of BMP requirements listed in the claimants' SUSMPs (presumably those drafted under the 2001 permit) that was not required under the 2001 permit.

The Commission also finds that part D.1.d.(8) is a new program or higher level of service because it requires developing, submitting, and implementing "an updated Model SUSMP" that defines minimum LID and other BMP requirements for incorporation into the copermittees SUSMPs. Although the 2001 permit required adopting a Model SUSMP and local SUSMP, it

did not require developing and submitting an updated Model SUSMP with the specified LID BMP requirements.

In sum, the Commission finds that parts D.1.d.(7) and D.1.d.(8) of the 2007 permit constitute a state-mandated new program or higher level of service for private priority development projects. Reimbursement is not required for complying with the LID requirements for municipal priority development projects.

C. Street sweeping and reporting (parts D.3.a.(5) & J.3.a(3)x-xv): Part D.3 is entitled "Existing Development." Part D.3.a.(5) requires regular street sweeping based on the amount of trash generated on the road, street, highway, or parking facility. Those identified as generating the highest volumes of trash are to be swept at least two times per month, those generating moderate volumes of trash are to be swept at least monthly, and those generating low volumes of trash are to be swept as necessary, but not less than once per year. The copermitees determine what constitutes high, moderate, and low trash generation.

In addition, section J.3.a.(3)(c) x-xv requires the copermitees, as part of their annual reporting, to identify the total distance of curb-miles of improved roads in each priority category, the total distance of curb-miles swept, the number of municipal parking lots and the number swept, the frequency of sweeping, and the tons of material collected from street and parking lot sweeping.

The State Board, in its comments submitted in October 2008, states that requiring minimum sweeping frequencies for streets determined by the copermitees to have high volumes of trash or debris is necessary to meet the minimum federal MEP standard. The State Board cites C.F.R. section 122.26(d)(2)(i)(B)-(C), (E) and (F) and 40 C.F.R. section 122.26(d)(2)(iv), and more specifically, section 122.26(d)(2)(iv)(A)(1), which states that the proposed management program include "[a] description of maintenance activities and a maintenance schedule for structural controls to reduce pollutants (including floatables) in discharges from municipal separate storm sewers." Also, section 122.26(d)(2)(iv)(A)(6) provides that the proposed management program include:

[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.

The State Board also cites section 122.44(d)(1)(i), which states as follows regarding NPDES permits: "limitations must 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 narrative criteria for water quality." And section 122.26(d)(2)(iv)(A)(3) states that the proposed management program include "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."

In their February 2009 rebuttal comments, the claimants point out that street sweeping as a BMP to control "floatables" is not required by federal law in that none of the federal regulations

specifically require street sweeping. The claimants quote the following from *Hayes v. Commission on State Mandates*:¹²¹ “if the state freely chose to impose the costs upon the local agency as a means of implementing a federal program then the costs are the result of a reimbursable state mandate.”

The Commission agrees with claimants. The permit requires activities that fall within the federal regulations to include: “[a] description of maintenance activities and a maintenance schedule for structural controls to reduce pollutants (including floatables) in discharges from municipal separate storm sewers.”¹²² And they also require: “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...”¹²³

Yet the more specific requirements in the permit include variable street sweeping schedules for areas impacted by different amounts of trash. They also require reporting on the amount of trash collected, which is not required by the federal regulations. These activities “exceed the mandate in that federal law or regulation.”¹²⁴ As in *Long Beach Unified School Dist. v. State of California*,¹²⁵ the permit requires specific actions, i.e., required acts that go beyond the requirements of federal law. In adopting these permit provisions, the state has freely chosen¹²⁶ to impose these requirements. Therefore, the Commission finds that parts D.3.a.(5) and J.3.a.(3)(c)x-xv of the permit are not a federal mandate.

Because of the mandatory language on the face of the permit, the Commission also finds part D.3.a(5) of the permit is a state mandate for the claimants to do all of the following:

(5) Sweeping of Municipal Areas

Each Copermittee shall implement a program to sweep improved (possessing a curb and gutter) municipal roads, streets, highways, and parking facilities. The program shall include the following measures:

- (a) Roads, streets, highways, and parking facilities identified as consistently generating the highest volumes of trash and/or debris shall be swept at least two times per month.
- (b) Roads, streets, highways, and parking facilities identified as consistently generating moderate volumes of trash and/or debris shall be swept at least monthly.
- (c) Roads, streets, highways, and parking facilities identified as generating low volumes of trash and/or debris shall be swept as necessary, but no less than once per year.

¹²¹ *Hayes v. Commission on State Mandates, supra*, 11 Cal.App.4th 1564.

¹²² 40 Code of Federal Regulations, section 122.26(d)(2)(iv)(A)(1).

¹²³ 40 Code of Federal Regulations, section 122.26(d)(2)(iv)(A)(3).

¹²⁴ Government Code section 17556, subdivision (c).

¹²⁵ *Long Beach Unified School Dist. v. State of California, supra*, 225 Cal.App.3d 155.

¹²⁶ *Hayes v. Commission on State Mandates, supra*, 11 Cal. App. 4th 1564, 1593-1594.

And as stated in part J.3.a(3)(c)x-xv (on p. 68) of the permit, the claimants report annually on:

x. Identification of the total distance of curb-miles of improved roads, streets, and highways identified as consistently generating the highest volumes of trash and/or debris, as well as the frequency of sweeping conducted for such roads, streets, and highways.

xi. Identification of the total distance of curb-miles of improved roads, streets, and highways identified as consistently generating moderate volumes of trash and/or debris, as well as the frequency of sweeping conducted for such roads, streets, and highways.

xii. Identification of the total distance of curb-miles of improved roads, streets, and highways identified as consistently generating low volumes of trash and/or debris, as well as the frequency of sweeping conducted for such roads, streets, and highways.

xiii. Identification of the total distance of curb-miles swept.

xiv. Identification of the number of municipal parking lots, the number of municipal parking lots swept, and the frequency of sweeping.

xv. Amount of material (tons) collected from street and parking lot sweeping.

The State Board, in its October 2008 comments, argues that requiring minimum street sweeping frequencies does not result in a new program or higher level of service. According to the State Board:

The 2001 Permit required Copermittees to perform street sweeping, but did not specify minimum frequencies. While the minimum frequencies may exceed some Copermittees' existing programs, the Claimants acknowledge that many Copermittees meet or exceed the mandatory requirements on a voluntary basis. To the extent the frequencies are already being met and the Permit imposes the same MEP standard as its predecessor ... the 2007 Permit does not impose a higher level of service.

In their February 2009 rebuttal comments, the claimants cite Government Code section 17565 to argue that whether or not they were sweeping streets at frequencies equal or more than the permit requires is not relevant. Government Code section 17565 states: "If a local agency ... at its option, has been incurring costs which are subsequently mandated by the state, the state shall reimburse the local agency ... for those costs incurred after the operative date of the mandate." The claimants also state that the 2001 permit did not in fact require street sweeping, "[a]t best it only included general statements regarding the need to control pollutants in streets and other impervious areas and, in any event, minimum frequencies were not required."

The Regional Board's Fact Sheet/Technical Report on part D.3.a.(5) of the 2007 permit states that street sweeping "has been added to ensure that the Copermittees are implementing this effective BMP at all appropriate areas."

The Commission finds that the street sweeping provision (part D.3.a.(5)) in the permit is a new program or higher level of service. The Commission agrees that Government Code section 17565 makes it irrelevant (for purposes of mandate reimbursement) whether or not claimants

were performing the activity prior to the permit, since voluntary activities do not affect reimbursement of an activity that is subsequently mandated by the state.

The 2001 permit, in part F.3.a.(3) and (4) stated:

(a) To establish priorities for oversight of municipal areas and activities required under this Order, each Copermittee shall prioritize each watershed inventory in F.3.a.2. above by threat to water quality and update annually. Each municipal area and activity shall be classified as high, medium, or low threat to water quality. In evaluating threat to water quality, each Copermittee shall consider (1) type of municipal area or activity; (2) materials used (3) wastes generated; (4) pollutant discharge potential; (5) non-storm water discharges; (6) size of facility or area; (7) proximity to receiving water bodies; (8) sensitivity of receiving water bodies; and (9) any other relevant factors.

(b) At a minimum, the high priority municipal areas and activities shall include the following:

(i) Roads, Streets, Highways, and Parking Facilities. [¶]...[¶]

F.3.a.(4) BMP Implementation (Municipal)

(a) Each Copermittee shall designate a set of minimum BMPs for high, medium, and low threat to water quality municipal areas and activities (as determined under section F.3.a.(3)). The designated minimum BMPs for high threat to water quality municipal areas and activities shall be area or activity specific as appropriate.

Street sweeping is not expressly required in this 2001 permit provision, nor does it specify any frequencies or required reporting. Thus, the Commission finds that part D.3.a.(5) of the 2007 permit that requires street sweeping, as specified, is a new program or higher level of service, as well as part J.3.a(3)x-xv that requires reporting on street-sweeping activities.

D. Conveyance system cleaning and reporting (parts D.3.a.(3) & J.3.a.(3)(c)(iv)-(viii)): Also under part D.3. "Existing Development," part D.3.a.(3) requires conveyance system cleaning, including the following:

- Verifying proper operation of all municipal structural treatment controls designed to reduce pollutant discharges to or from the MS4s and related drainage structures.
- Cleaning any catch basin or storm drain inlet that has accumulated trash and debris greater than 33% of the design capacity in a timely manner.
- Cleaning any MS4 facility that is designed to be self cleaning of any accumulated trash and debris immediately.
- Cleaning open channels of observed anthropogenic litter in a timely manner.

In J.3.a.(3)(c)(iv)-(viii), as part of the annual reporting requirements, copermittees shall provide a detailed accounting of the numbers of MS4 facilities in inventory, and the numbers of facilities inspected, exceeding cleaning criteria, and cleaned. In addition, copermittees must report by category tons of waste and litter removed from the facilities.

The State Board, in its comments submitted in October 2008, disagrees that the requirements exceed federal law, saying that “the same broad authorities applicable to the street sweeping requirement also apply to the conveyance system cleaning requirements.” According to the State Board, specificity in inspection and cleaning requirements is consistent with and supported by U.S. EPA guidance. Also, to the extent that permit requirements are more specific than the federal regulations, the State Board asserts that the requirements are an appropriate exercise of the San Diego Water Board’s discretion to define the MEP standard.

The claimants, in their February 2009 comments, state that “the requirements to inspect and perform maintenance to insure compliance with these standards is not limited by the ‘regular schedule of maintenance’ obligation but rather must be done as frequently as is necessary to comply with these specific standards.” Also, claimants note that the content and detail in the reporting is more than required by the 2001 permit. As to the MEP standard required by the federal regulations, claimants assert that the U.S. EPA documents cited by the State Board provide guidance, not mandates, and the permit Fact Sheet does not specifically set forth mandatory annual inspection and maintenance requirements. According to the claimants, the only mandatory requirement is that a maintenance program exist, and that the applicant provide an inspection schedule if maintenance depends on the results of inspections or occurs infrequently. Yet the 2007 permit includes “very specific requirements that go beyond the U.S. EPA guidance and are not included within the federal regulations.” Finally, claimants note that the State Board has acknowledged that the 2007 permit requirements are more specific than federal regulations, and cites the *Long Beach Unified School District* case to conclude that the specificity makes the requirements state mandates.

The Commission agrees with claimants. Like street sweeping, the permit requires conveyance system cleaning activities that fall within the federal regulations to include: “[a] description of maintenance activities and a maintenance schedule for structural controls to reduce pollutants (including floatables) in discharges from municipal separate storm sewers.”¹²⁷ And they also require: “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...”¹²⁸

Yet the permit requirements are more specific. Part D.3.a.(3) requires verifying proper operation of all municipal structural treatment controls, cleaning any catch basin or storm drain inlet that has accumulated trash and debris greater than 33% of the design capacity in a timely manner, cleaning any MS4 facility that is designed to be self cleaning of any accumulated trash and debris immediately, and cleaning open channels of observed anthropogenic litter in a timely manner. In addition, the reporting in part J requires a detailed accounting of the numbers of MS4 facilities in inventory, and the numbers of facilities inspected, exceeding cleaning criteria, and cleaned, and reporting by category tons of waste and litter removed from the facilities. These activities, “exceed[s] the mandate in that federal law or regulation.”¹²⁹ As in *Long Beach*

¹²⁷ 40 Code of Federal Regulations, section 122.26(d)(2)(iv)(A)(1).

¹²⁸ 40 Code of Federal Regulations, section 122.26(d)(2)(iv)(A)(3).

¹²⁹ Government Code section 17556, subdivision (c).

Unified School Dist. v. State of California,¹³⁰ the permit requires specific actions, i.e., required acts that go beyond the requirements of federal law. In adopting these permit provisions, the state has freely chosen¹³¹ to impose these requirements. Therefore, the Commission finds that parts D.3.a.(3) and J.3.a.(3)(c)iv-viii of the permit are not a federal mandate.

Rather, the Commission finds that part D.3.a.(3) of the 2007 permit is a state mandate on the claimants to do the following:

(a) Implement a schedule of inspection and maintenance activities to verify proper operation of all municipal structural treatment controls designed to reduce pollutant discharges to or from its MS4s and related drainage structures.

(b) Implement a schedule of maintenance activities for the MS4 and MS4 facilities (catch basins, storm drain inlets, open channels, etc). The maintenance activities shall, at a minimum, include:

i. Inspection at least once a year between May 1 and September 30 of each year for all MS4 facilities that receive or collect high volumes of trash and debris. All other MS4 facilities shall be inspected at least annually throughout the year.

ii. Following two years of inspections, any MS4 facility that requires inspection and cleaning less than annually may be inspected as needed, but not less than every other year.

iii. Any catch basin or storm drain inlet that has accumulated trash and debris greater than 33% of design capacity shall be cleaned in a timely manner. Any MS4 facility that is designed to be self cleaning shall be cleaned of any accumulated trash and debris immediately. Open channels shall be cleaned of observed anthropogenic litter in a timely manner.

iv. Record keeping of the maintenance and cleaning activities including the overall quantity of waste removed.

v. Proper disposal of waste removed pursuant to applicable laws.

vi. Measures to eliminate waste discharges during MS4 maintenance and cleaning activities.

The Commission also finds that part J.3.a.(3)(c) iv-viii is a state mandate to report the following information in the JURMP annual report:

iv. Identification of the total number of catch basins and inlets, the number of catch basins and inlets inspected, the number of catch basins and inlets found with accumulated waste exceeding cleaning criteria, and the number of catch basins and inlets cleaned.

v. Identification of the total distance (miles) of the MS4, the distance of the MS4 inspected, the distance of the MS4 found with accumulated waste exceeding cleaning criteria, and the distance of the MS4 cleaned.

¹³⁰ *Long Beach Unified School Dist. v. State of California*, *supra*, 225 Cal.App.3d 155.

¹³¹ *Hayes v. Commission on State Mandates*, *supra*, 11 Cal. App. 4th 1564, 1593-1594.

vi. Identification of the total distance (miles) of open channels, the distance of the open channels inspected, the distance of the open channels found with anthropogenic litter, and the distance of open channels cleaned.

vii. Amount of waste and litter (tons) removed from catch basins, inlets, the MS4, and open channels, by category.

viii. Identification of any MS4 facility found to require inspection less than annually following two years of inspection, including justification for the finding.

As to whether these provisions are a new program or higher level of service, the State Board, in its October 2008 comments, states that the 2001 permit contained “*more* frequent inspection and removal requirements than required in the 2007 Permit. It also contained record keeping requirements to document the facilities cleaned and the quantities of waste removed.” [Emphasis in original.]

Claimants, in their February 2009 comments, argue that the 2001 permit, in part F.3.a.(5) required each copermitee to ‘implement a schedule of maintenance activities at all structural controls designed to reduce pollutant discharges. By contrast, the 2007 permit requires each copermitee to ‘implement a schedule of **inspection and maintenance**’ and to ‘**verify proper operation of all municipal** structural controls....’ [Emphasis in original.] Claimants also point out that the 2007 permit requires copermitees to:

- Clean any catch basin or storm drain inlet that has accumulated trash and debris greater than 33% of the design capacity in a timely manner.
- Clean any MS4 facility that is designed to be self cleaning of any accumulated trash and debris immediately.
- Clean open channels of observed anthropogenic litter in a timely manner.

According to claimants, these requirements were not included in the 2001 permit. Claimants also state that the requirement to inspect and perform maintenance “is not limited by the ‘regular schedule of maintenance’ obligation but rather must be done as frequently as is necessary to comply with these specific standards.”

As to reporting, claimants state that the language in part D.3.a.(3)(b)(iv),(v) and (vi) of the 2007 permit and part F.3.a.(5)(c)(iii), (iv) and (v) of the 2001 permit track each other, but part J.3.a.(3)(c) iv through viii detail the information that the reports must now contain that was not in the 2001 permit, such as identifying the number of catch basins and inlets, the number inspected, the number found with accumulated waste exceeding the cleaning criteria, the distance of the MS4 cleaned, and other detail.

In analyzing whether parts D.3.a.(3) and J.3.a.(3)(c)(iv) – (viii) are a new program or higher level of service, we compare those provisions to the prior permit and look at the Regional Board’s Fact Sheet/Technical Report, which states why Part D.3.a.(3) was added:

Section D.3.a.(3) ... requires the Copermitees to inspect and remove waste from their MS4s prior to the rainy season. Additional wording has been added to clarify the intent of the requirements. The Copermitees will be required to inspect all storm drain inlets and catch basins. This change will assist the Copermitees in determining which basins/inlets need to be cleaned and at what

priority. Removal of trash has been identified by the copermittees as a priority issue in their long-term effectiveness assessment. To address this issue, wording has been added to require the Copermittees, at a minimum, inspect [sic] and remove trash from all their open channels at least once a year.

The 2001 permit contained the following in part F.3.a.(5)(b) and (c):

- (b) Each Copermittee shall implement a schedule of maintenance activities for the municipal separate storm sewer system.
- (c) The maintenance activities must, at a minimum, include:
 - i. Inspection and removal of accumulated waste (e.g., sediment, trash, debris and other pollutants) between May 1 and September 30 of each year;
 - ii. Additional cleaning as necessary between October 1 and April 30 of each year;
 - iii. Record keeping of cleaning and the overall quantity of waste removed;
 - iv. Proper disposal of waste removed pursuant to applicable laws;
 - v. Measures to eliminate waste discharges during MS4 maintenance and cleaning activities.

The Commission finds that some provisions in the 2007 permit are the same as in the 2001 permit. Specifically, part D.3.a(3)(a) is not a new program or higher level of service because the 2001 permit also required maintenance and inspection in part F.3.a.(5)(b) and (c). The Commission also finds that part D.3.a.(3)(b)(i),(iv)- (vi) of the 2007 permit is the same as part F.3.a.(5)(c)(i)(iii) - (v) in the 2001 permit, both of which require:

- Annual inspection of MS4 facilities (D.3.a(3)(b)(i));
- Record keeping of the maintenance and cleaning activities including the overall quantity of waste removed (D.3.a(3)(b)(iv));
- Proper disposal of waste removed pursuant to applicable laws (D.3.a(3)(b)(v)); and
- Measures to eliminate waste discharges during MS4 maintenance and cleaning activities (D.3.a(3)(b)(vi)).

Therefore, the Commission finds that these provisions are not a new program or higher level of service.

The Commission also finds that part D.3.a.(3)(b)(ii) is not a new program or higher level of service. It gives the claimants the flexibility, after two years of inspections, to inspect MS4 facilities that require inspection and cleaning less than annually, but not less than every other year. Part F.3.a.(5)(c)(i) of the 2001 permit stated: "The maintenance activities must, at a minimum, include: i. inspection and removal of accumulated waste (e.g., sediment, trash, debris and other pollutants) between May 1 and September 30 of each year." Potentially less frequent inspections under the 2007 permit is not a new program or higher level of service.

The Commission finds that part D.3.a.(3)(b)(iii) of the 2007 permit is a new program or higher level of service on claimants to clean in a timely manner "Any catch basin or storm drain inlet that has accumulated trash and debris greater than 33% of design capacity.... Any MS4 facility that is designed to be self cleaning shall be cleaned of any accumulated trash and debris immediately. Open channels shall be cleaned of observed anthropogenic litter in a timely

manner.” This part contains specificity, e.g., a standard of accumulation greater than 33% of design capacity, which was not in the 2001 permit.

Further, the Commission finds that the reporting in part J.3.a.(3)(c) (iv) – (viii) is a new program or higher level of service. The 2001 permit did not require this information in the content of the annual reports.

E. Educational component (part D.5): Part D.5 requires the copermitees to perform the activities on pages 25-28 above, which can be summarized as:

- Implement an educational program so that copermitees’ planning and development review staffs (and planning board/elected officials, if applicable) understand certain laws and regulations related to water quality.
- Implement an educational program that includes annual training before the rainy season so that the copermitees’ construction, building, code enforcement, and grading review staffs, inspectors, and others will understand certain specified topics.
- At least annually, train staff responsible for conducting stormwater compliance inspections and enforcement of industrial and commercial facilities on specified topics.
- Implement an education program so that municipal personnel and contractors performing activities that generate pollutants understand the activity specific BMPs for each activity to be performed.
- Implement a program to educate project applicants, developers, contractors, property owners, community planning groups, and others relating to specified topics.

The State Board, in its October 2008 comments on the test claim, states that federal regulations authorize the inclusion of an education component, in that the proposed management program must “include a description of appropriate educational and training measures for construction site operations” (40 C.F.R. § 122.26(d)(2)(iv)(D)(4)) and 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...” (40 C.F.R. § 122.26(d)(2)(iv)(A)(6)). The federal regulations also require 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” (40 C.F.R. § 122.26(d)(2)(iv)(B)(5)) and 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.” (40 C.F.R. § 122.26(d)(2)(iv)(B)(6)). The State Board also says that according to the U.S. EPA’s Phase II stormwater regulations, the MEP standard requires the copermitees to implement public education programs. According to the State Board, the regulations apply to copermitees with less developed storm water programs, and require the programs to include a public education and outreach program (40 C.F.R. § 122.34(b)(1)) and a public involvement/participation program (40 C.F.R. § 122.26(b)(2)). To the extent the permit requirements are more specific than federal law, the State Board calls them an appropriate use of the Regional Board’s discretion “to require more specificity in establishing the MEP standard.”

Claimants, in their February 2009 comments, characterize the federal regulations as only requiring them “to describe educational, public information, and other appropriate activities associated with their jurisdictional, watershed or stormwater management programs.” By contrast, under the permit claimants argue that they are required to “implement specific educational and training programs that achieve measurable increases in specific target community knowledge and to ensure a measurable change in the behavior of such target communities rather than simply report on the ... educational programs on an annual basis.” Claimants state that they are required to perform testing and surveys and “new program elements to secure the measureable changes in knowledge and behavior.”

The Commission agrees with claimants. As quoted in the State Board’s comments, the federal regulations require nonspecific descriptions of educational programs, for example, requiring the permit application to “include appropriate educational and training measures for construction site operations” and “controls such as educational activities.” The permit, on the other hand, requires implementation of an educational program with target communities and specified topics. These requirements “exceed the mandate in that federal law or regulation.”¹³² As in *Long Beach Unified School Dist. v. State of California*,¹³³ the permit requires specific actions, i.e., required acts that go beyond the requirements of federal law. In adopting these permit provisions, the state has freely chosen¹³⁴ to impose these requirements. Thus, the Commission finds that part D.5 of the permit is not federally mandated.

Based on the mandatory language on the face of the permit, the Commission finds that part D.5 of the permit constitutes a state mandate on the copermittees to do all of the following:

Each Copermittee shall implement an education program using all media as appropriate to (1) measurably increase the knowledge of the target communities regarding MS4s, impacts of urban runoff on receiving waters, and potential BMP solutions for the target audience; and (2) to measurably change the behavior of target communities and thereby reduce pollutant releases to MS4s and the environment. At a minimum, the education program shall meet the requirements of this section and address the following target communities:

- Municipal Departments and Personnel
- Construction Site Owners and Developers
- Industrial Owners and Operators
- Commercial Owners and Operators
- Residential Community, General Public, and School Children

a. GENERAL REQUIREMENTS

(1) Each Copermittee shall educate each target community on the following topics where appropriate:

¹³² Government Code section 17556, subdivision (c).

¹³³ *Long Beach Unified School Dist. v. State of California*, *supra*, 225 Cal.App.3d 155.

¹³⁴ *Hayes v. Commission on State Mandates*, *supra*, 11 Cal. App. 4th 1564, 1593-1594.

Table 3. Education

Laws, Regulations, Permits, & Requirements	Best Management Practices
<ul style="list-style-type: none"> • Federal, state, and local water quality laws and regulations • Statewide General NPDES Permit for Storm Water Discharges Associated with Industrial Activities (Except Construction). • Statewide General NPDES Permit for Storm Water Discharges Associated with Construction Activities • Regional Board's General NPDES Permit for Ground Water Dewatering • Regional Board's 401 Water Quality Certification Program • Statewide General NPDES Utility Vault Permit • Requirements of local municipal permits and ordinances (e.g., storm water and grading ordinances and permits) 	<ul style="list-style-type: none"> • Pollution prevention and safe alternatives • Good housekeeping (e.g., sweeping impervious surfaces instead of hosing) • Proper waste disposal (e.g., garbage, pet/animal waste, green waste, household hazardous materials, appliances, tires, furniture, vehicles, boat/recreational vehicle waste, catch basin/ MS4 cleanout waste) • Non-storm water disposal alternatives (e.g., all wash waters) • Methods to minimized the impact of land development and construction • Erosion prevention • Methods to reduce the impact of residential and charity car-washing • Preventive Maintenance • Equipment/vehicle maintenance and repair • Spill response, containment, and recovery • Recycling • BMP maintenance
General Urban Runoff Concepts	Other Topics
<ul style="list-style-type: none"> • Impacts of urban runoff on receiving waters • Distinction between MS4s and sanitary sewers • BMP types: facility or activity specific, LID, source control, and treatment control • Short-and long-term water quality impacts associated with urbanization (e.g., land-use decisions, development, construction) • Non-storm water discharge prohibitions • How to conduct a storm water inspections 	<ul style="list-style-type: none"> • Public reporting mechanisms • Water quality awareness for Emergency/ First Responders • Illicit Discharge Detection and Elimination observations and follow-up during daily work activities • Potable water discharges to the MS4 • Dechlorination techniques • Hydrostatic testing • Integrated pest management • Benefits of native vegetation • Water conservation • Alternative materials and designs to maintain peak runoff values • Traffic reduction, alternative fuel use

(2) Copermittee educational programs shall emphasize underserved target audiences, high-risk behaviors, and "allowable" behaviors and discharges, including various ethnic and socioeconomic groups and mobile sources.

b. SPECIFIC REQUIREMENTS

(1) Municipal Departments and Personnel Education

(a) Municipal Development Planning – Each Copermittee shall implement an education program so that its planning and development review staffs (and Planning Boards and Elected Officials, if applicable) have an understanding of:

- i. Federal, state, and local water quality laws and regulations applicable to Development Projects;
- ii. The connection between land use decisions and short and long-term water quality impacts (i.e., impacts from land development and urbanization);
- iii. How to integrate LID BMP requirements into the local regulatory program(s) and requirements; and
- iv. Methods of minimizing impacts to receiving water quality resulting from development, including:
 - [1] Storm water management plan development and review;
 - [2] Methods to control downstream erosion impacts;
 - [3] Identification of pollutants of concern;
 - [4] LID BMP techniques;
 - [5] Source control BMPs; and
 - [6] Selection of the most effective treatment control BMPs for the pollutants of concern.

(b) Municipal Construction Activities – Each Copermittee shall implement an education program that includes annual training prior to the rainy season so that its construction, building, code enforcement, and grading review staffs, inspectors, and other responsible construction staff have, at a minimum, an understanding of the following topics, as appropriate for the target audience:

- i. Federal, state, and local water quality laws and regulations applicable to construction and grading¹³⁵ activities.
- ii. The connection between construction activities and water quality impacts (i.e., impacts from land development and urbanization and impacts from construction material such as sediment).
- iii. Proper implementation of erosion and sediment control and other BMPs to minimize the impacts to receiving water quality resulting from construction activities.
- iv. The Copermittee's inspection, plan review, and enforcement policies and procedures to verify consistent application.
- v. Current advancements in BMP technologies.
- vi. SUSMP Requirements including treatment options, LID BMPs, source control, and applicable tracking mechanisms.

¹³⁵ Attachment C of the permit defines grading as “the cutting and/or filling of the land surface to a desired slope or elevation.”

(c) Municipal Industrial/Commercial Activities - Each Copermittee shall train staff responsible for conducting storm water compliance inspections and enforcement of industrial and commercial facilities at least once a year. Training shall cover inspection and enforcement procedures, BMP implementation, and reviewing monitoring data.

(d) Municipal Other Activities – Each Copermittee shall implement an education program so that municipal personnel and contractors performing activities which generate pollutants have an understanding of the activity specific BMPs for each activity to be performed.

(2) New Development and Construction Education

As early in the planning and development process as possible and all through the permitting and construction process, each Copermittee shall implement a program to educate project applicants, developers, contractors, property owners, community planning groups, and other responsible parties. The education program shall provide an understanding of the topics listed in Sections D.5.b.(1)(a) and D.5.b.(1)(b) above, as appropriate for the audience being educated. The education program shall also educate project applicants, developers, contractors, property owners, and other responsible parties on the importance of educating all construction workers in the field about stormwater issues and BMPs through formal or informal training.

(3) Residential, General Public, and School Children Education

Each Copermittee shall collaboratively conduct or participate in development and implementation of a plan to educate residential, general public, and school children target communities. The plan shall evaluate use of mass media, mailers, door hangers, booths at public events, classroom education, field trips, hands-on experiences, or other educational methods.

The State Board, in its October 2008 comments, states that the education requirement in part D.5. does not amount to a new program or higher level of service because the 2007 permit “includes education topics from the 2001 permit with minor wording and formatting changes. Additionally, the requirements were adopted to implement the same federal MEP standard as established in the CWA and in the 2001 Permit.”

In their February 2009 comments, the claimants state that the 2001 permit did not require:

- Implementation of an education program so that the copermittee’s planning and development review staff (and Planning Boards and Elected Officials, if applicable) understand certain specified laws and regulations related to water quality. (D.5.b.(1)(a).)
- Implementation of an education program that includes annual training prior to the rainy season so that the copermittee’s construction, building, code enforcement, and grading review staffs, inspectors, and other responsible construction staff have, at a minimum, an understanding of certain specified topics. (D.5.b.(1)(b).)
- Training of staff responsible for conducting storm water compliance inspections and enforcement of industrial and commercial facilities at least once a year relating to certain specified topics (D.5.b.(1)(c).)

- Implementation of an education program so that municipal personnel and contractors performing activities which generate pollutants have an understanding of the activity specific BMPs for each activity to be performed. (D.5.b.(1)(d).)
- Implementation of a program to educate project applicants, developers, contractors, property owners, community planning groups, and other responsible parties relating to certain specified topics. (D.5.b.(2).)

This analysis of whether the permit is a new program or higher level of service is in the order presented in the permit. The Commission finds that nearly all of the educational topics in part D.5.a. are the same as those in the 2001 permit (part F.4). Both the 2001 and 2007 permits require the claimants to “educate” each specified target community on the following topics (Table 3 in the 2007 permit):

Laws, Regulations, Permits, & Requirements: Federal, state, and local water quality laws and regulations; Statewide General NPDES Permit for Storm Water Discharges Associated with Industrial Activities (Except Construction); Statewide General NPDES Permit for Storm Water Discharges Associated with Construction Activities; Regional Board’s General NPDES Permit for Ground Water Dewatering; Regional Board’s 401 Water Quality Certification Program; Statewide General NPDES Utility Vault Permit; Requirements of local municipal permits and ordinances (e.g., storm water and grading ordinances and permits).

Best Management Practices: Pollution prevention and safe alternatives; Good housekeeping (e.g., sweeping impervious surfaces instead of hosing); Proper waste disposal (e.g., garbage, pet/animal waste, green waste, household hazardous materials, appliances, tires, furniture, vehicles, boat/recreational vehicle waste, catch basin/ MS4 cleanout waste); Non-storm water disposal alternatives (e.g., all wash waters); Methods to minimized the impact of land development and construction; Methods to reduce the impact of residential and charity car-washing; Preventive Maintenance; Equipment/vehicle maintenance and repair; Spill response, containment, and recovery; Recycling; BMP maintenance.

General Urban Runoff Concepts: Impacts of urban runoff on receiving waters; Distinction between MS4s and sanitary sewers; Short-and long-term water , quality impacts associated with urbanization (e.g., land-use decisions, development, construction); How to conduct a storm water inspection.

Other Topics: Public reporting mechanisms; Water quality awareness for Emergency/ First Responders; Illicit Discharge Detection and Elimination observations and follow-up during daily work activities; Potable water discharges to the MS4; Dechlorination techniques; Hydrostatic testing; Integrated pest management; Benefits of native vegetation; Water conservation; Alternative materials and designs to maintain peak runoff values; Traffic reduction, alternative fuel use.

Because the requirement to educate the target communities on these topics was in the 2001 permit, as well as the 2007 permit, the Commission finds that doing so, as required by part D.5.a(1), table 3, is not a new program or higher level of service.

Under the 2007 permit, the copermittees are required to “educate each target community” on the following educational topics that were not in the 2001 permit: (1) Erosion prevention, (2) Non storm water discharge prohibitions, and (3) BMP types: facility or activity specific, LID [low-impact development], source control, and treatment control. Thus, the Commission finds that the part D.5.a.(1) is a new program or higher level of service to educate each target community on only the following topics: (1) Erosion prevention, (2) Non storm water discharge prohibitions, and (3) BMP types: facility or activity specific, LID, source control, and treatment control.

Part D.5.a.(2) states: “(2) Copermittee educational programs shall emphasize underserved target audiences, high-risk behaviors, and ‘allowable’ behaviors and discharges, including various ethnic and socioeconomic groups and mobile sources.” This provision was not in the 2001 permit, so the Commission finds that part D.5.a.(2) is a new program or higher level of service.

In part D.5.b.(1)(a) (Municipal Development Planning) the permit requires implementing an education program for “municipal planning and development review staffs (and Planning Board and Elected Officials, if applicable)” on specified topics. The 2001 permit required implementing an educational program for “Municipal Departments and Personnel” that would include planning and development review staffs, but not planning boards and elected officials. So the Commission finds that part D.5.b.(1)(a)(i) and (ii) is a new program or higher level of service for planning boards and elected officials.

Certain topics in part D.5.b.(1)(a) are a new program or higher level of service for both planning and development review staffs as well as planning boards and elected officials. Under both part F.4.a. of the 2001 permit, and D.5.b.(1)(a) of the 2007 permit, the copermittees are required to implement an educational program on the following topics:

- i. Federal, state, and local water quality laws and regulations applicable to Development Projects; [The 2001 permit, in F.4.a. (p. 35) says: “Federal, state and local water quality regulations that affect development projects.”]
- ii. The connection between land use decisions and short and long-term water quality impacts (i.e., impacts from land development and urbanization); [The 2001 permit, in F.4.a (p. 35) calls this “Waters Quality Impacts associated with land development.”]

Thus the Commission finds that implementing an educational program on these topics is not a new program or higher level of service for municipal departments, but is for planning boards and elected officials.

The following topics were not listed in the 2001 permit, so the Commission finds that part D.5.b.(1)(a) is a new program or higher level of service to implement these in an educational program for all target communities:

- (iii) How to integrate LID BMP requirements into the local regulatory program(s) and requirements;
- (iv) Methods of minimizing impacts to receiving water quality resulting from development, including: [1] Storm water management plan development and review; [2] Methods to control downstream erosion impacts; [3] Identification of pollutants of concern; [4] LID BMP techniques; [5] Source control BMPs; and

[6] Selection of the most effective treatment control BMPs for the pollutants of concern.

Part D.5.b.(1)(b) (Municipal Construction Activities) of the permit requires implementing an educational program for municipal “construction, building, code enforcement, and grading review staffs.” Again, this is not a new program or higher level of service for those topics in which the 2001 permit also required an education program for “Municipal Departments and Personnel,” such as:

- i. Federal, state, and local water quality laws and regulations applicable to construction and grading activities. [The 2001 permit, in F.4.a. (p. 35) says: “Federal, state and local water quality regulations that affect development projects.”]
- ii. The connection between construction activities and water quality impacts (i.e., impacts from land development and urbanization and impacts from construction material such as sediment. [The 2001 permit, in F.4.a (p. 35) calls this “Water Quality Impacts associated with land development.”]

The timing of the educational program specified in D.5.b.(1)(b) requires it to be implemented “prior to the rainy season.” There is no evidence in the record, however, that this timing requirement is a new program or higher level of service compared with the 2001 permit. Thus the Commission finds that part D.5.b.(1)(b)(i) and (ii) are not a new program or higher level of service.

Municipal construction activity education topics were added to the 2007 permit, however, that were not in the 2001 permit, in paragraphs (iii) to (vi) as follows:

- (b) Municipal Construction Activities – Each Copermittee shall implement an education program that includes annual training prior to the rainy season so that its construction, building, code enforcement, and grading review staffs, inspectors, and other responsible construction staff have, at a minimum, an understanding of the following topics, as appropriate for the target audience:
- iii. Proper implementation of erosion and sediment control and other BMPs to minimize the impacts to receiving water quality resulting from construction activities.
 - iv. The Copermittee’s inspection, plan review, and enforcement policies and procedures to verify consistent application.
 - v. Current advancements in BMP technologies.
 - vi. SUSMP Requirements including treatment options, LID BMPs, source control, and applicable tracking mechanisms.

Thus, the Commission finds that part D.5.b.(1)(b)(iii) - (vi) of the 2007 permit is a new program or higher level of service.

Part D.5.b.(1)(c) of the 2007 permit (Municipal Industrial/Commercial Activities) requires the following:

- (c) Each Copermittee shall train staff responsible for conducting storm water compliance inspections and enforcement of industrial and commercial facilities at

least once a year. Training shall cover inspection and enforcement procedures, BMP implementation, and reviewing monitoring data.

The 2001 permit included (in F.4.b.) the topic "How to conduct a stormwater inspection" but did not specify that the training was to be annual, and did not require the training to cover inspection and enforcement procedures, BMP Implementation, or reviewing monitoring data. Thus, the Commission finds that part D.5.(b)(1)(c) is a new program or higher level of service.

Part D.5.b.(1)(d) of the 2007 permit requires the following:

(d) Municipal Other Activities – Each Copermittee shall implement an education program so that municipal personnel and contractors performing activities which generate pollutants have an understanding of the activity specific BMPs for each activity to be performed.

Regarding part D.5.b.(1)(d), the 2007 Fact Sheet/Technical Report states:

A new requirement has also been added for education of activity specific BMPs for municipal personnel and contractors performing activities that generate pollutants. Education is required at all levels of municipal staff and contractors. Education is especially important for the staff in the field performing activities which might result in discharges of pollutants if proper BMPs are not used.

Because part D.5.b.(1)(d) was not in the 2001 permit, and because the Regional Board called it a "new requirement" the Commission finds that part D.5.(b)(1)(d) of the 2007 permit is a new program or higher level of service.

Part D.5.(b)(2) of the 2007 permit requires an education program for "project applicants, developers, contractors, property owners, community planning groups, and other responsible parties." Parts F.4.a and F.4.b. of the 2001 permit required a similar education program for "construction site owners and developers." The Fact Sheet/Technical Report for the 2007 permit states:

Different levels of training will be needed for planning groups, owners, developers, contractors, and construction workers, but everyone should get a general education of stormwater requirements. Education of all construction workers can prevent unintentional discharges, such as discharges by workers who are not aware that they are not allowed to wash things down the storm drains. Training for BMP installation workers is imperative because the BMPs will not fail if not properly installed and maintained. Training for field level workers can be formal or informal tail-gate format.

Thus, the Commission finds that part D.5.(b)(2) of the 2007 permit is a new program or higher level of service for project applicants, contractors, or community planning groups who are not developers or construction site owners.

The final part of the education programs in the 2007 permit is D.5.(b)(3) regarding "Residential, General Public, and School Children."

Each Copermittee shall collaboratively conduct or participate in development and implementation of a plan to educate residential, general public, and school children target communities. The plan shall evaluate use of mass media, mailers,

door hangers, booths at public events, classroom education, field trips, hands-on experiences, or other educational methods.

The 2001 permit (part F.4.c.) stated the following:

In addition to the topics listed in F.4.a. above, the Residential, General Public, and School Children communities shall be educated on the following topics where applicable:

- Public reporting information resources
- Residential and charity car-washing
- Community activities (e.g., "Adopt a Storm Drain, Watershed, or Highway" Programs, citizen monitoring, creek/beach cleanups, environmental protection organization activities, etc..

The 2001 permit did not require claimants to "collaboratively conduct or participate in development ... of a plan to educate residential, general public, and school children target communities." The 2001 permit also did not require the plan to "evaluate use of mass media, mailers, door hangers, booths at public events, classroom education, field trips, hands-on experiences, or other educational methods." Thus, the Commission finds that part D.5.(b)(3) of the 2007 permit is a new program or higher level of service.

In sum, as to part D.5 of the 2007 permit that requires implementing educational programs, the Commission finds that the following subparts are new programs or higher levels of service:

- D.5.a.(1): Each copermittee shall educate each target community, as specified, on the following topics: erosion prevention, nonstorm waters discharge prohibitions, and BMP types: facility or activity specific, LID, source control, and treatment control.
- D.5.a.(2): Copermittee educational programs shall emphasize underserved target audiences, high-risk behaviors, and "allowable" behaviors and discharges, including various ethnic and socioeconomic groups and mobile sources.
- D.5.b.(1)(a): Implement an education program so that planning boards and elected officials, if applicable, have an understanding of: (i) Federal, state, and local water quality laws and regulations applicable to Development Projects; (ii) The connection between land use decisions and short and long-term water quality impacts (i.e., impacts from land developments and urbanization).
- D.5.b.(1)(a): Implement an education program so that planning and development review staffs as well as planning boards and elected officials have an understanding of: (iii) How to integrate LID BMP requirements into the local regulatory program(s) and requirements; (iv) Methods of minimizing impacts to receiving water quality resulting from development, including: [1] Storm water management plan development and review; [2] Methods to control downstream erosion impacts; [3] Identification of pollutants of concern; [4] LID BMP techniques; [5] Source control BMPs; and [6] Selection of the most effective treatment control BMPs for the pollutants of concern."
- D.5.b.(1)(b)(iii) - (vi): Implement an education program that includes annual training prior to the rainy season for its construction, building, code enforcement, and grading review staffs, inspectors, and other responsible construction staff have, at a minimum, an

understanding of the topics in parts D.5.b.(1)(b)(iii), (iv), (v), and (vi) of the permit, as follows:

- iii. Proper implementation of erosion and sediment control and other BMPs to minimize the impacts to receiving water quality resulting from construction activities.
 - iv. The Copermittee's inspection, plan review, and enforcement policies and procedures to verify consistent application.
 - v. Current advancements in BMP technologies.
 - vi. SUSMP Requirements including treatment options, LID BMPs, source control, and applicable tracking mechanisms.
- D.5.(b)(1)(c) and (d) as follows:
 - Each Copermittee shall train staff responsible for conducting storm water compliance inspections and enforcement of industrial and commercial facilities at least once a year. Training shall cover inspection and enforcement procedures, BMP implementation, and reviewing monitoring data.
 - Municipal Other Activities – Each Copermittee shall implement an education program so that municipal personnel and contractors performing activities which generate pollutants have an understanding of the activity specific BMPs for each activity to be performed.
 - D.5.(b)(2), As early in the planning and development process as possible and all through the permitting and construction process, to implement a program to educate project applicants, contractors, property owners, community planning groups, and other responsible parties. The education program shall provide an understanding of the topics listed in Sections D.5.b.(1)(a) [Municipal Development Planning] and D.5.b.(1)(b) [Municipal construction Activities] above, as appropriate for the audience being educated. The education program shall also educate project applicants, contractors, property owners, and other responsible parties on the importance of educating all construction workers in the field about stormwater issues and BMPs through formal or informal training.
 - D.5.(b)(3), Each Copermittee shall collaboratively conduct or participate in development and implementation of a plan to educate residential, general public, and school children target communities. The plan shall evaluate use of mass media, mailers, door hangers, booths at public events, classroom education, field trips, hands-on experiences, or other educational methods.

II. Watershed Urban Runoff Management Program (Part E)

Part E of the permit is the Watershed Urban Runoff Management Program (WURMP). The permit (Table 4) divides the copermittees into nine watershed management areas (WMAs) by "major receiving water bodies." The 2001 permit also had a WURMP component (in part J).

A. Watershed Urban Runoff Management Program copermittee collaboration (parts E.2.f & E.2.g): These provisions require the copermittees to do the activities on pages 28-29 above, including the following:

- Collaborating with other copermittees within their watershed management areas (WMAs) to develop and implement an updated Watershed Urban Runoff Management Program for each watershed that prevents urban runoff discharges from the MS4 from causing or contributing to a violation of water quality standards which at a minimum includes:
 - Identifying and implementing watershed activities that address the high-priority water quality problems in the watershed management areas that include both watershed water quality activities¹³⁶ and watershed education activities.¹³⁷
 - Creating a watershed activities list that includes certain specified information to be submitted with each updated Watershed Urban Runoff Management Plan (WURMP) and updated annually thereafter.
 - Implementing identified watershed activities within established schedules.
 - Collaborating to develop and implement the Watershed Urban Runoff Management Program, including frequent regularly scheduled meetings.¹³⁸

In its October 2008 comments, the State Board asserts that the Watershed Urban Runoff Management Program activities are necessary to meet the minimum federal MEP standard. The State Board quotes the following federal regulations: "The Director may ... issue distinct permits for appropriate categories of discharges ... including, but not limited to ... all discharges within a system that discharge to the same watershed..." (40 C.F.R. 122.26(a)(3)(ii).) The State Board also quotes more specific federal regulations:

Permits for all or a portion of all discharges from large or medium municipal separate storm sewer systems that are issued on a system-wide, jurisdiction-wide, watershed, or other basis may specify different conditions relating to different discharges covered by the permit, including different management programs for different drainage areas [watersheds] which contribute storm water to the system. (40 C.F.R. § 122.26 (a)(3)(v).)

The Director may issue permits for municipal separate storm sewers that are designated under paragraph (a)(1)(v) of this section on a system-wide basis, a

¹³⁶ Watershed Water Quality Activities are activities other than education that address the high priority water quality problems in the WMA. A Watershed Water Quality Activity implemented on a jurisdictional basis must be organized and implemented to target a watershed's high priority water quality problems or must exceed the baseline jurisdictional requirements of section D of the permit (Part E.2.f).

¹³⁷ Watershed Education Activities are outreach and training activities that address high priority water quality problems in the WMA (Part E.2.f).

¹³⁸ In their February 2009 comments, the claimants also list the following activities: (1) Annual review of WURMPs to identify needed modifications and improvements (part E.2.i); (2) Develop and periodically update watershed maps (part E.2.b); (3) Develop and implement a program for encouraging collaborative watershed-based land-use planning (part E.2.d); (4) Develop and implement a collective watershed strategy (part E.2.e). These parts of the permit, however, were not pled in the test claim so the Commission makes no findings on them.

jurisdiction-wide basis, watershed basis, or other appropriate basis;" (40 C.F.R. § 122.26 (a)(5).)

Proposed programs may impose controls on a systemwide basis, a watershed basis, a jurisdiction basis, or on individual outfalls. (40 C.F.R. § 122.26 (d)(2)(iv).)

The State Board argues that the regional board "determined that the inclusion of the requirement to formalize the Watershed Water Qualities Activities List was appropriate to further the goal of the WURMPS in achieving compliance with federal law." Based on some reports it received, the Regional Board determined that "many of the watershed water quality activities had no clear connection to the high priority water quality problems in the area of implementation." The Board determined it was therefore necessary and appropriate to require development of an implementation strategy to maximize WURMP effectiveness.

Claimants, in their February 2009 comments, point out that while cooperative agreements may be required by 40 C.F.R. § 122.26(d)(2)(i)(D), "each copermitttee is only responsible for their own systems." Claimants quote another federal regulation: "Copermitttees need only comply with permit conditions relating to discharges from the municipal separate storm sewers for which they operate." (40 C.F.R. § 122.26(a)(3)(vi).) Claimants argue that the 2007 permit:

[R]equires the copermitttees to engage in specific programmatic activities that are duplicative of the activities that were not required under the 2001 Permit and that are already required of them on a jurisdictional basis within the boundaries of the same watershed. These new requirements include no less than two watershed water quality activities and two watershed education activities per year.

Claimants also state that the permit "mandates that watershed quality activities implemented on a jurisdictional basis must exceed the baseline jurisdictional requirements under Section D of the Order." (part E.2.f.(1)(a).) According to what the claimants call these "dual baseline standards, jurisdictional and watershed, the copermitttees are required to perform more and duplicative work."

The Commission finds that the permit requirements in sections E.2.f and E.2.g. are not federal mandates. As with the other requirements in the permit, the federal regulations authorize but do not require the specificity regarding whether collaboration occurs on a jurisdictional, watershed or other basis. These requirements "exceed the mandate in that federal law or regulation."¹³⁹ As in *Long Beach Unified School Dist. v. State of California*,¹⁴⁰ the permit requires specific actions, i.e., required acts that go beyond the requirements of federal law. In adopting these permit provisions, the state has freely chosen¹⁴¹ to impose these requirements.

Based on the mandatory language in the permit, the Commission finds that the following in part E are a state mandate on the copermitttees:

¹³⁹ Government Code section 17556, subdivision (c).

¹⁴⁰ *Long Beach Unified School Dist. v. State of California*, *supra*, 225 Cal.App.3d 155.

¹⁴¹ *Hayes v. Commission on State Mandates*, *supra*, 11 Cal. App. 4th 1564, 1593-1594.

2. Each Copermittee shall collaborate with other Copermittees within its WMA(s) as in Table 4 [of the permit] to develop and implement an updated Watershed Urban Runoff Management Program for each watershed. Each updated Watershed Urban Runoff Management Program shall meet the requirements of section E of this Order, reduce the discharge of pollutants from the MS4 to the MEP, and prevent urban runoff discharges from the MS4 from causing or contributing to a violation of water quality standards. At a minimum, each Watershed Urban Runoff Management Program shall include the elements described below:
[¶]...[¶]

f. Watershed Activities¹⁴²

(1) The Watershed Copermittees shall identify and implement Watershed Activities that address the high priority water quality problems in the WMA. Watershed Activities shall include both Watershed Water Quality Activities and Watershed Education Activities. These activities may be implemented individually or collectively, and may be implemented at the regional, watershed, or jurisdictional level.

(a) Watershed Water Quality Activities are activities other than education that address the high priority water quality problems in the WMA. A Watershed Water Quality Activity implemented on a jurisdictional basis must be organized and implemented to target a watershed's high priority water quality problems or must exceed the baseline jurisdictional requirements of section D of this Order.

(b) Watershed Education Activities are outreach and training activities that address high priority water quality problems in the WMA.

(2) A Watershed Activities List shall be submitted with each updated Watershed Urban Runoff Management Plan (WURMP) and updated annually thereafter. The Watershed Activities List shall include both Watershed Water Quality Activities and Watershed Education Activities, along with a description of how each activity was selected, and how all of the activities on the list will collectively abate sources and reduce pollutant discharges causing the identified high priority water quality problems in the WMA.

(3) Each activity on the Watershed Activities List shall include the following information:

- (a) A description of the activity;
- (b) A time schedule for implementation of the activity, including key milestones;
- (c) An identification of the specific responsibilities of Watershed Copermittees in completing the activity;
- (d) A description of how the activity will address the identified high priority water quality problem(s) of the watershed;

¹⁴² In their rebuttal comments submitted in February 2009, claimants mention part E.(3) of the permit that requires a detailed description of each activity on the Watershed Activities List. Part E.(3), however, was not in the test claim so staff makes no findings on it.

(e) A description of how the activity is consistent with the collective watershed strategy;

(f) A description of the expected benefits of implementing the activity; and

(g) A description of how implementation effectiveness will be measured.

(4) Each Watershed Copermittee shall implement identified Watershed Activities pursuant to established schedules. For each Permit year, no less than two Watershed Water Quality Activities and two Watershed Education Activities shall be in an active implementation phase. A Watershed Water Quality Activity is in an active implementation phase when significant pollutant load reductions, source abatement, or other quantifiable benefits to discharge or receiving water quality can reasonably be established in relation to the watershed's high priority water quality problem(s). Watershed Water Quality Activities that are capital projects are in active implementation for the first year of implementation only. A Watershed Education Activity is in an active implementation phase when changes in attitudes, knowledge, awareness, or behavior can reasonably be established in target audiences.

g. Copermittee Collaboration

Watershed Copermittees shall collaborate to develop and implement the Watershed Urban Runoff Management Programs. Watershed Copermittee collaboration shall include frequent regularly scheduled meetings.

As to the issue of new program or higher level of service, the State Board, in its October 2008 comments, states:

Although Section E.2.f. requires development and implementation of a list of Watershed Water Quality Activities for potential implementation that was not specifically required in the 2001 Permit, the Copermittees were previously required to identify priority water quality issues and identify recommended activities to address the priority water quality problems (See 2001 Permit, section J.1 and J.2.d.)

The State Board asserts that Copermittees were already required to collaborate with other Copermittees, and that "Section E.2.g. merely adds effectiveness strategies to the collaboration requirements." ... Other requirements challenged by the Claimants exist in the 2001 Permit, but with minor wording changes (e.g., the requirement to update watershed maps, which exists in both permits).

Claimants, in their February 2009 comments, assert that parts E.2.f. and E.2.g do impose a new program or higher level of service. According to the claimants:

Under the 2001 Permit the watershed requirements were essentially limited to mapping, assessment and identification of short and long term issues. Collaboration included mapping (J.2.a.), assessment of receiving waters (J.2.b); identification and prioritization of water quality problems (J.2.c); implementation of time schedules (J.2.d) and identification of copermittee responsibilities for each recommended activity including a time schedule.

[¶]...[¶]

The 2007 Permit imposes standards far beyond those listed in ... the 2001 Permit The 2007 Permit now requires the copermittees to engage in specific programmatic activities that are duplicative of the activities that were not required under the 2001 Permit and that are already required of them on a jurisdictional basis within the boundaries of the same watershed. These new requirements include no less than two watershed water quality activities and two watershed education activities per year. The two-activity watershed requirement is a condition of all copermittees regardless of whether the activity is within their jurisdictional authority or not.

In addition, while the 2007 Permit states that activities can be implemented at a regional, watershed or jurisdictional level, it mandates that watershed quality activities implemented on a jurisdictional basis must exceed the baseline jurisdictional requirements under Section D of the Order. By reason of the dual baseline standards, jurisdictional and watershed, the copermittees are required to perform more and duplicative work.

The Commission finds that E.2.f. and E.2.g of the permit are a new program or higher level of service.

As to watershed education in part E.2.f, the 2001 permit (in part J.2.g.) stated that the WURMP shall contain "A watershed based education program." The 2007 permit states that the WURMP shall include "watershed education activities" defined as "outreach and training activities that address high priority water quality problems in the WMA [Watershed Management Area(s)]." Moreover, in part E.f.(4), the 2007 permit states: "A Watershed Education Activity is in an active implementation phase when changes in attitudes, knowledge, awareness, or behavior can reasonably be established in target audiences." Because of this increased requirement for implementation of watershed education, the Commission finds that watershed education activities, as defined in part E.2.f, is a new program or higher level of service.

Additionally, the Commission finds that the rest of part E.2.f. is a new program or higher level of service because it includes elements not in the 2001 permit, such as:

- A definition of watershed water quality activities (part E.2.f.(1)(a)).
- Submission of a watershed activities list, with specified contents (part E.2.f.(2)).
- A detailed description of each activity on the watershed activities list, with seven specific components (part E.2.f.(3)).
- Implementation of watershed activities pursuant to established schedules, including definitions of when activities are in an active implementation phase (part E.2.f.(4)).

As to part E.2.g., although the 2001 (in parts J.1. & J.2.) and 2007 permits both require copermittee collaboration in developing and implementing the Watershed Urban Runoff Management Plan, copermittee collaboration is a new program or higher level of service because the WURMP is greatly expanded over the 2001 permit in part E.2.f as discussed above. This means that new collaboration is required to develop and implement the watershed activities in part E.2.f.

The 2007 permit (in part E.2.g) also states that "Watershed Copermittee collaboration shall include frequent regularly scheduled meetings." This requirement for meetings was not in the 2001 permit. The Fact Sheet/Technical Report states:

The requirement for regularly scheduled meetings has been added based on Regional Board findings that watershed groups which hold regularly scheduled meetings (such as for San Diego Bay) typically produced better programs and work products than watershed groups that went for extended periods of time without scheduled meetings.¹⁴³

Therefore, the Commission finds that part E.2.g. of the 2007 permit is a new program or higher level of service.

Regarding watershed water quality activities in part E.2.f, the Fact Sheet/Technical Report the Regional Board stated:

This requirement developed over time while working with the Copermittees on their WURMP implementation under Order No. 2001-01. In October 2004 letters, the Regional Board recommended the Copermittees develop a list of Watershed Water Quality Activities for potential implementation. Following receipt of the Regional Board letters, the Copermittees created the Watershed Water Quality Activity lists. Although the Copermittees' lists needed improvement, the Regional Board found the lists to be useful planning tools that can be evaluated to identify effective and efficient Watershed Water Quality Activities. Because the lists are useful and have become a part of the WURMP implementation process, a requirement for their development has been written into the Order.

Thus, the Commission finds that part E.2.f. of the permit is a new program or higher level of service, in that it requires the following not required in the 2001 permit:

- Identification and implementation of watershed activities that address the high priority water quality problems in the WMA (Watershed Management Area), as specified (part E.2.f.(1)).
- Submission of a watershed activities list with each updated WURMP and updated annually thereafter, as specified (part E.2.f.(2)-(3)).
- Implementation of watershed activities pursuant to established schedules: no less than two watershed water quality activities and two watershed education activities in active implementation phase, as defined, per permit year (part E.2.f.(4)).

III. Regional Urban Runoff Management Program (Part F)

Part F of the permit describes the Regional Urban Runoff Management Program (RURMP). It was included because "some aspects of urban runoff management can be effectively addressed at a regional level. ... However, significant flexibility has been provided to the Copermittees for new regional requirements."¹⁴⁴

¹⁴³ For an inexplicable reason, the Fact Sheet/Technical Report lists this collaboration activity under Section E.2.m of the permit rather than E.2.g.. The permit at issue has no section E.2.m.

¹⁴⁴ San Diego Regional Water Quality Control Board, "Fact Sheet/Technical Report for Order No. R9-2007-0001."

A. Copermittee collaboration – Regional Residential Education Program Development and Implementation (part F.1): Part F.1 requires the copermittees to develop and implement a Regional Residential Education Program, with specified contents (see p. 12 above). In the test claim the claimants discuss hiring a consultant to develop the educational program that “will generally educate residents on: 1) the difference between stormwater conveyance systems and sanitary sewer systems; 2) the connection of storm drains to local waterways; and 3) common residential sources of urban run-off.” Claimants allege activities to comply with section F.1 of the permit that include, but are not limited to: “development of materials/branding, a regional website, regional outreach events, regional advertising and mass media, partnership development, and the development of marketing and research tools, including regional surveys to be conducted in FY 2008-09 and again in FY 2011-12.”

In comments submitted in October 2008, the State Board asserts that the permit condition in section F.1. is necessary to meet the minimum federal MEP standard and that the requirement is supported by the Clean Water Act statutes and regulations. The State Board cites the following federal regulations:

(v) Permits for all or a portion of all discharges from large or medium municipal separate storm sewer systems that are issued on a system-wide, jurisdiction-wide, watershed or other basis may specify different conditions relating to different discharges covered by the permit, including different management programs for different drainage areas which contribute storm water to the system.¹⁴⁵ [¶]...[¶]

(5) The Director may issue permits for municipal separate storm sewers that are designated under paragraph (a)(1)(v) of this section on a system-wide basis, jurisdiction-wide basis, watershed basis or other appropriate basis, or may issue permits for individual discharges.¹⁴⁶ [¶]...[¶]

(2) *Part 2.* Part 2 of the 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: [¶]...[¶]

(D) Control through interagency agreements among coapplicants the contribution of pollutants from one portion of the municipal system to another portion of the municipal system;¹⁴⁷

(iv) Proposed programs may impose controls on a systemwide basis, a watershed basis, a jurisdiction basis, or on individual outfalls. ...¹⁴⁸

In response, the claimants' February 2009 comments state that the Regional Residential Education Program is not necessary to meet the minimum federal MEP standard. The regional nature of the education program, according to the claimants, is duplicative because it imposes the

¹⁴⁵ 40 Code of Federal Regulations section 122.26 (a)(3)(v).

¹⁴⁶ 40 Code of Federal Regulations section 122.26 (a)(5).

¹⁴⁷ 40 Code of Federal Regulations section 122.26 (d)(2)(i)(D).

¹⁴⁸ 40 Code of Federal Regulations section 122.26 (d)(iv).

education requirements at the regional and jurisdictional levels concurrently, and it exceeds federal law.

The Commission finds that the requirements in part F.1 of the permit do not constitute a federal mandate. There is no federal requirement to provide a regional educational program, so the education program, "exceed[s] the mandate in that federal law or regulation."¹⁴⁹ As in *Long Beach Unified School Dist. v. State of California*, the permit "requires specific actions ... [that are] required acts."¹⁵⁰ In adopting part F.1, the state has freely chosen¹⁵¹ to impose these requirements. Thus, the Commission finds that part F.1. of the permit does not constitute a federal mandate.

Based on the mandatory language on the face of the permit, the Commission finds that the permit constitutes a state mandate on the claimants to do all the following in part F.1 of the permit:

The Regional Urban Runoff Management Program shall, at a minimum:

1. Develop and implement a Regional Residential Education Program. The program shall include:
 - a. Pollutant specific education which focuses educational efforts on bacteria, nutrients, sediment, pesticides, and trash. If a different pollutant is determined to be more critical for the education program, the pollutant can be substituted for one of these pollutants.
 - b. Education efforts focused on the specific residential sources of the pollutants listed in section F.1.a (p. 50.)

As to whether this is a new program or higher level of service, the State Board, in its October 2008 comments, states that it is not because the claimants were already implementing a residential education program at a regional level before the permit was adopted.

In claimants' February 2009 rebuttal comments, they assert that it is irrelevant whether or not the copermitees voluntarily met or exceeded the now mandatory requirements imposed by the 2007 permit because Government Code section 17565 states: "If a local agency ... at its option, has been incurring costs which are subsequently mandated by the state, the state shall reimburse the local agency ... for those costs incurred after the operative date of the mandate."

The Commission finds that part F.1 of the permit is a new program or higher level of service. The 2001 permit required an educational component as part of the Jurisdictional Urban Runoff Management Program (part F.4) that contained a residential component, but not a Regional Residential Education Program, so the activities in this program are new. Also, the Commission agrees that whether or not claimants were engaged in an educational program is not relevant due to Government Code section 17565. The Regional Board, in requiring the regional educational program, leaves the local agencies with no choice but to comply.

¹⁴⁹ Government Code section 17556, subdivision (c).

¹⁵⁰ *Long Beach Unified School Dist. v. State of California*, *supra*, 225 Cal.App.3d 155, 173.

¹⁵¹ *Hayes v. Commission on State Mandates*, *supra*, 11 Cal. App. 4th 1564, 1593-1594.

B. Copermittee collaboration (parts F.2 & F.3): Parts F.2 and F.3 (quoted on p. 11 above) require the copermittees to collaborate to develop, implement, and update as necessary a Regional Urban Runoff Management Program, to include developing the standardized fiscal analysis method required in permit part G (part F.2) and facilitating the assessment of the effectiveness of jurisdictional, watershed, and regional programs (part F.3).

In comments submitted in October 2008, the State Board asserts that the permit conditions in sections F.2 and F.3 are necessary to meet the minimum MEP standard, quoting the following federal regulation regarding municipal stormwater permits:

(2) *Part 2.* Part 2 of the 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: [¶]...[¶]

(D) Control through interagency agreements among coapplicants the contribution of pollutants from one portion of the municipal system to another portion of the municipal system;¹⁵²

The State Board also quotes section 122.26 (a)(3)(v) of the federal regulations as follows:

(v) Permits for all or a portion of all discharges from large¹⁵³ or medium¹⁵⁴ municipal separate storm sewer systems that are issued on a system-wide, jurisdiction-wide, watershed or other basis may specify different conditions relating to different discharges covered by the permit, including different

¹⁵² 40 Code of Federal Regulations section 122.26 (d)(2)(i)(D).

¹⁵³ “(4) Large municipal separate storm sewer system means all municipal separate storm sewers that are either: (i) Located in an incorporated place with a population of 250,000 or more as determined by the 1990 Decennial Census by the Bureau of the Census (Appendix F of this part); or (ii) Located in the counties listed in appendix H, except municipal separate storm sewers that are located in the incorporated places, townships or towns within such counties; or (iii) Owned or operated by a municipality other than those described in paragraph (b)(4)(i) or (ii) of this section and that are designated by the Director as part of the large or medium municipal separate storm sewer system due to the interrelationship between the discharges of the designated storm sewer and the discharges from municipal separate storm sewers described under paragraph (b)(4)(i) or (ii) of this section. ...” [40 CFR § 122.26 (b)(4).]

¹⁵⁴ “(7) Medium municipal separate storm sewer system means all municipal separate storm sewers that are either: (i) Located in an incorporated place with a population of 100,000 or more but less than 250,000, as determined by the 1990 Decennial Census by the Bureau of the Census (Appendix G of this part); or (ii) Located in the counties listed in appendix I, except municipal separate storm sewers that are located in the incorporated places, townships or towns within such counties; or (iii) Owned or operated by a municipality other than those described in paragraph (b)(7)(i) or (ii) of this section and that are designated by the Director as part of the large or medium municipal separate storm sewer system due to the interrelationship between the discharges of the designated storm sewer and the discharges from municipal separate storm sewers described under paragraph (b)(7)(i) or (ii) of this section. ...” [40 CFR § 122.26 (b)(7).]

management programs for different drainage areas which contribute storm water to the system.

The State Board also asserts:

To the extent the Clean Water Act and federal regulations do not identify all of the specificity required in Sections F.2, F.3 ..., the San Diego Water Board properly exercised its discretion under federal law to include specificity so that the federal MEP standard can be achieved. The San Diego Water Board exercised this duty under federal law and therefore the provisions of the 2007 Permit were adopted as federal requirements.

In the claimants' rebuttal comments submitted in February 2009, they state that "all of the authorities cited by the State merely acknowledge the State's authority to go beyond the federal regulations."

The Commission finds that the requirements in parts F.2 and F.3. of the permit do not constitute a federal mandate. There is no federal requirement to collaborate on, develop, or implement a Regional Urban Runoff Management Program (RURMP). The Commission finds that these RURMP activities "exceed the mandate in that federal law or regulation."¹⁵⁵ As in *Long Beach Unified School Dist. v. State of California*,¹⁵⁶ the permit requires specific actions, i.e., required acts that go beyond the requirements of federal law. In adopting these permit provisions, the state has freely chosen¹⁵⁷ to impose these requirements. Thus, the Commission finds that parts F.2 and F.3 of the permit do not constitute federal mandates.

Based on the mandatory language on the face of the permit, the Commission finds that parts F.2 and F.3 of the permit constitutes a state mandate on the claimants to do all the following:

Collaborate with the other Copermittees to develop, implement, and update as necessary a Regional Urban Runoff Management Program that meets the requirements of section F of the permit, reduces the discharge of pollutants from the MS4 to the MEP, and prevents urban runoff discharges from the MS4 from causing or contributing to a violation of water quality standards. The Regional Urban Runoff Management Program shall, at a minimum: [¶]...[¶]

(2) Develop the standardized fiscal analysis method required in section G of the permit, and,

(3) Facilitate the assessment of the effectiveness of jurisdictional, watershed, and regional programs.

As to whether these activities are a new program or higher level of service, the claimants state in the test claim:

"[W]hile the 2001 Permit required the copermittees to collaborate to address common issues and promote consistency among JURMPs and WURMPs and to

¹⁵⁵ Government Code section 17556, subdivision (c).

¹⁵⁶ *Long Beach Unified School Dist. v. State of California*, *supra*, 225 Cal.App.3d 155.

¹⁵⁷ *Hayes v. Commission on State Mandates*, *supra*, 11 Cal. App. 4th 1564, 1593-1594.

establish a management structure for this purpose, it lacked the detail, specificity and level of effort now mandated by the 2007 Permit.”

In their February 2009 rebuttal comments, claimants assert that the 2001 and 2007 permits contain major substantive differences in their requirements for fiscal analyses of their jurisdictional programs.

The State Board, in its October 2008 comments, states that the 2001 permit required that “the Copermittees enter into a formal agreement to provide, at a minimum, a management structure for designating joint responsibilities, decision making, watershed management, information management of data and reports” and other collaborative arrangements to comply with the permit.

According to the State Board, parts F.2 and F.3 are not a new program or higher level of service because the copermittees “were already conducting multiple efforts on a regional level under the 2001 permit. The inclusion of the RURMP is designed to organize these efforts into one framework to improve Copermittee and Regional Board tracking of regional efforts.” The State Board also asserts that the requirements were intended to reduce redundant reporting and improve efficiency and streamline regional program implementation. The State Board describes the 2007 permit as merely elaborating on and refining the 2001 requirements.

The permit itself states: “This Order contains new or modified requirements that are necessary to improve Copermittees’ efforts to reduce the discharge of pollutants in urban runoff to the MEP and achieve water quality standards.” [Emphasis added.] The permit also describes the Regional Urban Runoff Management Plan as new.

While the 2001 permit contained requirements for a fiscal analysis (part F.8) and an assessment of effectiveness (part F.7), it did so only as components of a Jurisdictional Urban Runoff Management Program. The Regional Urban Runoff Management Program, required in part F.2 of the 2007 permit, is new. The fiscal analysis in part G is incorporated by reference into part F.2, and the effectiveness assessment is incorporated into part F.3. Thus, the Commission finds that the requirements in parts F.2 and F.3 are a new program or higher level of service.

IV. Program Effectiveness Assessment (Part I)

Part I of the permit is called “Program Effectiveness Assessment” and includes subparts for Jurisdictional (I.1), Watershed (I.2) and Regional (I.3) assessment, in addition to a Long Term Effectiveness Assessment (I.5). Of these, claimants pled subparts I.1, I.2 and I.5.

A. Jurisdictional and Watershed Program effectiveness assessment (parts I.1 & I.2): As more specifically stated on pages 22-24 above, the permit requires the copermittees to do the following:

- Annually assess the effectiveness of the Jurisdictional Urban Runoff Management Program (JURMP) that includes specifically assessing the effectiveness of specified components of the JURMP and the effectiveness of the JURMP as a whole.
- Identify measureable targeted outcomes, assessment measures, and assessment methods for each jurisdictional activity/BMP implemented, each major JURMP component, and the JURMP as a whole.

- Development and implement a plan and schedule to address the identified modifications and improvements.
- Annually report on the effectiveness assessment as implemented under each of the specified requirements.
- As a watershed group of copermittees, annually assess the effectiveness of the Watershed Urban Runoff Management Program (WURMP) implementation, including each water quality activity and watershed education activity, and the program as a whole.
- Determine source load reductions resulting from WURMP implementation and utilize water quality monitoring results and data to determine whether implementation is resulting in changes to water quality.
- As with the JURMP, annually review WURMP jurisdictional activities or BMPs to identify modifications and improvements needed to maximize the program's effectiveness, develop and implement a plan and schedule to address the identified modifications and improvements to the programs, and annually report on the program's effectiveness assessment as implemented under each of the requirements.

Regarding parts I.1.a. and I.2.a. of the permit, the Fact Sheet/Technical Report states: "The section requires both specific activities and broader programs to be assessed since the effectiveness of jurisdictional [or watershed] efforts may be evident only when considered at different scales."¹⁵⁸

The State Board, in its comments submitted in October 2008, cites section 402(p)(3)(B)(ii)-(iii) of the Clean Water Act, as well as 40 C.F.R. sections 122.26(d)(2)(i)(B)-(C), (E) and (F) and subdivision (d)(2)(iv) of the same section to show the "broad federal authorities relied upon by the San Diego Water Board to support Section I ... [that] ... support inclusion of the JURMP and WURMP effectiveness assessments under federal law." The State Board also quotes section 122.26(d)(2)(v) that the copermittees must include in part 2 of their application for a permit:

Assessment of controls. Estimated reductions in loadings of pollutants from discharges of municipal storm sewer constituents from municipal storm sewer systems expected as the result of the municipal storm water quality management program. The assessment shall also identify known impacts of storm water controls on ground water.

The State Board also says that "under 40 C.F.R. section 122.42(c), applicants must provide annual reports on the progress of their storm water management programs. The federal law behind the JURMP and WURMP effectiveness assessment requirements were discussed at great length in the 2001 Permit Fact Sheet."¹⁵⁹ The State Board quotes a lengthy portion of the 2001

¹⁵⁸ Fact Sheet/Technical Report for Order No. R9-2007-0001, Parts I.1.a. and I.2.a.. Two identical paragraphs describe the JURMP on page 319 and the WURMP on page 320.

¹⁵⁹ 40 C.F.R. section 122.42(c) states:

Municipal separate storm sewer systems. The operator of a large or medium municipal separate storm sewer system or a municipal separate storm sewer that has been designated by the Director under §122.26(a)(1)(v) of this part must

Fact Sheet, which states that the U.S. EPA requires applicants to submit estimated reductions in pollutant loads expected to result from implemented controls and describe known impacts of storm water controls on groundwater. The 2001 Fact Sheet also includes "Throughout the permit term, the municipality must submit refinements to its assessment or additional direct measurements of program effectiveness in its annual report." It also lists a number of U.S. EPA suggestions, recommendations, and encouraged actions.

The State Board also quotes at length from the 2007 Permit Fact Sheet/Technical Report regarding why the effectiveness assessments are required under the permit, including the need for them and the benefits of including them. According to the State Board, the federal authorities support including the effectiveness assessments, and the Regional Board appropriately exercised discretion under federal law to include them, finding them necessary to implement the MEP standard. Thus, the State Board asserts that sections I.1 and I.2 do not exceed federal law.

The claimants, in their February 2009 comments, state that neither the broad nor the specific legal authority cited in the permit Fact Sheet "contains the above-referenced mandates required under the 2007 Permit." Claimants characterize the federal regulations as only requiring "program descriptions, estimated reductions, known impacts, and an annual report on progress. Federal law does not mandate the specific activities mandated by the 2007 Permit." Claimants also argue that the permit requirements are not necessary to meet the federal MEP standard, and point out that the 2001 Permit Fact Sheet cited by the State Board describes actions recommended or encouraged by the U.S. EPA, but not required. As claimant says: "they simply authorize applicants to go beyond minimum federal requirements." Claimants also quote the State Board's comment on "the need for and benefits of assessment requirements," noting that needs and benefits "constitute an insufficient basis for the imposition of a mandated requirement without subvention."

Although the federal regulations require assessment of controls and annual reports, they do not require the detailed assessment in the 2007 permit. The regulations do not require, for example, assessments of the effectiveness of each significant jurisdictional activity/BMP or watershed

submit an annual report by the anniversary of the date of the issuance of the permit for such system. The report shall include:

- (1) The status of implementing the components of the storm water management program that are established as permit conditions;
- (2) Proposed changes to the storm water management programs that are established as permit condition. Such proposed changes shall be consistent with §122.26(d)(2)(iii) of this part; and
- (3) Revisions, if necessary, to the assessment of controls and the fiscal analysis reported in the permit application under §122.26(d)(2)(iv) and (d)(2)(v) of this part;
- (4) A summary of data, including monitoring data, that is accumulated throughout the reporting year;
- (5) Annual expenditures and budget for year following each annual report;
- (6) A summary describing the number and nature of enforcement actions, inspections, and public education programs;
- (7) Identification of water quality improvements or degradation.

quality activity, or of the implementation of each major component of the JURMP or WURMP, or identification of modifications and improvements to maximize the JURMP or WURMP effectiveness. These requirements, "exceed the mandate in that federal law or regulation."¹⁶⁰ As in *Long Beach Unified School Dist. v. State of California*,¹⁶¹ the permit requires specific actions, i.e., required acts that go beyond the requirements of federal law. In adopting these permit provisions, the state has freely chosen¹⁶² to impose these requirements. Thus, the Commission finds that parts I.1 and I.2 of the permit are not federal mandates.

Based on the mandatory language on the face of the permit, the Commission finds that parts I.1 and I.2 of the permit are a state mandate on the copermitees to do all of the following:

1. Jurisdictional

a. As part of its Jurisdictional Urban Runoff Management Program, each Copermitee shall annually assess the effectiveness of its Jurisdictional Urban Runoff Management Program implementation. At a minimum, the annual effectiveness assessment shall:

(1) Specifically assess the effectiveness of each of the following:

(a) Each significant jurisdictional activity/BMP or type of jurisdictional activity/BMP implemented;

(b) Implementation of each major component of the Jurisdictional Urban Runoff Management Program (Development Planning, Construction, Municipal, Industrial/Commercial, Residential, Illicit Discharge¹⁶³ Detection and Elimination, and Education); and

(c) Implementation of the Jurisdictional Urban Runoff Management Program as a whole.

(2) Identify and utilize measurable targeted outcomes, assessment measures, and assessment methods for each of the items listed in section I.1.a.(1) above.

(3) Utilize outcome levels 1-6¹⁶⁴ to assess the effectiveness of each of the items listed in section I.1.a.(1) above, where applicable and feasible.

(4) Utilize monitoring data and analysis from the Receiving Waters Monitoring Program to assess the effectiveness each of the items listed in section I.1.a.(1) above, where applicable and feasible.

(5) Utilize Implementation Assessment,¹⁶⁵ Water Quality Assessment,¹⁶⁶ and Integrated Assessment,¹⁶⁷ where applicable and feasible.

¹⁶⁰ Government Code section 17556, subdivision (c).

¹⁶¹ *Long Beach Unified School Dist. v. State of California*, *supra*, 225 Cal.App.3d 155.

¹⁶² *Hayes v. Commission on State Mandates*, *supra*, 11 Cal. App. 4th 1564, 1593-1594.

¹⁶³ Illicit discharge, as defined in Attachment C of the permit, is "any discharge to the MS4 that is not composed entirely of storm water except discharges pursuant to a NPDES permit and discharges resulting from firefighting activities [40 C.F.R. 122.26 (b)(2)]."

¹⁶⁴ See footnote 50, page 21.

b. Based on the results of the effectiveness assessment, each Copermittee shall annually review its jurisdictional activities or BMPs to identify modifications and improvements needed to maximize Jurisdictional Urban Runoff Management Program effectiveness, as necessary to achieve compliance with section A of this Order. The Copermittees shall develop and implement a plan and schedule to address the identified modifications and improvements. Jurisdictional activities/BMPs that are ineffective or less effective than other comparable jurisdictional activities/BMPs shall be replaced or improved upon by implementation of more effective jurisdictional activities/BMPs. Where monitoring data exhibits persistent water quality problems that are caused or contributed to by MS4 discharges, jurisdictional activities or BMPs applicable to the water quality problems shall be modified and improved to correct the water quality problems.

c. As part of its Jurisdictional Urban Runoff Management Program Annual Reports, each Copermittee shall report on its Jurisdictional Urban Runoff Management Program effectiveness assessment as implemented under each of the requirements of sections I.1.a and I.1.b above.

2. Watershed

a. As part of its Watershed Urban Runoff Management Program, each watershed group of Copermittees (as identified in Table 4)¹⁶⁸ shall annually assess the effectiveness of its Watershed Urban Runoff Management Program implementation. At a minimum, the annual effectiveness assessment shall:

(1) Specifically assess the effectiveness of each of the following:

- (a) Each Watershed Water Quality Activity implemented;
- (b) Each Watershed Education Activity implemented; and
- (c) Implementation of the Watershed Urban Runoff Management Program as a whole.

¹⁶⁵ Implementation Assessment is defined in Attachment C of the permit as an "Assessment conducted to determine the effectiveness of copermittee programs and activities in achieving measureable targeted outcomes, and in determining whether priority sources of water quality problems are being effectively addressed."

¹⁶⁶ Water Quality Assessment is defined in Attachment C of the permit as an "Assessment conducted to evaluate the condition of non-storm water discharges, and the water bodies which receive these discharges."

¹⁶⁷ Integrated Assessment is defined in Attachment C of the permit as an "Assessment to be conducted to evaluate whether program implementation is properly targeted to and resulting in the protection and improvement of water quality."

¹⁶⁸ Table 4 of the permit divides the copermittees into nine watershed management areas. For example, the San Luis Rey River watershed management area lists the city of Oceanside, Vista and the County of San Diego as the responsible watershed copermittees. Table 4 also lists where the hydrologic units are and major receiving water bodies.

- (2) Identify and utilize measurable targeted outcomes, assessment measures, and assessment methods for each of the items listed in section I.2.a.(1) above.
- (3) Utilize outcome levels 1-6 to assess the effectiveness of each of the items listed in sections I.2.a.(1)(a) and I.2.a.(1)(b) above, where applicable and feasible.
- (4) Utilize outcome levels 1-4 to assess the effectiveness of implementation of the Watershed Urban Runoff Management Program as a whole, where applicable and feasible.
- (5) Utilize outcome levels 5 and 6 to qualitatively assess the effectiveness of implementation of the Watershed Urban Runoff Management Program as a whole, focusing on the high priority water quality problem(s) of the watershed. These assessments shall attempt to exhibit the impact of Watershed Urban Runoff Management Program implementation on the high priority water quality problem(s) within the watershed.
- (6) Utilize monitoring data and analysis from the Receiving Waters Monitoring Program to assess the effectiveness each of the items listed in section I.2.a.(1) above, where applicable and feasible.
- (7) Utilize Implementation Assessment, Water Quality Assessment, and Integrated Assessment, where applicable and feasible.

b. Based on the results of the effectiveness assessment, the watershed Copermittees shall annually review their Watershed Water Quality Activities, Watershed Education Activities, and other aspects of the Watershed Urban Runoff Management Program to identify modifications and improvements needed to maximize Watershed Urban Runoff Management Program effectiveness, as necessary to achieve compliance with section A of this Order.¹⁶⁹ The Copermittees shall develop and implement a plan and schedule to address the identified modifications and improvements. Watershed Water Quality Activities/Watershed Education Activities that are ineffective or less effective than other comparable Watershed Water Quality Activities/Watershed Education Activities shall be replaced or improved upon by implementation of more effective Watershed Water Quality Activities/Watershed Education Activities. Where monitoring data exhibits persistent water quality problems that are caused or contributed to by MS4 discharges, Watershed Water Quality Activities and Watershed Education Activities applicable to the water quality problems shall be modified and improved to correct the water quality problems.

c. As part of its Watershed Urban Runoff Management Program Annual Reports, each watershed group of Copermittees (as identified in Table 4) shall report on its Watershed Urban Runoff Management Program effectiveness assessment as implemented under each of the requirements of section I.2.a and I.2.b above.

¹⁶⁹ Section A is "Prohibitions and Receiving Water Limitations."

The State Board, in its October 2008 comments, states that the program effectiveness assessment is not a new program or higher level of service because the 2001 permit included a JURMP (in part F.7) and WURMP (in part J) effectiveness assessment requirements.

The claimants, in their February 2009 comments, state as follows:

The 2001 Permit only required the copermittees to develop a long-term strategy for assessing the effectiveness of their individual JURMP using specific and indirect measurements to track the long term progress of their individual JURMPs towards achieving water quality. [part F.7.a. of the 2001 permit.] The 2001 Permit also only mandated that the long term strategy developed by the copermittees include an assessment of the effectiveness of their JURMP in an annual report using the direct and indirect assessment measurements and methods developed in the long-term strategy. [part F.7. of the 2001 permit.]

Part F.7 of the 2001 permit required developing the following on the topic of "Assessment of Jurisdictional URMP Effectiveness Component."

a. As part of its individual Jurisdictional URMP, each Copermittee shall develop a long-term strategy for assessing the effectiveness of its individual Jurisdictional URMP. The long-term assessment strategy shall identify specific direct and indirect measurements that each Copermittee will use to track the long-term progress of its individual Jurisdictional URMP towards achieving improvements in receiving water quality. Methods used for assessing effectiveness shall include the following or their equivalent: surveys, pollutant loading estimations, and receiving water quality monitoring. The long-term strategy shall also discuss the role of monitoring data in substantiating or refining the assessment.

b. As part of its individual Jurisdictional URMP Annual Report, each Copermittee shall include an assessment of the effectiveness of its Jurisdictional URMP using the direct and indirect assessment measurements and methods developed in its long-term assessment strategy.

The 2007 permit requires more detail in its assessments than the 2001 permit. The 2007 permit requires annual assessments and using outcome levels, among other things, to assess the effectiveness of (a) each significant jurisdictional activity/BMP, (b) implementation of each major component of the JURMP, and (c) implementation of the JURMP as a whole. The 2001 permit did not require assessments at these three levels. And for example, outcome level 4 in the 2007 permit is required for measuring load reductions.¹⁷⁰ This is a higher level of service than "pollutant loading estimations" to be used as an effectiveness strategy in the 2001 permit.¹⁷¹ Therefore, the Commission finds that section I.1 of the permit (Jurisdictional URMP effectiveness assessment) is a new program or higher level of service.

¹⁷⁰ There are six Effectiveness Assessments incorporated into part I.1.a.(3) of the permit and are defined in Attachment C. One of them is "Effectiveness Assessment Level 4 – Load Reductions – Level 4 outcomes measure load reductions which quantify changes in the amounts of pollutants associated with specific sources before and after a BMP or other control measure is employed."

¹⁷¹ See Fact Sheet/Technical Report for Order No. R9-2007-0001.

The assessment provisions of the Watershed Urban Runoff Management Program are in part J.2 of the 2001 permit, which requires each copermitttee to develop and implement a Watershed URMP that contains, among other things:

b. An assessment of the water quality of all receiving waters in the watershed based upon (1) existing water quality data; and (2) annual watershed water quality monitoring that satisfies the watershed monitoring requirements of Attachment B.

[¶]...[¶]

i. Long-term strategy for assessing the effectiveness of the Watershed URMP. The long-term assessment strategy shall identify specific direct and indirect measurements that will track the long-term progress of the Watershed URMP towards achieving improvements in receiving water quality. Methods used for assessing effectiveness shall include the following or their equivalent: surveys, pollutant loading estimations, and receiving water quality monitoring. The long-term strategy shall also discuss the role of monitoring data in substantiating or refining the assessment.

As with the JURMP, the 2001 permit required a “long-term strategy for assessing the effectiveness of the Watershed URMP” whereas the 2007 permit requires the annual assessment of more specific criteria: (a) each Watershed Water Quality Activity implemented; (b) Each Watershed Education Activity implemented; and (c) Implementation of the Watershed Urban Runoff Management program as a whole. And the 2007 permit requires assessing these activities using the same six effectiveness outcome levels as for the JURMP (defined in Attachment C), that were not in the 2001 permit.¹⁷²

¹⁷² Effectiveness assessment outcome levels are defined in Attachment C of the permit as follows: Effectiveness assessment outcome level 1 – Compliance with Activity-based Permit Requirements – Level 1 outcomes are those directly related to the implementation of specific activities prescribed by this Order or established pursuant to it. Effectiveness assessment outcome level 2 – Changes in Attitudes, Knowledge, and Awareness – Level 2 outcomes are measured as increases in knowledge and awareness among target audiences such as residents, business, and municipal employees. Effectiveness assessment outcome level 3 – Behavioral Changes and BMP Implementation – Level 3 outcomes measure the effectiveness of activities in affecting behavioral change and BMP implementation. Effectiveness assessment outcome level 4 – Load Reductions – Level 4 outcomes measure load reductions which quantify changes in the amounts of pollutants associated with specific sources before and after a BMP or other control measure is employed. Effectiveness assessment outcome level 5 – Changes in Urban Runoff and Discharge Quality – Level 5 outcomes are measured as changes in one or more specific constituents or stressors in discharges into or from MS4s. Effectiveness assessment outcome level 6 – Changes in Receiving Water Quality – Level 6 outcomes measure changes to receiving water quality resulting from discharges into and from MS4s, and may be expressed through a variety of means such as compliance with water quality objectives or other regulatory benchmarks, protection of biological integrity [i.e., ecosystem health], or beneficial use attainment.

Therefore, the Commission finds that section I.2. of the permit (the Watershed URMP effectiveness assessment) is a new program or higher level of service.

B. Long Term Effectiveness Assessment (part I.5): As stated on pages 19-20 above, part I.5 requires the copermittees to collaborate to develop a Long Term Effectiveness Assessment (LTEA) that evaluates the copermittee programs on a jurisdictional, watershed, and regional level, and that emphasizes watershed assessment. The LTEA must build on the results of the August 2005 Baseline LTEA, and must be submitted to the Regional Board no later than 210 days before the permit expires. The LTEA must address the Regional objectives listed in part I.3 of the permit, as well as assess the effectiveness of the Receiving Waters Monitoring Program, and address outcome levels 1-6 as specified in attachment C of the permit.

In its October 2008 comments on the test claim, the State Board says that the LTEA requirement was imposed "so that the San Diego Water Board could properly evaluate the Copermittees' storm water program during the reapplication process." The State Board asserts that the LTEA provision is a federal mandate, citing 40 C.F.R. section 122.26, subdivisions (d)(2)(iv) and (v), in which (v) states that a permit application must include:

Assessment of controls. Estimated reductions in loadings of pollutants from discharges of municipal storm sewer constituents from municipal storm sewer systems expected as the result of the municipal storm water quality management program. The assessment shall also identify known impacts of storm water controls on ground water.

According to the State Board, "Even if the requirements to develop an LTEA are not specifically required by the federal regulations, the general discussion of the federal MEP standard is applicable here and supports the San Diego Water Board's determination that the region-wide LTEAs are necessary to meet the federal MEP standard."

In their February 2009 rebuttal comments, the claimants state:

The program effectiveness component of the 2007 Permit mandates Jurisdictional (I.1), Watershed (I.2), Regional (I.3), Total Maximum Daily Loads ("TMDL") and BMP Implementation (I.4) and Long-term Effectiveness Assessment (I.5) requirements. This Section mandates multiple layers of program assessment, review and reporting. Such duplicative and collaborative efforts were not required under the 2001 Permit and are not required by federal law.

Claimants assert that there is no federal authority that states that the regional, jurisdictional and watershed program effectiveness training requirements are required to meet the minimum federal MEP standards. Claimants also state that permits in other jurisdictions do not have LTEA requirements. According to the claimants, "while portions of the federal regulations cited by the State permit region-wide or watershed-wide cooperation, there is no mandatory requirement for multiple layers of program effectiveness assessment."

Although the federal regulations require assessment of controls, they do not require the detailed assessment in the 2007 permit. They do not require, for example, collaboration with other copermittees, addressing specified objectives or outcome levels, or addressing jurisdictional, watershed, and regional programs. These requirements "exceed the mandate in that federal law

or regulation.”¹⁷³ As in *Long Beach Unified School Dist. v. State of California*,¹⁷⁴ the permit requires specific actions, i.e., required acts that go beyond the requirements of federal law. In adopting these permit provisions, the state has freely chosen¹⁷⁵ to impose these requirements. Thus, the Commission finds that part I.5 of the permit is not a federal mandate.

Because of the mandatory language on the face of the permit, the Commission finds that part I.5 of the permit is a state mandate for the claimants to do all of the following:

5. Long-term Effectiveness Assessment

a. Each Copermittee shall collaborate with the other Copermittees to develop a Longterm Effectiveness Assessment (LTEA), which shall build on the results of the Copermittees’ August 2005 Baseline LTEA. The LTEA shall be submitted by the Principal Permittee to the Regional Board no later than 210 days in advance of the expiration of this Order.

b. The LTEA shall be designed to address each of the objectives listed in section I.3.a.(6)¹⁷⁶ of this Order, and to serve as a basis for the Copermittees’ Report of Waste Discharge for the next permit cycle.

c. The LTEA shall address outcome levels 1-6, and shall specifically include an evaluation of program implementation to changes in water quality (outcome levels 5 and 6).

d. The LTEA shall assess the effectiveness of the Receiving Waters Monitoring Program in meeting its objectives and its ability to answer the five core management questions. This shall include assessment of the frequency of monitoring conducted through the use of power analysis and other pertinent statistical methods. The power analysis shall identify the frequency and intensity of sampling needed to identify a 10% reduction in the concentration of

¹⁷³ Government Code section 17556, subdivision (c).

¹⁷⁴ *Long Beach Unified School Dist. v. State of California*, *supra*, 225 Cal.App.3d 155.

¹⁷⁵ *Hayes v. Commission on State Mandates*, *supra*, 11 Cal. App. 4th 1564, 1593-1594.

¹⁷⁶ Part I.3.a.(6) of the permit states: At a minimum, the annual effectiveness assessment shall:
(6) Include evaluation of whether the Copermittees’ jurisdictional, watershed, and regional effectiveness assessments are meeting the following objectives: (a) Assessment of watershed health and identification of water quality issues and concerns. (b) Evaluation of the degree to which existing source management priorities are properly targeted to, and effective in addressing, water quality issues and concerns. (c) Evaluation of the need to address additional pollutant sources not already included in Copermittee programs. (d) Assessment of progress in implementing Copermittee programs and activities. (e) Assessment of the effectiveness of Copermittee activities in addressing priority constituents and sources. (f) Assessment of changes in discharge and receiving water quality. (g) Assessment of the relationship of program implementation to changes in pollutant loading, discharge quality, and receiving water quality. (h) Identification of changes necessary to improve Copermittee programs, activities, and effectiveness assessment methods and strategies.

constituents causing the high priority water quality problems within each watershed over the next permit term with 80% confidence.

e. The LTEA shall address the jurisdictional, watershed, and regional programs, with an emphasis on watershed assessment.

The next issue is whether the LTEA (part I.5) is a new program or higher level of service. The State Board, in its October 2008 comments, state as follows:

The LTEA does not impose a new program or higher level of service. Rather, it requires the Copermittees to conduct a long term effectiveness assessment prior to submitting an application for reissuance of the Order in the next permit term and is necessary to support proposed changes to the Copermittees' programs."

The claimants, in their February 2009 comments, argue that the LTEA requirement in part I.5 does impose a new program or higher level of service. According to the claimants:

Section F.7 of the 2001 Permit only required individual copermittees to develop long term effectiveness assessments for their Jurisdictional Urban Runoff Management Plan ("JURMP"). ... The 2001 Permit did not require the copermittees to collaborate to develop an overarching LTEA for regional, jurisdictional and watershed programs, and did not require the submission of a LTEA by a date certain in advance of the Permit expiration.

The Commission finds that the LTEA is a new program or higher level of service. The 2001 permit required JURMP assessment (in part F.7) and WURMP (in part J.2) as quoted above in the discussion on parts I.1 and I.2., but not an LTEA. The Fact Sheet/Technical Report for the 2007 permit states:

Section I.5 (Long-Term Effectiveness Assessment) requires the Copermittees to conduct a Long-Term Effectiveness Assessment prior to their submittal of an application for reissuance of the Order. The Long-Term Effectiveness Assessment is necessary to provide support for the Copermittees' proposed changes to their programs in their ROWD. It can also serve as the basis for changes to the Order's requirements.

The Commission finds that the LTEA (part I.5) is a new program or higher level of service for three reasons. First, the scope of the assessment in the 2001 permit addresses only the JURMP and WURMP rather than "jurisdictional, watershed, and regional programs, with an emphasis on watershed assessment" as in the 2007 permit (see the analysis of I.1 and I.2 above). Second, the 2001 permit did not require collaborating with all other copermittees on assessment. Third, the 2001 permit contains much less detail on what to include in the assessment, such as, for example, the eight regional objectives listed in I.3.a.(6), incorporated by reference in part I.5. Also, the LTEA must assess the "effectiveness of the Receiving Waters Monitoring Program ... [and] shall include assessment of the frequency of monitoring conducted through the use of power analysis and other pertinent statistical methods." These methods were not required under the 2001 permit.

V. All Copermittee Collaboration (Part L)

Part L, labeled "All Permittee Collaboration," requires the copermittees to collaborate to address common issues and plan and coordinate activities, including developing a Memorandum of

Understanding (MOU), as specified. The Copermitees entered into an MOU effective in January 2008, which is attached to the test claim. The Copermitees allege activities involved with working body support and working body participation.

In comments submitted in October 2008, the State Board asserts that the permit condition in part L is necessary to meet the minimum MEP standard, quoting the following federal regulation regarding municipal stormwater permits:

(2) *Part 2.* Part 2 of the 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: [¶]...[¶]

(D) Control through interagency agreements among coapplicants the contribution of pollutants from one portion of the municipal system to another portion of the municipal system;¹⁷⁷

The Commission finds that there is no federal mandate to develop a management structure (memorandum of understanding, or MOU) as required in part L of the 2007 permit. The federal regulation most on point requires an applicant (claimant) to demonstrate adequate legal authority “which authorizes or enables the applicant at a minimum to: [¶]...[¶] (D) Control through interagency agreements among coapplicants the contribution of pollutants from one portion of the municipal system to another portion of the municipal system;”¹⁷⁸ All the federal regulations address is authority to establish an interagency agreement or memorandum of understanding, but do not require it to be implemented or specify its contents beyond “controlling ... the contribution of pollutants from one portion of the municipal system to another portion of the municipal system.”

By contrast, part L of the permit requires the copermitees to collaborate, promote consistency among JURMP and WURMP and plan and coordinate activities required under the permit. It also requires joint execution and submission to the Regional Board an MOU with a minimum of seven specified requirements.

Thus, this permit activity “exceed[s] the mandate in that federal law or regulation.”¹⁷⁹ As in *Long Beach Unified School Dist. v. State of California*,¹⁸⁰ the permit requires specific actions, i.e., required acts that go beyond the requirements of federal law. In adopting these permit provisions, the state has freely chosen¹⁸¹ to impose these requirements. Thus, the Commission finds that part L of the permit does not impose a federal mandate.

Based on the mandatory language in the permit, the Commission finds that part L of the permit is a state mandate on the claimants to do the following:

¹⁷⁷ 40 Code of Federal Regulations section 122.26 (d)(2)(i)(D).

¹⁷⁸ 40 Code of Federal Regulations section 122.26 (d)(2)(i)(D).

¹⁷⁹ Government Code section 17556, subdivision (c).

¹⁸⁰ *Long Beach Unified School Dist. v. State of California*, *supra*, 225 Cal.App.3d 155.

¹⁸¹ *Hayes v. Commission on State Mandates*, *supra*, 11 Cal. App. 4th 1564, 1593-1594.

1. Collaborate with all other Copermittees regulated under this Order to address common issues, promote consistency among Jurisdictional Urban Runoff Management Programs and Watershed Urban Runoff Management Programs, and to plan and coordinate activities required under this Order.

(a) Jointly execute and submit to the Regional Board no later than 180 days after adoption of the permit, a Memorandum of Understanding, Joint Powers Authority, or other instrument of formal agreement that at a minimum:

- (1) Identifies and defines the responsibilities of the Principal Permittee¹⁸² and Lead Watershed Permittees;¹⁸³
- (2) Identifies Copermittees and defines their individual and joint responsibilities, including watershed responsibilities;
- (3) Establishes a management structure to promote consistency and develop and implement regional activities;
- (4) Establishes standards for conducting meetings, decisions-making, and cost-sharing;
- (5) Provides guidelines for committee and workgroup structure and responsibilities;
- (6) Lays out a process for addressing Copermittee non-compliance with the formal agreement;
- (7) Includes any and all other collaborative arrangements for compliance with this order.

The State Board, in its October 2008 comments, asserts that the management structure framework in part L of the 2007 permit is not a new program or higher level of service because:

The 2001 permit required significant collaboration to address common issues and promote consistency across management programs [and] development of a management structure through execution of a formal agreement, meeting minimum specifications. It also required standardized reporting, including fiscal analysis.

The State Board also argues there is “minimal substantive difference” between the 2001 and 2007 permits in their requirements to establish “a formal cooperative arrangement and to implement regional urban runoff management activities. The 2007 Permit merely elaborates on and refines the 2001 requirements.”

In its February 2009 rebuttal comments, the claimants assert that the 2001 and 2007 permits contain major substantive differences in their requirements for fiscal analyses of their jurisdictional programs.

¹⁸² The Principal Permittee is the County of San Diego.

¹⁸³ According to the permit: “Watershed Copermittees shall identify the Lead Watershed Permittee for their WMA [Watershed Management Area].”

Part L.1 of the 2007 permit, the first paragraph in L requiring collaboration, is identical to part N of the 2001 permit. The Commission finds, however, that the collaboration is a new program or higher level of service because it now applies to all the activities that are found to be a new program or higher level of service in the analysis above (i.e, not in the 2001 permit) including the Regional Urban Runoff Management Program.

Part L.1.a, regarding the MOU or formal agreement, is similar but not identical to part N of the 2001 permit. Both permits require adoption of a "Memorandum of Understanding [MOU], Joint Powers Authority, or other instrument of formal agreement." The 2001 permit, in part N.1.a, required the MOU to provide a management structure with the following contents: "designation of joint responsibilities, decision making, watershed activities, information management of data and reports, including the requirements under this Order; and any and all other collaborative arrangements for compliance with this Order."

By contrast, the 2007 permit, requires the MOU to be submitted to the Regional Board within 180 days after adoption of the permit and requires that the MOU, at a minimum:

- (1) Identifies and defines the responsibilities of the principal Permittee and Lead Watershed Permittees;
- (2) Identifies Copermittees and defines their individual and joint responsibilities;
- (3) Establishes a management structure to promote consistency and develop and implement regional activities;
- (4) Establishes standards for conducting meetings, decision-making, and cost-sharing;
- (5) Provides guidelines for committee and workgroup structure and responsibilities;
- (6) Lays out a process for addressing Copermittee non-compliance with the formal agreement; and
- (7) Includes any and all other collaborative arrangements for compliance with this order.

The contents of the MOU specified in the 2001 permit, although stated with less specificity, are the same as those in the 2007 permit for numbers (1)-(2) and (7) above. Both permits require the MOU to contain "designation of joint responsibilities" and "collaborative arrangements for compliance with this order." Thus, the Commission finds that jointly executing and submitting those parts of the MOU to the Regional Board is not a new program or higher level of service.

The Commission finds that part L.1.a of the permit is a new program or higher level of service for all copermittees to do the following:

- Collaborate with all other Copermittees to address common issues, promote consistency among Jurisdictional Urban Runoff Management Programs and Watershed Urban Runoff Management Programs, and to plan and coordinate activities required under the permit.
- Jointly execute and submit to the Regional Board, no later than 180 days after adoption of the permit, a Memorandum of Understanding, Joint Powers Authority, or other instrument of formal agreement which at a minimum: (3) Establishes a management structure to promote consistency and develop and implement regional activities; (4) Establishes standards for conducting meetings, decision-making, and cost-sharing; (5) Provides guidelines for

committee and workgroup structure and responsibilities; and (6) Lays out a process for addressing copermittee non-compliance with the formal agreement.

Summary of Issue 1: The Commission finds that the following parts of the 2007 permit are a state-mandated, new program or higher level of service.

I. Jurisdictional Urban Runoff Management Program and Reporting (Parts D & J)

- Collaborate with other copermittees to develop and implement a hydromodification management plan, as specified (D.1.g.), for private priority development projects. Reimbursement is not required for this activity for municipal priority development projects.
- Develop and submit an updated Model SUSMP that defines minimum Low-impact Development and other BMPs as specified (D.1.d.(7)-(8)), for private priority development projects. Reimbursement is not required for this activity for municipal priority development projects.
- Street sweeping (D.3.a.(5)) and reporting on street sweeping (J.3.a(3)x-xv);
- Conveyance system cleaning (D.3.a.(3)(b)(iii)) and reporting on conveyance system cleaning (J.3.a.(3)(c)(iv)-(viii));
- Educational component (D.5).
 - Educate each specified target community on the following topics: (1) Erosion prevention, (2) Non storm water discharge prohibitions, and (3) BMP types: facility or activity specific, LID, source control, and treatment control (D.5.a.(1));
 - Educational programs shall emphasize underserved target audiences, high-risk behaviors, and 'allowable' behaviors and discharges, including various ethnic and socioeconomic groups and mobile sources (D.5.a.(2));
 - Implement an education program that includes annual training only for planning boards and elected officials, if applicable, to have an understanding of the topics in (i) and (ii) (D.5.b.(1)(a)(i) & (ii));
 - Implement an education program so that its planning and development review staffs (and Planning Boards and Election Officials, if applicable) have an understanding of the topics in (iii) and (iv) as specified (D.5.b.(1)(a)(iii) & (iv));
 - Implement an education program that includes annual training prior to the rainy season so that [the Copermittee's] construction, building, code enforcement, and grading review staffs, inspectors, and other responsible construction staff have, at a minimum, an understanding of the following topics, as appropriate for the target audience: the topics in (iii) to (vi), as specified (D.5.b.(1)(b)(iii) & (iv));
 - Municipal Industrial/Commercial Activities (D.5.b.(1)(c));
 - Municipal Other Activities (D.5.b.(1)(d));
 - New Development and Construction Education (D.5.(b)(2));
 - Residential, General Public, and School Children Education (D.5.(b)(3)).

II. Watershed Urban Runoff Management Program (Parts E.2.f & E.2.g.)

- Identify and implement the Watershed activities as specified (E.2.f.).
- Collaborate to develop and implement the Watershed Urban Runoff Management Programs. Watershed Copermittee collaboration shall include frequent regularly scheduled meetings. (E.2.g.)

III. Regional Urban Runoff Management Program (Parts F.1, F.2 & F.3)

- Include developing and implementing a Regional Residential Education Program development and implementation in the RURMP, as specified (F.1.).
- Include developing the standardized fiscal analysis method required in permit part G in the RURMP (F.2.).
- Facilitate the assessment of the effectiveness of jurisdictional, watershed, and regional programs in the RURMP (F.3.).

IV. Program Effectiveness Assessment (Parts I.1, I.2 & I.5)

- Annually assess the effectiveness of each copermittee's JURMP, as specified (I.1.).
- Annually assess the effectiveness of each watershed group's WURMP (I.2.).
- Collaborate with the other copermittees to develop a Long-term Effectiveness Assessment, as specified, and submit it to the Regional Board as specified (I.5.).

V. All Permittee Collaboration (Part L)

- Collaborate with all other copermittees to address common issues, promote consistency among the JURMP and WURMP, and to plan and coordinate activities required under the permit.
- Jointly execute and submit to the Regional Board, no later than 180 days after adoption of the permit, a Memorandum of Understanding, Joint Powers Authority, or other instrument of formal agreement as specified (L.1.a. (3)-(5)).

Any further reference to the test claim activities is limited to these parts of the permit found to be a new program or higher level of service.

Issue 2: Do the test claim activities impose costs mandated by the state within the meaning of Government Code sections 17514 and 17556?

The final issue is whether the permit provisions impose costs mandated by the state,¹⁸⁴ and whether any statutory exceptions listed in Government Code section 17556 apply to the test claim. Government Code section 17514 defines "cost mandated by the state" as follows:

[A]ny increased costs which a local agency or school district is required to incur after July 1, 1980, as a result of any statute enacted on or after January 1, 1975, or any executive order implementing any statute enacted on or after January 1, 1975, which mandates a new program or higher level of service of an existing program within the meaning of Section 6 of Article XIII B of the California Constitution.

¹⁸⁴ *Lucia Mar, supra*, 44 Cal.3d 830, 835; Government Code section 17514.

Government Code section 17564 requires reimbursement claims to exceed \$1000 to be eligible for reimbursement. In the test claim, the County of San Diego itemized the costs of complying with the permit conditions as follows:

Activity	Cost FY 2007-08
Regional Urban Runoff Management Program -Copermittee collaboration (F.2, F.3, L)	\$260,031.09
Copermittee collaboration, Regional Residential Education, Program Development and Implementation (F.1)	\$131,250.00
Jurisdictional Urban Runoff Management Program (JURMP) -hydromodification (D.1.g)	\$630,000.00
JURMP Standard Urban Storm Water Mitigation Plans -low impact development (D.1.d)	\$52,200.00
Long Term Effectiveness Assessment (I.5)	\$210,000.00
Street Sweeping (D.3.a.(5) Equipment, Staffing, Contract	\$3,477,190.00
Conveyance System Cleaning (D.3.a.(3)) and Reporting (J.2.a.(3)(c) iv – vii.	\$3,456,087.00
Program Effectiveness Assessment (I.1 & I.2)	\$392,363.00
Educational Surveys and Tests (D.5)	\$62,617.00
Watershed Urban Runoff Management Program -Copermittee collaboration (E.2.f., E.2.g)	\$1,632,893.00
Total	\$10,304,631.09

Claimants submitted documentation in February 2010 that show the 2008-2009 cost for the permit activities is \$18,014,213. These figures, along with those in the test-claim narrative and declarations submitted by the San Diego County and 18 cities,¹⁸⁵ illustrate that the costs to comply with the permit activities exceed \$1,000. The Commission, however, cannot find “costs mandated by the state” within the meaning of Government Code section 17514 if any exceptions in Government Code section 17556 apply, which is discussed below.

A. Claimants did not request the test claim activities within the meaning of Government Code section 17556, subdivision (a).

The first issue is whether the claimants requested or proposed the activities in the permit. The Department of Finance and the State Board both assert that claimants did so in their Report of

¹⁸⁵ The County and city declarations are attached to the test claim.

Waste Discharge. As discussed above, the claimants were required to submit a ROWD and Stormwater Quality Management Plan before the permit was issued.¹⁸⁶

Government Code section 17556, subdivision (a), provides that the Commission shall not find costs mandated by the state if:

(a) The claim is submitted by a local agency ... that requested legislative authority for that local agency ... to implement the program specified in the statute, and that statute imposes costs upon that local agency or school district requesting the legislative authority. A resolution from the governing body or a letter from a delegated representative of the governing body of a local agency ... that requests authorization for that local agency ... to implement a given program shall constitute a request within the meaning of this subdivision.

Based on the language of the statute, section 17556, subdivision (a), does not apply because the permit is not a statute, the claimants did not request "legislative authority" to implement the permit, and the record lacks any resolutions adopted by the claimants. Therefore, the Commission finds that the claimants did not request the activities in the permit within the meaning of Government Code section 17556, subdivision (a).

B. Claimants have fee authority under Government Code section 17556, subdivision (d), for the test claim activities that do not require voter approval under Proposition 218

Government Code section 17556, subdivision (d), states:

The commission shall not find costs mandated by the state, as defined in Section 17514, in any claim submitted by a local agency ... if, after a hearing, the commission finds any one of the following: [¶]...[¶] (d) The local agency ... has the authority to levy service charges, fees, or assessments sufficient to pay for the mandated program or increased level of service.

The California Supreme Court upheld the constitutionality of Government Code section 17556, subdivision (d), in *County of Fresno v. State of California*.¹⁸⁷ The court, in holding that the term "costs" in article XIII B, section 6, excludes expenses recoverable from sources other than taxes, stated:

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, supra*, 43 Cal.3d at p. 61.) 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* (1988) 44 Cal.3d 830, 836, fn. 6 [244 Cal.Rptr. 677, 750 P.2d 318].) Specifically, it was designed to protect the tax revenues of local governments from state mandates that would require expenditure of such revenues. Thus, although its language broadly

¹⁸⁶ Water Code section 13376; 40 Code of Federal Regulations, section 122.21 (a). The Federal regulation applies to U.S. EPA-issued permits, but is incorporated into section 123.25 (the state-program provision) by reference. Also see the 2007 permit, page 2, part A.

¹⁸⁷ *County of Fresno v. State of California, supra*, 53 Cal.3d 482.

declares that the “state shall provide a subvention of funds to reimburse ... local government for the costs [of a state-mandated new] program or higher level of service,” read in its textual and historical context section 6 of article XIII B requires subvention only when the costs in question can be recovered *solely from tax revenues*.

In view of the foregoing analysis, the question of the facial constitutionality of section 17556(d) under article XIII B, section 6, can be readily resolved. As noted, the statute provides that “The commission shall not find costs mandated by the state ... if, after a hearing, the commission finds that” the local government “has the authority to levy service charges, fees, or assessments sufficient to pay for the mandated program or increased level of service.” Considered within its context, the section effectively construes the term “costs” in the constitutional provision as excluding expenses that are recoverable from sources other than taxes. Such a construction is altogether sound. As the discussion makes clear, the Constitution requires reimbursement only for those expenses that are recoverable solely from taxes. It follows that section 17556(d) is facially constitutional under article XIII B, section 6.¹⁸⁸

In another case about subdivision (d) of section 17556, *Connell v. Superior Court*,¹⁸⁹ the dispute was whether local agencies had sufficient fee authority for a mandate involving increased purity of reclaimed wastewater used for certain types of irrigation. The court cited statutory fee authority for the reclaimed wastewater, and noted that the water districts did not dispute their fee authority. Rather, the water districts argued that they lacked “sufficient” fee authority in that it was not economically feasible to levy fees sufficient to pay the mandated costs. In finding the fee authority issue is a question of law, the court stated that Government Code section 17556, subdivision (d), is clear and unambiguous, in that its plain language precludes reimbursement where the local agency has the authority, i.e., the right or the power, to levy fees sufficient to cover the costs of the state-mandated program.” The court rejected the districts’ argument that “authority” as used in the statute should be construed as a “practical ability in light of surrounding economic circumstances” because that construction cannot be reconciled with the plain language of section 17556, and would create a vague standard not capable of reasonable adjudication. The court also said that nothing in the fee authority statute (Wat. Code, § 35470) limited the authority of the districts to levy fees “sufficient” to cover their costs. Thus, the court concluded that the plain language of section 17556 made the fee authority issue solely a question of law, and that the water districts could not be reimbursed due to that fee authority.¹⁹⁰

¹⁸⁸ *County of Fresno v. State of California*, *supra*, 53 Cal.3d 482, 487. Emphasis in original.

¹⁸⁹ *Connell v. Superior Court* (1997) 59 Cal.App.4th 382.

¹⁹⁰ *Connell v. Superior Court*, *supra*, 59 Cal.App.4th 382, 398-402.

1. Claimants' have regulatory fee authority (within the meaning of Gov. Code, § 17556, subd. (d)) under the police power sufficient to pay for the mandated activities that do not require voter approval under Proposition 218: the hydromodification plan and low-impact development.

In its October 2008 comments, the State Board asserted that the claimants have fee authority to pay for the permit activities. Although the Board recognizes "limitations on assessing fees and surcharges under California law ... [concerning] the percentage of voters who must approve the assessment" the Board points to examples of local agencies (Cities of Los Angeles, San Clemente, and Palo Alto) that have successfully adopted an assessment. The State Board also argues that the cities' trash collection responsibilities may also include street sweeping and conveyance system cleaning for which the city could charge fees, and that developer fees could be charged for hydromodification and low impact development.

Claimants, in comments submitted in February 2009, state that they cannot unilaterally impose a fee to recover the cost to comply with the 2007 permit on water or sewer bills sent to residents because of *Howard Jarvis Taxpayer Assoc. v. City of Salinas*,¹⁹¹ in which the court invalidated a stormwater management utility fee imposed by the city on all owners of developed parcels in the city. The court held that article XIII D (Proposition 218) of the California Constitution "required the city to subject the proposed storm drainage fee to a vote of the property owners or the voting residents of the affected area."¹⁹² As to the argument that claimants can put the fee to a vote in their jurisdictions, claimants state as follows:

Articles XIII C and XIII D, which were added to the Constitution by Proposition 218, regulate the imposition of general and special taxes as well as the imposition of special assessments and property related fees. In each of these cases the question of whether to impose a tax, special assessment or a property related fee must be submitted to and approved by the voters. And, in the case of a special tax, and in certain instances the imposition of a fee or charge, the tax or fee must be approved by a two-thirds vote of the resident voters. The State fails to cite any authority that requires the copermitees to first submit the question of whether to impose a tax or fee to the voters and have them reject the proposition. Such a requirement would render all mandate claims moot, without first submitting the question of whether to impose a tax or assessment to a vote of the electorate.

The issue of local fee authority for municipal stormwater permit activities in this permit cannot be answered without discussing regulatory fee authority under the police power and the limitations on that authority via the voter-approval requirement in article XIII D of the California Constitution (Proposition 218).

Case law has recognized three general categories of local agency fees or assessments: (1) special assessments, based on the value of benefits conferred on property; (2) development fees, exacted in return for permits or other government privileges; and (3) regulatory fees, imposed under the police power.¹⁹³ The regulatory and development fees are discussed below in the context of

¹⁹¹ *Howard Jarvis Taxpayers Assoc. v. City of Salinas* (2002) 98 Cal.App.4th 1351, 1358-1359.

¹⁹² *Id.* at page 1358-1359.

¹⁹³ *Sinclair Paint v. State Board of Equalization* (1997) 15 Cal.4th 866, 874.

XIII D (Proposition 218) that would allow the claimants to impose fees for the activities in the test claim related to development.

Regulatory fee authority under the police power: The law on local government fee authority begins with article XI, section 7, of the California Constitution, which states: "A county or city may make and enforce within its limits all local, police, sanitary, and other ordinances and regulations not in conflict with general laws." Article XI, section 7, includes the authority to impose fees, and courts have held that "the power to impose valid regulatory fees does not depend on legislatively authorized taxing power but exists pursuant to the direct grant of police power under article XI, section 7, of the California Constitution."¹⁹⁴

Water pollution prevention is also a valid exercise of government police power.¹⁹⁵

In *Sinclair Paint v. State Board of Equalization*,¹⁹⁶ the California Supreme Court upheld a fee on manufacturers of paint that funded a child lead-poisoning program that provided evaluation, screening, and medically necessary follow-up services for children who were deemed potential victims of lead poisoning. The program was entirely supported by fees assessed on manufacturers or other persons contributing to environmental lead contamination. In upholding the fee, the court ruled that it was a regulatory fee imposed under the police power and not a special tax requiring a two-thirds vote under article XIII A, section 4, of the California Constitution. The court stated:

From the viewpoint of general police power authority, we see no reason why statutes or ordinances calling on polluters or producers of contaminating products to help in mitigation or cleanup efforts should be deemed less "regulatory" in nature than the initial permit or licensing programs that allowed them to operate.

Viewed as a mitigating effects measure, [the fee] is comparable in character to several police power measures imposing fees to defray the actual or anticipated adverse effects of various business operations.¹⁹⁷ [Emphasis added.]

Regulatory fees also help to prevent or mitigate pollution, as the Court said: "imposition of 'mitigating effects' fees in a substantial amount ... also 'regulates' future conduct by deterring further manufacture, distribution, or sale of dangerous products, and by stimulating research and development efforts to produce safer or alternative products."¹⁹⁸ The court also recognized that regulatory fees do not depend on government-conferred benefits or privileges.¹⁹⁹

¹⁹⁴ *Mills v. County of Trinity* (1980) 108 Cal.App.3d 656, 662, in which a taxpayer challenged a county ordinance that imposed new and increased fees for county services in processing subdivision, zoning, and other land-use applications that had been adopted without a two-thirds affirmative vote of the county electors.

¹⁹⁵ *Freeman v. Contra Costa County Water Dist.* (1971) 18 Cal.App.3d 404, 408.

¹⁹⁶ *Sinclair Paint v. State Board of Equalization* (1997) 15 Cal.4th 866.

¹⁹⁷ *Sinclair Paint v. State Board of Equalization, supra*, 15 Cal.4th 866, 877.

¹⁹⁸ *Sinclair Paint v. State Board of Equalization, supra*, 15 Cal.4th 866, 875-877.

¹⁹⁹ *Id.* at page 875.

Although the holding in *Sinclair Paint* applied to a state-wide fee, the court's language (treating "ordinances" the same as "statutes") recognizes that local agencies also have police power to impose regulatory fees, and it relied on local government police power cases in its analysis.²⁰⁰

Other cases have defined a regulatory fee as an imposition that funds a regulatory program²⁰¹ or that distributes the collective cost of a regulation²⁰² and is "enacted for purposes broader than the privilege to use a service or to obtain a permit. ...the regulatory program is for the protection of the health and safety of the public."²⁰³ Courts will uphold regulatory fees if they do not exceed the reasonable cost of providing services necessary to the activity on which the fee is based and are not levied for an unrelated revenue purpose.

In upholding regulatory fees for environmental review by the California Department of Fish and Game, the court of appeal summarized the following rules on regulatory fees:

A regulatory fee may be imposed under the police power when the fee constitutes an amount necessary to carry out the purposes and provisions of the regulation. [Citations omitted.] Such costs ... include all those incident to the issuance of the license or permit, investigation, inspection, administration, maintenance of a system of supervision and enforcement. [Citations omitted.] Regulatory fees are valid despite the absence of any perceived "benefit" accruing to the fee payers. [Citations omitted.] Legislators "need only apply sound judgment and consider 'probabilities according to the best honest viewpoint of informed officials' in determining the amount of the regulatory fee."²⁰⁴ [Emphasis added.]

In *Tahoe Keys Property Owner's Assoc. v. State Water Resources Control Board*,²⁰⁵ the court refused to issue a preliminary injunction against collecting a pollution mitigation fee of \$4000 for each lot developed in the Tahoe Keys subdivision of Lake Tahoe. The fees were to be used for mitigation projects designed to achieve a net reduction in nutrients generated by the Tahoe Keys development. The court said: "on the face of the regulation, there appears to be a sufficient

²⁰⁰ *Sinclair Paint v. State Board of Equalization, supra*, 15 Cal.4th 866, 873. The Court stated: "Because of the close, 'interlocking' relationship between the various sections of article XIII A (Citation omitted) we believe these "special tax" cases [under article XIII A, § 3, state taxes] may be helpful, though not conclusive, in deciding the case before us. The reasons why particular fees are, or are not, "special taxes" under article XIII A, section 4, [local government taxes] may apply equally to section 3 cases."

²⁰¹ *California Assn. of Prof. Scientists v. Dept. of Fish and Game* (2000) 79 Cal.App.4th 935, 950.

²⁰² *Id.* at 952.

²⁰³ *Ibid.*

²⁰⁴ *California Assn. of Prof. Scientists v. Dept. of Fish and Game, supra*, 79 Cal.App.4th 935, 945.

²⁰⁵ *Tahoe Keys Property Owner's Assn. v. State Water Resources Control Board* (1993) 23 Cal.App.4th 1459.

nexus between the effect of the regulation and the objectives it was supposed to advance to support the regulatory scheme [mitigation of pollution in Lake Tahoe].²⁰⁶

A variety of local agency regulatory fees have been upheld for various programs, including: processing subdivision, zoning, and other land-use applications,²⁰⁷ art in public places,²⁰⁸ remedying substandard housing,²⁰⁹ recycling,²¹⁰ administrative hearings under a rent-control ordinance,²¹¹ signage,²¹² air pollution mitigation,²¹³ and replacing converted residential hotel units.²¹⁴ Fees on developers for environmental mitigation under the California Environmental Quality Act have also been upheld.²¹⁵

Given the variety of examples where regulatory fees have been upheld, and the broad range of costs to which they may be applied (including those for 'administration'), the claimants have fee authority under the police power to impose fees for the permit activities that are a state-mandated new program or higher level of service. But a determination as to whether the claimants' fee authority is sufficient, within the meaning of Government Code section 17556, subdivision (d), to pay for the mandated activities and deny the test claim, cannot be made without analysis of the limitations on the fee authority imposed by Proposition 218.

Regulatory fee authority is limited by voter approval under Proposition 218: With some exceptions, local government fees or assessments that are incident to property ownership are subject to voter approval under article XIII D of the California Constitution, as added by Proposition 218 in 1996. Article XIII D defines a fee as "any levy other than an ad valorem tax, a special tax, or an assessment, imposed by an agency on a parcel or a person as an incident of property ownership, including a user fee or charge for a property-related service." It defines an assessment as "any levy or charge upon real property by an agency for a special benefit conferred upon the real property [and] includes, but is not limited to, "special assessment," "benefit assessment," "maintenance assessment," and "special assessment tax."

Among other procedures, new or increased property-related fees require a majority-vote of the affected property owners, or two-thirds registered voter approval, or weighted ballot approval by the affected property owners (art. XIII D, § 6, subd. (c)). Assessments must also be approved by owners of the affected parcels (art. XIII D, § 4, subd.(d)). Expressly exempt from voter

²⁰⁶ *Id.* at page 1480.

²⁰⁷ *Mills v. County of Trinity*, *supra*, 108 Cal.App.3d 656, 662.

²⁰⁸ *Ehrlich v. City of Culver City* (1996) 12 Cal.4th 854, 886.

²⁰⁹ *Apartment Assoc. of Los Angeles County v. City of Los Angeles* (2001) 24 Cal.4th 830.

²¹⁰ *City of Dublin v. County of Alameda* (1993) 14 Cal.App.4th 264.

²¹¹ *Pennell v. City of San Jose* (1986) 42 Cal.3d 365.

²¹² *United Business Communications v. City of San Diego* (1979) 91 Cal.App.3d 156.

²¹³ *California Building Industry Ass'n v. San Joaquin Valley Air Pollution Control Dist.* (2009) 178 Cal.App.4th 120.

²¹⁴ *Terminal Plaza Corp. v. City and County of San Francisco* (1986) 177 Cal.App.3d 892.

²¹⁵ *Environmental Council of Sacramento v. City of Sacramento* (2006) 142 Cal.App.4th 1018.

approval, however, are property-related fees for sewer, water, or refuse collection services (art. XIII D, § 6, subd. (c)).

In 2002, an appellate court in *Howard Jarvis Taxpayers Association v. City of Salinas*, *supra*, 98 Cal.App.4th 1351, found that a city's charges on developed parcels to fund stormwater management were property-related fees, and were not covered by Proposition 218's exemption for "sewer" or "water" services. This means that an election would be required to charge stormwater fees if they are imposed "as an incident of property ownership."

The issue of whether a local agency has sufficient fee authority for the mandated activities under Government Code section 17556, subdivision (d), in light of the voter approval requirement for fees under article XIII D (Proposition 218) is one of first impression for the Commission.

The Commission finds that a local agency does not have sufficient fee authority within the meaning of Government Code section 17556 if the fee or assessment is contingent on the outcome of an election by voters or property owners. The plain language of subdivision (d) of this section prohibits the Commission from finding that the permit imposes "costs mandated by the state" if "The local agency ... has the authority to levy service charges, fees, or assessments sufficient to pay for the mandated program or increased level of service." [Emphasis added.] Under Proposition 218, the local agency has no authority to impose the fee without the consent of the voters or property owners.

Additionally, it is possible that the local agency's voters or property owners may never adopt the proposed fee or assessment, but the local agency would still be required to comply with the state mandate. Denying reimbursement under these circumstances would violate the purpose of article XIII B, section 6, which is to "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."²¹⁶

In its January 2010 comments on the draft staff analysis, the State Board disagrees that "the requirement to subject new or increased fees to these voting or protest requirements strips the claimants of 'fee authority' within the meaning of Government Code section 17556, subdivision (d)." The State Board cites *Connell v. Superior Court*,²¹⁷ in which the water districts argued that they lacked "sufficient" fee authority because it was not economically feasible for them to levy fees that were sufficient to pay the mandated costs. The *Connell* court determined that "the plain language of the statute [Gov. Code, § 17556, subd. (d)] precludes reimbursement where the local agency has the authority, i.e., the right or the power, to levy fees sufficient to cover the costs of the state-mandated program."²¹⁸ The State Board equates the Proposition 218 voting requirement with the economic impracticability faced by the water districts in *Connell*.

The claimants disagree, citing a lack of authority that requires them to first submit the question of whether to impose a tax or fee to the voters and have them reject the proposition. According

²¹⁶ *County of San Diego*, *supra*, 15 Cal.4th 68, 81.

²¹⁷ *Connell v. Superior Court*, *supra*, 59 Cal.App.4th 382.

²¹⁸ *Id.* at page 401.

to the claimants, such a requirement would render all mandate claims moot, without first submitting the question of whether to impose a tax or assessment to a vote of the electorate.

The Commission disagrees with the State Board. The Proposition 218 election requirement is not like the economic hurdle to fees in *Connell*. Absent compliance with the Proposition 218 election and other procedures, there is no legal authority to impose or raise fees within the meaning of Government Code section 17556, subdivision (d). The voting requirement of Proposition 218 does not impose a mere practical or economic hurdle, as in *Connell*, but a legal and constitutional one. Without voter or property owner approval, the local agency lacks the "authority, i.e., the right or power, to levy fees sufficient to cover the costs of the state-mandated program."²¹⁹

In fact, the fee at issue in the *Connell* case (Wat. Code, § 35470) was amended by the Legislature in 2007 to conform to Proposition 218. Specifically, the Water Code statute now requires compliance with "the notice, protest, and hearing procedures in Section 53753 of the Government Code."²²⁰ This Government Code statute implements Proposition 218.

For these reasons, the Commission finds that local agencies do not have fee authority that is sufficient within the meaning of Government Code section 17556, subdivision (d) to deny the test claim for those activities that would condition the fee or assessment on voter or property-owner approval under Proposition 218 (article XIII D). The Commission finds that Proposition 218 applies to all the activities in this test claim (except for the hydromodification and LID activities that are related to priority development projects discussed below) so that they impose "costs mandated by the state" (within the meaning of Gov. Code, § 17556, subd. (d)). To the extent that property-owner or voter-approved fees or assessments are imposed to pay for any of the permit activities found above to be a state-mandated new program or higher level of service, the fee or assessment would be identified as offsetting revenue in the parameters and guidelines to offset the claimant's costs in performing those activities.

Fees imposed for two of the test-claim activities, however, i.e., for the hydromodification management plan and low-impact development, would not be subject to voter approval under Proposition 218, as discussed below.

Fees as a condition of property development are not subject to Proposition 218: Proposition 218 does not apply to development fees, including those imposed on activities in part D of the permit. Article XIII D expressly states that it shall not be construed to "affect existing laws relating to the imposition of fees or charges as a condition of property development."²²¹

Moreover, the California Supreme Court has ruled that fees imposed "as an incident to property ownership" are subject to Proposition 218, but fees that result from the owner's voluntary

²¹⁹ *Connell v. Superior Court, supra*, 59 Cal.App.4th 382, 401.

²²⁰ Water Code section 35470, as amended by Statutes 2007, chapter 27. Section 53753 of the Government Code requires compliance with "the procedures and approval process set forth in Section 4 of Article XIII D of the California Constitution" for assessments.

²²¹ California Constitution, article XIII D, section 1, subdivision (b).

decision to seek a government benefit are not.²²² Thus, fees imposed as a result of the owner's voluntary decision to undertake a development project are not subject to Proposition 218, because they are not merely incident to property ownership.²²³

The final issue, therefore, is whether claimants may impose fees that are sufficient within the meaning of Government Code section 17556, subdivision (d), to pay for the activities in the permit related to development: the hydromodification management plan (part D.1.g), and low-impact development (part D.1.d.(7)&(8)). The Commission finds claimants have fee authority that is sufficient within the meaning of Government Code section 17556, subdivision (d), and that these activities do not impose costs mandated by the state and are not reimbursable.

Hydromodification management plan: Part D.1 of the permit describes the development planning component of the JURMP. Part D.1.g. requires each copermittee to collaborate with other copermittees to develop and implement and report on developing a hydromodification management plan (HMP) to manage increases in runoff discharge rates and durations from all priority development projects, as specified. As discussed above, the HMP is a state-mandated new program or higher level of service for only private priority development projects. The purpose of the HMP is:

[T]o manage increases in runoff discharge rates and durations from all Priority Development Projects, where such rates and durations are likely to cause increased erosion of channel beds and banks, sediment pollutant generation, or other impacts to beneficial uses and stream habitat due to increased erosive force.

According to the permit, priority development projects are:

- a) all new Development Projects that fall under the project categories or locations listed in section D.1.d.(2), and b) those redevelopment projects that create, add or replace at least 5,000 square feet of impervious surfaces on an already developed site that falls under the project categories or locations listed in section D.1.d.(2).

²²² In *Richmond v. Shasta Community Services Dist.* (2004) 32 Cal.4th 409, the court held that water service fees were subject to Proposition 218, but that water connection fees were not. In *Apartment Assoc. of Los Angeles County v. City of Los Angeles*, *supra*, 24 Cal.4th 830, 839-840, the court held that apartment inspection fees were not subject to Proposition 218 because they were not imposed on property owners as such, but in their capacity as landlords.

²²³ A recent report by the Office of the Legislative Analyst concurs with this conclusion: "Local governments finance stormwater clean-up services from revenues raised from a variety of fees and, less frequently, through taxes. Property owner fees for stormwater services typically require approval by two-thirds of the voters, or a majority of property owners. Developer fees and fees imposed on businesses that contribute to urban runoff, in contrast, are not restricted by Proposition 218 and may be approved by a vote of the governing body. Taxes for stormwater services require approval by two-thirds of the electorate." Office of the Legislative Analyst. *California's Water: An LAO Primer* (October 22, 2008) page 56. [Emphasis added.] See: <http://www.lao.ca.gov/2008/rsrc/water_primer/water_primer_102208.pdf> as of October 22, 2008.

The priority development project categories listed in part D.1.d.(2) are:

- (a) Housing subdivisions of 10 or more dwelling units. This category includes single-family homes, multi-family homes, condominiums, and apartments.
- (b) Commercial developments greater than one acre. [as specified]
- (c) Developments of heavy industry greater than one acre. This category includes, but is not limited to, manufacturing plants, food processing plants, metal working facilities, printing plants, and fleet storage areas (bus, truck, etc.).
- (d) Automotive repair shops. This category is defined as a facility that is categorized in any one of the following Standard Industrial Classification (SIC) codes: 5013, 5014, 5541, 7532-7534, or 7536-7539.
- (e) Restaurants. This category is defined as a facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (SIC code 5812), where the land area for development is greater than 5,000 square feet. Restaurants where land development is less than 5,000 square feet shall meet all SUSMP requirements except ... hydromodification requirement D.1.g.
- (f) All hillside development greater than 5,000 square feet. This category is defined as any development which creates 5,000 square feet of impervious surface which is located in an area with known erosive soil conditions, where the development will grade on any natural slope that is twenty-five percent or greater.
- (g) Environmentally Sensitive Areas (ESAs). All development located within or directly adjacent to or discharging directly to an ESA (where discharges from the development or redevelopment will enter receiving waters within the ESA), which either creates 2,500 square feet of impervious surface on a proposed project site or increases the area of imperviousness of a proposed project site to 10% or more of its naturally occurring condition. "Directly adjacent" means situated within 200 feet of the ESA. "Discharging directly to" means outflow from a drainage conveyance system that is composed entirely of flows from the subject development or redevelopment site, and not commingled with flows from adjacent lands.
- (h) Parking lots 5,000 square feet or more or with 15 or more parking spaces and potentially exposed to urban runoff. Parking lot is defined as a land area or facility for the temporary parking or storage of motor vehicles used personally, for business, or for commerce.
- (i) Street, roads, highways, and freeways. This category includes any paved surface that is 5,000 square feet or greater used for the transportation of automobiles, trucks, motorcycles, and other vehicles.
- (j) Retail Gasoline Outlets (RGOs). This category includes RGOs that meet the following criteria: (a) 5,000 square feet or more or (b) a projected Average Daily Traffic (ADT) of 100 or more vehicles per day.

The Commission finds that claimants have authority to impose fees for complying with the HMP activities in permit part D.1.g. for priority development projects, and their authority is sufficient within the meaning of Government Code section 17556, subdivision (d), in that the fee would not be subject to Proposition 218 voter approval. These activities involve collaborating with other copermittees to develop and implement a hydromodification management plan, and reporting on it. Because regulatory fees, pursuant to article XI, section 7 of the California Constitution, could be imposed on these priority development projects to pay for the costs of HMP, the Commission finds that permit part D.1.g. does not impose costs mandated by the state.

Low impact development: Low impact development is defined in Attachment C of the permit as a “storm water management and land development strategy that emphasizes conservation and the use of on-site natural features integrated with engineered, small-scale hydrologic controls to more closely reflect pre-development hydrologic functions.” The purpose of LID is to “collectively minimize directly connected impervious areas and promote infiltration at Priority Development Projects.” LID best management practices include draining a portion of impervious areas into pervious areas prior to discharge into the storm drain, and constructing portions of priority development projects with permeable surfaces.

Part D.1.d.(7) requires updating the Standard Urban Storm Water Mitigation Plans (SUSMP) to include low impact development requirements, as specified, including BMP requirements that meet or exceed the requirements of sections D.1.d.(4)²²⁴ and D.1.d.(5).²²⁵ Both D.1.d.(4) and D.1.d.(5) are the LID requirement implemented at priority development projects.

Part D.1.d.(8) requires permittees to develop and submit an updated model SUSMP that defines minimum low impact development and other BMP requirements to incorporate into the permittees local SUSMPs for application to priority development projects.

The Commission finds that claimants have authority to impose fees for complying with the LID activities in parts D.1.d.(7) and D.1.d.(8) of the permit, and their authority is sufficient within the meaning of Government Code section 17556, subdivision (d), in that they are not subject to Proposition 218 voter approval. Because regulatory fees, pursuant to article XI, section 7 of the California Constitution, could be imposed on the priority development projects to pay for the costs associated with LID, the Commission finds that permit parts D.1.d.(7) and D.1.d.(8) do not impose costs mandated by the state.

²²⁴ Part D.1.d.(4) of the permit includes LID BMP requirements: “Each Copermittee shall require each Priority Development Project to implement LID BMPs which will collectively minimize directly connected impervious areas and promote infiltration at Priority Development Projects:” The Permit lists various LID site design BMPs that must be implemented at all Priority Development Projects, and other LID BMPs that must be implemented at all Priority Development Projects “where applicable and feasible.”

²²⁵ Part D.1.d.(5), regarding “Source control BMP Requirements” requires permittees to require each Priority Development Project to implement source control BMPs that must “Minimize storm water pollutants of concern in urban runoff” and include five other specific criteria.

2. **Claimants also have fee authority regulated by the Mitigation Fee Act that is sufficient (within the meaning of Gov. Code, § 17556, subd. (d)) to pay for the hydromodification and low-impact development permit activities.**

Development fees are also an exercise of the local police power under article XI, section 7 of the California Constitution.²²⁶ A fee is considered a development fee if it is exacted in return for building permits or other governmental privileges so long as the amount of the fee bears a reasonable relation to the development's probable costs to the community and benefits to the developer.²²⁷ Development fees are not restricted by Proposition 218 as discussed above.

Fees on developers as conditions of permit approval are governed by the Mitigation Fee Act (Gov. Code, §§ 66000-66025) which defines a "fee" as:

[A] monetary exaction other than a tax or special assessment, whether established for a broad class of projects by legislation of general applicability or imposed on a specific project on an ad hoc basis, that is charged by a local agency to the applicant in connection with approval of a development project for the purpose of defraying all or a portion of the cost of public facilities related to the development project, but does not include ... fees for processing applications for governmental regulatory actions or approvals²²⁸ [Emphasis added.]

Public facilities are defined in the Act as "public improvements, public services, and community amenities."²²⁹

When a local agency imposes or increases a fee as a condition of development approval, it must do all of the following: (1) Identify the purpose of the fee; (2) Identify the use to which the fee is to be put. If the use is financing public facilities, the facilities shall be identified. (3) Determine how there is a reasonable relationship between the fee's use and the type of development project on which the fee is imposed; and, (4) Determine how there is a reasonable relationship between the need for the public facility and the type of development project upon which the fee is imposed. (Gov. Code, § 66001, subd. (a),)

The city or county must also determine whether there is a reasonable relationship between the specific amount of the fee and the costs of building, expanding, or upgrading public facilities. These determinations, known as nexus studies, are in writing and must be updated whenever new fees are imposed or existing fees are increased.²³⁰ A fee imposed "as a condition of approval of

²²⁶ *California Building Industry Assoc. v. Governing Board* (1988) 206 Cal.App.3d 212, 234.

²²⁷ *Sinclair Paint, supra*, 15 Cal.4th at page 875.

²²⁸ Government Code section 66000, subdivision (b).

²²⁹ Government Code section 66000, subdivision (d).

²³⁰ Government Code section 66001, subdivision (b). The Act also requires cities to segregate fee revenues from other municipal funds and to refund them if they are not spent within five years. Any person may request an audit to determine whether any fee or charge levied by the city or county exceeds the amount reasonably necessary to cover the cost of the service provided (Gov. Code, §66006, subd. (d)). Under Government Code section 66014, fees charged for zoning changes, use permits, building permits, and similar processing fees are subject to the same nexus requirements as development fees. Lastly, under California Government Code

a proposed development or development project” is limited to the estimated reasonable cost of providing the service or facility.²³¹ This is in contrast to regulatory fees, which do not depend on government-conferred benefits or privileges.²³²

The Mitigation Fee Act defines a “development project” as “any project undertaken for the purpose of development ... includ[ing] a project involving the issuance of a permit for construction or reconstruction, but not a permit to operate.” (Gov. Code, § 66000, subd. (a).)

A fee does not become a development fee simply because it is made in connection with a development project. Approval of the development must be conditioned on the payment of the fee. The Mitigation Fee Act is limited to situations where the fee or exaction is imposed as a condition of approval of a development project.²³³

Because local agencies may make development of priority development projects conditional on the payment of a fee, the Commission finds that the claimants have fee authority, governed by the Mitigation Fee Act, that is sufficient within the meaning of Government Code section 17556, subdivision (d), to pay for the hydromodification management plan and low-impact development activities. As discussed below, HMP and LID are “public facilities,” which the Mitigation Fee Act defines as “public improvements, public services, and community amenities.”²³⁴

The County of San Diego, in its January 2010 comments on the draft staff analysis, disagrees that it can impose a fee for the hydromodification plan (HMP) activities in the permit, stating that development and implementation of the HMP does not constitute a “public facility.”

The Commission disagrees. The purpose of the permit is to prevent or abate pollution in waterways and beaches in San Diego County. More specifically, the purpose of the HMP is:

[T]o manage increases in runoff discharge rates and durations from all Priority Development Projects, where such increased rates and durations are likely to cause increased erosion of channel beds and banks, sediment pollutant generation, or other impacts to beneficial uses and stream habitat due to increased erosive force.

All these stated purposes of the HMP provide public services or improvements, or community amenities within the meaning of the Act.²³⁵ Moreover, the California Supreme Court stated that the Act “concerns itself with development fees; that is, fees imposed on development projects in

section 66020, agencies collecting fees must provide project applicants with a statement of the amounts and purposes of all fees at the time of fee imposition or project approval.

²³¹ Government Code section 66005, subdivision (a).

²³² *Sinclair Paint, supra*, 15 Cal.4th at page 875.

²³³ *California Building Industry Ass’n v. San Joaquin Valley Air Pollution Control Dist.* (2009) 178 Cal.App.4th, 130, 131.

²³⁴ Government Code section 66000, subdivision (d).

²³⁵ Government Code section 66000, subdivision (d).

order to finance public improvements or programs that bear a 'reasonable relationship' to the development at issue."²³⁶ The HMP is such a program.

Similarly, the purposes of LID are to "collectively minimize directly connected impervious areas and promote infiltration at Priority Development Projects" and to reduce stormwater runoff from priority development projects. These activities are public services or improvements that fall within the Act's definition of public facility.

The County also argues that under the Mitigation Fee Act, the local agency must determine that there is "a reasonable relationship between the fee's use and the type of development project on which the fee is imposed." The County argues that there is no reasonable relationship between the costs incurred by claimants to develop and implement the HMP and a particular development project on which the fee might be imposed.

Again, the Commission disagrees. Every time a developer proposes a project that falls within one of the "priority development project" categories listed above, and the developer has "not yet begun grading or construction activities at the time any updated SUSMP or hydromodification requirement commences," the local agency may impose a fee subject to the Mitigation Fee Act. The fee would be for the costs of developing and implementing the HMP to "manage increases in runoff discharge rates and durations from all Priority Development Projects [that] cause ... impacts to beneficial uses and stream habitat due to increased erosive force." The local agency may also impose a fee on priority development projects to comply with LID, the purpose of which is to "collectively minimize directly connected impervious areas and promote infiltration at Priority Development Projects" and to reduce stormwater runoff.

Finally, the County argues that assessing fees on a private developer who submits a project for approval to recover the costs of reviewing and approving a particular project is "specifically excluded from the definition of 'fee' under the Act." The definition of fee in the Act states that it "does not include ... fees for processing applications for governmental regulatory actions or approvals" (Gov. Code, § 66000, subd. (b).)

The Commission disagrees that an HMP fee would be for "processing applications for governmental regulatory actions or approvals." Rather, it would be for permit approval of priority development projects, and used to implement the HMP and LID requirements. In *Barratt American Inc. v. City of Rancho Cucamonga* (2005) 37 Cal.4th 685, 698, the California Supreme Court distinguished between regulatory fees that implement state and local building safety standards under the Health and Safety Code and developer fees subject to the Mitigation Fee Act by stating: "These regulatory fees fund a program that supervises how, not whether, a developer may build." Thus, the Commission finds that the developer fees may be imposed for permit approval for priority development projects if the permit is conditional on payment of the fee, and the fee is used for HMP and LID compliance.

In sum, the Commission finds that the claimants have fee authority governed by the Mitigation Fee Act that is sufficient (within the meaning of Gov. Code, § 17556, subd. (d), to pay for the following parts of the permit that are related to development: the hydromodification management plan (part D.1.g) and updating the Standard Urban Storm Water Mitigation Plans to include Low Impact Development requirements (part D.1.d.(7)&(8)).

²³⁶ *Utility Cost Management v. Indian Wells Valley Water Dist.* (2001) 26 Cal.4th 1185, 1191.

3. Claimants' fee authority under Public Resources Code section 40059, or via benefit assessments, is not sufficient to pay for street sweeping, and Government Code section 17556, subdivision (d), does not apply to reporting on street sweeping.

Street sweeping is one test claim activity that is typically funded by local agency fees or assessments. Fees and assessments are both governed by Proposition 218.

The permit (in part D.3.a.5) requires a program to sweep "improved (possessing a curb and gutter) municipal roads, streets, highways, and parking facilities" at intervals depending on whether they are identified as consistently generating the highest volumes, moderate volumes, or low volumes of trash and/or debris. Reporting on street sweeping, such as curb-miles swept and tons of material collected, is also required (part J.3.a.(3)(c)x-xv).

Some local agencies collect fees for street sweeping for their refuse fund, such as the City of Pasadena.²³⁷ Other local agencies, e.g., the County of Fresno²³⁸ and the City of La Quinta,²³⁹ collect an assessment for street sweeping as a street maintenance activity. Both approaches are discussed below in light of the procedural requirements under Proposition 218.

Fees for street sweeping as refuse collection/solid waste handling: Article XI, section 7 of the California Constitution states: "A county or city may make and enforce within its limits all local, police, sanitary or other ordinances and regulations not in conflict with general laws." Local agency fees for refuse collection are authorized by Public Resources Code section 40059, which states:

(a) Notwithstanding any other provision of law, each county, city, district, or other local governmental agency may determine all of the following:

(1) Aspects of solid waste 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. [Emphasis added.]

"Solid waste" is defined in Public Resources Code section 40191 as:

[A]ll putrescible and nonputrescible solid, semisolid, and liquid wastes, including garbage, trash, refuse, paper, rubbish, ashes, industrial wastes, demolition and construction wastes, abandoned vehicles and parts thereof, discarded home and industrial appliances, dewatered, treated, or chemically fixed sewage sludge

²³⁷ City of Pasadena, Agenda Report, Resolution Nos. 8942 and 8943, April 27, 2009, "Public Hearing: Amendment to the General Fee Schedule to Increase the Residential Refuse Collection Fees and Solid Waste Franchise Fees." One of the findings in the resolution is: "Whereas, street sweeping is a refuse collection service involving solely the collection, removal and disposal of solid waste from public rights of way, and is, therefore, properly allocated to the Refuse Fund."

²³⁸ County of Fresno, Resolution Nos. 8942 and 8943, adopted January 15, 2008.

²³⁹ City of La Quinta, Resolution No. 2009-035, adopted May 5, 2009.

which is not hazardous waste, manure, vegetable or animal solid and semisolid wastes and other discarded solid and semisolid wastes.²⁴⁰

“Solid waste handling” is defined in Public Resources Code section 40195 as “the collection, transportation, storage, transfer, or processing of solid wastes.” Given the nature of material swept from city streets, street sweeping falls under the rubric of ‘solid waste handling.’

Under Proposition 218, “refuse collection” is expressly exempted from the voter-approval requirement (article XIII D, § 6, subd. (c)). Although “refuse collection” has no definition in article XIII D, the plain meaning of refuse²⁴¹ collection is the same as solid waste handling, as the dictionary definition of “refuse” and the statutory definition of “solid waste” both refer to rubbish and trash as synonyms. Refuse is collected via solid waste handling.

To impose or increase refuse collection fees, the local agency must provide mailed written notice to each parcel owner on which the fee will be imposed, and conduct a public hearing not less than 45 days after mailing the notice. If written protests against the proposed fee are presented by a majority of the parcel owners, the local agency may not impose or increase the fee (article XIII D, § 6, subd. (a)(2)). In addition, revenues are: (1) not to exceed the funds required to provide the service, (2) shall not be used for any other purpose than to provide the property-related service, and the amount of the fee on a parcel shall not exceed the proportional cost of the service attributable to the parcel. And the service must be actually used by or immediately available to the property owner (article XIII D, § 6, subd. (b)).

Government Code, section 17556, subdivision (d), does not apply to street sweeping because the fee is contingent on the outcome of a written protest by a majority of the parcel owners. The plain language of subdivision (d) of this section prohibits the Commission from finding that the permit imposes “costs mandated by the state” if “The local agency ... has the authority to levy service charges, fees, or assessments sufficient to pay for the mandated program or increased level of service.” [Emphasis added.] Under Proposition 218, the local agency has no authority to impose the fee if it is protested by a majority of parcel owners.

Additionally, it is possible that a majority of land owners in the local agency may never allow the proposed fee, but the local agency would still be required to comply with the state mandate. This would violate the purpose of article XIII B, section 6, which is to “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.”²⁴²

Thus, the Commission finds that fee authority under Public Resources Code section 40059 is not sufficient to pay for the mandated program or increased level of service in permit parts D.3.a.5 (street sweeping). Therefore, the Commission finds that street sweeping imposes costs mandated by the state and is reimbursable.

²⁴⁰ This definition also excludes hazardous waste, radioactive waste and medical waste, as defined.

²⁴¹ “Refuse” is defined as “ Items or material discarded or rejected as useless or worthless; trash or rubbish.” <<http://dictionary.reference.com/browse/refuse>> as of November 23, 2009.

²⁴² *County of San Diego, supra*, 15 Cal.4th 68, 81.

Any proposed fees that are not blocked by a majority of parcel owners for street sweeping must be identified as offsetting revenue in the parameters and guidelines.

Fees for street sweeping reports: Proposition 218 does not contain an express exemption on voter approval for reporting on street sweeping, only for “refuse collection.” Moreover, Proposition 218 (art. XIII D, § 6, subd. (b)(4)) states: “No fee or charge may be imposed for a service unless that service is actually used by, or immediately available to, the owner of the property in question.” The permit does not require the street sweeping reports be available to property owners, only that the reports be submitted to the Regional Board. For these reasons, the Commission finds that Government Code section 17556, subdivision (d), does not apply to reporting on street sweeping, so that part J.3.a.(3)(c)x-xv of the permit imposes costs mandated by the state and is reimbursable.

Assessments for street operation and maintenance: As mentioned above, some local agencies collect an assessment for street sweeping, e.g., the County of Fresno²⁴³ and the City of La Quinta.²⁴⁴ Assessments are defined as “any levy or charge upon real property by an agency for a special benefit conferred upon the real property. ‘Assessment’ includes, but is not limited to, ‘special assessment,’ ‘benefit assessment,’ ‘maintenance assessment’ and ‘special assessment tax.’” (article XIII D, § 2, subd. (b).) The terms “maintenance and operation” of “streets” and “drainage systems,” although used in article XIII D, are not defined in it. The plain meaning of maintenance of streets and drainage systems, however, would include street sweeping because “maintenance” means “the work of keeping something in proper condition; upkeep.”²⁴⁵ Clean streets are used not only for transportation, but for conveying storm water to storm drains.

The Supreme Court defined special assessments as follows:

A special assessment is a “compulsory charge placed by the state upon real property within a pre-determined district, made under express legislative authority for defraying in whole or in part the expense of a permanent public improvement therein....” [Citation.] [Citation.] In this regard, a special assessment is ‘levied against real property particularly and directly benefited by a local improvement in order to pay the cost of that improvement.’ [Citation.] ‘The rationale of special assessment[s] is that the assessed property has received a special benefit over and above that received by the general public. The general public should not be required to pay for special benefits for the few, and the few specially benefited should not be subsidized by the general public.’²⁴⁶

The Supreme Court summarized the constitutional procedures for creating an assessment district.

Under Proposition 218's procedures, local agencies must give the record owners of all assessed parcels written notice of the proposed assessment, a voting ballot, and a statement disclosing that a majority protest will prevent the assessment's

²⁴³ County of Fresno, Resolution Nos. 8942 and 8943, adopted January 15, 2008.

²⁴⁴ City of La Quinta, Resolution No. 2009-035, adopted May 5, 2009.

²⁴⁵ <<http://dictionary.reference.com/browse/maintenance>> as of December 7, 2009.

²⁴⁶ *Silicon Valley Taxpayers Ass'n. v. Santa Clara Open Space Authority* (2008) 44 Cal.4th 431, 442.

passage. (Art. XIII D, § 4, subs. (c), (d).) The proposed assessment must be “supported by a detailed engineer's report.” (Art. XIII D, § 4, subd. (b).) At a noticed public hearing, the agencies must consider all protests, and they “shall not impose an assessment if there is a majority protest.” (Art. XIII D, § 4, subd. (e).) Voting must be weighted “according to the proportional financial obligation of the affected property.” (*Ibid.*)²⁴⁷

Proposition 218 dictated that as of July 1, 1997, existing assessments were to comply with its procedural requirements, but an exception was created for “any assessment imposed exclusively to finance the capital costs or maintenance and operation expenses for sidewalks, streets, sewers, water, flood control, drainage systems or vector control.” (art. XIII D, § 5, subd. (a), emphasis added.) This means that the procedural requirements of Proposition 218 apply only to increases in assessments for street sweeping that were imposed after Proposition 218 was enacted.²⁴⁸

Absent any evidence in the record that assessments imposed before July 1, 1997 for street sweeping are sufficient to pay for the street sweeping specified in part D.3.a. of the permit, the Commission cannot find that assessments imposed before that date would pay for the costs mandated by the state for street sweeping within the meaning of Government Code section 17556, subdivision (d).

Should a local agency determine that its existing assessments are not sufficient to pay for the mandated street sweeping, it can raise assessments by following the article XIII D (Proposition 218) procedures detailed above. Those procedures, however, include an election and a protest, both of which were found above to extinguish local fee authority sufficient to pay for the mandate and to block the application of Government Code section 17556, subdivision (d).

Thus, to the extent that the claimants impose or increase assessments to pay for the street sweeping, they would be identified as offsetting revenue in the parameters and guidelines.

4. Claimants' fee or assessment authority under Health and Safety Code section 5471 is not sufficient to pay for conveyance-system cleaning, and Government Code section 17556, subdivision (d), does not apply to reporting on conveyance-system cleaning

Conveyance-system cleaning for operation and maintenance of the MS4 and MS4 facilities (catch basins, storm drain inlets, open channels, etc.) is required in the permit (part D.3.a.(3)). Specifically, claimants are required to clean in a timely manner “Any catch basin or storm drain inlet that has accumulated trash and debris greater than 33% of design capacity.... Any MS4 facility that is designed to be self cleaning shall be cleaned of any accumulated trash and debris immediately. Open channels shall be cleaned of observed anthropogenic litter in a timely manner.” Claimants are also required to report on the number of catch basins and inlets inspected and cleaned (J.3.a.(3)(c)iv-viii).

²⁴⁷ *Silicon Valley Taxpayers Ass'n v. Santa Clara Open Space Authority*, *supra*, 44 Cal.4th 431, 438.

²⁴⁸ See also *Howard Jarvis Taxpayers Ass'n v. City of Riverside* (1999) 73 Cal.App.4th, 679, holding that a preexisting streetlighting assessment is ‘exempt under Proposition 218.’

Local agencies have fee authority under Health and Safety Code section 5471 to charge fees for storm drainage maintenance and operation as follows:

[A]ny entity²⁴⁹ shall have power, by an ordinance approved by a two-thirds vote of the members of the legislative body thereof, to prescribe, revise and collect, fees, tolls, rates, rentals, or other charges for services and facilities furnished by it, either within or without its territorial limits, in connection with its water, sanitation, storm drainage, or sewerage system. ... Revenues derived under the provisions in this section, shall be used only for the acquisition, construction, reconstruction, maintenance, and operation of water systems and sanitation, storm drainage, or sewerage facilities [Emphasis added.]

This plain meaning of this statutory fee for storm drain operation and maintenance would include conveyance-system cleaning as required in the permit (part D.3.a.(3)(iii)), which the permit specifies as cleaning "catch basins or storm drain inlets." This cleaning is within the operation and maintenance of the storm drains.

The statutory fee, adopted in 1953, is now subject to the procedural requirements of Proposition 218. As it states in subdivision (d) of Health and Safety Code section 5471:

If the procedures set forth in this section as it read at the time a standby charge was established were followed, the entity may, by ordinance adopted by a two-thirds vote of the members of the legislative body thereof, continue the charge pursuant to this section in successive years at the same rate. If new, increased, or extended assessments are proposed, the entity shall comply with the notice, protest, and hearing procedures in Section 53753 of the Government Code [the codification of the Proposition 218 procedural requirements].

Proposition 218 does not exempt from voting requirements fees for storm drain maintenance like it does for "water, sewer, and refuse collection" in section 6 (c) of article XIII D. In fact, in *Howard Jarvis Taxpayers Ass'n. v. City of Salinas* (2002) 98 Cal.App.4th 1351, the court invalidated a local storm drain fee and held that the exemption from an election for sewer fees does not include storm drainage fees. As to new or increased assessments imposed for storm drainage operation and maintenance, they would be subject to the same election requirement of Proposition 218 (art. XIII D, § 4, subd. (e)) as for other assessments.

Therefore, the Commission finds that local agencies do not have sufficient authority under section 5471 of the Health and Safety Code to impose fees or assessments (under Gov. Code § 17556, subd. (d)) for conveyance system cleaning as required by part D.3.a.(3)(iii) of the permit or reporting as required by part J.3.a.(3)(c)iv-viii of the permit.

Fees or assessments for conveyance-system reports: The Commission also finds that local agencies do not have fee or assessment authority for reporting on conveyance-system (in part J.3.a.(3)(c)iv-viii) on the number of catch basins and inlets inspected and cleaned. Fees or

²⁴⁹ Entity is defined to include "counties, cities and counties, cities, sanitary districts, county sanitation districts, sewer maintenance districts, and other public corporations and districts authorized to acquire, construct, maintain and operate sanitary sewers and sewerage systems." Health and Safety Code section 5470, subdivision (e).

assessments imposed for this reporting would be subject to a vote of parcel owners. Moreover, Proposition 218 (art. XIII D, § 6, subd. (b)(4)) states: "No fee or charge may be imposed for a service unless that service is actually used by, or immediately available to, the owner of the property in question." The permit does not require the reports on conveyance- system cleaning be available to property owners, only that the reports be submitted to the Regional Board. For these reasons, the Commission finds that Government Code section 17556, subdivision (d), does not apply to reporting on conveyance-system cleaning, and that part J.3.a.(3)(c)iv-viii of the permit imposes costs mandated by the state within the meaning of Government Code section 17556, subdivision (d), and is reimbursable.

Any revenue from existing assessments, or assessments obtained after voter approval, for conveyance system cleaning would be included in the parameters and guidelines as offsets to reimbursement.

C. Claimants have potential fee authority and offsetting revenue if they comply with the requirements of Senate Bill 310 (Stats. 2009, ch. 577)

Effective January 2010, Senate Bill 310 (Stats. 2009, ch. 577) was enacted to add Water Code provisions authorizing local agencies to adopt watershed improvement plans.

SB 310 is intended to establish multiple watershed-based pilot programs.²⁵⁰ The bill creates the California Watershed Improvement Act of 2009 (commencing with Wat. Code, § 16000). Pursuant to Water Code section 16101, each county, city, or special district that is a copermitttee under a NPDES permit *may* develop either individually or jointly a watershed improvement plan. The process for developing a watershed improvement plan is to be conducted consistent with all applicable open meeting laws. Each county, city, or special district, or combination thereof, is to notify the appropriate Regional Board of its intention to develop a watershed improvement plan.

The watershed improvement plan is voluntary – it is not necessarily the same watershed activities required by the permit in the test claim.

SB 310 includes the following local agency fee authority:

16103. (a) In addition to making use of other financing mechanisms that are available to local agencies to fund watershed improvement plans and plan measures and facilities, a county, city, special district, or combination thereof may impose fees on activities that generate or contribute to runoff, stormwater, or surface runoff pollution, to pay the costs of the preparation of a watershed improvement plan, and the implementation of a watershed improvement plan if all of the following requirements are met:

- (1) The Regional Board has approved the watershed improvement plan.
- (2) The entity or entities that develop the watershed improvement plan make a finding, supported by substantial evidence, that the fee is reasonably related to the cost of mitigating the actual or anticipated past, present, or future adverse effects of the activities of the feepayer. "Activities," for the purposes of this paragraph,

²⁵⁰ Senate Rules Committee, Office of Senate Floor Analyses, Analysis of Senate Bill 310 (2009-2010 Reg. Sess.) as amended August 31, 2009, page 4.

means the operations and existing structures and improvements subject to regulation under an NPDES permit for municipal separate storm sewer systems.

(3) The fee is not imposed solely as an incident of property ownership.

(b) A county, city, special district, or combination thereof may plan, design, implement, construct, operate, and maintain controls and facilities to improve water quality, including controls and facilities related to the infiltration, retention and reuse, diversion, interception, filtration, or collection of surface runoff, including urban runoff, stormwater, and other forms of runoff, the treatment of pollutants in runoff or other waters subject to water quality regulatory requirements, the return of diverted and treated waters to receiving water bodies, the enhance-ment of beneficial uses of waters of the state, or the beneficial use or reuse of diverted waters.

(c) The fees authorized under subdivision (a) may be imposed as user-based or regulatory fees consistent with this chapter.

However, Water Code section 16102, subdivision (d), states: "A regional board may, if it deems appropriate, utilize provisions of the approved watershed improvement plan (approved under this new act) to promote compliance with one of more of the regional board's regulatory plans or programs." Subdivision (e) states "Unless a regional board incorporates the provisions of the watershed improvement plan into waste discharge requirements issued to a permittee, the implementation of a watershed improvement plan by a permittee shall not be deemed to be in compliance with those waste discharge requirements."

Therefore, the Commission finds that Water Code section 16103 may only provide offsetting revenue for this test claim to the extent that a local agency voluntarily complies with Water Code section 16101, the Regional Board approves the plan and incorporates it into the test claim permit to satisfy the requirements of the permit.

D. The holding in *San Diego Unified School Dist. v. Commission on State Mandates* does not apply to the test claim activities.

The State Board's January 2010 comments on the draft staff analysis cite *San Diego Unified v. Commission on States Mandates*,²⁵¹ arguing that the permit in this test claim, like the pupil expulsion hearings, are intended to implement a federal law, and has costs that are, in context, de minimis. In *San Diego Unified School District*, the California Supreme Court held costs for hearing procedures and notice are not reimbursable for pupil expulsions that are discretionary under state law. The court found that these hearing procedures are incidental to federal due process requirements and the costs are de minimis, and thus not reimbursable.

The Commission disagrees. The permit in this case does not meet the criteria in the *San Diego Unified School District* case. Unlike the discretionary expulsions in *San Diego Unified School District*, the permit imposes state-mandated activities. And although the permit is intended to implement the federal Clean Water Act, there is no evidence or indication that its costs are de minimis. Claimants submitted declarations of costs totaling over \$10 million for fiscal year

²⁵¹ *San Diego Unified School Dist., supra*, 33 Cal.4th 859.

2007-2008 alone.²⁵² Claimants further submitted documentation of 2008-2009 costs of over \$18 million. The State Board offers no evidence or argument to refute these cost declarations, so the Commission finds that permit activities (except for LID and HMP discussed above) impose costs mandated by the state that are not de minimis.

Summary: To recap fee authority under issue 2, the Commission finds that, due to the fee authority under the police power generally, and as governed by the Mitigation Fee Act, there are no "costs mandated by the state" within the meaning of Government Code sections 17514 and 17556 for the following parts of the permit that have a reasonable relationship to property development:

- Hydromodification Management Plan (part D.1.g);
- Updating the Standard Urban Storm Water Mitigation Plans to include Low Impact Development requirements (parts D.1.d.(7) & D.1.d.(8));

The Commission also finds that the claimants' fee or assessment authority is not sufficient within the meaning of Government Code section 17556, subdivision (d), and that there are costs mandated by the state within the meaning of Government Code section 17514 for all the activities in the permit, including:

- The fee authority in Public Resources Code section 40059 for the permit activities in parts D.3.a.5 (street sweeping) and J.3.a.(3)(c)x-xv (reporting on street sweeping);
- The fee authority in Health and Safety Code section 5471, for the permit activities in part D.3.a.(3)(iii) (conveyance system cleaning) or part J.3.a.(3)(c)iv-viii (reporting on conveyance system cleaning) of the permit.

Further, the Commission finds the following would be identified as offsetting revenue in the parameters and guidelines for this test claim:

- Any fees or assessments approved by the voters or property owners for any activities in the permit, including those authorized by Public Resources Code section 40059 for street sweeping or reporting on street sweeping, and those authorized by Health and Safety Code section 5471, for conveyance-system cleaning, or reporting on conveyance-system cleaning;
- Any proposed fees that are not subject to a written protest by a majority of parcel owners and that are imposed for street sweeping.
- Effective January 1, 2010, fees imposed pursuant to Water Code section 16103 only to the extent that a local agency voluntarily complies with Water Code section 16101 by developing a watershed improvement plan pursuant to Statutes 2009, chapter 577, and the Regional Board approves the plan and incorporates it into the test claim permit to satisfy the requirements of the permit.

²⁵² The County and city declarations are attached to the test claim.

CONCLUSION

For the reasons discussed above, the Commission finds that parts of 2007 permit issued by the California Regional Quality Control Board, San Diego Region (Order No. R9-2007-001, NPDES No. CAS0108758), are a reimbursable state-mandated program within the meaning of article XIII B, section 6 of the California Constitution for the claimants to perform the following activities.

The term of the permit is from January 24, 2007 – January 23, 2012.²⁵³ The permit terms and conditions are automatically continued, however, pending issuance of a new permit if all requirements of the federal NPDES regulations on the continuation of expired permits are complied with.²⁵⁴

I. Jurisdictional Urban Runoff Management Program and Reporting (parts D & J)

Street sweeping (part D.3.a.(5)): Sweeping of Municipal Areas

Each Copermittee shall implement a program to sweep improved (possessing a curb and gutter) municipal roads, streets, highways, and parking facilities. The program shall include the following measures:

(a) Roads, streets, highways, and parking facilities identified as consistently generating the highest volumes of trash and/or debris shall be swept at least two times per month.

(b) Roads, streets, highways, and parking facilities identified as consistently generating moderate volumes of trash and/or debris shall be swept at least monthly.

(c) Roads, streets, highways, and parking facilities identified as generating low volumes of trash and/or debris shall be swept as necessary, but no less than once per year.

Street sweeping reporting (J.3.a.(3)(c)x-xv): Report annually on the following:

²⁵³ According to attachment B of the permit: “*Effective Date*. This Order shall become effective on the date of its adoption provided the USEPA has no objection....” “(q) *Expiration*. This Order expires five years after adoption.”

²⁵⁴ According to attachment B of the permit: “(r) *Continuation of Expired Order* [23 CCR 2235.4]. After this Order expires, the terms and conditions of this Order are automatically continued pending issuance of a new permit if all requirements of the federal NPDES regulations on the continuation of expired permits (40 CFR 122.6) are complied with.”

- x. Identification of the total distance of curb-miles of improved roads, streets, and highways identified as consistently generating the highest volumes of trash and/or debris, as well as the frequency of sweeping conducted for such roads, streets, and highways.
- xi. Identification of the total distance of curb-miles of improved roads, streets, and highways identified as consistently generating moderate volumes of trash and/or debris, as well as the frequency of sweeping conducted for such roads, streets, and highways.
- xii. Identification of the total distance of curb-miles of improved roads, streets, and highways identified as consistently generating low volumes of trash and/or debris, as well as the frequency of sweeping conducted for such roads, streets, and highways.
- xiii. Identification of the total distance of curb-miles swept.
- xiv. Identification of the number of municipal parking lots, the number of municipal parking lots swept, and the frequency of sweeping.
- xv. Amount of material (tons) collected from street and parking lot sweeping.

Conveyance system cleaning (D.3.a.(3)):

- (a) Implement a schedule of inspection and maintenance activities to verify proper operation of all municipal structural treatment controls designed to reduce pollutant discharges to or from its MS4s and related drainage structures.
- (b) Implement a schedule of maintenance activities for the MS4 and MS4 facilities (catch basins, storm drain inlets, open channels, etc). The maintenance activities shall, at a minimum, include: []...[]
- iii. Any catch basin or storm drain inlet that has accumulated trash and debris greater than 33% of design capacity shall be cleaned in a timely manner. Any MS4 facility that is designed to be self cleaning shall be cleaned of any accumulated trash and debris immediately. Open channels shall be cleaned of observed anthropogenic litter in a timely manner.

Conveyance system cleaning reporting (J.3.a.(3)(c)(iv)-(viii)): Update and revise the copermitees' JURMPs to contain:

- iv. Identification of the total number of catch basins and inlets, the number of catch basins and inlets inspected, the number of catch basins and inlets found with accumulated waste exceeding cleaning criteria, and the number of catch basins and inlets cleaned.
- v. Identification of the total distance (miles) of the MS4, the distance of the MS4 inspected, the distance of the MS4 found with accumulated waste exceeding cleaning criteria, and the distance of the MS4 cleaned.
- vi. Identification of the total distance (miles) of open channels, the distance of the open channels inspected, the distance of the open channels found with anthropogenic litter, and the distance of open channels cleaned.
- vii. Amount of waste and litter (tons) removed from catch basins, inlets, the MS4, and open channels, by category.

viii. Identification of any MS4 facility found to require inspection less than annually following two years of inspection, including justification for the finding.

Educational component (part D.5): To implement an education program using all media as appropriate to (1) measurably increase the knowledge of the target communities regarding MS4s, impacts of urban runoff on receiving waters, and potential BMP solutions for the target audience; and (2) to measurably change the behavior of target communities and thereby reduce pollutant releases to MS4s and the environment. At a minimum, the education program shall meet the requirements of this section and address the following target communities:

- Municipal Departments and Personnel
- Construction Site Owners and Developers
- Industrial Owners and Operators
- Commercial Owners and Operators
- Residential Community, General Public, and School Children

a.(1) Each Copermittee shall educate each target community on the following topics where appropriate: (i) Erosion prevention, (ii) Non storm water discharge prohibitions, and (iii) BMP types: facility or activity specific, LID,-source control, and treatment control.

a.(2) Copermittee educational programs shall emphasize underserved target audiences, high-risk behaviors, and “allowable” behaviors and discharges, including various ethnic and socioeconomic groups and mobile sources.

b. SPECIFIC REQUIREMENTS

(1) Municipal Departments and Personnel Education

(a) Municipal Development Planning – Each Copermittee shall implement an education program so that its Planning Boards and Elected Officials, if applicable, have an understanding of:

- i. Federal, state, and local water quality laws and regulations applicable to Development Projects;
- ii. The connection between land use decisions and short and long-term water quality impacts (i.e., impacts from land development and urbanization);
- iii. How to integrate LID BMP requirements into the local regulatory program(s) and requirements; and
- iv. Methods of minimizing impacts to receiving water quality resulting from development, including:

- [1] Storm water management plan development and review;
- [2] Methods to control downstream erosion impacts;
- [3] Identification of pollutants of concern;
- [4] LID BMP techniques;
- [5] Source control BMPs; and
- [6] Selection of the most effective treatment control BMPs for the pollutants of concern.

(b) Municipal Construction Activities – Each Copermittee shall implement an education program that includes annual training prior to the rainy season so that its construction, building, code enforcement, and grading review staffs, inspectors, and other responsible construction staff have, at a minimum, an understanding of the following topics, as appropriate for the target audience:

- iii. Proper implementation of erosion and sediment control and other BMPs to minimize the impacts to receiving water quality resulting from construction activities.
- iv. The Copermittee's inspection, plan review, and enforcement policies and procedures to verify consistent application.
- v. Current advancements in BMP technologies.
- vi. SUSMP Requirements including treatment options, LID BMPs, source control, and applicable tracking mechanisms.

(c) Municipal Industrial/Commercial Activities - Each Copermittee shall train staff responsible for conducting storm water compliance inspections and enforcement of industrial and commercial facilities at least once a year [except for staff who solely inspect new development]. Training shall cover inspection and enforcement procedures, BMP implementation, and reviewing monitoring data.

(d) Municipal Other Activities – Each Copermittee shall implement an education program so that municipal personnel and contractors performing activities which generate pollutants have an understanding of the activity specific BMPs for each activity to be performed.

(2) New Development and Construction Education

As early in the planning and development process as possible and all through the permitting and construction process, each Copermittee shall implement a program to educate project applicants, developers, contractors, property owners, community planning groups, and other responsible parties. The education program shall provide an understanding of the topics listed in Sections D.5.b.(1)(a) and D.5.b.(1)(b) above, as appropriate for the audience being educated. The education program shall also educate project applicants, developers, contractors, property owners, and other responsible parties on the importance of educating all construction workers in the field about stormwater issues and BMPs through formal or informal training.

(3) Residential, General Public, and School Children Education

Each Copermittee shall collaboratively conduct or participate in development and implementation of a plan to educate residential, general public, and school children target communities. The plan shall evaluate use of mass media, mailers, door hangers, booths at public events, classroom education, field trips, hands-on experiences, or other educational methods.

II. Watershed Urban Runoff Management Program (parts E.2.f & E.2.g.)

Each Copermittee shall collaborate with other Copermittees within its WMA(s) [Watershed Management Area] as in Table 4 [of the permit] to develop and

implement an updated Watershed Urban Runoff Management Program for each watershed. Each updated Watershed Urban Runoff Management Program shall meet the requirements of section E of this Order, reduce the discharge of pollutants from the MS4 to the MEP, and prevent urban runoff discharges from the MS4 from causing or contributing to a violation of water quality standards. At a minimum, each Watershed Urban Runoff Management Program shall include the elements described below: [¶]...[¶]

[Paragraphs (a) through (e) were not part of the test claim.]

f. Watershed Activities

(1) The Watershed Copermittees shall identify and implement Watershed Activities that address the high priority water quality problems in the WMA. Watershed Activities shall include both Watershed Water Quality Activities and Watershed Education Activities. These activities may be implemented individually or collectively, and may be implemented at the regional, watershed, or jurisdictional level.

(a) Watershed Water Quality Activities are activities other than education that address the high priority water quality problems in the WMA. A Watershed Water Quality Activity implemented on a jurisdictional basis must be organized and implemented to target a watershed's high priority water quality problems or must exceed the baseline jurisdictional requirements of section D of this Order.

(b) Watershed Education Activities are outreach and training activities that address high priority water quality problems in the WMA.

(2) A Watershed Activities List shall be submitted with each updated Watershed Urban Runoff Management Plan (WURMP) and updated annually thereafter. The Watershed Activities List shall include both Watershed Water Quality Activities and Watershed Education Activities, along with a description of how each activity was selected, and how all of the activities on the list will collectively abate sources and reduce pollutant discharges causing the identified high priority water quality problems in the WMA.

(3) Each activity on the Watershed Activities List shall include the following information:

- (a) A description of the activity;
- (b) A time schedule for implementation of the activity, including key milestones;
- (c) An identification of the specific responsibilities of Watershed Copermittees in completing the activity;
- (d) A description of how the activity will address the identified high priority water quality problem(s) of the watershed;
- (e) A description of how the activity is consistent with the collective watershed strategy;
- (f) A description of the expected benefits of implementing the activity; and

(g) A description of how implementation effectiveness will be measured.

(4) Each Watershed Copermittee shall implement identified Watershed Activities pursuant to established schedules. For each Permit year, no less than two Watershed Water Quality Activities and two Watershed Education Activities shall be in an active implementation phase. A Watershed Water Quality Activity is in an active implementation phase when significant pollutant load reductions, source abatement, or other quantifiable benefits to discharge or receiving water quality can reasonably be established in relation to the watershed's high priority water quality problem(s). Watershed Water Quality Activities that are capital projects are in active implementation for the first year of implementation only. A Watershed Education Activity is in an active implementation phase when changes in attitudes, knowledge, awareness, or behavior can reasonably be established in target audiences.

g. Watershed Copermittees shall collaborate to develop and implement the Watershed Urban Runoff Management Programs. Watershed Copermittee collaboration shall include frequent regularly scheduled meetings.

III. Regional Urban Runoff Management Program (parts F.1, F.2 & F.3)

The Regional Urban Runoff Management Program shall, at a minimum:

Each copermittee shall collaborate with the other Copermittees to develop, implement, and update as necessary a Regional Urban Runoff Management Program that meets the requirements of section F of the permit, reduces the discharge of pollutants from the MS4 to the MEP, and prevents urban runoff discharges from the MS4 from causing or contributing to a violation of water quality standards. The Regional Urban Runoff Management Program shall, at a minimum: []...[]

1. Develop and implement a Regional Residential Education Program. The program shall include:
 - a. Pollutant specific education which focuses educational efforts on bacteria, nutrients, sediment, pesticides, and trash. If a different pollutant is determined to be more critical for the education program, the pollutant can be substituted for one of these pollutants.
 - b. Education efforts focused on the specific residential sources of the pollutants listed in section F.1.a.
2. Develop the standardized fiscal analysis method required in section G of the permit, and,
3. Facilitate the assessment of the effectiveness of jurisdictional, watershed, and regional programs.

IV. Program Effectiveness Assessment (parts I.1 & I.2)

1. Jurisdictional

a. As part of its Jurisdictional Urban Runoff Management Program, each Copermittee shall annually assess the effectiveness of its Jurisdictional Urban Runoff Management Program implementation. At a minimum, the annual effectiveness assessment shall:

(1) Specifically assess the effectiveness of each of the following:

(a) Each significant jurisdictional activity/BMP or type of jurisdictional activity/BMP implemented;

(b) Implementation of each major component of the Jurisdictional Urban Runoff Management Program (Development Planning, Construction, Municipal, Industrial/Commercial, Residential, Illicit Discharge²⁵⁵ Detection and Elimination, and Education); and

(c) Implementation of the Jurisdictional Urban Runoff Management Program as a whole.

(2) Identify and utilize measurable targeted outcomes, assessment measures, and assessment methods for each of the items listed in section I.1.a.(1) above.

(3) Utilize outcome levels 1-6²⁵⁶ to assess the effectiveness of each of the items listed in section I.1.a.(1) above, where applicable and feasible.

²⁵⁵ Illicit discharge, as defined in Attachment C of the permit, is “any discharge to the MS4 that is not composed entirely of storm water except discharges pursuant to a NPDES permit and discharges resulting from firefighting activities [40 C.F.R. 122.26 (b)(2)].”

²⁵⁶ Effectiveness assessment outcome levels are defined in Attachment C of the permit as follows: Effectiveness assessment outcome level 1 – Compliance with Activity-based Permit Requirements – Level 1 outcomes are those directly related to the implementation of specific activities prescribed by this Order or established pursuant to it. Effectiveness assessment outcome level 2 – Changes in Attitudes, Knowledge, and Awareness – Level 2 outcomes are measured as increases in knowledge and awareness among target audiences such as residents, business, and municipal employees. Effectiveness assessment outcome level 3 – Behavioral Changes and BMP Implementation – Level 3 outcomes measure the effectiveness of activities in affecting behavioral change and BMP implementation. Effectiveness assessment outcome level 4 – Load Reductions – Level 4 outcomes measure load reductions which quantify changes in the amounts of pollutants associated with specific sources before and after a BMP or other control measure is employed. Effectiveness assessment outcome level 5 – Changes in Urban Runoff and Discharge Quality – Level 5 outcomes are measured as changes in one or more specific constituents or stressors in discharges into or from MS4s. Effectiveness assessment outcome level 6 – Changes in Receiving Water Quality – Level 6 outcomes measure changes to receiving water quality resulting from discharges into and from MS4s, and may be expressed through a variety of means such as compliance with water quality objectives or other regulatory benchmarks, protection of biological integrity [i.e., ecosystem health], or beneficial use attainment.

(4) Utilize monitoring data and analysis from the Receiving Waters Monitoring Program to assess the effectiveness each of the items listed in section I.1.a.(1) above, where applicable and feasible.

(5) Utilize Implementation Assessment,²⁵⁷ Water Quality Assessment,²⁵⁸ and Integrated Assessment,²⁵⁹ where applicable and feasible.

b. Based on the results of the effectiveness assessment, each Copermittee shall annually review its jurisdictional activities or BMPs to identify modifications and improvements needed to maximize Jurisdictional Urban Runoff Management Program effectiveness, as necessary to achieve compliance with section A of this Order. The Copermittees shall develop and implement a plan and schedule to address the identified modifications and improvements. Jurisdictional activities/BMPs that are ineffective or less effective than other comparable jurisdictional activities/BMPs shall be replaced or improved upon by implementation of more effective jurisdictional activities/BMPs. Where monitoring data exhibits persistent water quality problems that are caused or contributed to by MS4 discharges, jurisdictional activities or BMPs applicable to the water quality problems shall be modified and improved to correct the water quality problems.

c. As part of its Jurisdictional Urban Runoff Management Program Annual Reports, each Copermittee shall report on its Jurisdictional Urban Runoff Management Program effectiveness assessment as implemented under each of the requirements of sections I.1.a and I.1.b above.

2. Watershed

a. As part of its Watershed Urban Runoff Management Program, each watershed group of Copermittees (as identified in Table 4)²⁶⁰ shall annually assess the effectiveness of its Watershed Urban Runoff Management Program implementation. At a minimum, the annual effectiveness assessment shall:

²⁵⁷ Implementation Assessment is defined in Attachment C of the permit as an "Assessment conducted to determine the effectiveness of copermittee programs and activities in achieving measurable targeted outcomes, and in determining whether priority sources of water quality problems are being effectively addressed."

²⁵⁸ Water Quality Assessment is defined in Attachment C of the permit as an "Assessment conducted to evaluate the condition of non-storm water discharges, and the water bodies which receive these discharges."

²⁵⁹ Integrated Assessment is defined in Attachment C of the permit as an "Assessment to be conducted to evaluate whether program implementation is properly targeted to and resulting in the protection and improvement of water quality."

²⁶⁰ Table 4 of the permit divides the copermittees into nine watershed management areas. For example, the San Luis Rey River watershed management area lists the city of Oceanside, Vista and the County of San Diego as the responsible watershed copermittees. Table 4 also lists where the hydrologic units are and major receiving water bodies.

- (1) Specifically assess the effectiveness of each of the following:
 - (a) Each Watershed Water Quality Activity implemented;
 - (b) Each Watershed Education Activity implemented; and
 - (c) Implementation of the Watershed Urban Runoff Management Program as a whole.
 - 2) Identify and utilize measurable targeted outcomes, assessment measures, and assessment methods for each of the items listed in section I.2.a.(1) above.
 - 3) Utilize outcome levels 1-6 to assess the effectiveness of each of the items listed in sections I.2.a.(1)(a) and I.2.a.(1)(b) above, where applicable and feasible.
 - 4) Utilize outcome levels 1-4 to assess the effectiveness of implementation of the Watershed Urban Runoff Management Program as a whole, where applicable and feasible.
 - 5) Utilize outcome levels 5 and 6 to qualitatively assess the effectiveness of implementation of the Watershed Urban Runoff Management Program as a whole, focusing on the high priority water quality problem(s) of the watershed. These assessments shall attempt to exhibit the impact of Watershed Urban Runoff Management Program implementation on the high priority water quality problem(s) within the watershed.
 - 6) Utilize monitoring data and analysis from the Receiving Waters Monitoring Program to assess the effectiveness each of the items listed in section I.2.a.(1) above, where applicable and feasible.
 - 7) Utilize Implementation Assessment, Water Quality Assessment, and Integrated Assessment, where applicable and feasible.
- b. Based on the results of the effectiveness assessment, the watershed Copermittees shall annually review their Watershed Water Quality Activities, Watershed Education Activities, and other aspects of the Watershed Urban Runoff Management Program to identify modifications and improvements needed to maximize Watershed Urban Runoff Management Program effectiveness, as necessary to achieve compliance with section A of this Order.²⁶¹ The Copermittees shall develop and implement a plan and schedule to address the identified modifications and improvements. Watershed Water Quality Activities/Watershed Education Activities that are ineffective or less effective than other comparable Watershed Water Quality Activities/Watershed Education Activities shall be replaced or improved upon by implementation of more effective Watershed Water Quality Activities/Watershed Education Activities. Where monitoring data exhibits persistent water quality problems that are caused or contributed to by MS4 discharges, Watershed Water Quality Activities and Watershed Education Activities applicable to the water quality problems shall be modified and improved to correct the water quality problems.

²⁶¹ Section A is "Prohibitions and Receiving Water Limitations."

c. As part of its Watershed Urban Runoff Management Program Annual Reports, each watershed group of Copermittees (as identified in Table 4) shall report on its Watershed Urban Runoff Management Program effectiveness assessment as implemented under each of the requirements of section I.2.a and I.2.b above.

Long Term Effectiveness Assessment (I.5):

- a. Collaborate with the other Copermittees to develop a Longterm Effectiveness Assessment (LTEA), which shall build on the results of the Copermittees' August 2005 Baseline LTEA. The LTEA shall be submitted by the Principal Permittee to the Regional Board no later than 210 days in advance of the expiration of this Order.
 - b. The LTEA shall be designed to address each of the objectives listed in section I.3.a.(6)²⁶² of this Order, and to serve as a basis for the Copermittees' Report of Waste Discharge for the next permit cycle.
 - c. The LTEA shall address outcome levels 1-6, and shall specifically include an evaluation of program implementation to changes in water quality (outcome levels 5 and 6).
 - d. The LTEA shall assess the effectiveness of the Receiving Waters Monitoring Program in meeting its objectives and its ability to answer the five core management questions. This shall include assessment of the frequency of monitoring conducted through the use of power analysis and other pertinent statistical methods. The power analysis shall identify the frequency and intensity of sampling needed to identify a 10% reduction in the concentration of constituents causing the high priority water quality problems within each watershed over the next permit term with 80% confidence.
 - e. The LTEA shall address the jurisdictional, watershed, and regional programs, with an emphasis on watershed assessment.
1. Collaborate with all other Copermittees regulated under the permit to address common issues, promote consistency among Jurisdictional Urban Runoff

²⁶² Part I.3.a.(6) of the permit states: At a minimum, the annual effectiveness assessment shall:
(6) Include evaluation of whether the Copermittees' jurisdictional, watershed, and regional effectiveness assessments are meeting the following objectives: (a) Assessment of watershed health and identification of water quality issues and concerns. (b) Evaluation of the degree to which existing source management priorities are properly targeted to, and effective in addressing, water quality issues and concerns. (c) Evaluation of the need to address additional pollutant sources not already included in Copermittee programs. (d) Assessment of progress in implementing Copermittee programs and activities. (e) Assessment of the effectiveness of Copermittee activities in addressing priority constituents and sources. (f) Assessment of changes in discharge and receiving water quality. (g) Assessment of the relationship of program implementation to changes in pollutant loading, discharge quality, and receiving water quality. (h) Identification of changes necessary to improve Copermittee programs, activities, and effectiveness assessment methods and strategies.

Management Programs and Watershed Urban Runoff Management Programs, and to plan and coordinate activities required under this Order.

V. All Copermittee Collaboration (part L)

(a) Collaborate with all other Copermittees to address common issues, promote consistency among Jurisdictional Urban Runoff Management Programs and Watershed Urban Runoff Management Programs, and to plan and coordinate activities required under the permit.

Jointly execute and submit to the Regional Board no later than 180 days after adoption of the permit, a Memorandum of Understanding, Joint Powers Authority, or other instrument of formal agreement that at a minimum: [¶]...[¶]

3. Establishes a management structure to promote consistency and develop and implement regional activities;
4. Establishes standards for conducting meetings, decisions-making, and cost-sharing.
5. Provides guidelines for committee and workgroup structure and responsibilities;
6. Lays out a process for addressing Copermittee non-compliance with the formal agreement.

The Commission finds that due to the fee authority under the police power (Cal. Const. art. XI, § 7) and as governed by the Mitigation Fee Act, there are no "costs mandated by the state" within the meaning of Government Code sections 17514 and 17556 for the following parts of the permit that have a reasonable relationship to property development:

- Hydromodification Management Plan (part D.1.g);
- Updating the Standard Urban Storm Water Mitigation Plans to include Low Impact Development requirements (parts D.1.d.(7) & D.1.d.(8));

The Commission also finds that the claimants' fee or assessment authority is not sufficient within the meaning of Government Code section 17556, subdivision (d), and that there are costs mandated by the state within the meaning of Government Code section 17514 for all the activities in the permit, including:

- The fee authority in Public Resources Code section 40059 for the permit activities in parts D.3.a.5 (street sweeping) and J.3.a.(3)(c)x-xv (reporting on street sweeping);
- The fee authority in Health and Safety Code section 5471, for the permit activities in part D.3.a.(3)(iii) (conveyance system cleaning) or part J.3.a.(3)(c)iv-viii (reporting on conveyance system cleaning) of the permit.

Further, the Commission finds the following would be identified as offsetting revenue in the parameters and guidelines for this test claim:

- Any fees or assessments approved by the voters or property owners for any activities in the permit, including those authorized by Public Resources Code section 40059 for street sweeping or reporting on street sweeping, and those authorize by Health and Safety Code

section 5471, for conveyance-system cleaning, or reporting on conveyance-system cleaning;

- Any proposed fees that are not subject to a written protest by a majority of parcel owners and that are imposed for street sweeping.
- Fees imposed pursuant to Water Code section 16103 only to the extent that a local agency voluntarily complies with Water Code section 16101, the Regional Board approves the plan and incorporates it into the test claim permit to satisfy the requirements of the permit.

ATTACHMENT 39

California Regional Water Quality Control Board
Santa Ana Region

July 13, 1990

ITEM: 11

SUBJECT: Waste Discharge Requirements for the Riverside County Flood Control & Water Conservation District, the County of Riverside, and the Incorporated Cities of Riverside County Within the Santa Ana Region, Stormwater Runoff Management Program, Riverside County, Order No. 90-104 (NPDES No. CA 8000192)

DISCUSSION:

See attached Fact Sheet.

RECOMMENDATION:

Adopt Order No. 90-104, NPDES No. CA 8000192, as presented.

In addition to the dischargers, comments were solicited from the following agencies and/or persons:

U. S. Environmental Protection Agency - Robert Wills, Pretreatment, Sludge, and Stormwater Section

U.S. Army District, Los Angeles, Corps of Engineers - Permits Section

NOAA, National Marine Fisheries Service

U.S. Fish and Wildlife Service

State Water Resources Control Board - Ted Cobb, Office of the Chief Counsel

State Water Resources Control Board - Archie Matthews, Division of Water Quality

State Department of Water Resources - Los Angeles

California Regional Water Quality Control Board, San Francisco Bay Region (2) - Tom Mumley

California Regional Water Quality Control Board, Los Angeles Region (4) - David Gildersleeve

California Regional Water Quality Control Board, Central Valley Region (5) - Wayne Pierson

California Regional Water Quality Control Board, Colorado River Basin Region (7)

California Regional Water Quality Control Board, San Diego Region (9) - Bruce Posthumus

State Department of Fish and Game - Marine Resources Region

State Department of Health Services - Santa Ana

State Department of Health Services - San Diego

State Department of Health Services - San Bernardino

State Department of Parks and Recreation - Henry R. Agonia

Orange County Health Care Agency - Robert Merryman

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Commenting Agencies - continued

Page 2

Orange County Environmental Management Agency, Environmental
Resources Division - Bob Collacott
San Bernardino County Department of Health Services - Paul Ryan
San Bernardino County Flood Control District - Chuck Laird
Riverside County Health Department - John Fanning
South Coast Air Quality Management District, El Monte - James Lents
Caltrans, District 8 - San Bernardino
Southern Pacific Railroad
Atchison, Topeka & Santa Fe Railway Company
U. S. Army Corps of Engineers
Department of the Air Force, March Air Force Base
National Forest Service
Brown & Caldwell - Jack Baylis
Uribe And Associates - Geoff Brosseau
Bill Dendy & Associates - Bill Dendy
Building Industry Association - Governmental Affairs Council
L.A. County Department of Public Works - John Mitchell
AMI Circle City Hospital
Corona Community Hospital
Riverside Community Hospital
Riverside General Hospital
Chapman College
Mt. San Jacinto College
University of California, Riverside
Riverside Community College
School Districts
Alvord Unified School District
Corona-Norco Unified School District
Hemet Unified School District
Lake Elsinore Unified School District
Menifee Union School District
Moreno Valley Unified School District
Nuvview Union School District
Perris Elementary School District
Perris Union High School District
Riverside Unified School District
Romoland School District
San Jacinto Unified School District
Val Verde School District
Environmental Organizations
Sierra Club, Orange County Chapter
Sierra Club, Los Angeles Chapter - Dick Hingson
Natural Resources Defense Council (NRDC)
Tri-County Conservation League - Gertrude Hagum
Press Enterprise

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Commenting Agencies - continued

Page 3

Santa Ana Watershed Project Authority - Neil Cline
Orange County Water District - Bill Mills
Metropolitan Water District - Ed Means
Western Municipal Water District - Don Harriger
Eastern Municipal Water District - Bill Plummer
San Bernardino Valley Municipal Water District - Louis Fletcher
Elsinore Valley Municipal Water District - James Laughlin
Lee Lake Water District - F. E. Wood
City of Ontario - City Manager/Director of Public Works
City of San Bernardino - City Manager/Director of Public Works
City of Fontana - City Manager/Director of Public Works
City of Rancho Cucamonga - City Manager/Director of Public Works

RBSA_28805

California Regional Water Quality Control Board
Santa Ana Region
6809 Indiana Avenue, Suite 200
Riverside, CA 92506-4298

FACT SHEET

PROJECT

The attached pages contain information concerning an application for waste discharge requirements and a National Pollutant Discharge Elimination System (NPDES) permit. Order No. 90-104, NPDES No. CA 8000192, prescribes waste discharge requirements for urban stormwater runoff from the cities and the unincorporated areas in Riverside County within the jurisdiction of the Santa Ana Regional Board. On May 8, 1990, the Riverside County Flood Control & Water Conservation District (RCFC&WCD) and the County of Riverside, in cooperation with the cities of Beaumont, Corona, Hemet, Lake Elsinore, Moreno Valley, Norco, Perris, Riverside, and San Jacinto (hereinafter collectively referred to as the dischargers), submitted NPDES Application No. CA 8000180 for an areawide stormwater discharge permit under the National Pollutant Discharge Elimination System (NPDES). As part of the permit application, a topographic map, storm drain system maps, listings of cities and entities participating in this program, and copies of ordinances relevant to the urban stormwater runoff from the Cities of Riverside and Moreno Valley were submitted. Copies of ordinances from the remaining seven cities participating in this program will be submitted at a later date.

PROJECT AREA

The permitted area is delineated by the San Bernardino-Riverside County boundary line on the north and northwest, the Orange Riverside County boundary line on the west, the Santa Ana-San Diego Regional Board boundary line on the south, and the Santa Ana Colorado River Basin Regional Board boundary line on the east (see Attachment "A").

CLEAN WATER ACT REQUIREMENTS

The Federal Clean Water Act (CWA) allows the U. S. Environmental Protection Agency (EPA) to delegate its NPDES permitting authority to states with an approved environmental regulatory program. The State of California is one of the delegated states. The Porter Cologne Act (California Water Code) authorizes the State Board, through its Regional Boards, to regulate and control the discharge of pollutants into waters of the state and tributaries thereto.

Fact Sheet - continued
Order No. 90-104 (NPDES No. CA 8000192)

Page 2 of 6

CLEAN WATER ACT REQUIREMENTS - CONT'D

Section 405 of the Water Quality Act (WQA) of 1987 added Section 402(p) to the CWA. Pursuant to Section 402(p)(4) of the CWA, the EPA is required to promulgate regulations for stormwater permit applications for stormwater discharges associated with industrial activities and municipal separate storm drain systems serving a population of 100,000 or more. Section 402 (p)(4) of the CWA also requires dischargers of stormwater associated with industrial activities and municipal separate storm drain systems serving a population of 250,000 or more to file stormwater permit applications by February 4, 1990.

On December 7, 1988, EPA published its proposed regulations in the Federal Register to solicit public comments. Final regulations are tentatively scheduled to be promulgated on July 20, 1990 and to be published in the Federal Register on August 4, 1990. In the absence of final stormwater regulations, a permit governing municipal stormwater discharges should meet both the statutory requirements of Section 402 (p)(3)(B) and all requirements applicable to a NPDES permit issued under the issuing authority's discretionary authority in accordance with Section 402 (a)(1)(B) of the CWA.

AREAWIDE STORMWATER PERMIT

To regulate and control stormwater discharges from the Riverside County area to the Riverside County storm drain systems, an areawide approach is essential. The entire storm drain system is not controlled by a single entity; the RCFC&WCD, several cities, and the State Department of Transportation (Caltrans) manage the system. In addition to the cities and the RCFC&WCD, there are a number of other significant contributors of urban stormwater runoff to these storm drain systems. These include: large institutions such as the State University system, schools, hospitals etc.; federal facilities such as military sites etc.; state agencies such as Caltrans; water and wastewater management agencies such as Eastern & Western Municipal Water Districts; the National Forest Service; and state parks. The management and control of the entire flood control system cannot be effectively carried out without the cooperation and efforts of all these entities. Also, it would not be meaningful to issue a separate stormwater permit to each of the entities within the permitted area whose land/facilities drain into the county storm drain systems. The Regional Board and a majority of the cities and the county have concluded that the best management option for the Riverside County area is to issue an areawide stormwater permit.

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Fact Sheet - continued
Order No. 90-104 (NPDES No. CA 8000192)

Page 3 of 6

AREAWIDE STORMWATER PERMIT - CONT'D

Some of the RCFC&WCD storm drain systems discharge into storm drain systems controlled by other entities, such as the Orange County Flood Control District, which is regulated under the Regional Board's Order No. 90-71, NPDES No. CA 8000180. Some of the storm drain systems discharge into drainage areas of Riverside County within the Colorado River Basin and San Diego Regional Boards' jurisdiction. Permit requirements for stormwater runoff from the drainage areas of Riverside County within the jurisdiction of the San Diego and Colorado River Basin Regional Boards will be addressed by these Regional Boards.

COORDINATION WITH OTHER REGIONAL AGENCIES

In developing best management practices and monitoring programs, consultation/coordination with other flood control districts and other regional boards is essential. Regional Board staff will coordinate the program with other regional boards and other flood control districts/cities on an "as needed" basis.

EXISTING FACILITIES AND PROGRAMS

Within the Santa Ana Region, the RCFC&WCD serves a population of approximately 0.8 million, occupying an area of approximately 1,300 square miles. The District's system includes an estimated 200 miles of opened and closed storm channels. The cities' systems include an estimated 57 miles of opened and closed storm channels. Approximately one-quarter (1/4) of Riverside County drains into water bodies within this Regional Board's jurisdiction. Stormwater discharges from urbanized areas consist mainly of surface runoff from residential, commercial, and industrial developments. In addition, there are stormwater discharges from agricultural land uses, including dairy operations. The constituents of concern and significance in these discharges are: total and fecal coliform, enterococcus, total suspended solids, biochemical oxygen demand (BOD), chemical oxygen demand (COD), total organic carbon (TOC), oil and grease (O&G), heavy metals, nutrients, base/neutral and acid extractibles, pesticides, herbicides, and petroleum hydrocarbon components.

The RCFC&WCD has an active surface water quality monitoring program in the permit area. This monitoring program includes 12 water quality monitoring stations, 11 continuous stream gaging stations and 6 crest stage gaging stations, and 51 automatic precipitation gaging stations. Water quality sampling is performed quarterly in January, April, July, and October under dry weather conditions. Samples collected are analyzed for nutrients, metals, minerals, specific conductance, total filtrable residue, and pH. Most of the water quality monitoring stations are located at stormwater drain systems in the Santa Ana River area.

Fact Sheet - continued
Order No. 90-104 (NPDES No. CA 8000192)

Page 4 of 6

EXISTING FACILITIES AND PROGRAMS - CONT'D

To protect the beneficial uses of waters of the state, the pollutants from all sources need to be controlled. Recognizing this, and the fact that stormwater discharges contain significant amounts of pollutants, the RCFC&WCD, the County of Riverside, the incorporated cities of Riverside County, and the Regional Board have all agreed that an areawide stormwater permit is the most effective way to develop and implement a comprehensive stormwater management program in a timely manner. This areawide stormwater permit contains requirements with time schedules that will allow the County of Riverside and the cities to address water quality problems caused by urban stormwater runoff by developing and implementing management programs to reduce pollutants in stormwater discharges to the maximum extent practicable.

PERMIT REQUIREMENTS

In accordance with Section 402(p)(3), as part of a program to reduce the pollutants in stormwater discharges to the maximum extent practicable, the dischargers are required to submit existing management plans and programs being implemented in the localities, and information that could lead to successful identification of illegal discharges and sources of pollutants in stormwater discharges. In addition, the dischargers will be required to adopt and implement effective management programs and control measures in accordance with a time schedule approved by the Executive Officer of the Regional Board. Due to the large number of water bodies covered in this order, it is necessary to prioritize water bodies for the development and implementation of the stormwater management program. The stormwater management program will be developed and implemented in two phases, Phase I and Phase II. In Phase I, the dischargers will be required to submit existing stormwater qualitative data and to develop stormwater management and monitoring programs for those water bodies where beneficial uses are threatened or impaired due to runoff of stormwater and urban nuisance water. These water bodies include Reaches 3 and 4 of the Santa Ana River, Prado area streams, San Gabriel Mountain Streams (Valley Reaches), Lake Evans, Lee Lake, Lake Mathews, Lake Elsinore, and Canyon Lake. In Phase II, the dischargers will be required to submit existing stormwater qualitative data and to develop stormwater management and monitoring programs for the remaining water bodies which include the San Jacinto River and its tributaries, San Timoteo Creek and its tributaries, Lake Perris, Lake Fulmor, Lake Hemet, Lake Norconian, and Mockingbird Reservoir.

If existing management programs are not effective in controlling pollutant loading and in achieving the water quality objectives of the receiving waters, additional programs shall be developed and implemented.

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Fact Sheet - continued
Order No. 90-104 (NPDES No. CA 8000192)

Page 5 of 6

PERMIT REQUIREMENTS - CONT'D

The permit also requires the development and implementation of management programs (best management practices) during the life of the permit such that the quality of stormwater discharged can be improved and the water quality objectives of the receiving waters can be met ultimately. It is also expected that the beneficial uses of the receiving waters will be protected through implementation of best management practices.

Currently, the RCFC&WCD has 12 monitoring stations throughout its system. The proposed order requires the dischargers to submit a stormwater system monitoring program that will meet the objectives, as outlined in Item VII.1., of the program.

BENEFICIAL USES

Stormwater flows which are discharged to storm drain systems in Riverside County are tributary to various water bodies (inland surface streams and lake and reservoirs) of the state. The beneficial uses of these water bodies include municipal and domestic supply, agricultural supply, industrial service supply, industrial process supply, groundwater recharge, water contact recreation, non-contact water recreation, warm freshwater habitat, cold freshwater habitat, wildlife habitat, and preservation of rare and endangered species. The ultimate goal of this stormwater management program is to protect the beneficial uses of the receiving waters.

ANTIDEGRADATION ANALYSIS

The Regional Board has considered whether a complete antidegradation analysis, pursuant to 40 CFR 131.12 and State Board Resolution No. 68-16, is required for the stormwater discharges. The Regional Board finds that the pollutant loading rates to the receiving waters will be reduced with the implementation of the requirements in this order. As a result, the quality of stormwater discharges and receiving waters will be improved, thereby protecting the beneficial uses of waters of the United States. This discharge is consistent with the federal and state antidegradation requirements and a complete antidegradation analysis is not necessary.

RBSA_28810

Fact Sheet - continued
Order No. 90-104 (NPDES No. CA 8000192)

Page 6 of 6

PUBLIC WORKSHOP

The Regional Board recognizes the significance of Riverside County's ~~Stormwater/Urban Runoff Management Program~~ and will conduct at least one workshop every year during the term of this permit to discuss the progress of the stormwater management program. The details of the annual workshop will be published in local newspapers and mailed to interested parties. Persons wishing to be included in the mailing list for any of the items related to this permit may register their name, mailing address and phone number with the Regional Board office at the address given below.

PUBLIC HEARING

The Regional Board will hold a public hearing regarding the proposed waste discharge requirements. The public hearing is scheduled to be held on Friday, July 13, 1990, at 9:00 a.m. at the City Council Chambers in Riverside. Further information regarding the conduct and nature of the public hearing concerning these waste discharge requirements may be obtained by writing or visiting the Santa Ana Regional Board office, 6809 Indiana Avenue, Suite 200, Riverside.

WRITTEN COMMENTS

Interested persons are invited to submit written comments on the proposed waste discharge requirements and the Executive Officer's proposed determinations. Comments should be submitted by June 22, 1990, either in person or by mail to:

Joanne Lee
California Regional Water Quality Control Board
Santa Ana Region
6809 Indiana Avenue, Suite 200
Riverside, CA 92506-4298

INFORMATION AND COPYING

Persons wishing further information may write to the above address or call Joanne Lee at (714)782-4130. Copies of the application, proposed waste discharge requirements, and other documents (other than those which the Executive Officer maintains as confidential) are available at the Regional Board office for inspection and copying by appointment scheduled between the hours of 10:00 a.m. and 4:00 p.m., Monday through Thursday (excluding holidays).

REGISTER OF INTERESTED PERSONS

Any person interested in a particular application or group of applications may leave his name, address, and phone number as part of the file for an application. Copies of tentative waste discharge requirements will be mailed to all interested parties.

California Regional Water Quality Control Board
Santa Ana Region

ORDER NO. 90-104

NPDES No. CA 8000192

Waste Discharge Requirements
for
the Riverside County Flood Control & Water Conservation District
and
the County of Riverside, and
the Incorporated Cities of Riverside County Within the Santa Ana Region
Areawide Urban Stormwater Runoff
Riverside County

The California Regional Water Quality Control Board, Santa Ana Region (hereinafter Regional Board), finds that:

1. On May 8, 1990, the County of Riverside and the Riverside County Flood Control & Water Conservation District (RCFC&WCD), in cooperation with the cities of Beaumont, Corona, Hemet, Lake Elsinore, Moreno Valley, Norco, Perris, Riverside, and San Jacinto (hereinafter collectively referred to as the dischargers), submitted NPDES Application No. CA 8000192 for an areawide stormwater discharge permit under the National Pollutant Discharge Elimination System (NPDES).
2. The 1972 Clean Water Act (CWA) recognized the need to prohibit the discharge of pollutants to surface water bodies from point sources such as industrial facilities and municipal sewage treatment plants. The discharges of pollutants from point sources are regulated by the NPDES permit system, which required technology-based controls for treatment of wastewater. Stormwater point source discharges were exempt from the NPDES permitting requirements unless these discharges were contaminated by industrial/commercial activity. The Regional Board recognized the water quality problems associated with stormwater discharges from industrial facilities and has issued a number of stormwater permits for such facilities in accordance with the EPA regulations.
3. In 1976, the United States Environmental Protection Agency (EPA) issued new regulations establishing a comprehensive permitting program for all stormwater discharges except for rural runoff uncontaminated by industrial/commercial activity. Channelized stormwater runoff from rural areas continued to be defined as nonpoint source unless designated otherwise by the permitting authority.

Order No. 90-104 (NPDES No. CA 8000192) - cont'd Page 2 of 29
The RCFC&WCD, the County of Riverside, and the Cities
Areawide Urban Stormwater Runoff

4. Since 1976, EPA has issued several revisions to the stormwater regulations. Section 405 of the Water Quality Act (WQA) of 1987 added Section 402(p) to the CWA. Pursuant to Section 402(p)(4) of the CWA, EPA is required to promulgate regulations for stormwater permit applications for stormwater discharges associated with industrial activities and municipal separate storm drain systems serving a population of 100,000 or more. Section 402 (p)(4) of the CWA also requires dischargers of stormwater associated with industrial activities and municipal separate storm drain systems serving a population of 250,000 or more to file stormwater permit applications by February 4, 1990.
5. On December 7, 1988, EPA published its proposed regulations in the Federal Register to solicit public comments. Final regulations are tentatively scheduled to be promulgated on July 20, 1990 and to be published in the Federal Register on August 4, 1990. In the absence of final stormwater regulations, a permit governing municipal stormwater discharges should meet both the statutory requirements of Section 402 (p)(3)(B) and all requirements applicable to a NPDES permit issued under the issuing authority's discretionary authority in accordance with Section 402 (a)(1)(B) of the CWA.
6. The beneficial uses of a number of water bodies within Riverside County are threatened or impaired wholly or in part due to urban stormwater runoff and nuisance water. These water bodies include the Santa Ana River (SAR), Reaches 3 and 4, Canyon Lake, Lake Elsinore, Lake Evans, and Lake Mathews. A comprehensive stormwater and urban runoff management and regulatory program is essential for the protection of the water resources of the Region. The RCFC&WCD, the County of Riverside, the cities in Riverside County, and the Regional Board have recognized this fact, and as a first step towards protecting water quality in the area, a comprehensive management program is being developed. This order outlines the existing programs and specifies additional requirements to achieve water quality objectives for the Riverside County drainage areas. The intent of this permit is to regulate pollutant discharges and improve water quality in the Region in a timely manner.

Order No. 90-104 (NPDES No. CA 8000192) - cont'd Page 3 of 29
The RCFC&WCD, the County of Riverside, and the Cities
Areawide Urban Stormwater Runoff

7. Within the Santa Ana Region, the RCFC&WCD, serves a population of approximately 0.8 million, occupying an area of approximately 1,300 square miles. The District's system includes an estimated 200 miles of opened and closed storm channels and the cities' systems include an estimated 57 miles of opened and closed storm channels. Approximately one-quarter (1/4) of the entire Riverside County area drains into water bodies within this Regional Board's jurisdiction. The project area is shown on Attachment "A" and the drainage areas are characterized as shown on Attachment "B". Approximately 5/8 of the Riverside County drainage areas is within the jurisdiction of the Colorado River Basin Regional Board and the remaining one-eighth (1/8) of the Riverside County drainage areas is within the jurisdiction of the San Diego Regional Board. Urbanization of the drainage areas within the Colorado River Basin and San Diego Regional Boards is minimal in comparison to that in the drainage areas under the Santa Ana Regional Board's jurisdiction. Permit requirements for stormwater runoff from the drainage areas of Riverside County within the jurisdiction of the San Diego and Colorado River Basin Regional Boards will be addressed by these Regional Boards.
8. The discharges consist of surface runoff generated from various land uses in all the hydrologic drainage areas which discharge into water bodies in Riverside County. The quality of these discharges varies considerably and is affected by land use activities, basin hydrology and geology, season, the frequency and duration of storm events, and the presence of illicit connections to the storm drain systems. The constituents of concern and significance in these discharges are: total and fecal coliform, enterococcus, total suspended solids, biochemical oxygen demand (BOD), chemical oxygen demand (COD), total organic carbon (TOC), oil and grease, heavy metals, nutrients, base/neutral and acid extractibles, pesticides, herbicides, and petroleum hydrocarbon components.
9. There are several entities whose land/facilities drain into the Riverside County storm drain systems. The RCFC&WCD has control over approximately 85% percent of the storm drain systems within the Region and has agreed to be the major responsible party in implementing the provisions of this order. The remaining storm sewer systems are owned and operated by the cities within the county and by the State Department of Transportation (Caltrans). The County of Riverside, and the incorporated cities within the county have agreed to

Order No. 90-104 (NPDES No. CA 8000192) - cont'd Page 4 of 29
The RCFC&WCD, the County of Riverside, and the Cities
Areawide Urban Stormwater Runoff

9. (cont'd)

cooperate with the RCFC&WCD in controlling and improving the quality of urban runoff from their respective areas. The RCFC&WCD has been named as the "principal permittee" and the County of Riverside and the incorporated cities have been named as the "co-permittees". Attachment "C" lists the incorporated cities with their 1990 estimated populations. Of the nine cities listed, there are two cities with an estimated 1990 population over 100,000.

10. Due to the enormous variability in stormwater quality and the complexity of the urban runoff management program, this areawide stormwater permit is categorized as a major NPDES permit. This areawide stormwater permit requires all entities discharging stormwater/urban runoff into the storm drain systems or any surface water bodies to have appropriate controls for proper management of this runoff. The Regional Board has the discretion and authority to require non-cooperating entities to participate in this areawide permit or obtain individual stormwater discharge permits, pursuant to 40 CFR 122.26(a). The entities listed in Attachment "D" are considered as potential dischargers of stormwater to the Riverside County drainage areas. It is expected that these entities will also work cooperatively with the County of Riverside to manage urban runoff.
11. The RCFC&WCD, as the "principal permittee", will obtain the cooperation of all entities in implementing the provisions of this order. The dischargers have agreed upon the responsibilities as outlined in the draft June 6, 1990 Implementation Agreement. In general, the RCFC&WCD, as the "principal permittee", will be responsible for preparing operating budgets, preparing and monitoring the implementation programs, coordinating and submitting reports to the Regional Board, and conducting inspections on District's storm drain systems. The County of Riverside and the incorporated cities, as the "co-permittees", will develop site-specific compliance requirements, perform compliance monitoring and inspections, submit storm drain maps and compliance reports to the RCFC&WCD, exercise enforcement authority for achieving compliance, and review and implement stormwater management programs.

Order No. 90-104 (NPDES No. CA 8000192) - cont'd Page 5 of 29
The RCFC&WCD, the County of Riverside, and the Cities
Areawide Urban Stormwater Runoff

12. The RCFC&WCD obtains its authority to control pollutants in stormwater discharges, to prohibit illegal discharges and control spills, and to require compliance and carry out inspections of the storm drain systems in the County of Riverside from the Riverside County Flood Control and Water Conservation District Act and various county ordinances which address industrial wastes and waste discharges, and land use within the unincorporated areas of Riverside County and contract cities. The "co-permittees" have various forms of legal authority in place, such as charters, State Code provisions for General Law cities, city ordinances, and applicable portions of municipal codes and the State Water Code, to regulate stormwater/urban runoff discharges.
13. The RCFC&WCD has an active surface water quality monitoring program in the permit area. This monitoring program includes 12 water quality monitoring stations, 11 continuous stream gaging stations and 6 crest stage gaging stations, and 51 automatic precipitation gaging stations. Water quality sampling is performed quarterly in January, April, July, and October under dry weather conditions. Samples collected are analyzed for nutrients, metals, minerals, specific conductance, total filtrable residue, and pH. Most of the water quality monitoring stations are located at stormwater drain systems in the Santa Ana River area.
14. A Water Quality Control Plan was adopted by the Regional Board on May 13, 1983. The Plan contains water quality objectives and beneficial uses of waters in the Santa Ana Region. On July 14, 1989, the Regional Board adopted a Basin Plan amendment, incorporating revised beneficial use designations for the ground and surface waters of the Region.
15. The requirements contained in this order are necessary to implement the Water Quality Control Plan.
16. An attempt has been made to incorporate all of the essential elements of the proposed federal stormwater regulations in this permit.
17. Stormwater discharges to the storm drain systems in Riverside County within the Santa Ana Region are tributary to various water bodies of the state. The identified water bodies are as follows (Only a portion of some of the water bodies listed below is within the Santa Ana Regional Board's jurisdiction):

Order No. 90-104 (NPDES No. CA 8000192) - cont'd Page 6 of 29
The RCFC&WCD, the County of Riverside, and the Cities
Areawide Urban Stormwater Runoff

17. (cont'd)

Inland Surface Streams

- A. Santa Ana River
Santa Ana River, Reaches 3 and 4
- B. Prado Area Streams
Tequesquite Arroyo (Sycamore Creek)
Chino Creek
Temescal Creek, Reaches 1, 2, 3, 4, 5, and 6
Coldwater Canyon Creek
Bedford Canyon Creek
Other tributaries to these Creeks
- C. San Gabriel Mountain Streams (Valley Reaches)
Day and East Etiwanda Creek
Cucamonga Creek
- D. San Jacinto River Basin
San Jacinto River, Reaches 1, 2, 3, 4, 5, 6, and 7
Bautista Creek - Headwaters to Debris Dam
Strawberry Creek and San Jacinto River, North Fork
Fuller Mill Creek
Stone Creek
Salt Creek
Other tributaries: Indian, Hurkey, Poppet and
Potrero Creeks, and other tributaries to these
Creeks
- E. San Timoteo Creek Area Streams
San Timoteo Creek, Reaches 3 and 4
Little San Gorgonio Creek
Yucaipa Creek
Other Tributaries to these Creeks - Valley Reaches
Other Tributaries to these Creeks - Mountain Reaches

Lake and Reservoirs

- F. Lake Evans
- G. Lee Lake
- H. Lake Mathews
- I. Mockingbird Reservoir
- J. Lake Norconian
- K. Canyon Lake
- L. Lake Elsinore
- M. Lake Fulmor
- N. Lake Hemet
- O. Lake Perris

RBSA_28817

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The RCFC&WCD, the County of Riverside, and the Cities
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17. (cont'd)

The beneficial uses of these water bodies include municipal and domestic supply (MUN), agricultural supply (AGR), industrial service supply (IND), industrial process supply (PROC), groundwater recharge (GWR), water contact recreation (REC-1), non-contact water recreation (REC-2), warm freshwater habitat (WARM), cold freshwater habitat (COLD), wildlife habitat (WILD), and preservation of rare and endangered species (RARE). The beneficial uses of individual water bodies are shown on Attachment "E".

18. Stormwater discharged from the storm drain systems operated by the County of San Bernardino drain into various water bodies in the project area. These water bodies include the Santa Ana River and San Timoteo Creek. The County of San Bernardino will also be required to obtain an areawide stormwater permit for effective control of the pollutants in the stormwater runoff discharged from its storm drain systems.

19. Due to the large number of water bodies covered in this order, it is necessary to prioritize these water bodies for the development and implementation of the stormwater management program to effectively control the pollutants in the stormwater discharges. The stormwater management program will be developed and implemented in two phases, Phase I and Phase II. In Phase I, the dischargers will be required to submit existing stormwater qualitative data and develop management and monitoring programs for those water bodies where beneficial uses are threatened or impaired due to runoff of stormwater and urban nuisance water. These water bodies include Reaches 3 and 4 of the Santa Ana River, Prado area streams, Temescal Creek and its tributaries, Lake Evans, Lee Lake, Lake Mathews, Lake Elsinore, and Canyon Lake. In Phase II, the dischargers will be required to submit existing stormwater qualitative data and to develop stormwater management and monitoring programs for the remaining water bodies which include the San Jacinto River and its tributaries, San Timoteo Creek and its tributaries, Lake Perris, Lake Fulmor, Lake Hemet, Lake Norconian, and Mockingbird Reservoir.

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20. Numeric and narrative water quality standards exist for the water bodies listed in Item No. 17, above. Currently, this permit does not contain numeric limitations for any constituents because the impact of stormwater discharges on the water quality of the above named receiving waters has not been fully determined. Extensive water quality monitoring and analysis of the data are essential to make that determination. This order requires the dischargers continue to monitor the stormwater discharges or begin monitoring as necessary, and to analyze the data. Additionally, the order also requires development and implementation of best management practices¹ (BMPs) in accordance with the WQA of 1987. It is anticipated that with the implementation of BMPs by the dischargers, the pollutants in the stormwater runoff will be reduced and the quality of the receiving waters will be improved. The ultimate goal of the urban stormwater runoff management program is to attain water quality consistent with the water quality objectives for the receiving waters to protect the beneficial uses.
21. With respect to industrial activities, the Regional Board currently regulates discharges of point source process wastewater and non-process wastewater and stormwater discharges to storm drain systems through NPDES permits. Point source discharges other than stormwater will continue to be regulated by the Regional Board. Industrial stormwater dischargers are required to cooperate with the RCFC&WCD to control the discharge of pollutants in the stormwater runoff from individual facilities or to obtain individual industrial stormwater discharge permits from the Regional Board.
22. Recognizing the need for public involvement and participation in the development and implementation of an effective stormwater/urban runoff management program, the Regional Board will conduct at least one workshop each year during the term of this permit. The purposes of the workshops will be to solicit comments and to inform the public of the progress of the program. Written comments submitted will be forwarded to the State Board, EPA, and the RCFC&WCD for their review and comments.

¹ Best Management Practices (BMPs) are water quality management practices that are maximized in efficiency for the control of stormwater runoff pollution.

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23. In accordance with California Water Code Section 13389, the issuance of waste discharge requirements for this discharge is exempt from those provisions of the California Environmental Quality Act contained in Chapter 3 (commencing with Section 21100), Division 13 of the Public Resources Code.
24. The Regional Board has considered an antidegradation analysis, pursuant to 40 CFR 131.12 and State Board Resolution No. 68-16, for this discharge. The Regional Board finds that the stormwater discharges are consistent with the federal and state antidegradation requirements and a complete antidegradation analysis is not necessary.
25. The Regional Board has notified the dischargers and interested agencies and persons of its intent to issue waste discharge requirements for this discharge and has provided them with an opportunity to submit their written views and recommendations.
26. The Regional Board, in a public hearing, heard and considered all comments pertaining to the discharge and to the tentative requirements.

IT IS HEREBY ORDERED that the dischargers, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act, as amended, and regulations and guidelines adopted thereunder, shall comply with the following:

I. RESPONSIBILITIES OF PRINCIPAL PERMITTEE

The principal permittee shall be responsible to manage the program overall, including:

1. Administer the Riverside County Flood Control and Water Conservation District Act.
2. Conduct water quality and hydrographic monitoring of the storm drain system outfalls as agreed upon by the Executive Officer.
3. Develop uniform criteria for storm drain system inspections.
4. Conduct inspections of the storm drain systems within its jurisdiction.
5. Implement management programs, monitoring programs, and implementation plans within its jurisdiction as required by this order.

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I. RESPONSIBILITIES OF PRINCIPAL PERMITTEE - CONT'D

6. Prepare and submit to the Regional Board all the reports, plans, and programs as required in this order.
7. Monitor the implementation of the plans and programs and determine their effectiveness in attaining water quality objectives.
8. Coordinate all the activities with the Regional Board.
9. Enact legislation and ordinances as necessary to establish legal authority.
10. Obtain public input² for any proposed management and implementation plans.
11. Pursue enforcement actions as necessary to ensure compliance with stormwater management programs and implementation plans.
12. Respond to emergency situations such as accidental spills, leaks, illegal discharges/illicit connections etc. to prevent or reduce the discharge of pollutants to storm drain systems and waters of the United States.

II. RESPONSIBILITIES OF THE CO-PERMITTEES

The co-permittees shall be responsible to manage the program within its jurisdiction, including:

1. Administer the county and city ordinances.
2. Conduct storm drain system inspections in accordance with the uniform criteria developed by the principal permittee.
3. Conduct and coordinate with the principal permittee any surveys and characterizations needed to identify the pollutant sources and drainage areas.
4. Review and approve management programs, monitoring programs, and implementation plans.

² Public input is demonstrated by: (1) disseminating the notice of availability of plans for review and comment to the public at large, environmental groups, federal, state and local agencies and other interested parties; and, (2) addressing concerns expressed by the public.

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II. RESPONSIBILITIES OF THE CO-PERMITTEES - CONT'D

5. Implement management programs, monitoring programs, and implementation plans within each respective jurisdiction as required by this order.
6. Submit storm drain system maps with periodic revisions as necessary.
7. Prepare and submit all reports to the principal permittee in a timely manner.
8. Enact legislation and ordinances as necessary to establish legal authority.
9. Pursue enforcement actions as necessary to ensure compliance with the stormwater management programs and the implementation plans.
10. Respond to emergency situations such as accidental spills, leaks, illegal discharges/illicit connections, etc. to prevent or reduce the discharge of pollutants to storm drain systems and waters of the United States.

III. GENERAL REQUIREMENTS

1. The dischargers shall prohibit illegal discharges from entering into the municipal storm drain systems. Discharges conditionally allowed to enter storm drain systems are specified in Item V.6.
2. The dischargers shall develop and implement best management practices (BMPs) to control discharge of pollutants to the maximum extent practicable³ to waters of the United States. The BMPs so developed, along with a time schedule for implementation, shall be submitted for the approval of and/or modification by the Executive Officer of the Regional Board. In developing the best management practices, the dischargers shall consider the water quality objectives of all the receiving water bodies.

³ Maximum Extent Practicable (MEP) means to the maximum extent possible, taking into account equitable considerations of synergistic, additive, and competing factors, including but not limited to, gravity of the problem, fiscal feasibility, public health risks, societal concern, and social benefits.

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IV. COMPILATION AND SUBMITTAL OF EXISTING DATA

1. Runoff Quality/Quantity

The dischargers shall collectively submit all quantitative information, generated since 1980 or earlier where better information exists, on stormwater discharges to the storm drain systems. This information will be used to facilitate the identification of sources of pollutants present in the stormwater discharges and to develop an effective discharge monitoring program for this order. Information to be submitted shall include the following:

- a. Any historical averages and extremes data for stormwater discharges;
- b. Analytical and flow data for stormwater samples collected from the storm drain system outfalls, and within any waters of the United States;
- c. Precipitation data from the precipitation stations and the duration of the storm events (if available);
- d. Discharge data from the storm drain systems as determined from the gaging stations;
- e. Analysis of the data and the major pollutants identified in the stormwater discharges from each drainage area to each receiving water body and a determination whether the identified pollutants came from non-point source or point-source discharges.

2. System/Drainage Area Characterization

The dischargers shall submit information to the Regional Board for identification and characterization of the sources of pollutants in the stormwater discharges. The following information shall be provided:

- a. An identification of all land use activities in each drainage area and a map showing various land use activities and storm drain systems in each drainage area.

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IV. COMPILATION AND SUBMITTAL OF EXISTING DATA - CONT'D

- b. An identification of the drainage areas, more than 50 acres in size, that discharge stormwater to the storm drain systems and of those drainage areas that discharge to storm drain systems with pipe diameters greater than 36 inches.
- c. The sizes of these drainage areas (acreage) and the sizes (pipe diameters or approximate dimensions of the storm drain systems) and physical characteristics of the storm drain systems. These physical characteristics shall include, but not be limited to, whether the storm drain system is lined or unlined and whether it has intermittent or continuous flow;
- d. The names, locations, and Standard Industrial Codes (SIC) of specific industrial sources and principal land use activities in each drainage area, identified in IV.2.a., above, discharging to the storm drain systems. An estimate of the runoff coefficients for these drainage areas shall also be provided;
- e. The locations of present storm drain outfalls discharging to waters of the United States. The name of each receiving water body shall be reported and the location of each outfall shall be indicated on a map;
- f. The locations of major structural controls for stormwater discharge (e.g. retention basins, detention basins, etc).

3. Illegal Discharges/Illicit Connections

- a. The dischargers shall provide a list of dischargers (permitted and unpermitted) known to exist currently who discharge process or non-process wastewater to the storm drain systems. The dischargers shall also provide any existing procedures used for detecting illegal discharges/illicit connections to the storm drain systems, the rationale for the procedures, and the drainage areas (or cities) in which these programs are practiced; and
- b. A description of the present and historic use of ordinances or other controls to prohibit the illegal discharges/illicit connections to storm drain systems;

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IV. COMPILATION AND SUBMITTAL OF EXISTING DATA - CONT'D

4. Stormwater Management Program

A description of the existing stormwater/urban runoff management programs and structural and non-structural BMPs implemented by the dischargers.

5. Stormwater/Urban Runoff Monitoring Program

A description of the existing monitoring programs and the rationale for their selection.

6. Pollutant Information

The dischargers shall provide information regarding the discharge of any pollutant required under 40 CFR 122.21(g)(7)(iii) and (iv).

7. Other Pertinent Existing Information

The dischargers shall provide to the Regional Board any other existing information that is pertinent to this permit. For example, a description of drainage areas hydrologic parameters.

8. The dischargers shall submit the above information, IV.1. -IV.7, for various water bodies within the project area in accordance with the following schedule:

<u>Phase</u>	<u>Description of Water Body</u>	<u>Compliance Report Due</u>
I	Santa Ana River, Reaches 3 & 4, Prado area streams, San Gabriel Mountain Streams (Valley Reaches), Lake Evans, Lee Lake, Lake Mathews, Lake Elsinore, and Canyon Lake.	03/31/91
II	San Jacinto River and its tributaries, San Timoteo Creek and its tributaries, Lake Fulmor, and Lake Hemet, Lake Perris, Lake Norconian, and Mockingbird Reservoir.	03/31/92

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V. RECONNAISSANCE SURVEY

1. The dischargers shall submit information from a reconnaissance survey to be conducted at the storm drain systems. The purpose of the survey is to identify illegal discharges/illicit connections to the storm drain systems. The reconnaissance survey field manual and implementation plan for prosecuting violators and eliminating illegal discharges so developed, along with time schedules for implementation, shall be submitted for the approval of and/or modification by the Executive Officer of the Regional Board.
2. By September 30, 1991, a proposed reconnaissance survey field manual, including a time schedule, for Phase I shall be submitted for approval and/or modification by the Executive Officer of the Regional Board. By September 30, 1992, a proposed reconnaissance survey field manual, including a time schedule, for Phase II shall be submitted.
3. The discharger shall implement the reconnaissance survey field manual after consideration of public comments and approval/modification of the manual by the Executive Officer of the Regional Board. By September 30, 1992 and every year thereafter until the completion of the survey, a progress report containing the following information shall be submitted:
 - a. Results of the reconnaissance survey, including an analysis of the results.
 - b. Additional information that would lead to isolating and identifying sources of illegal discharges/illicit connections to the storm drain systems. Such information should include, but is not limited to, visual observations (e.g. color, turbidity, odor, etc), major land use activities in the surrounding drainage areas, seasonal change of flow, the surrounding hydrogeologic formation, etc.
 - c. A listing of any identified or suspected illegal dischargers including the names, locations, and types of the facilities and the names of the storm drain systems and receiving waters the illegal discharges are discharged to.

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V. RECONNAISSANCE SURVEY - CONT'D

- d. A listing of large industrial facilities (with more than 100 employees) where hazardous/toxic substances are stored and/or used, landfills, hazardous waste disposal, treatment, and/or recovery facilities, and any known spills, leaks or other problems in the area.
 - e. A discussion on all activities, related to the survey, conducted for the past 12 months.
4. By September 30, 1992, the dischargers shall submit a proposed implementation plan, including a tentative time schedule, for Phase I to prosecute violators and eliminate such discharges to the storm drain systems. By September 30, 1993, a proposed implementation plan to prosecute violators and eliminate illegal discharges/illicit connections shall also be submitted for Phase II. The proposed plan shall also include a description of the legal authorities for prosecuting violators and eliminate or control illicit disposal practices and illegal discharges to the storm drain systems, and a proposed time schedule for obtaining such legal authorities, if necessary.
 5. The dischargers shall implement the program for prosecuting violators and eliminate illegal discharges to the storm drain systems after consideration of public comments and approval/modification of the program by the Executive Officer of the Regional Board. By September 30, 1993 and every year thereafter, the discharger shall submit a progress report evaluating the effectiveness of the plan in detecting and eliminating illegal discharges to the storm drain systems.
 6. The permittees shall effectively eliminate all identified illegal discharges/illicit connections in the shortest time practicable, and in no case later than July 1, 1995. Those illegal discharges/illicit connections identified after July 1, 1995 shall be eliminated in the shortest time practicable. The following discharges shall not be considered illegal discharges provided the discharges do not cause or contribute to violations of water quality standards and are not significant contributors of pollutants to waters of the United States: discharges composed entirely of stormwater, discharges covered under NPDES permits or waivers/clearances, discharges to storm drain systems from potable water line flushing, fire fighting, landscape irrigation, diverted stream flows, rising groundwaters (not including active dewatering systems), groundwater infiltration as defined at 40 CFR

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V. RECONNAISSANCE SURVEY - CONT'D

6. (cont'd)

35.2005(20), discharges from potable water sources, passive foundation drains (not including active groundwater dewatering), air conditioning condensation, irrigation water, water from crawl space pumps, passive footing drains (not including active groundwater dewatering systems), lawn watering, individual residential vehicle washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, street wash waters related to cleaning and maintenance by permittees, or waters not otherwise containing wastes as defined in California Water Code Section 13050 (d). If it is determined that any of the preceding discharges cause or contribute to violations of water quality standards or are significant contributors of pollutants to waters of the United States, the permittees shall prohibit these discharges from entering storm drain systems.

VI. DRAINAGE AREA MANAGEMENT PROGRAM

1. The dischargers shall develop and implement best management practices (BMPs) to control the discharge of pollutants to waters of the United States. The discharger shall submit information pertaining to the proposed stormwater system management programs for approval of and/or modification by the Executive Officer of the Regional Board. The information shall include, but need not be limited to, the following:

- a. A brief description of the existing BMPs and stormwater management programs.
- b. Proposed modifications to the existing BMPs and stormwater/urban runoff management programs to reduce pollutants in the stormwater discharges from industrial, commercial, and residential areas to the maximum extent practicable. At a minimum, the following shall be considered in developing the BMPs:

Structural Controls

- i. For the permitted area, wherever appropriate, structural controls such as first flush diversion, detention/retention basins, infiltration trenches/basins, porous pavement, oil/grease separators, grass swales, wire concentrators, etc.

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VI. DRAINAGE AREA MANAGEMENT PROGRAM - CONT'D

Non-Structural Controls

- ii. Programs to educate the public on proper disposal of hazardous/toxic wastes. These may include public workshops, meetings, notifications by mail, collection programs for household hazardous wastes, etc.
- iii. Management practices such as street sweeping, proper maintenance of streambanks, erosion control structures, etc.
- iv. Regulatory approaches such as county and local ordinances, permitting of construction sites, etc.
- v. Enforcement programs, established by the county and cities, including response to emergency incidents, field inspections, and identification and elimination of illegal discharges/illicit connections to the storm drain systems.

c. An implementation plan for site-specific BMPs which are required to reduce pollutants in the stormwater discharges from residential, commercial and industrial areas, and construction sites. Requirements for the implementation of BMPs at these sites are described below:

i. New Construction Sites

Runoff from construction sites has the potential to adversely impact the quality of waters of the United States. A full range of structural and non-structural BMPs shall be required at new construction sites. All industrial/commercial construction operations that result in a disturbance of one acre or more of total land area (or a smaller parcel of land which is a part of a larger common development) and residential construction sites that result in a disturbance of five acres or more of total land area (or a smaller parcel of land which is a part of a larger common development) shall be required to develop and implement BMPs, including a long term funding mechanism and commitment to support required maintenance of the BMPs, to control erosion/siltation and contaminated runoff from the construction sites.

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VI. DRAINAGE AREA MANAGEMENT PROGRAM - CONT'D

ii. Residential and Commercial/Industrial Sites

Numerous studies have shown that runoff from residential and commercial/industrial areas has contributed a number of pollutants to waters of the United States. As development progresses, the percentage of paved surface increases, the rate of runoff increases, and the amount of pollutants in the runoff also increases. To prevent the increase of pollutants in the stormwater discharges, all new developments and existing facilities with significant redevelopment, irrespective of their size, must develop individual comprehensive, long-term, post construction stormwater management plans, incorporating structural and non-structural BMPs. These management plans shall include a long term funding mechanism and commitment to support required maintenance of the BMPs.

- d. A description of the legal authorities for implementing the programs, and a proposed time schedule for obtaining such legal authorities, if necessary.
- e. A description of staff, equipment, and funds available to implement the programs.

- 2. The dischargers shall submit the BMPs so developed, along with a time schedule for implementation, for the approval of and modification by the Executive Officer of the Regional Board in accordance with the following schedule:

<u>Phase</u>	<u>Description of Water Body</u>	<u>Compliance Report Due</u>
I	Santa Ana River, Reaches 3 & 4, Prado area streams, San Gabriel Mountain Streams (Valley Reaches), Lake Evans, Lee Lake, Lake Mathews, Lake Elsinore, and Canyon Lake.	03/31/92
II	San Jacinto River and its tributaries, San Timoteo Creek and its tributaries, Lake Fulmor, and Lake Hemet, Lake Perris, Lake Norconian, and Mockingbird Reservoir.	03/31/93

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VI. DRAINAGE AREA MANAGEMENT PROGRAM - CONT'D

3. The dischargers shall implement the BMPs and other stormwater management programs after consideration of public comments and approval/modification of the programs by the Executive Officer of the Regional Board. By October 31, 1992 and every year thereafter, the dischargers shall submit a progress report assessing the reduction of pollutants discharged to waters of the United States and evaluating the effectiveness of the BMPs developed for the stormwater discharges. The dischargers shall also include recommended BMP modifications, with a time schedule for implementation, needed to achieve compliance with any water quality objectives not attained.

VII. STORMWATER SYSTEM MONITORING PROGRAM

1. The discharger shall submit a stormwater system monitoring program for approval of and/or modification by the Executive Officer. The objectives of the stormwater system monitoring program are:
 - a. To define the type, magnitude (concentration and mass load), and sources of pollutants in the stormwater system discharges within each permittee's respective jurisdiction so that appropriate pollution prevention and correction measures can be identified;
 - b. To evaluate the effectiveness of pollution prevention and correction measures; and
 - c. To evaluate the compliance with water quality objectives established for the stormwater system or its components.
2. At a minimum, the stormwater system monitoring program shall include the following:
 - a. A brief description of the existing monitoring programs.
 - b. For both storm and non-storm conditions, sampling of the stormwater system discharges at major and representative outfalls discharging to waters of the United States to determine the pollutant loading rates to each receiving water body listed in Attachment "E".

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VII. STORMWATER SYSTEM MONITORING PROGRAM - CONT'D

- c. For both storm and non-storm conditions, a description of the number of monitoring stations, the locations of these monitoring stations, and the rationale for their selection.
- d. For both storm and non-storm conditions, a description of the physical, chemical, and biological parameters selected for analysis, the method of analysis, the type of sampling, and the sampling frequency proposed. The rationale for each of these selections shall be provided.
- e. Monitoring of the stormwater system discharges to identify illicit connections shall be conducted.
- f. Quality assurance and quality control plans for the stormwater system monitoring program shall be submitted.
- g. A data base that consolidates all monitoring information shall be maintained.
- h. A description of the staff, equipment, and funds available to implement the monitoring program shall be provided.
- i. A description of the legal authorities for implementing the program, and a proposed time schedule for obtaining such legal authorities (if necessary) shall be provided.

3. The dischargers shall submit the stormwater monitoring program so developed, along with a time schedule, for various water bodies in the project area in accordance with the following schedule:

<u>Phase</u>	<u>Description of Water Body</u>	<u>Compliance Report Due</u>
I	Santa Ana River, Reaches 3 & 4, Prado area streams, San Gabriel Mountain Streams (Valley Reaches), Lake Evans, Lee Lake, Lake Mathews, Lake Elsinore, and Canyon Lake.	03/31/92
II	San Jacinto River and its tributaries, San Timoteo Creek and its tributaries, Lake Fulmor, and Lake Hemet, Lake Perris, Lake Norconian, and Mockingbird Reservoir.	03/31/93

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VII. STORMWATER SYSTEM MONITORING PROGRAM - CONT'D

3. The dischargers shall implement the stormwater system monitoring program after consideration of public comments and approval/modification of the program by the Executive Officer of the Regional Board. By March 31, 1992 and every year thereafter, the dischargers shall submit a report on progress towards implementation of the approved monitoring program.

VIII. RECEIVING WATER MONITORING PROGRAM

1. The discharger shall develop a receiving water monitoring program to assess the effects of pollutants from the stormwater system discharges on receiving water bodies, and to evaluate compliance with water quality objectives of the receiving water bodies. All the water bodies listed in Attachment "E" shall be addressed. The receiving water monitoring program shall be coordinated with the stormwater system monitoring program required under Section VII such that the aforesated objectives of the receiving water monitoring program will be achieved.
2. At a minimum, the receiving water monitoring program shall include the following:
 - a. A brief description of the existing monitoring programs.
 - b. A description of the number of monitoring stations, the location of these monitoring stations, and the rationale for their selection.
 - c. A description of the physical, chemical and biological selected for analysis, the type of sampling, and the sampling frequency proposed. The rationale for each of these selections shall be provided.
 - d. Quality assurance and quality control plans for the receiving water monitoring program.
 - e. Maintenance of a data base that consolidates all monitoring information. This data base shall be coordinated with the data base required for the stormwater system monitoring program (VII.2.g.).

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VIII. RECEIVING WATER MONITORING PROGRAM - CONT'D

3. The dischargers shall submit the receiving water monitoring programs for various water bodies within the project area in accordance with the following schedule:

<u>Phase</u>	<u>Description of Water Bodies</u>	<u>Compliance Report Due</u>
I	Santa Ana River, Reaches 3 & 4, Prado area streams, San Gabriel Mountain Streams (Valley Reaches), Lake Evans, Lee Lake, Lake Mathews, Lake Elsinore, and Canyon Lake.	03/31/92
II	San Jacinto River and its tributaries, San Timoteo Creek and its tributaries, Lake Fulmor, and Lake Hemet, Lake Perris, Lake Norconian, and Mockingbird Reservoir.	03/31/93

4. The dischargers shall implement the receiving water monitoring program after consideration of public comments and approval/modification of the program by the Executive Officer of the Regional Board. By March 31, 1992 and every year thereafter, the discharger shall submit a report on progress towards implementation of the approved receiving water monitoring program.

IX. FISCAL ANALYSIS

1. By July 31 of each year, a fiscal analysis of the capital and operation and maintenance expenditures necessary to accomplish the activities of the proposed plans and programs shall be performed.
2. By August 31, 1991 and every year thereafter, a fiscal analysis of the capital and operation and maintenance expenditures shall be submitted for review by EPA and the Regional Board.

X. DATA ANALYSIS

1. For the stormwater system monitoring program, the results of the chemical analysis and quantitative data (such as flow, precipitation, and discharge data) shall be compiled for each drainage area, each storm event, and for different times during the same storm event. The mass loading rates for the pollutants of concern shall be calculated.

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X. DATA ANALYSIS - CONT'D

2. An evaluation shall be performed for the calculated mass loading rates from the stormwater system monitoring program and the receiving water monitoring program. Any impact of the discharges from the stormwater systems on the receiving waters shall be discussed, starting with the most significantly impacted receiving water bodies. The evaluation shall be concluded with recommendations and the corrective actions proposed for any resulting discrepancies.
3. By January 31, 1993 and every year thereafter, the analysis of all the above data shall be submitted.

XI. PROGRAM ANALYSIS

1. In January of every year, the principal permittee shall conduct an analysis of the effectiveness of the overall stormwater management program. If the water quality objectives of the receiving waters are violated as a result of stormwater/urban runoff discharges, the principal permittee shall identify proposed programs which will result in the attainment of the water quality objectives, and a time schedule to implement the new programs.
2. By March 31, 1993 and every year thereafter, the analysis of the overall program and any proposed programs, to achieve compliance with water quality objectives of water bodies that have not been attained, shall be submitted.

XII. REPORTING

1. All reports shall be signed by the "principal permittee" or duly authorized representative of the dischargers and shall be submitted to EPA and the Regional Board under penalty of perjury.
2. A signed copy of the Implementation Agreement between the RCFC&WCD, the County of Riverside, and the cities shall be submitted by January 31, 1991. Any revisions to the Implementation Agreement shall be forwarded to the Executive Officer within 30 days of approval by all the dischargers.

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XII. REPORTING - CONT'D

3. Other reports and information required to be submitted to the Regional Board under the requirements specified above shall be reported in accordance with the following schedule:

Phase I

<u>TASK</u>	<u>COMPLIANCE REPORT DUE</u>
a. Existing reports and programs IV.1.-IV.7.	03/31/91
b. Proposed Reconnaissance Survey Field Manual - V.2.	09/30/91
c. Proposed Implementation Plan for Prosecuting Illegal Dischargers - V.4.	09/30/92
d. Management Programs (BMPs) and Implementation Plan - VI.1.- VI.2.	03/31/92
e. Stormwater Monitoring Program VII.1. - VII.3	03/31/92
f. Receiving Water Monitoring Program VIII.1. - VIII.3.	03/31/92
g. Progress Reports after Plan Implementation	
i. Reconnaissance Survey Progress Report - V.3.	09/30 of every year ⁴
ii. Illegal Discharges - V.5.	09/30 of every year ⁵
iii. Management Programs - VI.3.	03/31 of every year ⁶

⁴ The first progress report is due by September 30, 1992.

⁵ The first progress report is due by September 30, 1993.

⁶ The first progress report is due by March 31, 1993.

Order No. 90-104 (NPDES No. CA 8000192) - cont'd Page 26 of 29
 The RCFC&WCD, the County of Riverside, and the Cities
 Areawide Urban Stormwater Runoff

XII. REPORTING - CONT'D

<u>TASK</u>	<u>COMPLIANCE REPORT DUE</u>
g. Progress Reports after Plan Implementation	
iv. Stormwater Monitoring Program VII.4.	03/31 of every year ⁷
v. Receiving Water Monitoring Program VIII.4.	03/31 of every year ⁸
h. Compliance - Illegal Discharges	See Item V.6.
i. Fiscal Analysis	08/31 of every year ⁹
j. Data Analysis	01/31 of every year ¹⁰
k. Program Analysis	03/31 of every year ¹¹

Phase II

<u>TASK</u>	<u>COMPLIANCE REPORT DUE</u>
a. Existing reports and programs IV.1. - IV.7.	03/31/92
b. Proposed Reconnaissance Survey Field Manual - V.2.	09/30/92
c. Proposed Implementation Plan for Prosecuting Illegal Dischargers - V.4.	09/30/93
d. Management Programs (BMPs) and Implementation Plan - VI.1.- VI.2.	03/31/93

⁷ The first progress report is due by March 31, 1993.

⁸ The first progress report is due by March 31, 1993.

⁹ The first annual fiscal analysis is due by August 31, 1991.

¹⁰ The first data/program analysis is due by January 31, 1993.

¹¹ The first program analysis is due by March 31, 1993.

Order No. 90-104 (NPDES No. CA 8000192) - cont'd Page 27 of 29
The RCFC&WCD, the County of Riverside, and the Cities
Areawide Urban Stormwater Runoff

XII. REPORTING - CONT'D

Phase II - cont'd

<u>TASK</u>	<u>COMPLIANCE REPORT DUE</u>
e. Stormwater Monitoring Program VII.1.- VII.3.	03/31/93
f. Receiving Water Monitoring Program VIII.1. - VIII.3.	03/31/93
g. Progress Reports after Plan Implementation	
i. Reconnaissance Survey Progress Report - V.3.	09/30 of every year ¹²
ii. Illegal Discharges - V.5.	09/30 of every year ¹³
iii. Management Programs - VI.3.	03/31 of every year ¹⁴
iv. Stormwater System Monitoring Program VII.4.	03/31 of every year ¹⁵
v. Receiving Water Monitoring Program VIII.4.	03/31 of every year ¹⁶
h. Compliance - Illegal Discharges	See Item V.6.
i. Fiscal Analysis	08/31 of every year ¹⁷

¹² The first Progress report is due by September 30, 1993.

¹³ The first progress report is due by September 30, 1994.

¹⁴ The first progress report is due by March 31, 1994.

¹⁵ The first progress report is due by March 31, 1994.

¹⁶ The first progress report is due by March 31, 1994.

¹⁷ The first annual fiscal analysis is due by August 31, 1991.

Order No. 90-104 (NPDES No. CA 8000192) - cont'd Page 28 of 29
The RCFC&WCD, the County of Riverside, and the Cities
Areawide Urban Stormwater Runoff

XII. REPORTING - CONT'D

Phase II - cont'd

<u>TASK</u>	<u>COMPLIANCE REPORT DUE</u>
j. Data Analysis	01/31 of every year ¹⁸
k. Program Analysis	03/31 of every year ¹⁹

XIII. EXPIRATION AND RENEWAL

1. This Order expires on July 1, 1995 and the discharger must file a Report of Waste Discharge in accordance with Title 23, Chapter 3, Subchapter 9 of the California Code of Regulations not later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements. This report of waste discharge shall include, but is not limited to, the following:
 - a. Summary of the results of the monitoring program.
 - b. Summary of the BMPs implemented and evaluations of their effectiveness.
 - c. Summary of procedures implemented to detect, identify, and eliminate illegal discharges and illicit disposal practices and an evaluation of their effectiveness.
 - d. Summary of enforcement procedures and actions taken to require stormwater dischargers to comply with the approved stormwater management programs.
 - e. Summary of measures implemented to control pollutants in surface runoff from construction sites and an evaluation of their effectiveness.
 - f. Evaluation of the need for additional BMPs, source control, and/or structural control measures.

¹⁸ The first data analysis is due by January 31, 1994.

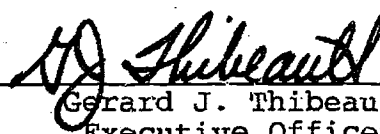
¹⁹ The first program analysis is due by March 31, 1994.

Order No. 90-104 (NPDES No. CA 8000192) - cont'd Page 29 of 29
The RCFC&WCD, the County of Riverside, and the Cities
Areawide Urban Stormwater Runoff

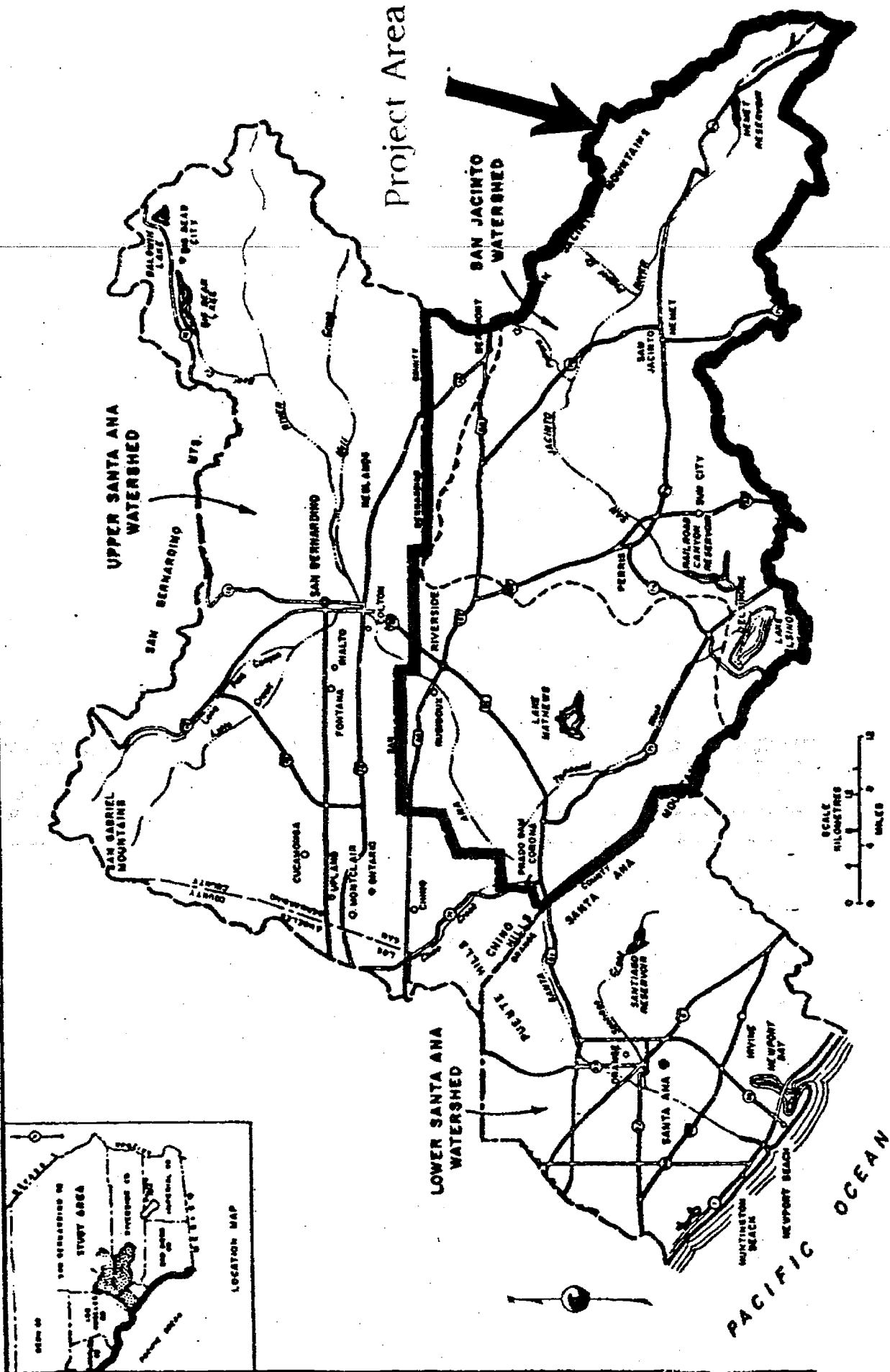
XIII. EXPIRATION AND RENEWAL - CONT'D

- g. Proposed plan of stormwater/urban runoff quality management activities that will be undertaken during the term of the next permit.
 - h. Any significant changes to the storm drain systems, outfall locations, detention/retention basins, and structural/non-structural controls.
2. This order shall serve as a National Pollutant Discharge Elimination System permit pursuant to Section 402 of the Clean Water Act, or amendments thereto, and shall become effective 10 days after date of its adoption, provided that the Regional Administrator of the Environmental Protection Agency has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

I, Gerard J. Thibeault, 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, Santa Ana Region, on July 13, 1990.



Gerard J. Thibeault
Executive Officer

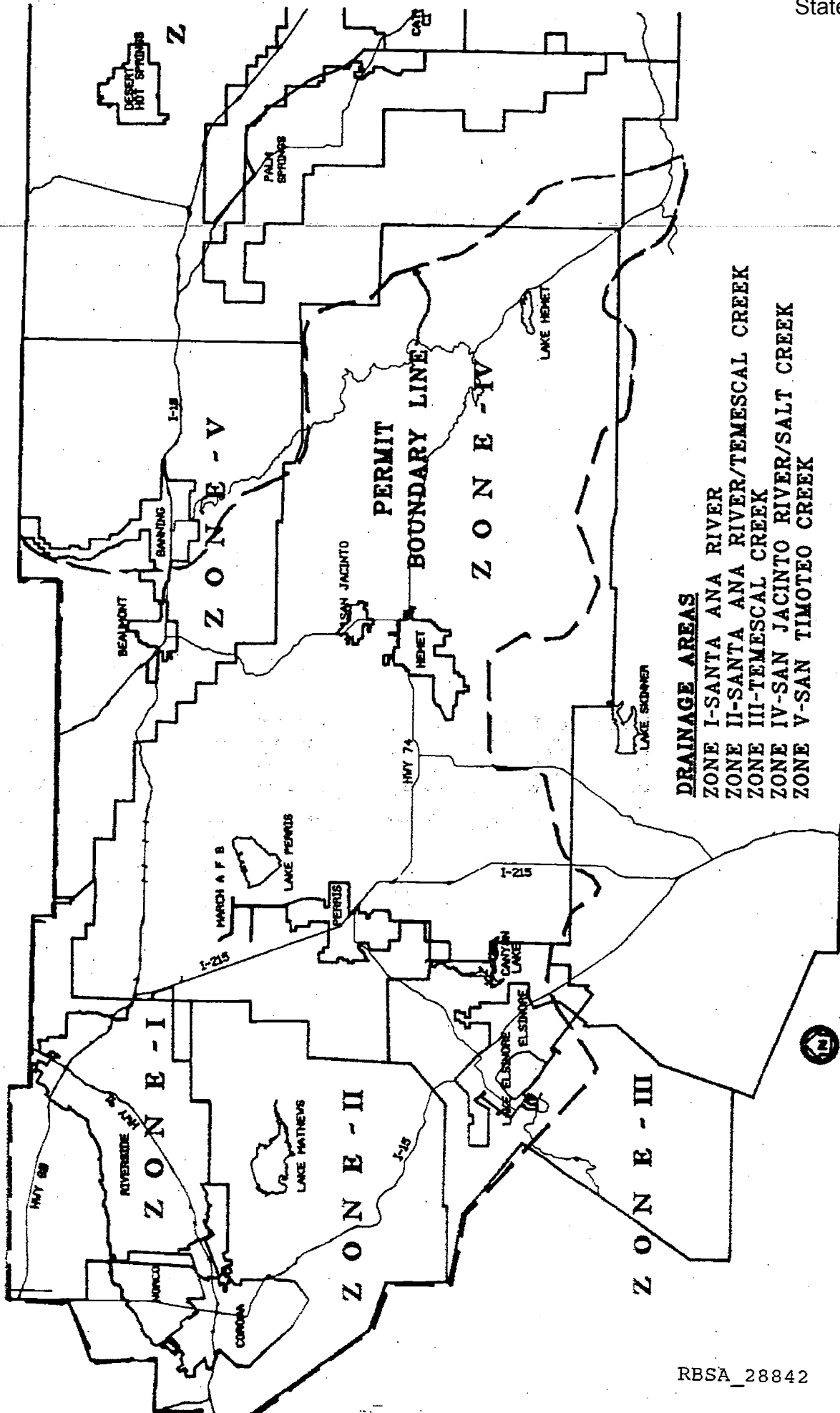


SANTA ANA PLANNING AREA

FIGURE 1 -

Attachment "A"
Order No. 90-104 (NPDES No. CA 8000192)

RIVERSIDE COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT



DRAINAGE AREAS
ZONE I-SANTA ANA RIVER
ZONE II-SANTA ANA RIVER/TEMESCAL CREEK
ZONE III-TEMESCAL CREEK
ZONE IV-SAN JACINTO RIVER/SALT CREEK
ZONE V-SAN TIMOTEO CREEK

RBSA_28842

POPULATION ESTIMATES FOR CITIES AND UNINCORPORATED AREAS
OF
RIVERSIDE COUNTY
WITHIN THE
SANTA ANA RIVER BASIN

<u>CITY</u>		<u>1990 POPULATION</u>
Beaumont		9,430
Corona		72,820
Hemet		34,460
Lake Elsinore		14,030
Moreno Valley		111,910
Norco		25,730
Perris		17,720
Riverside		214,350
San Jacinto		<u>15,150</u>
	SUB TOTAL	= 515,600
Unincorporated		<u>271,460</u>
	TOTAL	= 787,060

Attachment "C"
Order No. 90-104 (NPDES No. CA 8000192)

(REVISED 6/1/90)

LIST OF OTHER ENTITIES WITH THE POTENTIAL TO
DISCHARGE POLLUTANTS TO STORMWATER FACILITIES

Government Agencies

California Department of Transportation (Caltrans)
Department of the Air Force, March Air Force Base
Special Districts
State Parks
U.S. Army Corps of Engineers

Hospitals

AMI Circle City Hospital
Corona Community Hospital
Riverside Community Hospital
Riverside General Hospital

Railroads

AT&SF Railway Company
Southern Pacific Railroad

School Districts

Alvord Unified School District
Corona-Norco Unified School District
Hemet Unified School District
Lake Elsinore Unified School District
Menifee Union School District
Moreno Valley Unified School District
Nuvview Union School District
Perris Elementary School District
Perris Union High School District
Riverside Unified School District
Romoland School District
San Jacinto Unified School District
Val Verde School District

Universities and Colleges

Chapman College
Mt. San Jacinto College
Riverside Community College
University of California Riverside

Water Districts

Eastern Municipal Water District
Elsinore Valley Municipal Water District
Metropolitan Water District
Western Municipal Water District

It is intended that this list will be added to during the permit process.

Attachment "D"
Order No. 90-104 (NPDES No. CA 8000192)

TABLE 2-1
 BENEFICIAL USES

Water Body

Beneficial Use

INLAND SURFACE STREAMS - Continued

UPPER SANTA ANA RIVER BASIN

Santa Ana River

Reach 3- Prado Dam to Mission Blvd. in Riverside

Reach 4- Mission Blvd. in Riverside to San Jacinto Fault in San Bernardino

Reach 5- San Jacinto Fault to Confluence with Bear Creek

Reach 6- Confluence with Bear Creek to Headwaters (See also Individual Tributary Streams)

San Bernardino Mountain Streams

Mill Creek Drainage:

Mill Creek:

Reach 1- Confluence with Santa Ana River to Bridge Crossing Route 38 at Upper Powerhouse

Reach 2- Bridge Crossing Route 38 at Upper Powerhouse to Headwaters

Mountain Home Creek

Mountain Home Creek, East Fork

Monkey Face Creek

Alger Creek

Falls Creek

Vivian Creek

High Creek

Other Tributaries: Lost, Oak Cove, Green, Skinner, Momyer and Glen Martin Creeks, and other Tributaries to these Creeks

+ Exceeded from MUM by Reg. Bd. Res. 89-42

	MUM	AGR	IND	PROC	GRV	MAV	POW	REC1	REC2	COM	WAR	COL	BIO	WIL	RARE	SPW	MAR	SHEL
Reach 3- Prado Dam to Mission Blvd. in Riverside	+	X			X			X	X		X			X				
Reach 4- Mission Blvd. in Riverside to San Jacinto Fault in San Bernardino	+			X	X			X	X		X			X				
Reach 5- San Jacinto Fault to Confluence with Bear Creek	X	X			I		X	X	X		I	X		X				
Reach 6- Confluence with Bear Creek to Headwaters (See also Individual Tributary Streams)	X	X			X			X	X			X		X		X		
Reach 1- Confluence with Santa Ana River to Bridge Crossing Route 38 at Upper Powerhouse	I	I			I			I	I			I		I				
Reach 2- Bridge Crossing Route 38 at Upper Powerhouse to Headwaters	X	X			X		X	X	X			X		X				
Mountain Home Creek	X				X		X	X	X			X		X				
Mountain Home Creek, East Fork	X				X		X	X	X			X		X		X		
Monkey Face Creek	X				X			X	X			X		X				
Alger Creek	X				X			X	X			X		X				
Falls Creek	X				X		X	X	X			X		X		X		
Vivian Creek	X				X			X	X			X		X				
High Creek	X				X			X	X			X		X				
Other Tributaries: Lost, Oak Cove, Green, Skinner, Momyer and Glen Martin Creeks, and other Tributaries to these Creeks	I				I			I	I			I		I				

X= Present or Potential Beneficial Use
 I= Intermittent Beneficial Use

TABLE 2-1
 BENEFICIAL USES

Water Body

Beneficial Use

INLAND SURFACE STREAMS - Continued

UPPER SANTA ANA RIVER BASIN - Continued

San Gabriel Mountain Streams
 (Mountain Reaches)

San Antonio Creek
 Lytle Creek (South, Middle and North Forks) and
 Coldwater Canyon Creek
 Day and East Etiwanda Creeks
 Valley Reaches of Above Streams
 Cucamonga Creek (Mountain Reach)
 Cucamonga Creek (Valley Reach)
 Other Tributaries (Mountain Reaches): San Sevaine,
 Deer, Duncan Canyon, Henderson Canyon, Bull, Fan,
 Demens, Thorpe, Angalls, Telegraph Canyon, Stoddard
 Canyon, Icehouse Canyon, Cascade Canyon, Cedar,
 Falling Rock, Kerkhoff and Cherry Creeks, and other
 Tributaries to these Creeks

San Timoteo Area Streams

San Timoteo Creek

Reach 1- Santa Ana River Confluence to Gauge at San
 Timoteo Canyon Road
 Reach 2- Gauge at San Timoteo Canyon Road to
 Confluence with Yucaipa Creek
 Reach 3- Confluence with Yucaipa Creek to Section
 24, T2S, R3W (Bunker Hill II Boundary)
 Reach 4- Section 24, T2S, R3W (Bunker Hill II
 Boundary) to Confluence with Little San
 Gorgonio and Noble Creeks (Headwaters of
 San Timoteo Creek)
 Oak Glen, Potato Canyon and Birch Creeks
 Little San Gorgonio Creek
 Yucaipa Creek
 Other Tributaries to these Creeks-
 Valley Reaches
 Other Tributaries to these Creeks-
 Mountain Reaches

	A	I	R	G	M	P	R	R	C	W	C	B	W	R	S	M	S
U	G	M	D	W	A	O	E	E	C	A	O	I	I	A	P	A	H
N	R	D	C	R	V	W	1	2	M	M	D	L	D	E	M	R	L
San Antonio Creek	X	X	X	X	X		X	X	X		X		X				
Lytle Creek (South, Middle and North Forks) and Coldwater Canyon Creek	X	X	X	X	X		X	X	X		X		X				
Day and East Etiwanda Creeks	X			X	X		X	X			X		X				
Valley Reaches of Above Streams	I				I		I	I		I			I				
Cucamonga Creek (Mountain Reach)	X		X	X	X		X	X	X		X		X		X		
Cucamonga Creek (Valley Reach)	+				I		I	I		I			I				
Other Tributaries (Mountain Reaches): San Sevaine, Deer, Duncan Canyon, Henderson Canyon, Bull, Fan, Demens, Thorpe, Angalls, Telegraph Canyon, Stoddard Canyon, Icehouse Canyon, Cascade Canyon, Cedar, Falling Rock, Kerkhoff and Cherry Creeks, and other Tributaries to these Creeks	I				I		I	I		I			I				
<u>San Timoteo Area Streams</u>																	
<u>San Timoteo Creek</u>																	
Reach 1- Santa Ana River Confluence to Gauge at San Timoteo Canyon Road	+	X			X		X	X		X			X				
Reach 2- Gauge at San Timoteo Canyon Road to Confluence with Yucaipa Creek	+	X			X		X	X		X			X				
Reach 3- Confluence with Yucaipa Creek to Section 24, T2S, R3W (Bunker Hill II Boundary)	+				X		X	X		X			X				
Reach 4- Section 24, T2S, R3W (Bunker Hill II Boundary) to Confluence with Little San Gorgonio and Noble Creeks (Headwaters of San Timoteo Creek)	+				X		X	X		X			X				
Oak Glen, Potato Canyon and Birch Creeks	X				X		X	X		X			X				
Little San Gorgonio Creek	X				X		X	X		X			X				
Yucaipa Creek	I				I		I	I		I			I				
Other Tributaries to these Creeks- Valley Reaches	I				I		I	I		I			I				
Other Tributaries to these Creeks- Mountain Reaches	I				I		I	I		I			I				

+ Excepted from MJN by Reg. Bd. Res. 89-42 or 89-99

X= Present or Potential Beneficial Use
 I= Intermittent Beneficial Use

TABLE 2-1
 BENEFICIAL USES

Water Body

Beneficial Use

INLAND SURFACE STREAMS - Continued

UPPER SANTA ANA RIVER BASIN - Continued

Prado Area Streams

Tequesquite Arroyo (Sycamore Creek)

Chino Creek

Temescal Creek

Reach 1- Santa Ana River Confluence to Riverside Canal

Reach 2- Riverside Canal to Lee Lake

Reach 3- Lee Lake (see Lakes, p. 2-13)

Reach 4- Lee Lake to Mid-section line of Sect. 17 (downstream end of freeway cut)

Reach 5- Mid-section line of Sect. 17 (downstream end of freeway cut) to Elsinore Groundwater Subbasin Boundary

Reach 6- Elsinore Groundwater Subbasin Boundary to Lake Elsinore Outlet

Coldwater Canyon Creek

Bedford Canyon Creek

Other Tributaries to these Creeks

+ Exempted from MUM by Reg. Bd. Res. 89-42
 3 Access prohibited in some portions by Riverside County Flood Control

M U M	A G R	I N D	P R O C	G W R	N A V	P O W	R E C 1	R E C 2	C O M M	W A R M	C O L D	B I O L	W I L D	R A R E	S P W N	M A R	S R E L
				I			I	I		I			I				
				X			X	X		X			X				
	X	X		X			X ³	X		X			X				
	I	I		I			I	I		I			I				
	I			I			I	I		I			I				
	I			I			I	I		I			I				
X	X			X			X	X		X			X				
				I			I	I		I			I				
I				I			I	I		I			I				

X= Present or Potential Beneficial Use
 I= Intermittent of Potential Beneficial Use

TABLE 2-1
BENEFICIAL USES

Water Body

Beneficial Use

INLAND SURFACE STREAMS - Continued

SAN JACINTO RIVER BASIN

San Jacinto River

Reach 1- Lake Elsinore to Canyon Lake
 Reach 2- Canyon Lake (see Lakes, p. 2-13)
 Reach 3- Canyon Lake to Nuevo Road
 Reach 4- Nuevo Road to North-South Mid-Section Line, S8, T4S, R1W
 Reach 5- Mid-Section Line Section 8 to Confluence with Poppet Creek
 Reach 6- Poppet Creek to Cranston Bridge
 Reach 7- Cranston Bridge to Lake Hemet
 Bautista Creek- Headwaters to Debris Dam
 Strawberry Creek and San Jacinto River, North Fork
 Fuller Mill Creek
 Stone Creek
 Salt Creek
 Other Tributaries: Indian, Hurkey, Poppet and Potrero Creeks, and other Tributaries to these Creeks

MUN	AGR	IND	PRO	GRA	MIN	POT	RE	RE	CO	WA	CO	BI	WI	RA	SP	MA	SH
1	2	3	4	5	6	7	1	2	3	4	5	6	7	8	9	10	11
I	I			I			I	I		I			I				
+	I			I			I	I		I			I				
+	I			I			I	I		I			I				
+	I			I			I	I		I			I				
I	I			I			I	I		I			I				
X	X			X			X	X			X		X				
X	X			X			X	X			X		X				
X	X			X			X	X			X		X				
X	X			X			X	X			X		X				
+							I	I		I			I				
I	I			I			I	I		I			I				

+ Exceeded from MUN by Reg. Bd. Res. 89-42

X= Present or Potential Beneficial Use
 I= Intermittent Beneficial Use

TABLE 2-1
 BENEFICIAL USES

Water Body

Beneficial Use

LAKES AND RESERVOIRS

UPPER SANTA ANA RIVER BASIN

Baldwin Lake

Big Bear Lake

Evans Lake

Jenks Lake

Lee Lake

Mathews, Lake

Mockingbird Reservoir

Norconian, Lake

LOWER SANTA ANA RIVER BASIN

Anaheim lake

Irvine lake (Santiago Reservoir)

Laguna, Lambert, Peters Canyon,
 Rattlesnake, Sand Canyon and Siphon Reservoirs

SAN JACINTO RIVER BASIN

Canyon Lake (Railroad Canyon Reservoir)

Elsinore, Lake

Fulmor, Lake

Kemet, Lake

Perris, Lake

	MUN	AGR	IND	PO	GR	HA	PO	REC	REC	COM	WAR	COL	BIO	WIL	RA	SP	HA	SH
	N	R	D	W	W	V	W	1	2	M	M	D	L	L	E	W	A	E
Baldwin Lake	+							I	I		I	I		I				
Big Bear Lake	X	X			X			X	X		X	X		X				
Evans Lake	+							X	X		X	X		X				
Jenks Lake	X	X			X			X	X			X		X				
Lee Lake	+	X	X		X			X	X		X			X				
Mathews, Lake	X	X	X	X	X			4	X		X			X	X			
Mockingbird Reservoir	+	X						5	X		X			X				
Norconian, Lake	+							X	X		X			X				
Anaheim lake	+				X			X	X		X			X				
Irvine lake (Santiago Reservoir)	X	X						X	X		X	X		X				
Laguna, Lambert, Peters Canyon, Rattlesnake, Sand Canyon and Siphon Reservoirs	+	X						6	X		X			X				
Canyon Lake (Railroad Canyon Reservoir)	X	X			X			X	X		X			X				
Elsinore, Lake	+							X	X		X			X				
Fulmor, Lake	X	X						X	X		X	X		X				
Kemet, Lake	X	X			X			X	X		X	X		X			X	
Perris, Lake	X	X	X	X	X			X	X		X	X		X				

- + Excepted from MUN by Reg. Bd. Res. 89-42
- 4 Access prohibited by the Metropolitan Water District
- 5 Access prohibited by the Gage Canal Company (owner-operator)
- 6 Access prohibited by Irvine Ranch Company (owner)

X= Present or Potential Beneficial Use
 I= Intermittent Beneficial Use

ATTACHMENT 40

California Regional Water Quality Control Board
Santa Ana Region
2010 Iowa Avenue, Suite 100
Riverside, CA 92507-2409

FACT SHEET

March 8, 1996

ITEM: 11

SUBJECT: Waste Discharge Requirements for the Riverside County Flood Control and Water Conservation District, the County of Riverside, and the Incorporated cities of Riverside County within the Santa Ana Region, Storm Water Run-off Management Program, Order No. 96-30 (NPDES No. CAS 618033)

PROJECT

The attached pages contain information concerning an application for renewal of waste discharge requirements and a National Pollutant Discharge Elimination System (NPDES) permit, Order No. 96-30, NPDES No. CAS 618033, which prescribes waste discharge requirements for urban storm water run-off from the cities and the unincorporated areas in Riverside County within the jurisdiction of the Santa Ana Regional Board. On January 3, 1995 the Riverside County Flood Control and Water Conservation District (RCFC&WCD), the County of Riverside, the Cities of Beaumont, Calimesa, Canyon Lake, Corona, Hemet, Lake Elsinore, Moreno Valley, Norco, Perris, Riverside, and San Jacinto (hereinafter collectively referred to as the Permittees), submitted NPDES Application No. CAS 618033 for an area-wide stormwater discharge permit under NPDES. The permit application was submitted in accordance with the previous NPDES permit (Order No. 90-104, NPDES No. CA 8000192) which expired on July 1, 1995. Additionally, the permit application follows guidance provided by staff of the State Water Resources Control Board (State Board) and the Regional Water Quality Control Boards (Regional Boards).

PROJECT AREA

The permitted area is delineated by the San Bernardino-Riverside County boundary line on the north and northwest, the Orange-Riverside County boundary line on the west, the Santa Ana-San Diego Regional Board boundary line on the south, and the Santa Ana-Colorado River Basin Regional Board boundary line on the east. Areas of the County not addressed or which are excluded by the stormwater regulations and areas not under the jurisdiction of the permittees are excluded from the area requested for coverage under this permit application. This includes the following areas and activities:

- Federal lands and state properties, including, but not limited to, military bases, national forests, hospitals, colleges and universities, and highways;

Fact Sheet - Continued
Order No. 96-30 (NPDES No. CAS 618033)

Page 2 of 5

- Native American tribal lands;
- Open space and rural (non-urbanized) areas;
- Agricultural lands; and
- Utilities and special districts.

As a partial illustration, federal and state lands in Riverside County within the jurisdiction of the Santa Ana Regional Board, for which coverage under a municipal stormwater NPDES permit is excluded, are shown in Appendix A (Western Riverside County NPDES Permit Area).

CLEAN WATER ACT REQUIREMENTS

The Federal Clean Water Act (CWA) allows the United States Environmental Protection Agency (USEPA) to delegate its NPDES permitting authority to states with an approved environmental regulatory program. The State of California is one of the delegated states. The Porter-Cologne Act (California Water Code) authorizes the State Board, through its Regional Boards, to regulate and control the discharge of pollutants into waters of the State and tributaries thereto. Section 405 of the Water Quality Act (WQA) of 1987 added Section 402(p) to the CWA. Pursuant to Section 402(p)(4) of the CWA, the USEPA promulgated regulations for stormwater permit applications for stormwater discharges associated with industrial activities and municipal separate storm drain systems serving a population of 100,000 or more. This permit governing municipal stormwater discharges meets both the statutory requirements of Section 402(p)(3)(B) and all requirements applicable to an NPDES permit issued under the issuing authority's discretionary authority in accordance with Section 401(a)(1)(B) of the CWA.

AREA-WIDE STORMWATER PERMIT

To regulate and control stormwater discharges from the Riverside County area to the municipal storm drain systems, an area-wide approach is essential. The entire storm drain system is not controlled by a single entity; the RCFC&WCD, the County, several Cities, the State Department of Transportation (Caltrans), and the U.S. Army Corps of Engineers, in addition to other smaller entities, manage the systems. In addition to the Cities, the County and the RCFC&WCD, there are a number of other significant contributors of urban stormwater runoff to these storm drain systems. These include: large institutions such as the State university system, schools, hospitals, etc.; federal facilities such as military sites, etc.; State agencies such as Caltrans; water and wastewater management agencies such as Eastern and Western Municipal Water District; the National Forest Service and State parks. The Regional Board has issued a separate NPDES permit to Caltrans. In addition, Caltrans, and the other contributors identified, are not under the jurisdiction of the Permittees. The management and control of the entire flood control system cannot be effectively carried out without the cooperation and efforts of all these entities. Also, it would not be meaningful to issue a separate stormwater permit to each of the entities within the permitted area whose

Fact Sheet - Continued
Order No. 96-30 (NPDES No. CAS 618033)

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land/facilities drain into the storm drain systems operated by the Permittees. The Regional Board has concluded that the best management option for the Riverside County area is to issue an area-wide stormwater permit to the RCFC&WCD, Riverside County, and the cities in Riverside County. A separate stormwater NPDES permit has been issued to Caltrans. Stormwater discharges from other state, federal, utility, or special district facilities and state or federal lands will either be added to the Riverside County permit or permitted separately.

Some of the RCFC&WCD storm drain systems discharge into storm drain systems controlled by other entities, such as the Orange County Flood Control District, which is (or will be) regulated under the Regional Board's Order No. 96-30, NPDES No. CA 8000192. Some areas within Riverside County are within the Colorado River Basin and San Diego Regional Boards' jurisdiction. Permit requirements for stormwater runoff from the drainage areas of Riverside County within the jurisdiction of the San Diego and Colorado River Basin Regional Boards are addressed by these Regional Boards.

COORDINATION WITH OTHER REGIONAL AGENCIES

In developing best management practices and monitoring programs, consultation/coordination with other drainage management entities and other Regional Boards is essential. Regional Board staff will coordinate the program with other Regional Boards and other flood control entities/cities on an "as needed" basis. The permit/program process is at the same stage of development in both the Santa Ana and San Diego Regional Board areas of Riverside County. Common programs, reports, implementation schedules and efforts are desirable and will be utilized to the maximum extent practicable.

EXISTING FACILITIES AND PROGRAMS

Within the Santa Ana Region, the RCFC&WCD serves a population of approximately 930,000, occupying an area of approximately 1,360 square miles. The RCFC&WCD's system includes an estimated 200 miles of open and closed storm drains. The storm drain systems operated by the remaining Permittees include an estimated 57 miles of open and closed storm drains. Approximately one-quarter (1/4) of Riverside County drains into water bodies within this Regional Board's jurisdiction. Stormwater discharges from urbanized areas consist mainly of surface runoff from residential, commercial, and industrial developments. In addition, there are stormwater discharges from agricultural land uses, including dairy operations. However, the WQA specifically excludes agricultural discharges from regulation under this program. The constituents of concern and significance in storm water discharges are: total suspended solids, biochemical oxygen demand (BOD), chemical oxygen demand (COD), oil and grease (O&G), heavy metals, nutrients and organic chemicals such as base/neutral and acid extractables, pesticides and herbicides, and petroleum hydrocarbon components.

To protect the beneficial uses of waters of the State, the pollutants from all sources need to be controlled. Recognizing this, and the fact that stormwater discharges contain pollutants, the

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Permittees and the Regional Board have all agreed that an area-wide stormwater permit is the most effective way to develop and implement a comprehensive stormwater management program in a timely manner. ~~This area-wide stormwater permit contains requirements with time schedules that~~ will allow the Permittees to continue to address water quality problems caused by urban stormwater runoff through their management programs to reduce pollutants in stormwater discharges to the maximum extent practicable.

PERMIT REQUIREMENTS

In accordance with Section 402(p)(3), as part of a program to reduce the pollutants in stormwater discharges to the maximum extent practicable, the Permittees have been required to submit existing management plans and programs being implemented or developed in the previous municipal stormwater NPDES permit to reduce pollutants in stormwater discharges. In addition, the permittees will be required to report, review and/or revise the management programs and control measures in accordance with a time schedule approved by the Executive Officer of the Regional Board for this municipal permit.

If existing management programs are not effective in controlling pollutant loading and in achieving the water quality objectives of the receiving waters, additional programs shall be developed and implemented upon consultation and approval of the Executive Officer.

The permit also requires the development and implementation of management programs and/or best management practices (BMPs) during the life of the permit such that the quality of stormwater discharged can be improved and the water quality objectives of the receiving waters ultimately can be met. It is also expected that through implementation of these programs and/or BMPs the beneficial uses of the receiving waters will be protected.

BENEFICIAL USES

Stormwater flows which are discharged to municipal storm drain systems in Riverside County are tributary to various water bodies (inland surface streams and lake and reservoirs) of the state. The beneficial uses of these water bodies include municipal and domestic supply, agricultural supply, industrial service supply, industrial process supply, groundwater recharge, water contact recreation, non-contact water recreation, warm freshwater habitat, cold freshwater habitat, wildlife habitat, and preservation of rare and endangered species. The ultimate goal of this stormwater management program is to protect the beneficial uses of the receiving waters.

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ANTIDEGRADATION ANALYSIS

The Regional Board has considered whether a complete antidegradation analysis, pursuant to 40 CFR 131.12 and State Board Resolution No. 68-16, is required for these stormwater discharges. The Regional Board finds that the pollutant loading rates to the receiving waters will be reduced with the implementation of the requirements in this order. As a result, the quality of stormwater discharges and receiving waters will be improved, thereby protecting the beneficial uses of waters of the United States. This is consistent with the federal and state antidegradation requirements and a complete antidegradation analysis is not necessary.

PUBLIC WORKSHOP

The Regional Board recognizes the significance of Riverside County's Storm Water/Cleanwater Protection Program and will conduct, participate, and/or assist with at least one workshop every year during the term of this permit to promote and discuss the progress of the stormwater management program. The details of the annual workshop will be published in local newspapers and mailed to interested parties. Persons wishing to be included in the mailing list for any of the items related to this permit may register their name, mailing address and phone number with the Regional Board office at the address given below.

PUBLIC HEARING

The Regional Board will hold a public hearing regarding the proposed waste discharge requirements. The public hearing is scheduled to be held on March 8, 1996, starting at 9:30 a.m. at the City Council Chambers, 3300 Newport Boulevard, Newport Beach, California. Further information regarding the conduct and nature of the public hearing concerning these waste discharge requirements may be obtained by writing or visiting the Santa Ana Regional Board office, 2010 Iowa Avenue, Suite 100, Riverside, CA 92507.

INFORMATION AND COPYING

Persons wishing further information may write to the above address or call Pavlova Vitale at 909/782-4920. Copies of the application, proposed waste discharge requirements, and other documents (other than those which the Executive Officer maintains as confidential) are available at the Regional Board office for inspection and copying by appointment scheduled between the hours of 10:00 a.m. and 4:00 p.m., Monday through Thursday (excluding holidays).

REGISTER OF INTERESTED PERSONS

Any person interested in a particular application or group for applications may leave his name, address and phone number as part of the file for an application. Copies of tentative waste discharge requirements will be mailed to all interested parties.

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SANTA ANA REGION**

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT

NPDES NO. CAS 618033

AND

WASTE DISCHARGE REQUIREMENTS

ORDER NO. 96-30

FOR

**THE RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION
DISTRICT, THE COUNTY OF RIVERSIDE, AND THE INCORPORATED CITIES OF
RIVERSIDE COUNTY WITHIN THE SANTA ANA REGION
AREAWIDE URBAN STORM WATER RUN-OFF**

The California Regional Water Quality Control Board, Santa Ana Region (hereinafter Regional Board), finds that:

1. On January 3, 1995, the Riverside County Flood Control and Water Conservation District (RCFC&WCD), in cooperation with the County of Riverside, and the incorporated cities of Beaumont, Corona, Calimesa, Canyon Lake, Hemet, Lake Elsinore, Moreno Valley, Norco, Perris, Riverside, and San Jacinto (hereinafter collectively referred to as "permittees"), have jointly submitted a National Pollutant Discharge Elimination System (NPDES) Application No. CAS 618033 to renew their areawide NPDES permit for urban storm water run-off.
2. The 1987 amendments to the Clean Water Act required the United States Environmental Protection Agency (EPA) to develop permitting regulations for storm water discharges from municipal separate storm sewer systems serving a population of 100,000 or more and for storm water discharges associated with industrial activities, including construction sites. The EPA published proposed storm water regulations on December 7, 1988 and promulgated the final regulations on November 16, 1990. Prior to the EPA's promulgation of the final storm water regulations, the three counties (Orange, Riverside, and San Bernardino) and the incorporated cities within the jurisdiction of the Santa Ana Regional Board requested areawide NPDES permits for urban storm water run-off.
3. On July 13, 1990, the Regional Board adopted Order No. 90-104 for urban storm water run-off from urban areas in Riverside County within the Santa Ana Region. Order No. 90-104 expired on July 1, 1995. The Riverside County Flood Control and Water Conservation District was named as the principal permittee and Riverside County and the incorporated cities were named as the co-permittees. In order to more effectively carry out the requirements of this order, the permittees have agreed that the RCFC&WCD will continue as principal permittee and Riverside County and the incorporated cities will continue as co-permittees. However, the Regional Board, in exercising its enforcement discretion, will take action only against the individual permittee responsible for specific violations of this order, whenever possible.

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4. Order No. 90-104 required the permittees to develop and implement a drainage area management plan (DAMP); develop and implement storm water and receiving water monitoring plans; to eliminate illegal and illicit discharges to the storm drain systems; and, to enact the necessary legal authority to effectively prohibit illegal and illicit discharges. The overall goal of these requirements was to reduce pollutant loadings to surface waters from urban run-off to the maximum extent practicable (MEP)¹. This Order regulates urban storm water run-off² from areas under the jurisdiction of the permittees.
5. The Report of Waste Discharge (the permit renewal application) included the following major components:
 - a. A map of the drainage area and maps of existing storm drain facilities
 - b. A summary of the storm water management program
 - c. A Consolidated Program for Water Quality Monitoring
 - d. A copy of a Proposed Storm Water/Urban Run-off Management and Discharge Control Ordinance
 - e. A copy of the current Implementation Agreement
 - f. A copy of the Interagency Agreement
 - g. The Drainage Area Management Plan (DAMP)
 - h. A copy of Proposed Riverside County Grading and Erosion Control Ordinance
6. Within the Santa Ana Region, the permittees serve a population of approximately 930,000, occupying an area of approximately 1,360 square miles. The permitted area is shown on Appendix 1. This order regulates storm water run-off from areas under the jurisdiction of the permittees. The term storm water as used in this order includes storm water run-off, snow melt run-off, and surface run-off and drainage. The average annual rainfall in the urbanized area of Riverside County ranges from 10 to 12 inches. The permittees have jurisdiction over and/or maintenance responsibility for storm water conveyance systems within Riverside County. The storm drain system includes an estimated 200 miles of open and closed storm drains owned and operated by RCFC&WCD and an estimated 57 miles of open and closed storm drains owned and operated by the remaining permittees. The permittees have identified major outfalls(with a pipe diameter of 36 inches or greater or drainage areas draining 50 acres or more) and have submitted maps of existing storm drain facilities.
7. Approximately one quarter (1/4) of the entire Riverside County area drains into water bodies within the Santa Ana Region. Most of the urbanized areas of Riverside County lie within this Regional Board's jurisdiction. Storm water run-off from other portions of Riverside County is regulated by the San Diego and Colorado River Basin Regional Boards. The

¹ Maximum Extent Practicable (MEP) means to the maximum extent possible, taking into account equitable considerations of synergistic, additive and competing factors, including but not limited to the gravity of the problem, fiscal feasibility, public health risks, societal concerns and social benefits.

² Urban storm water run-off discharges include those discharges from residential, commercial, industrial and construction areas within the permitted area and excludes discharges from feedlots, dairies and farms

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discharges consist of run-off from rainfall, snow melt, and surfacing ground water from various land use areas which either discharge directly to the Santa Ana River or to watercourses tributary to the Santa Ana River. Other major rivers in the area include the San Jacinto River and Temescal Creek. The San Jacinto Mountain areas drain into the San Jacinto River, which discharges into Lake Elsinore. Any overflow from Lake Elsinore is tributary to Temescal Creek, which flows into Reach 3 of the Santa Ana River in the Prado Flood Control Basin.

8. The Santa Ana River Basin is the major watershed within this Region. This watershed is divided into the upper and lower Santa Ana watersheds. The lower Santa Ana River Basin (downstream from Prado Dam) includes the Orange County drainage areas and the Upper Santa Ana River Basin includes the San Bernardino County and the Riverside County drainage areas. The San Bernardino County drainage areas are generally upstream of the Riverside County drainage areas.
9. The three county areas within this Region are regulated under three areawide permits for urban storm water run-off. These areawide NPDES permits are:
 - a. Orange County, NPDES No. CA 8000180, Order No. 90-71 (upon renewal NPDES No. CAS 618030, Order No. 96-31)
 - b. Riverside County, NPDES No. CA 8000192, Order No. 90-104 (upon renewal NPDES No. CAS 618033, Order No. 96-30)
 - c. San Bernardino County, NPDES No. CA 8000200, Order No. 90-136 (upon renewal NPDES No. CAS 618036, Order No. 96-32)
10. Run-off from the San Bernardino County drainage areas is generally conveyed to the Riverside County drainage areas through the Santa Ana River or other drainage channels tributary to the Santa Ana River. These flows are then discharged to Reach 2 of the Santa Ana River through Prado Dam (Reach 3 of the Santa Ana River). Most of the flow in Reach 2 is recharged in Orange County. During wet weather, some of the flow is discharged to the Pacific Ocean through Reach 1 of the Santa Ana River.
11. In addition to the Regional Board, a number of other stakeholders are involved in the management of the water resources of the Region. These include, but are not limited to, the incorporated cities in the Region, publicly owned treatment works, the three counties, and the Santa Ana Watershed Project Authority and its member agencies. The entities listed in Appendix 2 are considered as potential dischargers of storm water to the Riverside County drainage areas. It is expected that these entities will also work cooperatively with the permittees to manage urban run-off. The Regional Board has the discretion and authority to require non-cooperating entities to participate in this areawide permit or to issue individual storm water permits, pursuant to 40 CFR 122.26(a). Cooperation and coordination among all the stakeholders are critical to optimize the use of limited resources and insure economical management of the watershed. Recognizing this fact, this order focusses on watershed

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management and seeks to integrate the programs of all the stakeholders, especially the three municipal storm water permit holders, within this watershed.

12. The 1989, 1991, and 1994 Water Quality Assessments by the Regional Board identified impairment of a number of water bodies within the permitted area. The beneficial uses of these water bodies are threatened or impaired in part due to urban storm water run-off and non-storm water flows from urbanized areas. Preliminary results from urban storm water monitoring programs within the Region indicate that major pollutants of concern in urban run-off are certain heavy metals, sediment, coliform bacteria, pesticides, and nutrients. Municipal storm water run-off is a source of pollutants to waters of the Region that may be causing or contributing to water quality impairment. It is recognized that instream or end-of-channel treatment of storm water is difficult and expensive. Therefore, it is critical to identify the pollutant sources and to develop management practices necessary to reduce pollutant loading to storm water. The quality of these discharges varies considerably and is affected by land use activities, basin hydrology and geology, season, the frequency and duration of storm events and point source discharges permitted by the Regional Board under individual permits.
13. Studies conducted by the EPA, the states, flood control districts and other entities indicate the following major sources of urban storm water pollution nationwide:
 - a. Industrial sites where appropriate pollution control and best management practices (BMPs) are not implemented,
 - b. Construction sites where erosion and siltation controls and BMPs are not implemented, and
 - c. Urban run-off where the drainage area is not properly managed.
14. To address the industrial and construction sites, the State Water Resources Control Board (State Board) issued two statewide general NPDES permits: one for storm water run-off from industrial sites (NPDES No. CAS000001, General Industrial Activities Storm Water Permit) and the second one for storm water run-off from construction sites (NPDES No. CAS000002, General Construction Activity Storm Water Permit). Most industrial activities (some light industrial activities are exempt) and construction activities on five acres or more are required to get individual NPDES permits for storm water discharges, or get coverage under these statewide general permits by completing and filing a Notice of Intent (NOI) with the State Board.
15. In addition, the Regional Board adopted Order No. 94-005, NPDES NO. CA 8000279, for storm water run-off from facilities owned and/or operated by Caltrans, which includes freeways and highways, and Order No. 94-7, NPDES NO. CA 8000336, for concentrated animal feeding operations, including dairies (General Dairy Permit). The Regional Board has issued and continues to issue individual storm water permits for certain industrial facilities within the Region.

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16. One of the major components of these statewide permits, the Caltrans permit, and the General Dairy Permit is the requirement for the development and implementation of a storm water pollution prevention plan (SWPPP).
17. The Regional Board is the enforcing authority for the two statewide general permits. However, in most cases, the industrial and construction sites discharge directly into storm drains and/or flood control facilities owned and operated by the permittees. These industrial and construction sites are also regulated under local laws and regulations. Therefore, a coordinated effort between the permittees and the Regional Board is critical to avoid duplicative storm water regulatory activities. A memorandum of understanding between the permittees and the Regional Board may be appropriate to efficiently implement the storm water regulations for industries and construction sites at the local level.
18. The permittees generally conduct inspections of industrial and commercial facilities and construction sites within their jurisdiction to determine compliance with local storm water ordinances and regulations as well as for other regulatory purposes. The permittees have established a subcommittee to develop an enforcement/compliance strategy for industrial and commercial facilities and construction sites. The permittees have agreed to notify Regional Board staff when conditions are observed during such inspections which result in a threat or potential threat to water quality. This also includes failure to obtain coverage under the general storm water permits.
19. The permittees have agreed not to issue grading and/or building permits without proof of compliance for projects subject to the State's General Construction Activity Storm Water Permit.
20. The permittees own/operate facilities where industrial or related activities take place that may have an impact on storm water quality. Some of the permittees also enter into contracts with outside parties to carry out activities that may also have an impact on storm water quality. These facilities and related activities include, but are not limited to, street sweeping, catch basin cleaning, maintenance yards, vehicle and equipment maintenance areas, waste transfer stations, corporation and storage yards, parks and recreational facilities, landscape and swimming pool maintenance activities, storm drain system maintenance activities and the application of herbicides, algacides and pesticides. As part of this order, the permittees will assess public agency activities and facilities for potential impact to storm water quality and develop and implement best management practices to reduce pollutant discharges from those activities/facilities found to be significant sources of pollutants. Non-storm water discharges from these facilities and/or activities also affect water quality. This order prohibits non-storm water discharges from public facilities unless the discharges are exempt under Section III., Discharge Limitations, 3 of this order or are permitted by the Regional Board under an individual NPDES permit.

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21. The major focus of storm water pollution prevention is the development and implementation of an appropriate drainage area management plan (DAMP) including best management practices (BMPs). The ultimate goal of the urban storm water management program is to attain water quality consistent with the water quality objectives for the receiving waters in order to protect beneficial uses. The permittees developed and submitted a DAMP, which was approved on January 18, 1994.
22. The DAMP is a dynamic document and the permittees have implemented, or are in the process of implementing its various elements. The Regional Board also recognizes other drainage area management plans such as the Drainage Water Quality Plan for Lake Mathews (DWQPLM), which includes structural BMPs for pollution control. The RCFC & WCD and Riverside County are involved in the DWQPLM.
23. There is some contribution of pollutants in urban run-off from privately owned and operated facilities such as residences, businesses and commercial establishments and public and private institutions. Therefore, a successful storm water management plan should include the participation and cooperation of the public, businesses, and institutions. Therefore, the DAMP has a strong emphasis on public education.
24. The DAMP included 34 BMPs and a time schedule for implementation. These BMPs are organized into two components: BMPs for existing facilities and BMPs for new development. Both components include regulatory activities, public education programs and operations and maintenance activities.
25. In order to characterize storm water discharges, to identify problem areas, and to determine the effectiveness of the various BMPs, an effective monitoring program is critical. From 1990 through 1995, the principal permittee administered the monitoring program for the permittees which included storm water monitoring, receiving water monitoring, dry weather monitoring and sediment monitoring. The Report of Waste Discharge included a Consolidated Program for Water Quality Monitoring.
26. In order to make the best use of limited resources of all the permittees (including other municipal permittees in San Bernardino and Orange Counties), and to derive maximum benefit from the storm water management programs, future programs should consider and explore approaches and program elements common to all three counties. An integrated management program may be developed with the cooperation of all the stakeholders, including the permittees in the three counties, and the Regional Board. The Regional Board will coordinate the activities within the watershed and seek participation of the permittees

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27. The permittees have agreed to revise the implementation agreement that was developed in 1990 as required under Order No. 90-104 to coordinate the activities of the principal and co-permittees.
28. Illegal dumping and illicit/illegal connections and discharges to the storm drains are contributors to storm water and other surface water contamination. All the permittees have completed a reconnaissance survey of the municipal storm drain systems (open channels and underground storm drains). The permittees are required to detect, identify and eliminate illicit/illegal discharges. Additionally, the permittees are required to develop a program to prohibit illegal/illicit connections to their storm drains and flood control facilities.
29. This order requires the permittees to continue to implement the BMPs listed in the DAMP and to effectively prohibit illegal and illicit discharges to the storm drain system. One of the major elements of the DAMP, the Storm Water/Urban Run-off Management and Discharge Controls Ordinance, was adopted by Riverside County on May 9, 1995. The purpose of this ordinance is to reduce pollutant discharges in storm water, and to regulate illicit connections and non-storm water discharges to the storm drain system.
30. Early identification of potential storm water impacts and mitigation measures can significantly reduce storm water pollution problems. The permittees should consider these impacts and appropriate mitigation measures in planning procedures, in the California Environmental Quality Act (CEQA) review process for specific projects, Master Plans, etc.
31. Successful implementation of the provisions and limitations in this order will require the cooperation of all the public agency organizations within Riverside County having programs/activities that have an impact on storm water quality (e.g., Fire Department, Department of Environmental Health, Planning Department, Building and Safety, Code Enforcement, etc.). As such, these organizations are expected to actively participate in implementing this areawide storm water program.
32. The permittees may lack legal jurisdiction over storm water discharges into their systems from some of the State and federal facilities, agricultural land, utilities and special districts, and Native American tribal lands. The Regional Board recognizes that the permittees should not be held responsible for such facilities and/or discharges.
33. The permittees may petition the Regional Board to issue a NPDES permit to any discharger of non-storm water into storm drain systems that the permittees own or operate.
34. A revised Water Quality Control Plan (Basin Plan) was adopted by the Regional Board and became effective on January 24, 1995. The Basin Plan contains water quality objectives and beneficial uses for water bodies in the Santa Ana Region.

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35. The requirements contained in this order are necessary to implement the Basin Plan.
36. In accordance with the Clean Water Act and its implementing regulations, this order requires the permittees to develop and implement programs and policies necessary to control the discharge of pollutants to waters of the United States to the maximum extent practicable.
37. The legislative history and the preamble to the federal storm water regulations indicate that Congress and the U.S. EPA were aware of the difficulties in regulating urban storm water run-off solely through traditional end-of-pipe treatment. However, the U.S. EPA and the State Water Resources Control Board have determined that the NPDES permits for urban storm water run-off must contain effluent limitations based on water quality standards (beneficial uses and water quality objectives). The development and implementation of best management practices (BMPs), which will achieve compliance with applicable standards, are generally considered to be acceptable as effluent limitations. In accordance with Section 402 (p) of the Clean Water Act, this order requires the permittees to develop controls to reduce the discharge of pollutants to the maximum extent practicable. If urban storm water discharges cause an exceedance of the water quality standards in the receiving waters, the BMPs must be reevaluated, revised and implemented as appropriate to address any exceedances of receiving water quality standards. Numeric and narrative water quality objectives are contained in the Basin Plan for the water bodies in this Region. This order does not contain numeric effluent limitations for any constituents because the impact of the storm water discharges on the water quality of the receiving waters has not yet been fully determined. Extensive water quality monitoring and analysis of the data are essential to make that determination. Due to the high cost associated with monitoring, and due to the variability that exists in the current storm water monitoring efforts being conducted by the permittees and other municipal permittees in Orange and San Bernardino Counties under their municipal storm water permits, a tri-county monitoring program to develop and implement effective monitoring procedures and strategies will be considered.
38. It is the Regional Board's intent that this order shall achieve attainment and protection of the beneficial uses of receiving waters. This order therefore, includes Receiving Water Limitations required to implement water quality objectives and to prevent nuisance and water quality impairment in receiving waters. The Permit requires implementation of control measures in accordance with the approved DAMP that will reduce pollutants in storm water discharges to the maximum extent practicable. The Receiving Water Limitations require the implementation of control measures that are technically and economically feasible as necessary to protect beneficial uses and attain water quality objectives in the receiving waters.

The Regional Board finds that the unique aspects of the regulation of storm water discharges through municipal storm sewer systems, including intermittent discharges, difficulties in monitoring and limited physical control over the discharge, will require adequate time to

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implement and evaluate the effectiveness of best management practices and to determine whether they will adequately protect receiving waters. Therefore, the permit includes a procedure for determining whether storm water discharges are causing continuing or recurring exceedances of receiving water limitations and for evaluating whether the approved DAMP must be revised. The permittees will be in compliance with the Receiving Water Limitations so long as the permittees comply with that procedure.

39. The storm water regulations require public participation in the storm water management program development and implementation. As such the permittees are required to solicit and consider all comments received from the public and submit copies of the comments to the Executive Officer of the Regional Board. In considering the public comments, the permittees may modify reports, plans, or schedules prior to submittal to the Regional Board.
40. In accordance with California Water Code Section 13389, the issuance of waste discharge requirements for this discharge is exempt from those provisions of the California Environmental Quality Act contained in Chapter 3 (commencing with Section 21100), Division 13 of the Public Resources Code.
41. The Regional Board has considered anti-degradation requirements, pursuant to 40 CFR 131.12 and State Board Resolution No. 68-16, for this discharge. The Regional Board finds that the storm water discharges are consistent with the federal and state anti-degradation requirements and a complete anti-degradation analysis is not necessary.
42. The Regional Board has notified the permittees and interested parties of its intent to issue waste discharge requirements for this discharge and has provided them with an opportunity to submit their written views and recommendations.
43. The Regional Board, in a public hearing, heard and considered all comments pertaining to the discharge and to the tentative requirements.

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 thereunder, and the provisions of the Clean Water Act, as amended, and the regulations and guidelines adopted thereunder, shall comply with the following:

I. RESPONSIBILITIES OF THE PRINCIPAL PERMITTEE:

The principal permittee shall be responsible for managing the overall storm water program and shall:

1. Conduct water quality and hydrographic monitoring of the municipal separate drain system outfalls as agreed upon by the Executive Officer of the Regional Board.

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2. Develop criteria for inspections of the municipal storm drain systems.
3. Conduct inspections of the storm drain systems owned and operated by the RCFC&WCD.
4. Implement management programs, monitoring programs, and related plans as required by this order.
5. Enact and revise policies and ordinances necessary to establish and maintain adequate legal authority within the scope of the Riverside County Flood Control and Water Conservation District Act, as required by the Federal Storm Water Regulations, 40CFR, Part 122.26(d)(2)(i)(A-F).
6. Respond and/or arrange for responding to emergency situations such as accidental spills, leaks, illicit discharges/illegal connections, etc., to prevent or reduce the discharge of pollutants to the municipal separate storm drain systems and to waters of the United States.
7. Prepare and submit to the Executive Officer of the Regional Board, unified reports, plans, and programs necessary to comply with this order.

The activities of the principal permittee should include, but not be limited to, the following:

8. Coordinate permit activities and participate in any committees/subcommittees formed to coordinate permit compliance activities.
9. Provide technical and administrative support and inform the co-permittees of the progress of other pertinent municipal programs, pilot projects, research studies, etc.
10. Coordinate the implementation of areawide storm water quality management activities such as monitoring programs, public education, other pollution prevention measures, household hazardous waste collection, etc.
11. Gather and disseminate information on the progress of statewide municipal storm water programs and evaluate the information for potential use in the execution of this order.
12. Monitor the implementation of the plans and programs required by this order and determine their effectiveness in reducing pollutant loadings to surface waters to the maximum extent practicable.

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13. Coordinate activities pertaining to implementation of this order with the Regional Board.
14. Solicit and coordinate public input for any major proposed storm water management programs and implementation plans.
15. Develop and implement mechanisms, performance standards, etc., to promote consistent implementation of BMPs among the permittees.
16. In conjunction with the co-permittees, implement the BMPs listed in the approved DAMP.

II. RESPONSIBILITIES OF THE CO-PERMITTEES

Each co-permittee shall be responsible for managing the storm water program within its jurisdiction and shall:

1. Adopt the Grading and Erosion Control Ordinance or its equivalent, within 120 days of adoption of this order.
2. Conduct storm drain system inspections in accordance with the criteria developed by the principal permittee.
3. Enact and revise policies and ordinances necessary to establish and maintain adequate legal authority as required by the Federal Storm Water Regulations, 40CFR, Part 122.26(d)(2)(i)(A-F).
4. Implement management programs, monitoring programs, and related plans as required by this order.

The co-permittees' activities should include, but not be limited to, the following:

5. Administer the storm water and erosion control ordinances adopted pursuant to Item 1., above.
6. Conduct and coordinate with the principal permittee any surveys, monitoring and/or characterizations needed to identify the pollutant sources and drainage areas.
7. Review and comment on all plans, strategies, management programs, monitoring programs, as developed by the principal permittee or any subcommittee to comply with this order.

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8. Cooperate in committees and/or subcommittees formed by the principal permittee to address compliance with this order.
9. In conjunction with the principal permittee, implement the BMPs listed in the approved DAMP.
10. Submit to the principal permittee any information necessary to develop unified report submittals to the Executive Officer of the Regional Board.
11. Prepare and submit any specific reports/information related to the permittees' storm water program as deemed necessary by the Executive Officer of the Regional Board.

III. DISCHARGE LIMITATIONS

1. The permittees shall prohibit illicit discharges from entering into the municipal separate storm sewer systems (municipal storm drain systems) and require controls to reduce the discharge of pollutants to the maximum extent practicable.
2. This order authorizes storm water discharges to waters of the State from the permittees' existing municipal separate storm drain systems provided that the permittees implement the BMPs (structural and/or non-structural control measures) necessary to reduce the pollutants in the discharge to the maximum extent practicable. All other discharges are prohibited except those listed under Item 3., below, those for which the Regional Board has issued individual permits, and those discharges which are in accordance with Item 5., below.
3. The following discharges need not be prohibited by the permittees unless identified by the permittees as sources of pollutants to the waters of the United States.
 - a. Discharges covered by an NPDES permit, or for which an approval has been issued by the Regional or State Board office;
 - b. Discharges from potable water line flushing and other potable water sources;
 - c. Discharges from fire fighting and fire hydrant testing and flushing;

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- d. Discharges from landscape irrigation, lawn watering and other irrigation activities;
- e. Diverted stream flows;
- f. Rising ground waters and natural springs;
- g. Uncontaminated groundwater infiltration (as defined in 40 CFR 35.2005(20)) and uncontaminated pumped groundwater;
- h. Passive foundation drains;
- i. Air conditioning condensate;
- j. Water from crawl space pumps;
- k. Passive footing drains;
- l. Discharges from individual residential vehicle washing (not including discharges from mobile sources such as automobile/equipment detailing or washing);
- m. Flows from riparian habitats and wetlands;
- n. Dechlorinated swimming pool discharges;
- o. Street wash water and run-off from fire fighting (program descriptions shall address discharges or flows from fire fighting only where such discharges are identified as significant sources of pollutants to waters of the United States),
- p. Waters not otherwise containing wastes as defined in California Water Code Section 13050 (d); and
- q. Other types of discharges identified and recommended by the permittees and approved by the Regional Board.

For purposes of this order, a discharge may include storm water and other types of discharges as indicated above.

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4. The permittees shall take necessary steps as required under Item 1., above, to ensure that non-storm water discharges to the municipal storm drain system do not cause or contribute to violations of water quality objectives or discharge pollutants to waters of the United States.
5. Non-storm water discharges from permittees' activities into waters of the state are prohibited unless the non-storm water discharges are permitted by an NPDES permit or are included in Item 3., above. If permitting or immediate elimination of the non-storm water discharges is impractical, the permittees shall include in the storm water pollution prevention strategy, required under Section V., Provision 13., of this order, a proposed plan to address the non-storm water discharges.
6. The discharge shall not cause or contribute to degradation of groundwaters.
7. Pollutants in storm water discharges from the municipal separate storm sewer system shall be reduced to the maximum extent practicable.

IV. RECEIVING WATER LIMITATIONS

1. Receiving water limitations are based upon beneficial uses, water quality objectives and water quality standards contained in the Basin Plan, and amendments thereto, and on ambient water quality. They are intended to protect the beneficial uses and attain the water quality objectives contained in the Basin Plan. The discharge of urban storm water, or non-storm water from a municipal storm sewer system for which the permittees are responsible under the terms of this permit shall not cause continuing or recurring impairment of beneficial uses or exceedances of water quality objectives. The permittees will not be in violation of this provision so long as they are in compliance with the requirements set forth in 2.
2. If the Executive Officer determines that a continuing or recurring impairment of beneficial uses or exceedance of water quality objectives has been caused by urban storm water discharges from the municipal storm sewer system, the following steps shall be taken:
 - a. The Executive Officer will evaluate the adequacy of the permittees implementation of the approved DAMP based on the permittees submitted reports. The Executive Officer will determine if implementation of the approved DAMP has a reasonable likelihood of preventing future continuing or recurring impairment of beneficial uses or exceedances of water quality objectives resulting from urban storm water discharges. If the Executive

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Officer makes this determination, the permittees are required to continue implementing the approved DAMP.

- b. If the Executive Officer determines that the implementation of the approved DAMP will not have a reasonable likelihood of preventing future impairment of beneficial uses or exceedances of water quality objectives, the permittees shall, upon notice from the Executive Officer, do the following:
 - i. Submit a report that includes an evaluation of the relative contribution of the urban storm water discharges to the impairment of beneficial uses or the exceedance of water quality objectives. The report shall address the persistence, the significance, and to the extent feasible, the causes of the impairment or exceedance, and the technical and economic feasibility of control actions available to the permittees to reduce or eliminate the impairment or exceedance.
 - ii. Submit a report reviewing the approved DAMP to determine whether it should be revised so that there will be a reasonable likelihood of preventing future continuing or recurring beneficial use impairment or exceedances of water quality objectives, or whether revisions to achieve protection of beneficial uses or attainment of water quality objectives are technically or economically infeasible. If the report recommends revision of the approved DAMP, the report shall include a work plan to revise the DAMP so that it will have a reasonable likelihood of preventing future continuing or recurring beneficial use impairment or exceedances of water quality objectives. If the report concludes that no revisions are necessary to achieve protection of beneficial uses or attainment of water quality objectives, the report shall explain how implementation of the approved DAMP will achieve compliance. If the report determines that revisions to achieve protection of beneficial uses or attainment of water quality objectives are technically or economically infeasible, the permittees shall continue to comply with the approved DAMP, shall fully document this determination and shall make recommendations for actions to achieve compliance, including for example, commencement of a total maximum daily load report or revisions of the Basin Plan or mitigation projects to protect beneficial uses, and identification of possible funding sources for such actions.
 - iii. The permittees shall implement the work plan and the revised DAMP as approved by the Executive Officer.

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3. The Executive Officer shall review and approve or disapprove the reports required under Receiving Water Limitation 2. The reports may be submitted as part of the next Annual Report, or at some other time designated by the Executive Officer. So long as the permittees have complied with the procedures set forth in Receiving Water Limitation 2, they do not have to repeat the procedure for continuing or recurring exceedances of the same receiving water limitations. As appropriate, any determinations under this part or revisions to the approved DAMP may be considered by the Regional Board in a public meeting.

V. PROVISIONS

GENERAL

1. Permittees shall demonstrate compliance with all the requirements in this order and specifically with Section III., Discharge Limitations, and Section IV., Receiving Water Limitations, through timely implementation of their approved Drainage Area Management Plan and any approved modifications, revisions, or amendments thereto, which are developed pursuant to this order. The Drainage Area Management Plan and any amendments thereto are hereby made an enforceable part of this order.
2. Permittees shall implement all elements of the approved DAMP. Any proposed revisions to the DAMP shall be submitted to the Executive Officer of the Regional Board for review and approval. All revisions to the DAMP approved by the Executive Officer shall be implemented in a timely manner.
3. The permittees shall comply with Monitoring and Reporting Program No. 96-30, which is hereby made a part of this order, and any revisions thereto. The Executive Officer is authorized to revise the Monitoring and Reporting Program and also to allow the permittees to participate in regional, statewide, national, or other monitoring programs in lieu of Monitoring and Reporting Program No. 96-30.
4. Upon approval by the Executive Officer of the Regional Board, all plans and reports required by this order, including any subsequent amendments, shall be implemented and shall become an enforceable part of this order.

5. The permittees shall report to the Executive Officer of the Regional Board:
 - a. Any enforcement actions and known discharges of storm or wastewaters to facilities owned or operated by the permittees which may impair domestic water supply sources (e.g., discharges due to a levee break, illegal discharges to the street, etc.) or which may have an impact on human health or the environment; if the discharge is to Canyon Lake or any tributary to Canyon Lake, Elsinore Valley Municipal Water District shall also be notified immediately;
 - b. Any industrial and/or construction facilities found not to be in compliance with the State's General Storm Water Permits or where the activities may be contributing pollutants to the waters of the U.S.; and
 - c. Any suspected or reported activities on federal, state, or other entity's land or facilities, where the permittees do not have any jurisdiction, and where the suspected or reported activities may be contributing pollutants to waters of the United States.
6. The permittees shall not issue occupancy permits unless the applicant is informed of his obligation under the State's NPDES industrial general permit. The permittees shall not issue grading or building permits to developments that may result in land disturbance of five acres or more (or less than five acres, if it is part of a larger common plan of development or sale which is five acres or more) unless the applicant shows proof of coverage under the State's General Construction Activity Storm Water Permit. The proof of coverage may include a letter from the Regional Board office, a copy of the Notice of Intent, etc. The permittees shall coordinate the activities of the various departments/sections within each permittee's jurisdiction to insure consistent implementation of storm water regulations.
7. Permit application and special NPDES program requirements contained in 40 CFR 122.21 (a), (b), (d) (2), (f), and (p), 122.41 (a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), and (l); and 122.42 (c) are incorporated into this order by reference.

IMPLEMENTATION AGREEMENT

8. No later than June 4, 1996, the permittees shall submit to the Executive Officer of the Regional Board an updated copy of an implementation agreement with authorized signatures of each of the permittees. Any subsequent revisions to the implementation agreement shall be forwarded to the Executive Officer of the Regional Board within 30 days of approval by the permittees. At a minimum, the implementation agreement should include all the essential elements of the existing agreement, developed in accordance with Order No. 90-104.

LEGAL AUTHORITY

9. The permittees shall adopt the proposed Storm Water/Urban Run-off Management and Discharge Control Ordinance, or its equivalent. No later than June, 26, 1996, each permittee shall certify to the Regional Board that it has adequate legal authority to control the discharges of pollutants into the municipal storm drain system and that it has, at a minimum, satisfied each of the key regulatory requirements contained in 40 CFR Section 122.26(d)(2)(i)(A-F).

ENFORCEMENT/COMPLIANCE STRATEGY

10. Permittees shall develop and implement an enforcement/compliance strategy to enforce storm water and erosion control ordinances. This enforcement/compliance strategy should include a mechanism to determine compliance of industrial facilities and construction sites, and notification to the Executive Officer of any finding of non-compliance and any proposed local enforcement action. The enforcement/compliance strategy shall be submitted to the Executive Officer of the Regional Board by August 27, 1996.

PUBLIC EDUCATION AND OUTREACH

11. The permittees shall continue to implement the public education efforts already underway and shall implement all of the proposed efforts identified in the Report of Waste Discharge.
12. When feasible, the permittees shall participate in joint outreach with other programs including, but not limited to, other municipal storm water programs to ensure that a consistent message on storm water pollution prevention is brought to the public.
13. The permittees shall develop public education materials to encourage the public to report illegal dumping from residential, industrial, construction and commercial sites into public streets, storm drains and other water bodies.

MUNICIPAL FACILITIES

14. The permittees shall develop a pollution prevention strategy to address their public agency facilities and activities which are determined by the permittees (with the approval of the Executive Officer of the Regional Board) to be activities of concern regarding storm water pollution. The pollution prevention strategy shall be

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developed to ensure that the public agency facilities and/or activities that are currently not required to obtain coverage under the State's general storm water permits are not sources of pollutants into the waters of the United States. The pollution prevention strategy shall be submitted to the Executive Officer of the Regional Board by October 9, 1996. In developing the pollution prevention strategy, the permittees shall consider the following:

- a. Identification of public agency facilities and activities that are potential contributors of pollutants to waters of the United States.
- b. Potential pollutants of concern that are associated with the facilities and/or activities;
- c. Proposed BMPs and a schedule for their implementation to ensure that these facilities are not sources of pollutants into the waters of the United States;
- d. A monitoring program to measure the effectiveness of the BMPs;
- e. A schedule for training of public agency staff to ensure proper implementation of the BMPs; and
- f. Identification of any non-storm water discharges from the public agency facilities/activities, frequency of the discharge, characterization of the discharge, volume, flow and duration of the discharge, short term source control BMPs to mitigate the impacts from the discharge, and a schedule for elimination or permitting of the discharge.

MUNICIPAL CONSTRUCTION PROJECTS/ACTIVITIES

15. This Order authorizes the discharge of storm water run-off from construction projects that may result in land disturbance of 5 acres or more (or less than five acres, if it is part of a larger common plan of development or sale which is five acres or more) that are under ownership and/or direct responsibility of any of the permittees.
16. Prior to commencement of construction activities, the permittees shall notify the Executive Officer of the Regional Board of the proposed construction project. Upon completion of the project, the Executive Officer shall be notified of the completion of the project.
- 17.

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17. The permittees shall develop and implement a storm water pollution prevention plan and a monitoring program that is specific for the construction project prior to the commencement of any of the construction activities. The SWPPP and monitoring program shall be implemented throughout the duration of the construction project. The SWPPP shall be kept at the construction site and released to the public and/ or Regional Board staff upon request.
18. The SWPPP and the monitoring program for the construction projects shall be consistent with the requirements of the most recent version of the State's General Permit for Storm Water Discharges Associated with Construction Activities.
19. The permittees shall give advance notice to the Executive Officer of the Regional Board of any planned changes in the construction activity which may result in non-compliance with the current version of the State's General Permit for Storm Water Discharges Associated with Construction Activities.
20. All other terms and conditions of the latest version of the State's General Construction Activity Storm Water Permit shall be applicable.

NEW DEVELOPMENT (INCLUDING RE-DEVELOPMENT)

21. Within 90 days of the issuance of this order, the permittees shall begin implementation of the new development BMPs (DAMP Supplement A) that were developed pursuant to Order No. 90-104.
22. Within 120 days of the issuance of this order, the permittees shall review their General Plan update and CEQA document preparation processes to insure that storm water-related issues are properly considered. If necessary, these processes shall be revised to include requirements for evaluation of storm water-related impacts and identification of appropriate mitigation measures.
23. The permittees shall establish a mechanism to insure proper maintenance and operation of all permanent flood control structures. For new developments, the parties responsible for the maintenance of the flood control structures and funding sources for maintenance and operation of the facilities shall be identified prior to issuance of grading permits.

FISCAL RESOURCES

24. The permittees shall prepare and submit a unified fiscal analysis report appropriate for implementation of the requirements of this order to the Executive Officer of the Regional Board. The fiscal analysis report shall be submitted no later than

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November 15, of each year and shall at a minimum include the following:

- a. Each permittee's expenditures for the previous fiscal year;
- b. Each permittee's budget for the current fiscal year;
- c. A description of the source of funds;

PERMIT EXPIRATION AND RENEWAL

25. This order expires on March 1, 2001 and the permittees must file a Report of Waste Discharge (permit application) no later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements. The Report of Waste Discharge shall, at a minimum, include the following:
 - a. Any revisions to the Drainage Area Management Plan including, but not limited to, all the activities the permittees propose to undertake during the next permit term, goals and objectives of such activities, an evaluation of the need for additional source control and/or structural BMPs, any proposed pilot studies, etc.;
 - b. Changes in land use and/or population including map updates; and
 - c. Any significant changes to the storm drain systems, outfalls, detention or retention basins or dams; and other controls, including map updates of the storm drain systems.
26. This order may be modified, revoked or reissued prior to its expiration date for the following reasons:
 - a. To address significant changes in conditions identified in the technical reports required by the Regional Board which were unknown at the time of the issuance of this order;
 - b. To incorporate applicable requirements of statewide water quality control plans and policies adopted by the State Water Resources Control Board or any amendments to the Basin Plan approved by the Regional Board, the State Board, and, if necessary, by the Office of Administrative Law; or
 - c. To comply with any applicable requirements, guidelines, or regulations issued or approved under the Clean Water Act, if the requirements, guidelines, or regulations contain different conditions or additional requirements than those included in this order.
 - d. To incorporate new or revised program elements and compliance schedule(s) necessary to comply with Section IV of this order.

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27. ~~This order shall serve as a National Pollutant Discharge Elimination System (NPDES) permit pursuant to Section 402 (p) of the Clean Water Act, or amendments thereto, and shall become effective ten days after the date of its adoption provided the Regional Administrator of the U. S. EPA has no objections. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.~~

28. Order No. 90-104 is hereby rescinded.

I, Gerard Thibeault, 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, Santa Ana Region, on March 8, 1996.

Gerard J. Thibeault
Executive Officer

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**ORDER NO. 96-30
APPENDIX 1
PERMITTED AREA**

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ORDER NO. 96-30
APPENDIX 2

**California Regional Water Quality Control Board
Santa Ana Region**

Monitoring and Reporting Program No. 96-30

NPDES NO. CAS 618033

for

**RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION
DISTRICT, THE COUNTY OF RIVERSIDE, AND THE INCORPORATED CITIES OF
RIVERSIDE COUNTY WITHIN THE SANTA ANA REGION
AREAWIDE URBAN STORM WATER RUN-OFF**

I. GENERAL

1. Revisions of the monitoring and reporting program may be necessary to ensure that the discharger is in compliance with requirements and provisions contained in this order. Revisions may be made by the Executive Officer at any time during the term of this order, and may include a reduction or increase in the number of parameters to be monitored, the frequency of monitoring, or the number and size of samples collected.
2. All sample collection, handling, storage, and analyses shall be in accordance with 40 CFR Part 136 or other methods approved by the Executive Officer.
3. The permittees are authorized to complement their monitoring data with data from other sources provided those sources are similar to sources in the Santa Ana Watershed.
4. The permittees shall implement the Consolidated Program for Water Quality Monitoring (submitted as part of the Report of Waste Discharge) until development and implementation of other acceptable monitoring programs.

II. OBJECTIVES

The overall goal of this monitoring program is to provide feedback in direction for and in support of an effective watershed management program. The following are the major objectives:

1. To define storm water quality status, trends, and pollutants of concern.
2. To characterize pollutants in storm water and to assess the influence of land use on storm water quality.
3. To identify significant water quality problems related to storm water discharges within the watershed.

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4. To identify other sources of pollutants in storm water run-off to the extent possible (e.g., atmospheric deposition, contaminated sediments, other non-point sources, etc.).
5. To verify and to control illicit discharges.
6. To identify those waters which without additional action to control pollution from storm water discharges cannot reasonably be expected to attain or maintain applicable water quality objectives or the goals and requirements of the Basin Plan.
7. To evaluate the effectiveness of existing management programs, including an estimate of pollutant reductions achieved by the structural and nonstructural BMPs.

The Regional Board recognizes that these objectives may not be attainable during this permit period and authorizes the Executive Officer to evaluate and to determine adequate progress toward meeting each objective.

III. MONITORING PROGRAM REQUIREMENTS

The lead permittee shall develop and submit for the approval of the Executive Officer an integrated monitoring program to achieve the above stated objectives. In developing this program, the lead permittee is encouraged to seek cooperation with the permittees from San Bernardino and Orange counties. The Executive Officer or his/her designated representative(s) shall facilitate the coordination meetings or subcommittees formed to achieve this goal. The development and implementation of the monitoring program shall be in accordance with the time schedule prescribed by the Executive Officer. At a minimum, the program shall consider the following:

1. Uniform guidelines for quality control, quality assurance, data collection and data analyses.
2. A mechanism for the collection, analysis and interpretation of existing data from Orange, Riverside, and San Bernardino County monitoring programs. These and other data from local, regional or national sources should be utilized to characterize different storm water sources; to determine pollutant generation, transport and fate; to develop a relationship between land use, development size, storm size and the event mean concentration of pollutants; to determine spatial and temporal variances in storm water quality and seasonal and other bias in the collected data; and to identify any unique features of the Santa Ana Watershed. The permittees are encouraged to use data from similar studies, if available.

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3. A description of the monitoring program including:
 - a. The number and location of monitoring stations;
 - b. Environmental indicators (e. g., ecosystem, biological, habitat, chemical, sediment, stream health, etc.) chosen for monitoring;
 - c. Parameters selected for field screening and for laboratory work; and
 - d. Total number of samples to be collected from each station, receiving water and major outfall monitoring, frequency of sampling during dry weather and short or long duration storm events, type of samples (grab, 24-hour composite, etc.), and the type of sampling equipment.
4. A mechanism for analyzing the collected data and interpreting the results including an evaluation of the effectiveness of the management practices, and need for any refinement of the management practices.
5. A description of the responsibilities of all the participants in this program including estimated cost.

IV. REPORTING

1. All progress reports and proposed strategies and plans required by this order shall be signed by the principal permittee and copies shall be submitted to the Executive Officer of the Regional Board under penalty of perjury.
2. The permittees shall submit an **ANNUAL PROGRESS REPORT** to the Executive Officer of the Regional Board and to the Regional Administrator of U. S. EPA, Region 9, no later than November 15, of each year. This progress report may be submitted in a mutually agreed upon electronic format. At a minimum, the annual progress report shall include the following:
 - a. A review of the status of program implementation and compliance (or non-compliance) with the schedules contained in this order.
 - b. An assessment of the effectiveness of control measures established under the illicit discharge elimination program and the Drainage Area Management Plan. The effectiveness may be measured in terms of how successful the program has been in eliminating illicit/illegal discharges and in reducing pollutant loads in storm water discharges.

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- c. An analysis of the feasibility and usefulness of using structural BMPs based on data collected from the Drainage Water Quality Plan for Lake Mathews and/or other similar programs..
 - d. An assessment of any storm water management program modifications made to comply with Clean Water Act requirements to reduce the discharge of pollutants to the maximum extent practicable.
3. Co-permittees shall be responsible for the submittal of all required information/materials needed to comply with this Monitoring and Reporting Program in a timely manner to the principal permittee. All such submittals shall be signed by a duly authorized representative of the co-permittee under penalty of perjury.

V. REPORTING SCHEDULE

All reports required by this order shall be submitted to the Executive Officer of the Regional Board in accordance with the following schedule:

<i>ITEM</i>	<i>DUE DATE</i>
Legal Authority Certification	June 26, 1996
Revised Implementation Agreement	June 4, 1996
Enforcement Strategy	August 27, 1996
Municipal Activities Pollution Prevention Strategy	October 9, 1996
Annual Report including the Fiscal Analyses Report	November 15 of each year (next report due in 1996)

Ordered by _____ Gerard J. Thibeault
Executive Officer

March 8, 1996

ATTACHMENT 41

April 27, 2007

Mr. Gerard J. Thibeault, Executive Officer
Santa Ana Regional Water Quality Control Board
3737 Main Street, Suite 500
Riverside, California 92501-3339

*Re: Report of Waste Discharge for the Santa Ana
River Region of Riverside County
Order No. R8-2002-0011,
NPDES No. CAS618033*

Dear Mr. Thibeault:

Enclosed are two copies of the Report of Waste Discharge (ROWD) for the area-wide municipal separate storm sewer system (MS4) National Pollutant Discharge Elimination System (NPDES) permit No. CAS618033, Santa Ana Regional Water Quality Control Board Order No. R8-2002-0011. This ROWD is an application for renewal of the area-wide MS4 NPDES permit for Riverside County Flood Control and Water Conservation District (RCFC&WCD), the County of Riverside (County), and the incorporated cities of Riverside County within the Santa Ana River basin (Beaumont, Calimesa, Canyon Lake, Corona, Hemet, Lake Elsinore, Moreno Valley, Murrieta, Norco, Perris, Riverside, San Jacinto) collectively referred to herein as "Permittees."

In accordance with Section X.VI.A of Order No. R8-2002-0011, this ROWD describes:

- Revisions to the Drainage Area Management Plan (DAMP) including, but not limited to, activities the Permittees propose to undertake during the next permit term, goals and objectives of such activities, and evaluation of the need for additional source control and/or structural BMPs, proposed pilot studies, etc;
- Any new or revised program elements and compliance schedule(s) necessary to comply with Section III (Receiving Water Limitations) of Order No. R8-2002-0011;
- Changes in land use and/or population including map updates;
- Significant changes to the MS4s, outfalls, detention or retention basins or dams, and other controls, including updated maps of the MS4s.

In 2002 both the Permittees and the Santa Ana Regional Water Quality Control Board (Regional Board) staff invested significant time and resources in the development of the current MS4 NPDES permit (hereinafter referred to as the 2002 MS4 Permit). It is noteworthy that the adoption of the 2002 MS4 Permit was supported by the Regional Board staff, Permittees and the Regional Board in that every other MS4 NPDES permit issued in Southern California during that period had been appealed.

Mr. Gerard J. Thibeault, Executive Officer
California Regional Water Quality Control Board
Santa Ana Region

April 27, 2007

Re: *Report of Waste Discharge for Santa Ana
River Region of Riverside County
Order No. R8-2002-0011, NPDES No. CAS618033*

- Recognition that the Municipal Facilities Strategy and Enforcement Compliance Strategies have been incorporated into the DAMP; and
- Regional Board staff comments made during the term of the 2002 MS4 Permit, including comments received during the January 22, 2007 ROWD coordination meeting.

Our goal is to work with the Regional Board staff to further refine the provisions of the 2002 MS4 Permit to ensure that the requirements and expectations of the fourth term MS4 NPDES permit are clear and unambiguous and that the focus is on addressing identified water quality problems in the Receiving Waters. A "track changes" version of the 2002 MS4 Permit reflecting the proposed revisions is included as an appendix to the ROWD. The proposed revisions also reflect the Permittee's need to clarify the requirements of the Permit, remove duplication of requirements that are contained in both the DAMP and the Permit (both documents are enforceable), and remove completed 2002 MS4 Permit requirements that are no longer useful to the Regional Board or the Permittees. In general, it is our experience that a simpler, more understandable MS4 NPDES permit facilitates compliance and protection of Receiving Water quality. A copy of the proposed fourth term MS4 NPDES permit with revisions accepted is also included in the ROWD for your convenience.

In addition, a revised DAMP that has been modified consistent with the proposed revisions of the 2002 MS4 Permit is provided as an appendix in the ROWD. The Permittees identified several DAMP enhancements that they believed were necessary to improve the efficacy of existing compliance programs mandated by the 2002 MS4 Permit or to address Regional Board staff comments regarding overall compliance programs. However, due to time limitations, not all of revisions proposed within this ROWD have been incorporated into the revised DAMP included as an appendix in the ROWD. For each program element, the ROWD identifies whether changes to the DAMP have already been addressed, or whether the Permittees are committing to make changes within 12 months of permit adoption. For your convenience, Permittee commitments in the ROWD to enhance the DAMP have also been incorporated into the proposed fourth term MS4 NPDES permit as compliance requirements.

The Permittees would also like to note that, based on the January 22, 2007 meeting with Regional Board staff, options to enhance industrial, commercial and construction operator compliance through alternative enforcement tools were carefully evaluated. Enforcement of Permittee storm water ordinances and permits is a concern shared by the Permittees and the Regional Board staff. Many of the requirements of the local ordinances and permits overlap with requirements of the General Permit for Storm Water Discharges Associated with Industrial Activities and the General Permit for Storm Water Discharges Associated with Construction Activity. Although the Permittees have a greater local enforcement presence, their ability to impose fines is limited by State law. As suggested by Regional Board staff, the Permittees have considered increased use of stop work orders and bonding requirements at construction sites and have concluded that these enforcement tools have limited

-5-

Mr. Gerard J. Thibeault, Executive Officer
California Regional Water Quality Control Board
Santa Ana Region

April 27, 2007

*Re: Report of Waste Discharge for Santa Ana
River Region of Riverside County
Order No. R8-2002-0011, NPDES No. CAS618033*

bcc: S. Stump
J. Uhley
B. Cho

REPORT OF WASTE DISCHARGE

Submitted To

SANTA ANA REGIONAL WATER QUALITY CONTROL BOARD
(Order No. R8-2002-0011)

and

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY – REGION IX
(NPDES No. No. CAS618033)

APRIL 27, 2007

SANTA ANA RIVER REGION

RIVERSIDE COUNTY

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT,
COUNTY OF RIVERSIDE, CITY of BEAUMONT, CITY of CALIMESA,
CITY of CANYON LAKE, CITY of CORONA, CITY of HEMET,
CITY of LAKE ELSINORE, CITY of MORENO VALLEY, CITY of MURRIETA,
CITY of NORCO, CITY of PERRIS, CITY of RIVERSIDE, and CITY of SAN JACINTO

**Santa Ana River Region
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- A Proposed 2007 MS4 Permit (“revisions accepted” and “track changes” versions)
- B 2007 Drainage Area Management Plan (without appendices)
- C Permit Area Boundary Map / 2006 Land Use Map
- D Santa Ana River Region MS4 Facility Maps

Santa Ana River Region Report of Waste Discharge

- Santa Ana Regional Board staff comments received by the Permittees during the term of 2002 MS4 Permit, including comments received during our January 22, 2007 ROWD kick-off meeting regarding topics such as low impact development, hydromodification, LIPs, etc.

This ROWD also highlights program accomplishments during the 2002 MS4 Permit term. The major accomplishments for the Permittees are:

- Revisions to the DAMP that include 28 Construction Site and 36 Municipal and Industrial Source Control Best Management Practices (BMPs) designed to reduce Urban Runoff pollution.
- Development and implementation of a Water Quality Management Plan (WQMP) that addresses post-construction Urban Runoff management for New Development.
- Participation in the development and implementation of TMDLs for Lake Elsinore, Canyon Lake and the Middle Santa Ana River.
- Initiation of a cooperative program with County Department of Environmental Health to implement Supplemental Environmental Projects in lieu of a portion of fines for environmental crime cases.
- Development of handbook to standardize post-construction BMP selection and design in Riverside County. Ongoing updates to the handbook include a plan to incorporate low impact development design concepts.
- Development of coordinated BMP manual for fire fighting agencies.
- Development, implementation and maintenance of Permittee databases to track construction sites 1-acre or larger. In addition, the Permittees have standardized a construction reporting spreadsheet used for Annual Reports, updated inspection forms, and enhanced the construction outreach program.
- Creation of Permittee databases to track industrial and commercial facilities.
- Creation and maintenance of the Storm Water Protection website that offers educational resources and free brochures targeting residents, businesses, developers, contractors, and elementary school children.
- Categorization and quantification of litter types.
- Partnership with the Riverside-Corona Resource Conservation District and Mission Resource Conservation District to provide an educational outreach programs targeting schools and adults.
- Continued participation in the Consolidated Program for Water Quality Monitoring (Consolidated Monitoring Program) that includes collection of water quality samples at MS4 outfalls and Receiving Waters.
- Participation in regional and statewide monitoring efforts such as the Southern California Monitoring Committee, Southern California Coastal Water Commission and National Water Resources Institute.
- Participation in the California Stormwater Quality Association, including the leadership roles of Board Member, Legislative Chair, and Monitoring and Science Co-Chair.
- Development and enhancements to templates for project-specific WQMPs

**Santa Ana River Region
Report of Waste Discharge**

2.0 Introduction

On October 25, 2002 the Santa Ana Regional Board adopted Order No. R8-2002-0011, an area-wide MS4 NPDES permit (2002 MS4 Permit). This ROWD is an application for renewal of the 2002 MS4 Permit (NPDES No. CAS618033) for the District, the County, and the incorporated cities of Riverside County within the Santa Ana River basin. Terms used in this document are defined in the glossary of both the Proposed 2007 MS4 Permit and the 2007 DAMP, which are included as Appendices A and B, respectively.

2.1 Contents of ROWD

The 2002 MS4 Permit expires on October 26, 2007 and requires that this ROWD be submitted no later than 180 days in advance of the expiration date (April 29, 2007). The 2002 MS4 Permit also specifies that the ROWD “shall, at a minimum, include the following:

- Revisions to the DAMP including, but not limited to, activities the Permittees propose to undertake during the next permit term, goals and objectives of such activities, and evaluation of the need for additional source control and/or structural BMPs, proposed pilot studies, etc;
- Any new or revised program elements and compliance schedule(s) necessary to comply with Section III of the MS4 NPDES Permit Order;
 - Changes in land use and/or population including map updates;
 - Significant changes to the MS4, outfalls, detention or retention basins or dams, and other controls, including updated maps of the MS4.”

The ROWD includes the following appendices:

- A Proposed 2007 MS4 Permit (“track changes” and revisions-accepted versions),
- B 2007 DAMP,
- C Permit Area Boundary Map / 2006 Land Use Map, and
- D Santa Ana River Region MS4 facility maps.

2.2 Regulatory History

In May 1990 the District, the County, and the Cities of Beaumont, Corona, Hemet, Lake Elsinore, Moreno Valley, Norco, Perris, Riverside, and San Jacinto submitted an application for an area-wide municipal storm water NPDES permit for the portion of the county within the Santa Ana River basin. On July 10, 1990, the newly incorporated cities of Calimesa and Canyon Lake were added to the application. An “Early” Permit¹ was adopted by the Santa Ana Regional Board on July 13, 1990. The “Early” Permit designated the District as the Principal Permittee and the County and the 11 cities were designated as Co-Permittees. Collectively, the Principal Permittee and the Co-Permittees are referred to as the Permittees.

¹ Some municipalities applied for and received storm water discharge permits prior to the United States Environmental Protection Agency’s promulgation of the “Final Rule for NPDES Permit Application for Storm Water Discharges” on November 16, 1990. Such permits have been referred to as “Early” permits.

Santa Ana River Region Report of Waste Discharge

Board Order No. R8-2003-0061, NPDES No. CAG998001 as amended by Order Nos. R8-2006-0004 and R8-2005-0041) and Utility Vaults (State Board Order No. 2006-0008-DWQ, NPDES No. CAG990002) General Permits;

- Recognition that the Municipal Facilities Strategy and Enforcement Compliance Strategies have been incorporated into the DAMP; and
- Santa Ana Regional Board staff comments received by the Permittees during the term of 2002 MS4 Permit, including comments received during our January 22, 2007 ROWD kick-off meeting regarding topics such as low impact development, hydromodification, LIPs, etc.

2.3 Permit Area

The Permit Area is defined in the Proposed 2007 MS4 Permit² as the portion of the Santa Ana River watershed that is within the County of Riverside and identified as "Urban Area" and those portions of "Agriculture" and "Open Space" that do convert to industrial, commercial, or residential use during the term of the Order. The Permit Area is referred to as the "Santa Ana Region." The following lands are excluded from the Santa Ana Region:

- Federal lands and state properties, including, but not limited to, military bases, national forests, hospitals, colleges and universities, and highways;
- Native American tribal lands;
- Open space and rural (non-urbanized) area;
- Agricultural lands; and
- Utilities and special districts.

A map delineating the Santa Ana Region is provided in Appendix C.

² A map of the Permit Area is included as Appendix C.

**Santa Ana River Region
 Report of Waste Discharge**

3.3 Population and Land Use

3.3.1 Population

Within the portion of Riverside County under the jurisdiction of the Santa Ana Regional Board, the population has grown from 1,104,362 in late 2002 to 1,237,388 in 2006. The areas of the most significant percentage growth in population from 2002 to 2006 include the Cities of Beaumont, Lake Elsinore, and Perris. Long-range population forecasting indicates population growth in the Santa Ana Region to approximately 1,425,500 by 2010. The most significant percentage growth in population between 2006 and 2010 is expected in the Cities of Beaumont, Calimesa, and San Jacinto. Table 1 contains population estimates and projections for each Co-Permittee. Since the District is not a general purpose government, it is not included in this listing.

Table 1. Population of Santa Ana Region Co-Permittees

Co-Permittee	Year			Change (2006 to 2010)
	Estimate 2002 (a)	Estimate 2006 (a)	Projected 2010 (b)	
City of Beaumont	13,959	23,145	33,951	47%
City of Calimesa	7,427	7,200 (c)	12,000 (c)	67%
City of Canyon Lake	10,647	10,500 (d)	11,400	9%
City of Corona	138,761	144,661	150,177	4%
City of Hemet	63,001	69,544	78,000 (e)	12%
City of Lake Elsinore	33,460	40,985	51,138	25%
City of Moreno Valley	151,847	174,565	194,403 (f)	11%
City of Murrieta	--			
City of Norco	25,511	27,263	29,058	7%
City of Perris	38,690	47,139	65,415 (g)	39%
City of Riverside	277,459	292,883 (h)	307,781 (h)	5%
City of San Jacinto	26,374	31,066	51,332	65%
Unincorporated County of Riverside	317,226	368,437 (i)	440,853 (i)	20%
Total	1,104,362	1,237,388	1,425,508	15%

Notes:

(a) Unless otherwise noted, population estimates were obtained from State of California, Department of Finance, *E-4 Population Estimates for Cities, Counties and the State, 2001-2006, with 2000 Benchmark*. Sacramento, California, May 2006.

www.dof.ca.gov/HTML/DEMOGRAP/ReportsPapers/Estimates/E4/E4-01-06/documents/Hist_E-4.xls

(b) Unless otherwise noted, projected population was obtained from Western Riverside Council of Governments (WRCOG), Subregional Growth Forecast, Riverside County Projection (Revised Draft), November 22, 2006.

www.wrcog.co.gov/wrcogsubregforecast.pdf

(c) Data provided by City of Calimesa.

(d) Data provided by City of Canyon Lake.

(e) Valley Economic Development Corporation, Hemet.

(f) Data provided by City of Moreno Valley.

(g) Data provided by City of Perris.

(h) Data provided by City of Riverside.

(i) Data provided by County of Riverside, Executive Office

Santa Ana River Region Report of Waste Discharge

Specific Plan includes a new shopping center totaling 194,569 square feet of commercial both retail and restaurants. There industrial developments expected to be built south of State Route 60 as described in the Rolling Hills Ranch Specific Plan and the Moran Raceway Industrial Specific Plan, together totaling approximately 360 acres of industrial development.

Approximately 9,000 homes have been constructed over the last five years in the City of Beaumont. With the changes in the housing market, the City of Beaumont expects approximately 800 housing units to be built per year during the next five years. The majority of the growth in the City of Beaumont is expected to occur in four major specific plan areas: Sundance, located in the north eastern region; Four Seasons, located in south eastern region; Hidden Canyon, Heartland, and Oak Valley PGA located in the eastern portion; and Noble Creek specific plan located in the northern portion. The remaining growth will be through infill and build out on the remaining specific plan areas.

3.3.3.3 *City of Calimesa*

Assuming there will be no major drops in the housing markets and/or the general Southern California economy, the population of the City of Calimesa will rise dramatically during the next permit term. In January 2007, the City of Calimesa started the review process for a subdivision containing over 1,600 lots. This project, commonly called the Suncal Development, is located between San Timoteo Road and Interstate 10, northwest of Singleton Road. The Suncal Development is expected to be built to completion by 2009. Other smaller developments are occurring throughout the City of Calimesa, but none will be of the same scale as the Suncal Development.

3.3.3.4 *City of Canyon Lake*

There are less than four hundred vacant lots still available for developing. The City of Canyon Lake averages approximately 40 new homes a year, so over the next five years approximately 200 new homes are expected.

3.3.3.5 *City of Corona*

Generally, development in accordance with the City of Corona General Plan would result in infill of vacant lands and redevelopment of existing sites in the Downtown Revitalization and North Main Street Specific Plan areas, as well as effective reuse of obsolete industrial lands. Additionally, incremental growth, mainly consisting of low density residential in the southern periphery of the City of Corona, is anticipated. Most potential new development would be the result of annexation of land within the City of Corona's sphere of influence (SOI) as described below.

- City of Corona Potential New Development 2007-2012 (excluding SOI)
 - Residential - approximately 1,550 units
 - Commercial - Neighborhood/Regional Retail & Office- approximately 2,100,000 square feet
 - Industrial - 5,600,000 square feet.
- City of Corona SOI Potential New Development 2007-2012
 - West Sphere consisting of Prado Basin, Coronita, and Foothill would primarily include development along the foothills south of Coronita consisting of low-density, rural housing. Approximate addition of 200 residential units is anticipated by 2012. This area consisting of 6,844 acres would need to be annexed from the County of Riverside.

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development in the City of Norco will be the subdivision of large lots into four or fewer lots with a few exceptions that may yield a couple more. These infill lots are spread throughout the City of Norco so there is no specific pattern or growth area that can be identified. It is anticipated that the number of overall housing units will increase approximately 26 units a year until 2010. And again there will be no pattern or area of concentration for these units.

Commercial development is planned for the southern part of the City of Norco (south of First Street) along Hamner Avenue and Hidden Valley Parkway, which are the two primary commercial corridors in this area. The City of Norco anticipates the development of 25,000+ square feet of retail/restaurant space on the north side of Hidden Valley Parkway east of the I-15 freeway in 2007. The remaining commercial areas within this area of the City of Norco are all infill lots that are vacant or underutilized. The City of Norco anticipates approximately 16,000 square feet of development in the first year of the 2007-2012 MS4 Permit term accelerating to approximately 20,000 square feet per year toward the end of the term. Total anticipated development in terms of square feet in this area by the end of this term is 71,148 square feet.

Along Hamner Avenue from First Street north to Second Street the City of Norco anticipates the development of 41,629 square feet of hotel space (82 units) in 2007. The remaining commercial acreage is either vacant or is underutilized in terms of allowed uses per existing zoning. The City of Norco anticipates approximately 6,000 square feet of commercial space per year in this area at the beginning of the 2007-2012 MS4 permit term, increasing to approximately 15,000 per year by the end of the term for an approximate total of 77,629 square feet of commercial space over this permit term.

Along Hamner Avenue from Second Street north to Third Street is a commercial corridor that is primarily built out with the exception of the southwest corner of Third Street and Hamner Avenue. This area also includes a secondary commercial corridor along Four Wheel Drive within the Auto Mall that is currently underutilized and may be developed for commercial or more industrial-type uses in the future. The City of Norco anticipates approximately 70,000 square feet of commercial development through the 2007-2012 MS4 permit term along Hamner Avenue and 15,000 square feet along Four Wheel Drive that could be either commercial or more industrial in nature. The total square-footage anticipated in this area over this permit term is 85,000 square feet.

The commercial corridor along Hamner Avenue between Third and Fourth Streets is a largely developed but underutilized commercial area within the City of Norco. Development will be completed for 45,532 square feet of commercial office development in 2007. Remaining development is anticipated to occur as infill only. Therefore, the City of Norco anticipates approximately 65,532 square feet of commercial development in the first year of the 2007- 2012 MS4 permit term and 20,000 in the second for a total of 85,532 square feet of commercial development for this area during the permit term.

Between Fourth and Fifth Streets, the Hamner Avenue commercial corridor is less developed with more vacant parcels for future development. The City of Norco anticipates construction of 54,834 square feet of retail, office, and restaurant space on the west side of the street and 14,000 square feet of retail and restaurant space on the east side of the street within the first year of the 2007-2012 MS4 Permit term. The City of Norco anticipates more development of vacant properties on the east side of the street probably beginning the second year of the 2007-2012 MS4 Permit term with approximately 10,000 square feet increasing to 20,000 square feet of commercial development during the third year. The City of Norco anticipates 15,000 square feet on the west side of the street at the beginning of this term. The total

Santa Ana River Region Report of Waste Discharge

be developed by 2012. This last round of development would most likely be south of Nuevo Avenue and west of the Perris Valley Storm Drain.

There is a large volume of industrial construction occurring north of Rider Street, west of Perris Valley Storm Drain. By the end of 2007, it is expected that 1,769,756 square feet of warehousing, distribution and manufacturing buildings will be constructed. An additional 770,040 square feet of industrial park build out is expected to be constructed by 2010. By 2012, an additional 4,748,590 square feet of industrial development is expected to occur, continuing to be concentrated north of Rider Street and west of the Perris Valley Storm Drain.

The majority of commercial development is located south of Mapes Road and east of Perris Valley Storm Drain. By the end of 2007, 650,000 square feet of regional commercial and other retail chain stores and restaurants will be constructed. An additional 405,830 square feet of commercial development is anticipated by 2010. By 2012, it is likely that an additional 2,035,000 square feet of commercial space could be developed with most of this development occurring north of State Highway 74 and west of the Perris Valley Storm Drain.

During the 2007-2012 MS4 Permit period, in addition to the 2,539,796 square feet of industrial development expected between 2007 and 2010, it is likely that an additional 4,748,590 square feet of industrial development to be constructed by 2012. The second round of industrial development is expected to follow the same pattern as the current industrial development; concentrated north of Rider Street and west of the Perris Valley Storm Drain.

3.3.3.11 *City of Riverside*

Over the next five years, the City of Riverside has six focus areas for major redevelopment efforts; as well as incorporation of eleven potential areas to be annexed into the city. Furthermore, the City of Riverside has outlined a Riverside Renaissance Initiative that includes new parks and park facilities, landscaping, traffic management efforts and economic redevelopment. Throughout the City's improvement plans are increased density for residential, commercial and mixed use opportunities. Areas of potential annexation are targeted for coordinated development and maintaining open space.

In the downtown area, the City plans 500,000 square feet of new office space, 1,000 new residential units and expanded cultural opportunities. Planned new cultural amenities include education facilities, a Center for Visual Arts and a Regional Performing Arts facility. The new developments will change the land use of existing developed areas that currently include commercial office, automotive repair shops and surface parking into denser residential and commercial uses. With the downtown changes, parking will move from surface lots to underground parking structures and traffic will move more efficiently, resulting in an expected decrease of Pollutant contribution to Urban Runoff.

In central portion of the city, near the Plaza, and in the La Sierra neighborhood, the City plans to redevelop adjacent lots into high density projects, possibly including high density residential, mixed use or commercial uses; however, no project has been established.

Similarly, in the Casa Blanca and Lincoln neighborhoods, the City of Riverside seeks to develop high-density projects on currently developable properties. In the Airport neighborhood, the City of Riverside plans for improved architectural design and landscaping in some industrial areas.

**Santa Ana River Region
Report of Waste Discharge**

3.4.1 Rivers and Streams

Santa Ana River, Reaches 3 and 4

Tributaries to the south bank of the Santa Ana River

Temescal Creek, Reaches 1, 2, 3, 4, 5, and 6

Tributaries to Temescal Creek

Coldwater Canyon Creek and its tributary drainages

Bedford Canyon Creek and its tributary drainages

Tequesquite Arroyo (Sycamore Creek) and its tributary drainages

Tributaries to the north bank of the Santa Ana River

Day Creek

San Sevaine Creek

San Jacinto River Basin

San Jacinto River, Reaches 1, 2, 3, 4, 5, 6, and 7

San Jacinto River, North Fork

Bautista Creek, headwaters to debris dam

Fuller Mill Creek

Salt Creek

Strawberry Creek

Stone Creek

Other tributaries: Indian, Hurkey, Poppet, and Potrero

San Timoteo Creek Basin

San Timoteo Creek, Reaches 3 and 4 and tributaries

Little San Gorgonio Creek and its tributaries

3.4.2 Lakes and Reservoirs

- Canyon Lake
- Lake Fulmor
- Lake Perris
- Lake Elsinore
- Lake Hemet
- Lee Lake
- Lake Evans
- Lake Mathews
- Mockingbird Reservoir

The Beneficial Uses of these surface water bodies include: municipal and domestic water supply, agricultural water supply, industrial service water supply, industrial process water supply, groundwater recharge, water contact recreation, non-contact water recreation, warm freshwater habitat, cold freshwater habitat, wildlife habitat, and preservation of rare and endangered species. Several of these surface water bodies have been identified by the State of California as "impaired" because they do not meet Water Quality Standards for the designated Beneficial Uses⁸.

⁸ Under Section 303(d) of the Clean Water Act, states, territories, and authorized tribes are required to develop lists of impaired waters. Impaired waters are waters that do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. Priority rankings must be identified for impaired waters and Total Maximum Daily Loads (TMDLs) must be developed for impaired waters.

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Report of Waste Discharge**

Table 5. TMDL Waste Load Allocations Assigned to Santa Ana Region MS4 Permittees

Water Body	Pollutant / Stressor	Assigned Dischargers	WLA
Canyon Lake	Total Phosphorus – MS4 Dischargers	County of Riverside, Cities of Lake Elsinore, Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Murrieta, Riverside, and Beaumont	306 kg/yr (total) based on a running average to be achieved as soon as possible, but no later than by December 31, 2020
	Total Phosphorus – Septic System Discharges	County of Riverside, Cities of Beaumont, Canyon Lake, Hemet, Lake Elsinore, Moreno Valley, Murrieta, Perris, Riverside and San Jacinto.	139 kg/yr (total) based on a 10 year running average to be achieved as soon as possible, but no later than by December 31, 2020
	Total Nitrogen – MS4 Discharges	County of Riverside, Cities of Lake Elsinore, Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Murrieta, Riverside and Beaumont	3,974 kg/yr (total) based on a 10 year running average to be achieved as soon as possible, but no later than by December 31, 2020
	Total Nitrogen – Septic System Discharges	County of Riverside, Cities of Beaumont, Canyon Lake, Hemet, Lake Elsinore, Moreno Valley, Murrieta, Perris, Riverside and San Jacinto.	4,850 kg/yr (total) based on a 10 year running average to be achieved as soon as possible, but no later than by December 31, 2020
Lake Elsinore	Total Phosphorus – MS4 Dischargers	County of Riverside and City of Lake Elsinore	124 kg/yr (total) based on a running average to be achieved as soon as possible, but no later than by December 31, 2020
	Total Phosphorus – Septic System Discharges	County of Riverside and City of Lake Elsinore	69 kg/yr (total) based on a 10 year running average to be achieved as soon as possible, but no later than by December 31, 2020
	Total Nitrogen – MS4 Discharges	County of Riverside and City of Lake Elsinore	349 kg/yr (total) based on a running average to be achieved as soon as possible, but no later than by December 31, 2020
	Total Nitrogen – Septic System Discharges	County of Riverside and City of Lake Elsinore	608 kg/yr (total) based on a 10 year running average to be achieved as soon as possible, but no later than by December 31, 2020
Santa Ana River	Pathogen Indicators – MS4 Discharges	County of Riverside, Cities of Corona, Riverside and Norco	Fecal Coliform: log mean less than 200 organisms/100 ml based on five or more samples per 30 day period, and not more than 10% of the samples exceed 400 organisms/100 mL for any 30-day period to be achieved as soon as possible, but no later than December 31, 2020

3.6 Municipal Separate Storm Sewer System (MS4)

3.6.1 Permittees' Existing MS4

The MS4 facilities operated by the District consist of an estimated 134 miles of drainage facilities (59 miles open channel and 75 miles of underground storm drain). The MS4 facilities operated by the Co-Permittees are approximately 460 miles (395 miles of underground pipe and 65 miles open channel) in length. Maps depicting the location of the Permittees' MS4 facilities are included as Appendix D.

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- West End Moreno Master Drainage Plan – Line AA Lateral C
- Montecito Ranch – Jameson Road Storm Drain
- Gavilan Hills – Smith Road Channel and Basin
- West Elsinore Master Drainage Plan – Line A-1
- Arizona Channel – Line C4, Victoria Avenue Lateral
- Four Corners Storm Drain
- San Jacinto Master Drainage Plan – Line E
- Norco Master Drainage Plan – Line NA-S

3.6.1.2 County

The most current collection of existing MS4 facilities for Riverside County can be found in the NPDES maps included with the District's Annual Report.

3.6.1.3 City of Beaumont

Significant changes and additions made to the City of Beaumont's MS4 facilities during the term of the 2002 MS4 Permit are:

- Oak Valley Greens Storm Drain
- Marshall Creek Channel
- Hurstland Avenue Storm Drain
- Ring Ranch Road Storm Drain
- Hendrick Court & Camumet Way Storm Drain
- Oak Valley Parkway Storm Drain

3.6.1.4 City of Calimesa

There has been no new construction of storm water facilities during the previous permit period of 2002 to 2007.

3.6.1.5 City of Canyon Lake

There were no new MS4 facilities (36-inch diameter or larger) constructed between 2002-2007 that are owned or operated by the City of Canyon Lake.

3.6.1.6 City of Corona

During the 2002 MS4 Permit term, the City of Corona added approximately 10.2 miles (53,859 linear feet) of storm drain pipes between 36-inch and 96-inch in diameter. The new storm drain was constructed as part of over 32 various sized projects within the City of Corona.

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- La Casa Drive & Adobe Way
- Via de La Real between Legendary & La Palma
- Primrose Way / Barbazon Drive / Fir Street
- Stamlin Court & Hammet Court
- Iris Avenue & Hammet Court
- Alicante Avenue / JFK Drive / Cactus Avenue
- Cadiz Court / JFK Drive / Cactus Avenue
- Avalon Avenue / JFK Drive / Cactus Avenue
- Somerset Drive
- Sage Court / Thoroughbred Lane / Iris Avenue
- Call Agua & Palomino Lane

3.6.1.10 City of Norco

Significant changes and additions made to the City of Norco's MS4 facilities during the term of the 2002 MS4 Permit are:

- California Avenue - Sixth Street to East Street (including a portion of Buckskin)
- Fifth Street- Dapple Grey to Hillside Avenue
- Hillside Avenue - Fifth Street 1,200 feet north
- Kips Korner Park - Parkridge Avenue to River Road.
- Vaughn Street – Tract 27580 west to Hillside Avenue

3.6.1.11 City of Perris

No information provided.

3.6.1.12 City of Riverside

Over the course of the term of the 2002 MS4 Permit, the City of Riverside has gained less than 9.6 miles (50,607 linear feet) of storm drain pipes greater than 36-inch diameter. Likewise, the City of Riverside gained less than 10.7 miles (56,306 linear feet) of storm drain pipes less than 36-inch in diameter. The new pipes were built City-wide through numerous private development projects.

3.6.1.13 City of San Jacinto

Significant changes and additions made to the City of San Jacinto's MS4 facilities during the term of the 2002 MS4 Permit are:

- Tract 31794 (Hemet & Mountain), retention basin
- Tract 29917 (Park & Hewitt), detention basin and debris basin
- Tract 32188 (San Jacinto & Commonwealth), 36-inch diameter storm drain on both San Jacinto and Commonwealth Avenues, detention basin
- Tract 31036 (7th & Las Rosas), retention basin
- Tracts 30644 & 31035 (San Jacinto & Tradewinds), portion of MDP Line J grass lined trapezoidal channel

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- Sedco Master Drainage Plan – Line E, Bryant Street Storm Drain
- Arroyo Del Toro Channel
- West Elsinore Master Drainage Plan Line A
- Lakeland Village – Adelfa Channel
- Ortega Channel Debris Basin
- Skylark Channel
- Third Street Storm Drain
- Norco Master Drainage Plan Line NA-3, LN N-1, NB-3, S-1, S-2, S-5
- Santa Ana River – Norco Bluffs, Prado Dam, 7 Oaks Dam
- Santa Ana Canyon – Below Prado
- North Norco Channel, Stage 10
- West Norco Storm Drain
- Mockingbird Canyon
- Corona Drain, Line 1-G, 1-H, 1-J, 7-A, 46, 52, 9A, 5, Cota Avenue Channel, Main Street Storm Drain
- Corona Storm Water Treatment Facility
- Lincoln Avenue Storm Drain (City of Corona)
- Bedford Canyon Wash
- Gavilan Hills / Smith Road Channel and Basin
- County Line Channel
- Eastvale Master Drainage Plan Cloverdale Crossing Line A, E-1
- Temescal Creek Foster Road Storm Drain
- Temescal Channel
- Temescal Canyon Wash
- North Main Street Channel
- Ontario Avenue Storm Drain
- Golden Harvest Storm Drain
- San Sevaine Channel
- La Sierra Master Drainage Plan Cypress Avenue Lateral, Campbell Avenue Lateral, La Sierra Channel Upgrade
- University Wash
- Columbia Basin Expansion
- Mira Loma – Beach Street Storm Drain
- Pedley Hills Bolero Drive Storm Drain
- Belltown – Market Street Channel and Lateral B-1
- SW Riverside Master Drainage Plan Line C, Line G, G-1 & F-1, Cross Street Storm Drain
- Jurupa Basin- Storm Drain Extension
- Day Creek Channel – Bellgrave Basin
- Pyrite Channel Bypass
- Pedley – Scheelite Street Storm Drain

3.6.2.2 *County*

The following projects will be completed by the County of Riverside during the next permit term and would likely include culverts or other MS4 facilities.

- Van Buren Blvd. Bridges at the Santa Ana River.
- River Road Bridge at the Santa Ana River
- Leon Road and Rice Road Bridges at Salt Creek
- Valley Way at State Route 60

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3.6.2.7 City of Hemet

- Brenson Project – Eaton & Kirby
- Centex Homes – State & Fruitvale
- Emmerson Ranch (Ryland) – Cawston & Devonshire
- JP Ranch (Corman Leigh) – Warren & Devonshire
- Los Rancherias – Deveonshire & Los Ran.
- McSweeny Farms – State & Newport
- Peppertree – Menlo & Cawston
- Ranch Diamonte (Pulte) – Warren & Mustang
- Scrimsher Development – Fruitvale & Palm
- Stoney Mountain Ranch – Warren & Esplanade
- Tres Cerritos (Corman Leigh) – Devonshire & Warren
- Young Homes (Corwin) – Mountain & Soboba

3.6.2.8 City of Lake Elsinore

No information provided.

3.6.2.9 City of Moreno Valley

Between 2007 and 2012 the City does not expect to construct or accept for maintenance any developer-constructed MS4 facilities of 36-inch diameter or greater, except for those capital projects cited below, but only if cooperative agreements are not executed with the Flood Control District for the same.

- Lasselle Street from Alessandro Boulevard to John F. Kennedy Drive – this project will contain sections of 36-inch diameter storm drain in Lasselle Street.
- Indian Street from Cactus Avenue to Delphinium Avenue – this project will contain sections of 36-inch diameter storm drain in Indian Street.

3.6.2.10 City of Norco

- Fourth Street - Temescal Avenue to Corona (800 feet) Corona Avenue Fourth Street north 800 feet
- Western Avenue - Fifth Street to Pacer Park
- North Norco Channel - Parkridge to River Road
- Mountain Avenue - First Street to Second Street
- NNC Line - Pedley Avenue - Sixth Street south 1200 feet
- Seventh Street - south to Norco Channel
- North Norco Channel - Rose Court to Sixth Street

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- SP 1-01 The Cove (Tracts 30033, 34, 35, 36, 84), (Warren & Cottonwood) onsite storm drain (varies 36-inch to 90-inch diameter), Warren Rd Box Culvert (5 feet by 10 feet), two detention basins, and four debris basins

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- League of Cities; and
- County Engineers Association of California.

4.1.2 Legal Authority

The Co-Permittees have adopted ordinances regarding the management of Urban Runoff. The ordinances provide the Permittees with the legal authority to implement the requirements of the 2002 MS4 Permit and 40 CFR Section 122.26(d)(2)(i)(A-F). However, there are limitations to the authority the Permittees have for enforcement actions. The Permittees also provided to the Santa Ana Regional Board certification of adequate legal authority to comply with the 2002 MS4 Permit and to implement the DAMP.

4.1.3 Program Management Accomplishments

During the term of the 2002 MS4 Permit the following accomplishments were achieved.

- Revised DAMP: Includes 28 Construction Site and 36 Municipal and Industrial Source Control BMPs that are to be implemented by the Permittees for purposes of controlling Pollution associated with Urban Runoff to the Maximum Extent Practicable (MEP). Enhanced the construction site inspections, the industrial/commercial facilities inspections, new development review requirements, and the Permittee facilities and activities program.
- Updated the Implementation Agreement.
- Cooperated in the establishment of TMDL Task Forces and workgroups for Lake Elsinore, Canyon Lake, and the Middle Santa Ana River.
- Developed and updated methods to track program effectiveness such as resident surveys, tracking hotline inquiries, and web counters.
- Revised the program management structure as presented in the ROWD submitted to the Santa Ana Regional Board in 2000 including:
 - Established the Management Steering Committee that brings together the city managers in the Santa Ana Region promoting consensus and communication on a regional basis.
 - Formation of sub-committees to guide and develop specific program elements (Construction Activities, Industrial/Commercial Activities, New Development/Significant Redevelopment, Public Education, Municipal Facilities & Activities, Monitoring, & Finance).
- Expanded implementation of the CAP.
- Assisted in development and implementation of the TMDLs for Canyon Lake, Lake Elsinore and the Middle Santa Ana River.
- Enhanced Public Education program through development of new outreach materials and programs.
- Enhanced enforcement and compliance elements of the DAMP.
- Pursued and received Proposition 50 Planning Grant to develop an Integrated Regional Watershed Management Plan for the San Jacinto watershed and to facilitate implementation of the Canyon Lake/Lake Elsinore Nutrient TMDL.

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- Established an electronic tracking system for NPDES complaints received through the toll free "Report Storm Water Pollution" hotline, OES or otherwise reported to the District.
- Enhanced public outreach regarding illegal dumping including brochures for: Outdoor Activities, Fountains & Swimming Pools, and Pet Waste, establishment of a Santa Ana Watershed Clean-Up Day and coordination with the County of Riverside Trash Task Force.
- Initiated cooperative program with Environmental Health to promote Environmental Enhancement Projects in lieu of fines for environmental crime cases. This initiative resulted in the billboard advertising campaign to promote and BMP posters addressing appropriate BMPs for gas stations and garages.
- Prepared a one-year evaluation of Litter Management BMPs. This evaluation assessed the relative efficiency and cost effectiveness of anthropogenic litter management BMPs including: street sweeping, catch basin cleaning, deployment of trash receptacles, public education, and MS4 maintenance. As a result, a Litter Removal Inspection Form was developed that assists the Permittees in identifying and prioritizing areas with litter problems. The Permittees augmented the litter management programs including employee/contractor training, industrial/commercial activity inspections, recycling programs including bulk-item collection, participation in watershed clean-up efforts, and illegal dumping retrieval.

4.2.2 Proposed Revisions to IC/ID Program Element and MS4 Permit

4.2.2.1 Consolidation of IC/ID Reporting Requirements

The Permittees proposed a consolidation and simplification of IC/ID reporting requirements in the 2005 DAMP. These reporting requirements have been incorporated into the Proposed 2007 MS4 Permit. IC/ID reporting requirements were spread throughout the construction, industrial, commercial, and IC/ID sections of the 2002 MS4 Permit. The Proposed 2007 MS4 Permit provisions now reference the unified IC/ID reporting procedures currently contained within the DAMP for simplicity and clarity.

4.2.2.2 Consolidation of Training Requirements

All training requirements have been consolidated to Section XIV of the Proposed 2007 MS4 Permit for simplicity and clarity.

4.3 Permittee Facilities and Activities

The Permittees' Municipal Facilities Strategy was conditionally approved by the Executive Officer of the Santa Ana Regional Board on October 30, 1997. The Municipal Facilities Strategy provides guidance for identifying potential storm water pollutant sources and for selecting appropriate BMPs for implementation at identified facilities of concern owned and operated by the Permittees. The Permittees are implementing the provisions of the Municipal Facilities Strategy within their respective jurisdictions. The Municipal Facilities Strategy was consolidated into the Section 5 of the DAMP during the current MS4 permit term. The Permittees implement the DAMP provisions within their respective jurisdictions. To assist the Permittees in implementing this program, training focused on storm water regulatory requirements and BMPs related to Permittee maintenance facilities and roadway maintenance activities were conducted annually during the 2002 MS4 Permit term.

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issued by the Santa Ana Regional Board. A notification process similar to that used for Permittee construction activities will be included in Section 5 of the 2007 DAMP.

4.4 Development Planning

This program element links a Co-Permittee's General Plan, environmental review process, and development approval and permitting processes to the later phases of detailed design, construction and operation. A General Plan specifies policies that guide development. The environmental review process examines potential impacts from proposed development with respect to the General Plan policies and environmental issues, including water quality, and includes consideration of mitigation measures to reduce any identified significant impacts. The development approval and permitting processes carries forth project-specific requirements in the form of conditions of approval, design specifications, tracking, inspection, and enforcement actions. These three "front-end" planning processes must be coordinated and linked to the later phases of design, construction and operation for development projects to ensure Urban Runoff quality protection features are planned, designed and evaluated in accordance with the Permittees' goals for protection of Receiving Waters.

4.4.1 Development Planning Program Element Accomplishments

- The Riverside County Santa Ana and Santa Margarita Regions Model WQMP was developed in 2004. The Model WQMP is a post-construction planning tool to address Urban Runoff from New Development and Significant Redevelopment. The Model WQMP is implemented on a watershed-specific level, and provides guidance for project specific post-construction BMPs to address the quantity and quality of Urban Runoff from New Development and Significant Redevelopment projects. Any New Development or Significant Redevelopment project that requires discretionary approval must submit a project-specific WQMP to the appropriate Permittee. The project-specific WQMP ensures that management of Urban Runoff to protect Receiving Water quality is considered a priority during project design and operation.
- Provided outreach to the Association of Environmental Professionals.
- Development of a GIS Web Browser to assist developers and Permittees in identifying pertinent water quality information for proposed development projects.
- Developed Planning Application forms for Permittee use to ensure that the need for a project-specific WQMP was properly identified early in the planning process.
- Developed a FAQ and watershed impairments maps to assist Permittees and developers with preparing and reviewing project-specific WQMPs.
- Developed a BMP design handbook to standardize BMP selection and design in Riverside County.
- Initiated development of an enhanced BMP Design Handbook to provide additional guidance for low impact development and post-construction BMP design.
- Participation in the SMC efforts to evaluate low impact development options and establish Southern California guidance for BMP implementation.
- Participation in SCCWRP's hydromodification studies to develop scientifically based design guidance for Southern California.

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- The construction inspection forms were updated.
- Co-Permittees developed and maintain an inventory database (or databases) of construction sites 1-acre or larger for which they have issued a building or grading permit. For each construction site/project included in a Co-Permittee's inventory, the Co-Permittees have assigned a priority of "high," "medium," or "low" to reflect the construction site's potential for impairing Receiving Water quality.

4.5.2 Proposed Revisions to the Private Development Construction Activities Program Element and MS4 Permit

4.5.2.1 Consolidation of IC/ID Reporting Requirements

The Permittees proposed a consolidation and simplification of reporting requirements in the 2005 DAMP. IC/ID reporting requirements were spread throughout the construction, industrial, commercial, and IC/ID sections of the 2002 MS4 Permit. The Proposed 2007 MS4 Permit provisions now reference the unified IC/ID reporting procedures currently contained within the DAMP for simplicity and clarity.

4.5.2.2 Consolidation of Training Requirements

All training requirements have been consolidated to Section XIV of the Proposed 2007 MS4 Permit for simplicity and clarity.

4.5.2.3 Consolidation of Inspection Program Requirements

The Permittees have consolidated the Construction, Industrial and Commercial Inspection program requirements into Section IX of the Proposed 2007 MS4 Permit. The consolidation simplifies and clarifies the permit by removing redundant text.

4.5.2.4 Enforcement

During our January 22, 2007 ROWD kick-off meeting Santa Ana Regional Board staff provided a draft document entitled "Riverside County MS4 Permit – Findings from the Audits" in which they recommended increased use of performance bonds and stop work orders as a compliance mechanism for construction sites. The Permittees currently use various combinations of performance bonds and stop work orders for BMP enforcement but these enforcement mechanisms are limited. At this time the Permittees do not propose revising the DAMP to require or to expand the use of performance bonds as a construction site compliance measure. The process associated with the use of stop work orders and limitations of performance bonds are further described in the subsections that follow.

4.5.2.4.1 Use of Stop Work Orders to Enforce Erosion and Sediment Control BMPs

Erosion and sediment control work including installation of BMPs typically is work that must be completed within short periods of time (i.e., 24 hours in advance of a rain forecast and/or a particular phase of construction). Stop work orders are designed to address performance in a changing environment with tight or short performance periods of hours or days for installation of improvements (i.e., BMPs) that must be in-place and based upon daily changes to the site and inspector interpretation of needed BMPs that differ from approved plans. The stop work order process followed by most municipalities is:

1. **Determine if a stop work order is necessary.** If an inspector observes a condition that is unsafe or requires immediate attention to protect the contractor or the public he will issue a stop work

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2. **Agreement.** The performance agreement sets the requirements for performance and notice of default or lack of improvements. Municipalities must outline the time period for completion of the improvements before issuing a notice of default, after which the notice is served upon the contractor with a copy to the bond company. In addition, the agreement establishes a time period for response from the contractor and/or the bonding company to agree or not agree with the municipality's findings and/or to perform the work or pay the municipality for the agreed upon work if the contractor fails to meet his contractual obligation stipulated in the agreement. As the typical initial response time ranges from days to weeks, performance bonds would not be effective in enforcing construction BMPs.
3. **Bond enforcement.** If the contractor does not successfully complete all required work or violates any requirement of the agreement, the municipality spells out the enforcement measures it deems necessary to ensure completion. Municipalities typically prepare punch lists and solicit the work to correct the problems after expiration all administrative remedies of the agreement have been exhausted by the contractor and the bonding company. The administrative remedy takes months and sometimes years if it is escalated to the legislative body. As enforcement of performance bonds requires a lengthy process, construction site conditions may have changed significantly and even the need for the required sediment and erosion controls may be eliminated over this period by completion of the project.

Although not as time sensitive as construction site BMPs, the use of performance bonds for post-construction BMPs has limits, also. Typically, a performance bond involves a third party (i.e., insurance company, bank, etc.) and an agreement with the Co-Permittee. Failure of the private party to perform the required maintenance of a post-construction BMP will necessitate the Co-Permittee to build a "case" against the non-performing party that may lead to a hearing by an arbitrator or in a court of law. The necessary resources, including code enforcement staff, legal counsel, consulting services, etc., to build such a case strains a municipality. Performance bonds are burdensome and require both diligence and patience on the side of the "enforcer" to ensure the case is solid for either payment or services by the third party or moving the case to litigation.

4.6 Commercial and Industrial Sources

The Principal Permittee and the County have implemented the CAP through which the County Department of Environmental Health specifically addresses storm water compliance survey/inspections of restaurants facilities that must secure a hazardous materials permit for either storing, handling or generating hazardous materials. The CAP is implemented in those cities and unincorporated areas that do not maintain an individual industrial/commercial inspection program through other mechanisms such as POTW waste pre-treatment programs or business license inspection programs. As described in Section 8 of the DAMP, the Permittees must either participate in the CAP or implement an equivalent inspection program. The Cities of Corona and Riverside maintain such programs through their respective POTW pre-treatment programs.

The Riverside County Department of Building and Safety has been tasked with developing a pilot project to establish a stand alone Storm Water Compliance Inspection and Enforcement Program (CIEP) for industrial/commercial facilities in the unincorporated areas of the Count Ordinance 857 (Business Registration and Licensing) was adopted on September 12, 2006 by the County Board of Supervisors and provides the basis for registering all businesses that are within the unincorporated areas of the County. Once a database has been established and businesses are registered, inspections will occur to determine

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4.6.2.4 *Alternative Inspection Program*

Several Permittees have developed enhanced industrial/commercial inspection programs to address the specific needs of their municipalities. The Proposed 2007 MS4 Permit recognizes these alternative programs, and requires, at a minimum, that they be equivalent to the CAP.

4.7 Public Education and Outreach

To leverage finite resources, the public education program has frequently partnered with various entities (County of Riverside Waste Management Department, Western Riverside Council of Governments, Riverside County Code Enforcement Division, Riverside County Department of Environmental Health, Riverside County Agricultural Commissioner's Office, Riverside-Corona Resource Conservation District etc.) to promote conservation, pollution prevention and environmental awareness. The education program also expands outreach opportunities by collaborating with entities such as County of Riverside Agricultural Commissioner, Flower Shows, and Home & Garden Shows to promote proper use of pesticides and herbicides to specific target groups such as pesticide applicators and home gardeners.

The public education program developed the Storm Water Protection Website (www.floodcontrol.co.riverside.ca.us/stormwater/) to provide information to residents, businesses, developers, contractors, school, teachers, and children about the problem of storm water pollution and offers simple measures to protect Receiving Waters. The website provides a materials order form for educational materials and tracks the number of queries. The public education program operates a toll-free hotline for reporting illegal dumping activity and to provide public education information.

4.7.1 Public Education and Outreach Program Element Accomplishments

The Storm Water Protection Website contains resources for residential homes, businesses, developers, contractors, and children. The website is accessible from the District home page. The Storm Water Protection Website offers free brochures that all web site visitors can print in quantities or can order including:

- *After the Storm* – a citizen's guide to understanding MS4 pollution in your neighborhood or when performing daily activities.
- *Automotive Maintenance & Car Care* – guidelines for keeping your auto shop or retail fuel facility in environmental shape.
- *Outdoor Cleaning Activities* – guideline for outdoor cleaning activities and wastewater disposal.
- *Pools, Spas and Fountains* – Environmental maintenance suggestions for pool, spa, and fountain owners.
- *What's the Scoop* – tips for a healthy pet and a healthier environment.
- *Household Hazardous Waste* – A schedule of collection locations for proper disposal of HHW.
- *Stormwater Pollution Found in Your Neighborhood* – door hanger.

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4.7.2 Proposed Revisions to Public Education and Outreach Program Element and MS4 Permit

4.7.2.1 Public Education Outreach Program Enhancements

During the next MS4 Permit term the following revisions to the Public Education and Outreach program will be priorities:

- Enhance coordination of public education outreach with adjacent MS4s.
- Enhance outreach materials for IC/IDs, nutrients, fertilizers, and pesticides.
- Focus the Public Education and Outreach Program on the pollutants causing the greatest impacts to water quality, determined by the monitoring results.

4.7.2.2 Training Program Consolidation

All training requirements have been consolidated to Section XIV of the Proposed 2007 MS4 Permit for simplicity and clarity. In addition, training program requirements have been modified in the Proposed 2007 MS4 Permit to allow for adjustable training schedules to accommodate individuals who have already been trained, allow for local training, and provide alternative training formats. The goal of these training revisions would be to infuse storm water pollution prevention training knowledge into daily activities of Permittee staff. Providing a Santa Ana Regional Board approved alternative to the repetitive classroom-style training required by the 2002 MS4 Permit would result in more enthusiastic staff participation and retention.

4.8 Monitoring Program

4.8.1 Overview of the Consolidated Program for Water Quality Monitoring

As Riverside County is within the jurisdiction of three Regional Boards, the Consolidated Monitoring Program was developed in 1994 to integrate the requirements of the three area-wide MS4 Permits. The overall goal of the Consolidated Monitoring Program continues to be to develop information that can be used to support effective implementation of the Urban Runoff management programs throughout Riverside County.

The purpose of the MS4 Urban Runoff program is to manage the quality of Urban Runoff to the MEP to prevent impacts to Receiving Waters. The monitoring program goals necessary to support this purpose are:

- Identify those Receiving Waters, which, without additional action to control pollution from Urban Runoff, cannot reasonably be expected to achieve or maintain applicable Water Quality Standards.
- Characterize Pollutants associated with Urban Runoff and assess the influence of urban land uses on Receiving Water quality.
- Analyze and interpret the collected data to identify trends, if any, both to prevent impairments through the implementation of preventive BMPs and to track improvements based on the Urban Runoff management program.

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4.8.3 Monitoring Program Accomplishments

4.8.3.1 Revised Consolidated Monitoring Program

The Permittees have revised the Consolidated Monitoring Program to address the objectives of the 2002 MS4 Permit and to more effectively utilize finite monitoring resources. The Consolidated Monitoring Program identifies general monitoring elements common to the three MS4 permits applicable to Riverside County, and watershed-specific requirements are addressed in the appendices.

The Consolidated Monitoring Program addresses the following elements:

- TMDL/303(d) monitoring
- Microbial monitoring
- Bioassessment monitoring
- Field Reconnaissance
- Evaluation of other sources of data
- Mass emission monitoring
- Water column toxicity monitoring
- Hydrologic monitoring
- Land use correlations
- Special studies

The water quality monitoring program requires sampling and analysis from both wet and dry weather flows. Wet weather sampling involves weather forecasting, scheduling and mobilization of field crews, collection of representative samples from the runoff hydrograph, compositing samples, laboratory analysis, and maintenance of the laboratory analytical results in a water quality database. Dry weather monitoring includes procedures to indicate a source not related to a rainfall event, which may reflect an illicit connection, an illegal discharge, rising groundwater or other permitted or non-permitted non-storm water discharges. Therefore, the Consolidated Monitoring Program also addresses mobilization guidance; water quality sampling procedures; quality assurance and quality control (QA/QC) procedures; data collection and analysis guidance; monitoring costs; and health and safety issues.

The Consolidated Monitoring Program monitoring stations primarily sample Receiving Waters and discharges from MS4 outfalls. Receiving Water sampling locations were selected to provide baseline information of ambient water quality. The Receiving Water sampling stations include creeks, rivers, lakes, and reservoirs. A summary of the Consolidated Monitoring Program stations is maintained in a sampling data base (spreadsheet format) that includes channel type, location information, nearest rain gauge, type of sampling location (MS4 outfall vs. Receiving Water), sampling methods and equipment, tributary area, and land use mix.

4.8.3.2 Participation in Regional Monitoring Efforts

- Participation in the monitoring programs to support development of the Canyon Lake, Middle Santa Ana River and Lake Elsinore TMDLs.
- Cooperated with Santa Ana Watershed Project Authority (SAWPA), SJRWC, and LESJWA to obtain three grants, totaling more than \$2.25 million, to address TMDL impairments by facilitating monitoring and data collection (two for the San Jacinto watershed, one for the Santa Ana River watershed).
- Continued participation by District staff as the CASQA Monitoring and Science Co-Chair.

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inter-calibration of lab data and standardization of various test methods. The Permittees will continue to incorporate the findings of these efforts into their monitoring programs as the results of the studies are released.

The Permittees would also note that, through the TMDL process, the Santa Ana Regional Board has significantly increased the monitoring and analysis obligations of the Permittees. In addition, the new monitoring obligations require that limited resources be diverted from other compliance program elements to address the monitoring of these high priority water quality issues within the watershed. The TMDL monitoring programs are also stretching existing Permittee staffing resources for monitoring programs. For this reason, the Permittees are not proposing any other significant modifications to their existing MS4 monitoring programs at this time. The Permittees, do however, wish to reserve the right to re-evaluate and restructure MS4 compliance monitoring obligations to compliment and support TMDLs and prevent duplication of effort. Restructuring may include removal or relocation of MS4 compliance monitoring stations, conversion of sampling sites to automated sampling equipment, or other methods deemed necessary to ensure that programs are complimentary and not duplicative.

4.9 Program Evaluation, Reporting and Revision

Each year the District, as Principal Permittee, coordinates the preparation of the Annual Report submitted to the Santa Ana Regional Board. The Annual Report details the Permittees' activities and accomplishments in regard to implementing the DAMP. Each Permittee submits to the District an Annual Report for their jurisdiction that assesses the improvement in water quality through indirect qualitative and quantitative measures. Evaluation of overall program effectiveness includes evaluation of achievement of short and long term strategies (that is, not directly based on the quality of Urban Runoff or receiving water quality).

The long-term strategy for assessing effectiveness focuses on water quality data obtained as part of the Consolidated Monitoring Program. This is by necessity a long-term strategy since the first step is developing and understanding baseline data. Due to the inherent variability of Urban Runoff, years of monitoring data collection are necessary to identify statistically significant trends or draw conclusions on program effectiveness. Additionally, because there are (1) numerous program elements being implemented and revised concurrently, (2) other environmental regulations indirectly impact Urban Runoff, and (3) numerous other climatological, man-made, and environmental changes that occur in the watershed, the ability to identify cause-and-effect relationships between a specific program element and/or BMP and improvement in the quality of Urban Runoff is complicated, if not infeasible, in many cases.

The short-term strategy for assessing the effectiveness focuses on quantitative, indirect methods of assessment. Each year the Permittees collect various metrics defined in the DAMP to assist with program evaluation. As part of the ROWD, the Permittees will evaluate these metrics, including water quality data, in an effort to assess overall program effectiveness. On an annual basis, the Permittees will review the metrics to determine if any course corrections on existing program elements may be beneficial.

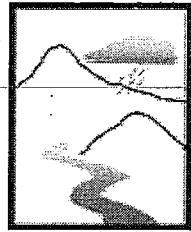
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Appendix A. Proposed 2007 MS4 Permit

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Appendix C. Permit Area Boundary Map / 2006 Land Use Map

ATTACHMENT 42



Storm Water

Clean Water

PROTECTION PROGRAM

**RIVERSIDE COUNTY
DRAINAGE AREA MANAGEMENT PLAN**

**SANTA ANA AND SANTA MARGARITA
REGIONS**

APRIL 2007

**Santa Ana Watershed
Drainage Area Management Plan
Summary of Changes since 2006 Annual Report**

Notice of Intent and Notice of Termination for Construction Activities under the Municipal Permit	
<i>Notice of Intent</i> Added fields for email and fax number for owner's and contractor's information	Phone () () Fax () () Email :
<i>Notice of Termination</i> Added fields for email and fax number for owner's and contractor's information	Phone () () Fax () () Email :

Sanitary Sewer Overflow Procedures	
Description	December 2006
<i>Attachment A (Sewering Agency Contact Roster)</i>	
Contact information change for the City of Hemet	Police Dispatch: 951.765.2400
Contact information change for the Elsinore Valley Municipal Water District	After Work Hours: (951) 258-9299
Contact information change for the Lake Hemet Municipal Water District	Mitch Freeman (Sr W. Operator), Jeff Wall (Chief Engineer) 951.658.3241 ext. 247; 951.658.3241 ext. 238 After Work Hours: 951.956.4836; 951.970.8970 Fax 951.766.7031

Riverside County DAMP – Santa Ana and Santa Margarita Regions

Contact information change for the Rubidoux Community Services District		mfreeman@lhmwd.org After Work Hours: 951.684.7580 dballow@rcsd.org
Contact information change for the Yucaipa Valley Water District	909.208.6347 (cell)	After Work Hours: 951.789.5109
Contact information change for the City of Corona	Mr. Gary Reid 951.736.2233 Fax 951.279.3695 Cell 951.830.1455 Gary.reid@ci.corona.ca.us	Rudy Fandel 951.736.2476, After Hours: 951.736-2223 Fax 951.739.4909 Rudy.fandel@ci.corona.ca.us
Contact information change for the City of Riverside		After Work Hours: 951.351.6140
Contact information change for the Jurupa Community Service District		Fax: 951-685-1153
Contact information change for the Lee Lake Water District	Mr. Harry Riebe or Mr. John Pastore 760.479.4120	Ken Codwell (Plant Super.) Mr. Harry Riebe (Eng.) Jeff Pape (GM) During Work: 760.277.1414; 760.479.4120; 951.277.1414 After Work: 951.830.3651; 760.473.4120; 760.250.9658
Contact information change for the Western Municipal Water District	951.789.5114 (during working hours) bbeam@wmwd.com	951.789.5114 (during working hours) westernops@wmwd.com
<i>Attachment C (MS4 Permittee Contact Roster)</i>		
Contact information change for the City of Canyon Lake	Kathy Bennett 951.244.2955 Fax 951.246.2022 Cell 951.237.2222 Home 951.471.2873 Kathy@cityofcanyonlake.com	Robert Bohan, Senior Special Enforcement Officer 951.244.2955 Fax 951.246.2022 Cell 951.265.1796 Home 951.244.3935(Deputy)

Riverside County DAMP – Santa Ana and Santa Margarita Regions

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Water Quality Management Plan (WQMP)

Description	September 17, 2004	July 24, 2006 update
<i>Through-out document</i> References to web page changed:	www.swicb.ca.gov	www.waterboards.ca.gov
<i>Section 4.0 - Project-Specific WQMP Preparation (page 8)</i> Edit to sentence (1 st paragraph, 1 st sentence)	Prior to submitting...	Category projects must submit...
<i>Section 4.3 - Identify Pollutants of Concern (page 12)</i> Edit to sentence (3 rd paragraph)	...pollutants expected to be generated by the project	... potential pollutants of concern generated by the project.
<i>Section 4.3 - Identify Pollutants of Concern (page 12)</i> Edit to sentence (4 th paragraph, last sentence)	See Section 4.5,	See Section 4.5.3,
<i>Section 4.5.2.1 - Non-Structural Source Control BMPs (page 19)</i> Edit to sentence (9 th paragraph, last sentence)	The project applicant shall request these materials (in writing) at...	The project applicant shall request these materials at...

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<p><i>Exhibit B – Potential Pollutants Generated by Land Use Type (page B-2)</i> Edit to each Expected (E) value</p>	<p>E</p>	<p>P</p>
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<p>WQMP Template</p>		
	<p>Previous Version</p>	<p>August 23, 2006 update</p>
<p>File format</p>	<p>*.doc format</p>	<p>*.dot format</p>
<p>Protection</p>	<p>None</p>	<p>Password-protected</p>
<p>Fill-in forms</p>	<p>Incompatible w/ current Word versions Yellow highlights</p>	<p>Upgraded to Word 2003 & fixed bugs Removed yellow highlights</p>
<p>Yes/No/NA Inputs</p>	<p>Type-in only</p>	<p>Check boxes</p>
<p>Instructions</p>	<p>In fill-in field only</p>	<p>Special section above fill-in fields</p>
<p>Automatic field updates</p>	<p>Project title, tract/development nos., owner/preparer info, document date</p>	<p>Fixed bugs & added auto-update for page numbers.</p>
<p>Section I</p>	<p>Planning Area/Community Name</p>	<p>Planning Area/Community Name/Development Name</p>

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Best Management Practices (BMP) Design Handbook		September 17, 2004	July 24, 2006 update
Description			
Table 2 - Potential Pollutants Generated by Land Use Type (page 2) Table correction		Table has been updated to be consistent with WQMP Exhibit B table	
Table 3 - Treatment Control BMP Selection Matrix (page 3) Table correction		Table has been updated to be consistent with WQMP Table 3	
Austin Sand Filter Design Procedure			
3. Sedimentation Basin Design (page 37) Formula correction	Width = $A_s / (3)$ Length = $(2) \times (\text{width})$	$A_s = 2 \times W^2$ length = $2 \times \text{width}$	
Worksheet 7 - Design Procedure Form for Austin Sand Filter (page 43 and 44) Formula correction	Width = $A_s / (3)$ $V_t \geq V_t?$	$A_s = 2 \times W^2$ $V_t \leq V_t$	
Appendix B - BMP Design Examples			
cover sheet (page 65) Typographical error change	Austin San Filter	Austin San Filter	
Extended Detention Basin Example Calculation/value change Datasheet, Worksheet 1: Item 2.b, and Worksheet 3: Item 1.a.	$A_{\text{total}} = 80$ acres	$A_{\text{total}} = 40$ acres	
Typographical error change Through-out datasheet Total Basin Volume check: Forebay Design: Basin Outlet, For this size orifice:	$\dots (108\% V_{\text{BMP}}) ? V_{\text{BMP}}$ $\dots ((4 * \text{Area}_F) / ?) = 89.9$ $\dots 27$ hours ? 24 hours	$\rightarrow \dots (108\% V_{\text{BMP}}) \geq V_{\text{BMP}}$ $\dots ((4 * \text{Area}_F) / \pi) = 89.9$ $\dots 27$ hours ≥ 24 hours	

Riverside County DAMP – Santa Ana and Santa Margarita Regions

Best Management Practices (BMP) Design Handbook	
Description	July 24, 2006 update
<p>Grass Swale Example</p> <p>Calculation/value change</p> <p>Datasheet</p> <p>Table 4: Runoff Coefficients for an Intensity and Worksheet 2: Item 2</p> <p>Worksheet 2: Item 4</p> <p>Worksheet 2: Item 5 and Worksheet 9: Item 1</p> <p>Worksheet 9: Item 1</p>	<p>September 17, 2004</p> <p>...60 hours ? 48 hours</p> <p>$Q_{BMP} = 9.27$ cfs</p> <p>slight coefficient value changes through-out table</p> <p>$C = .579$</p> <p>$Q_{BMP} = 9.27$ ft³/s</p> <p>$D = 0.42$ (5") ft</p>
<p>Austin Sand Filter Example</p> <p>Typographical error change</p> <p>Datasheet and Worksheet 7: Item 1</p> <p>Through-out datasheet</p> <p>Filter Basin Design:</p>	<p>July 24, 2006 update</p> <p>...60 hours \geq 48 hours</p> <p>$Q_{BMP} = 9.31$ cfs</p> <p>$C = .582$</p> <p>$Q_{BMP} = 9.31$ ft³/s</p> <p>$D = 0.41$ (5") ft</p>
<p>Worksheet 7: Item 4.d.</p>	<p>$A_{total} = 80$ acres</p> <p>\rightarrow</p> <p>.... = 10164 ft³ ? V_{fb}</p> <p>.... = 8469 ft³ ? V_{fb}</p> <p>$V_r \geq V_r?$</p>
<p>Infiltration Basin Example</p> <p>Calculation/value change</p> <p>Datasheet and Worksheet 1: Item 4</p>	<p>$A_{total} = 40$ acres</p> <p>\rightarrow</p> <p>.... = 10164 ft³ $\geq V_{fb}$</p> <p>.... = 8469 ft³ $\geq V_{fb}$</p> <p>$V_r \leq V_r$</p>
<p>Datasheet: 3. Trench Surface Area</p> <p>Worksheet 4: Item 1b</p> <p>Worksheet 4: Item 3</p>	<p>$V_{BMP} = 1.13$ in-acre</p> <p>$V_{BMP} = 0.0942$ ft-acre</p> <p>$V_{BMP} = 4103$ ft³</p> <p>$A_m = 5952$ feet = 0.1366 Acres</p> <p>$V_{BMP} = 4103$ ft³</p> <p>$A_m = 5952$ feet</p>
<p>Filter Strip Example</p> <p>Calculation/value change</p> <p>Table 4: Runoff Coefficients for an Intensity and Worksheet 2: Item 2</p>	<p>$V_{BMP} = 1.12$ in-acre</p> <p>$V_{BMP} = 0.093$ ft-acre</p> <p>$V_{BMP} = 4051$ ft³</p> <p>$A_m = 5880$ ft² = 0.135 Acres</p> <p>$V_{BMP} = 4051$ ft³</p> <p>$A_m = 5880$ feet</p> <p>slight coefficient value changes through-out table</p>

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Best Management Practices (BMP) Design Handbook		
Description	September 17, 2004	July 24, 2006 update
Worksheet 2: Item 4 Worksheet 10: Item 1 Worksheet 10: Item 2	C = .83 Q _{BMP} = .211 cfs W _m = 42.2 ft	C = .82 Q _{BMP} = .21 cfs W _m = 42 ft

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- B Third-term Santa Ana Region MS4 Permit
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- D SMR MS4 Map
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- F 2004 San Diego Region Implementation Agreement (Santa Margarita Region)
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- I Sanitary Sewer Overflow Procedure
- J Template Pollution Prevention Plan for Municipal Facilities
- K Fire BMPs
- L CEQA Project Application Form
- M CEQA Initial Study Checklist
- N Guidance for Preparing/Reviewing CEQA Initial Studies and Environmental Impact Reports
- O Riverside County Water Quality Management Plan for Urban Runoff
- P Project-Specific WQMP Checklist
- Q Compliance Assistance Program Storm Water Survey Forms
- R Co-Permittee Standardized Reporting Forms
- S Santa Margarita River Watershed Storm Water Management Plan

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1.0 EXECUTIVE SUMMARY

This update of the Drainage Area Management Plan for the Santa Ana and Santa Margarita Regions (DAMP) addresses the requirements of the municipal separate storm sewer system (MS4) Permits issued to the Riverside County Permittees by the Santa Ana Regional Water Quality Control Board (Regional Board) in 2002 and the San Diego Regional Board in 2004, and incorporates programs developed since 1993. These are the third MS4 permits issued by each Regional Board and are referred to as the “Third-term” MS4 Permits.

The update of the DAMP was conducted in two phases. In the first phase, the DAMP was updated to specifically address the requirements of the Third-term Santa Ana Region MS4 Permit. A revised DAMP was submitted to the Santa Ana Regional Board in January 2005 for approval by the Executive Officer as specified in Section XIII.A of the Third-term Santa Ana Region Permit. Following submittal of the revised DAMP to the Santa Ana Regional Board, additional revisions were made to address requirements specific to the Santa Margarita Region (SMR). The revisions for the Santa Margarita Region do not affect the programs implemented in the Santa Ana Region.

The DAMP describes a wide range of continuing and enhanced Best Management Practices (BMPs) and control techniques, which are being implemented during the five-year terms of the Third-term MS4 Permits and describes the overall Urban Runoff management strategies planned by the Permittees in the Santa Ana and Santa Margarita Regions of Riverside County. The DAMP has been prepared to meet the complex Urban Runoff management needs in the Santa Ana and Santa Margarita Regions consistent with the Third-term MS4 Permits. The DAMP must address the needs and constraints of the Permittees and the requirements of the Third-term MS4 Permits.

A glossary of terms is provided as Appendix A. Throughout the DAMP equivalent terms from the Third-term MS4 Permits have been standardized. For example, the term “Standard Urban Stormwater Management Plan (SUSMP)” referenced in the Third-term SMR Permit is referred to as the “Water Quality Management Plan (WQMP)”.

The requirements of the Watershed SWMP (Provision K.2. of the Third-term SMR permit) are addressed throughout the DAMP. In addition, Appendix S contains a separate “Watershed SWMP” section that describes how Provision K.2 requirements are specifically addressed by the DAMP.

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2.0 INTRODUCTION TO THE DRAINAGE AREA MANAGEMENT PLAN

The DAMP is a programmatic document developed by the Permittees and approved by the Executive Officers of the Santa Ana and San Diego Regional Boards. It is the principal document that translates the MS4 Permit requirements into programs and implementation plans. The DAMP is used by the Permittees in their development of individual ordinances, plans, policies and procedures to manage Urban Runoff.

The initial DAMP was prepared in February 1993 (subsequently referred to as 1993 DAMP) in compliance with the requirements of the First-term MS4 Permits issued by the Santa Ana and San Diego Regional Boards. This DAMP outlines the major programs and policies that the Permittees individually and/or collectively develop and implement to manage Urban Runoff in compliance with the Third-term MS4 Permits issued by the Santa Ana Regional Board in 2002 and the San Diego Regional Board in 2004. The primary program elements are illustrated in Figure 2-1. Additional program elements were also developed to address specific compliance needs. "Supplement A" to the DAMP was developed in April 1996 to provide guidance in the selection and design of storm water quality controls for development projects. The Municipal Facilities Strategy and Enforcement Compliance Strategy were developed as required by the 1998 MS4 Permit issued by the Santa Ana Regional Board. These program elements have been incorporated into the DAMP.

The area of Riverside County covered by the MS4 Permit issued by the Santa Ana Regional Board is referred to as the Santa Ana Region (SAR) and the area covered by the MS4 Permit issued by the San Diego Regional Board is referred to as the Santa Margarita Region (SMR). The Permittees of the Third-term MS4 Permits and their associated regions are:

- ◆ Riverside County Flood Control and Water Conservation District (District) (SAR, SMR)
- ◆ County of Riverside (SAR, SMR)
- ◆ City of Beaumont (SAR)
- ◆ City of Corona (SAR)
- ◆ City of Hemet (SAR)
- ◆ City of Lake Elsinore (SAR)
- ◆ City of Moreno Valley (SAR)
- ◆ City of Murrieta (SAR, SMR)
- ◆ City of Norco (SAR)
- ◆ City of Perris (SAR)
- ◆ City of Riverside (SAR)
- ◆ City of San Jacinto (SAR)
- ◆ City of Calimesa (SAR)
- ◆ City of Canyon Lake (SAR)
- ◆ City of Temecula (SMR)

The District has been designated Principal Permittee in both MS4 Permits and the remaining 14 municipalities, including the County, are referred to as Co-Permittees.

2.1 PROGRAM OVERVIEW

The DAMP serves as the primary compliance document that describes the program elements necessary to comply with the Third-term MS4 Permits. The program elements and associated DAMP sections are identified in Figure 2.1.

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Santa Ana Region Specific Element

In addition to the descriptions of program elements contained within the DAMP, each Permittee maintains documentation of their internal procedures for implementation of the program elements described in the DAMP. This documentation includes the following information:

- ◆ Legal counsel certification of the Permittee's authority to implement the Third-term Santa Ana MS4 Permit requirements.
- ◆ Copy of the Permittee's storm water ordinance, grading/erosion ordinance and litter/trash control ordinance
- ◆ Illicit Connection/Illegal Discharge enforcement and compliance prioritization and response program (DAMP Section 4)
- ◆ Policy and Procedures for planning and design of Permittee projects subject to the Water Quality Management Plan (WQMP).
- ◆ Operation and maintenance schedule for the MS4.
- ◆ CEQA project application forms and initial study checklists
- ◆ Procedure for implementing development review, approval and permitting
- ◆ Construction site inspection program, database and inspection checklist
- ◆ Industrial/commercial inspection program, database and inspection checklist

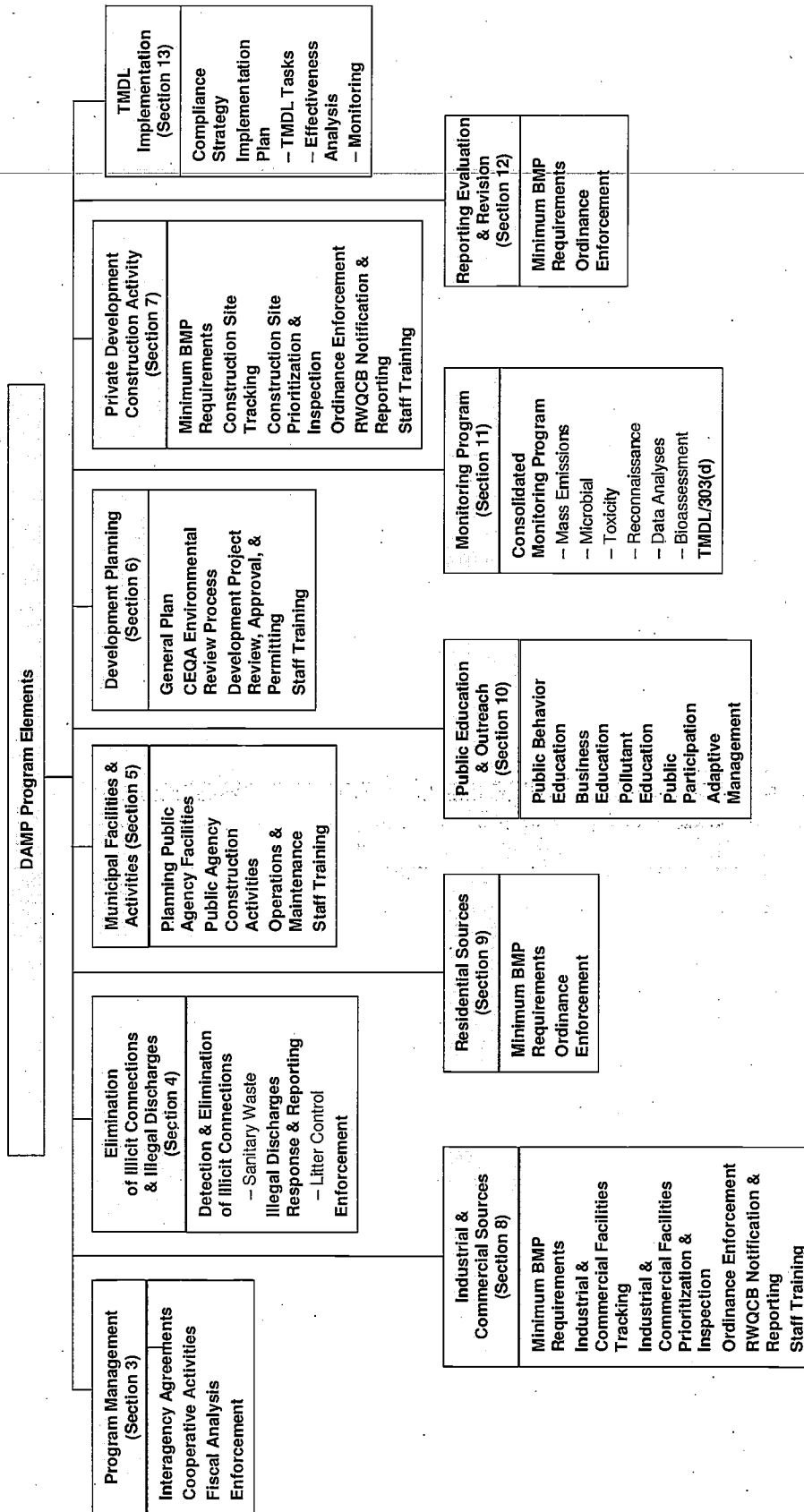
These documents are reviewed and updated as necessary to keep up with changes within the Permittees jurisdiction and with changing local, state and federal regulations. These programs will remain, however, in compliance with the Third Term Santa Ana MS4 Permit and the programs outlined in this DAMP.

Santa Margarita Region Specific Elements

In addition to the descriptions of program elements contained within the DAMP, each Permittee maintains an Individual Storm Water Management Plan (Individual SWMP) that documents their internal procedures for implementation of the program elements described in the DAMP. In the Santa Margarita Region, the Permittees local program elements do not have to be in substantial conformance with the DAMP. The Permittees may choose to implement programs described in the DAMP or to implement alternative programs. However, the alternate programs must be in conformance with the requirements of the Third Term Santa Margarita Region MS4 Permit.

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Figure 2-1. Program Elements of DAMP



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2.2 REGULATORY FRAMEWORK

2.2.1 CWA Section 402(p) – NPDES Permitting for Storm Water Discharges

The Urban Runoff pollution control effort, of which this DAMP is part, is the result of over thirty years of legislative effort beginning with the Federal Water Pollution Control Act, which, as amended in 1972, is now referred to as the Clean Water Act (CWA). The CWA authorized that the discharge of pollutants to Waters of the United States from a point source is effectively prohibited unless the discharge is in compliance with a NPDES permit. In 1987 Congress amended portions of the CWA and included Section 402(p), which set requirements for permitting storm water discharges. Section 402(p) of the CWA required that the United States Environmental Protection Agency (USEPA) establish regulations setting forth a program of NPDES applications and corresponding permits for storm water discharges associated with industrial activities and for storm water discharges from MS4s. Section 402(p) of the CWA also requires that MS4 NPDES permits include:

- ◆ A requirement to effectively prohibit non-storm water discharges into the MS4; and
- ◆ Controls to reduce the pollutants in storm water discharges to the maximum extent practicable (MEP), 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.

USEPA's Final Rule for NPDES Permit Application Regulations for Storm Water Discharges became effective December 17, 1990 and is often referred to as the "Phase I storm water regulations." The Phase I storm water regulations are administered nationwide through the USEPA's NPDES program. California is authorized to issue NPDES permits under Section 402 of the CWA per agreement with the USEPA. The Phase I storm water regulations require that the management program for an MS4 include a comprehensive planning process which involves public participation and necessary intergovernmental coordination to reduce the discharge of pollutants to the MEP using management practices, control techniques and systems, design and engineering methods, and such other provisions which are appropriate. The Phase I storm water regulations also specify who is covered; prescribes a variety of required information-gathering, planning, and reporting activities; and sets forth a schedule for compliance. The Phase I storm water regulations also set forth requirements for specific industrial activities, including construction.

2.2.2 CWA Section 303(d) – Impaired Water Bodies

Under Section 303(d) of the CWA, states, territories, and authorized tribes are required to develop lists of impaired waters and to update those lists every other year. These lists of impaired water bodies are typically referred to as the "303(d) List". In developing the 303(d) List "all existing and readily available water quality-related information" must be utilized. The listed water bodies are considered impaired because they do not meet water quality standards necessary to maintain designated beneficial uses, even after point sources of pollution have installed the minimum required levels of pollution control technology. The current 303(d) List can be viewed or downloaded from the following website: http://www.waterboards.ca.gov/tmdl/303d_lists.html.

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A Total Maximum Daily Load (TMDL) specifies the maximum amount of a pollutant that a water body can receive and still meet water quality standards, and allocates pollutant loadings among point and nonpoint pollutant sources. The CWA requires that priority rankings be established for impaired waters [Receiving Waters on the 303(d) List] and that TMDLs be developed taking into account the severity of pollution and the beneficial uses of the water (fishing, swimming, municipal water supply, etc.).

2.2.3 Santa Ana Region

In response to the Phase I storm water regulations, the Permittees obtained an "Early" MS4 Permit¹ from the Santa Ana Regional Board (NPDES No. CA 8000192, Order No. 90-104) on July 13, 1990, for Urban Runoff from areas in Riverside County within the SAR. The SAR MS4 Permit was renewed in 1996 (Second-term MS4 Permit) with the following additional requirements:

- ◆ Develop an "Enforcement/Compliance Strategy" (E/CS) that addresses compliance with regard to industrial and commercial facilities as well as construction sites;
- ◆ Assess Permittee activities and facilities for potential impacts to Urban Runoff quality and then develop a "Municipal Facility Strategy" (MFS) based on the assessment;
- ◆ Identify post-construction source pollutant prevention and treatment measures that could be incorporated into development projects (New Development Guidelines, Supplement A to the 1993 DAMP).

The Second-term MS4 Permit also explicitly recognized that there are areas of Riverside County within the jurisdictional area of the Santa Ana Regional Board that are not:

- ◆ Subject to the Phase I storm water regulations;
- ◆ Under the jurisdiction of the State of California; nor
- ◆ Under the jurisdiction of the Permittees.

Such areas or entities include:

- ◆ Federal and state lands, including, but not limited to, military bases, national forests, hospitals, colleges and universities, and highways;
- ◆ Utilities and special districts;
- ◆ Native American tribal lands;
- ◆ Non-urbanized areas; and
- ◆ Agricultural lands.

On October 25, 2002, the Santa Ana Regional Board adopted Order No. R8-2002-0011, NPDES No. CAS 618033 (Third-term SAR MS4 Permit). The areas excluded from coverage under the Second-

¹ Some municipalities applied for and received storm water discharge permits prior to the USEPA promulgation of the "Final Rule for NPDES Permit Application for Storm Water Discharges." Such permits have been referred to as "Early" permits.

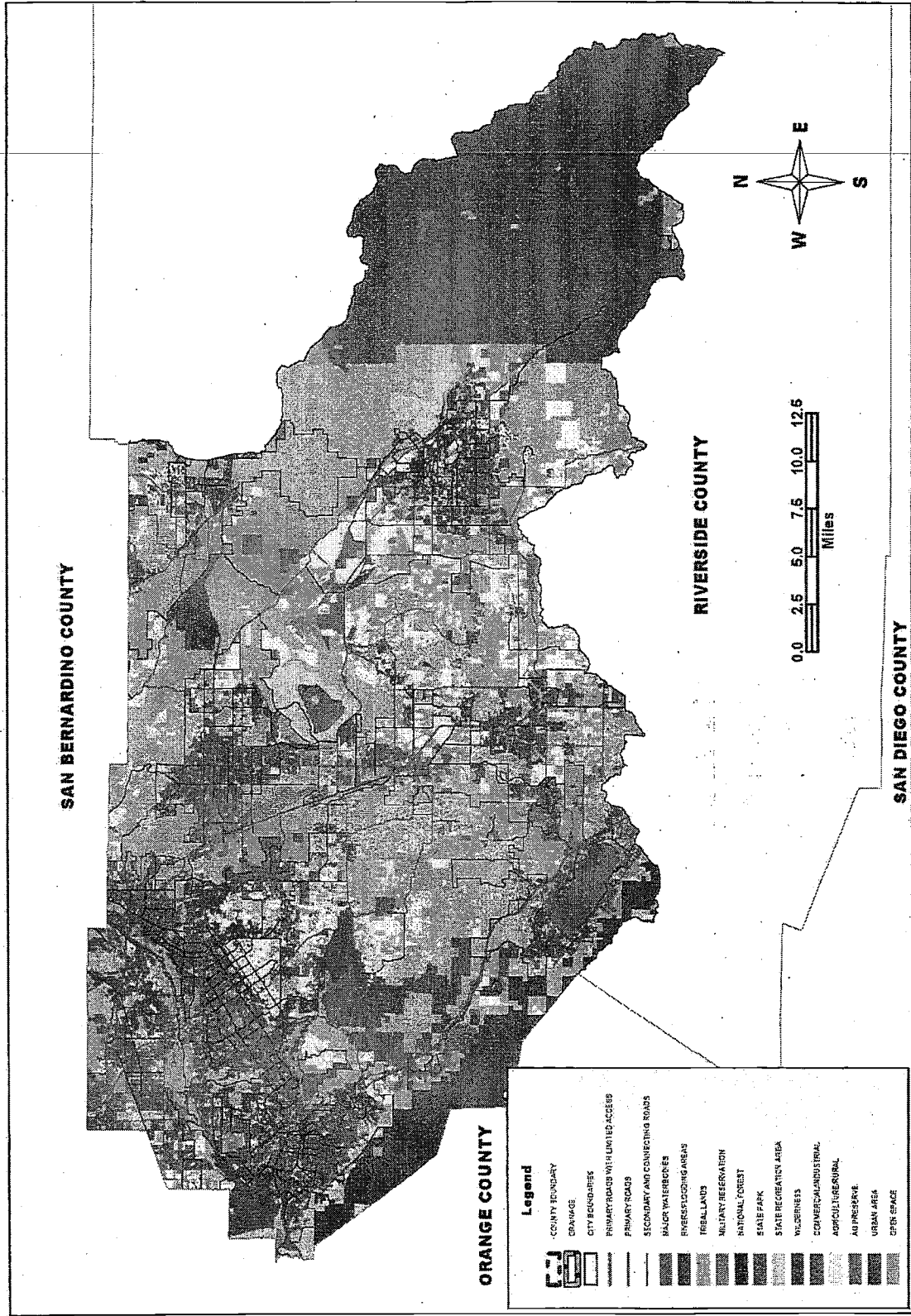
Riverside County DAMP – Santa Ana and Santa Margarita Regions

term MS4 permit are also excluded from coverage under the Third-term SAR MS4 Permit. Figure 2-2 shows the SAR. A copy of the Third-term SAR MS4 Permit is included as Appendix B.

As with the prior SAR MS4 permits, the Third-term SAR MS4 Permit regulates discharges of Urban Runoff from MS4s within Riverside County under the jurisdiction of and/or maintenance responsibility of the Permittees. Further, the Third-term SAR MS4 Permit is intended to regulate the discharge of “pollutants” in Urban Runoff from anthropogenic sources under the control of the Permittees, and is not intended to address background or naturally occurring pollutants or flows. The Third-term SAR MS4 Permit required that the Permittees review and update their programs consistent with the current MEP standard as specified in the permit.

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Figure 2-2. Santa Ana Region



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2.2.4 Santa Margarita Region

In response to the Phase I storm water regulations, the District, the County and the City of Temecula obtained an "Early" MS4 Permit² (NPDES No. CA0108766, Order No. 90-46) in July 1990. On May 18, 1992, the City of Murrieta was added to that permit. This first MS4 Permit required the Permittees to develop an Urban Runoff management program and implement BMPs to control the discharge of pollutants to Waters of the U.S. During this time, the Permittees cooperatively developed the Santa Margarita Regional DAMP (SMR DAMP). The SMR DAMP described 35 BMPs implemented by the Permittees in their effort to control Urban Runoff pollution to the MEP. The San Diego Regional Board approved the SMR DAMP on April 26, 1996.

On January 17, 1995 the District, the County and the cities of Murrieta and Temecula (Permittees) submitted an application for renewal (referred to as a Report of Waste Discharge) of the SMR MS4 Permit. On May 13, 1998 the Regional Board adopted Order No. 98-02 renewing the SMR MS4 Permit. However, the USEPA Region IX (Region IX) objected³ to the Order as adopted and issued a final SMR MS4 Permit (Permit No. CAS0108766) on April 27, 1999. Permit No. CAS0108766 became effective on May 30, 1999. On June 25, 1999, Region IX "returned" Permit No. CAS0108766 to the San Diego Regional Board for implementation. On November 8, 2000, the Regional Board issued Addendum No. 1 to Order No. 98-02 that incorporated, by reference, Permit No. CAS0108766 into their Order.⁴ The District was designated as the "Principal Permittee" and the two cities and the County were identified as "Co-Permittees."

On July 14, 2004, the San Diego Regional Board adopted Order No. R9-2004-01, which is the Third-term SMR MS4 Permit. Figure 2-3 shows the SMR. A copy of the Third-term SMR MS4 Permit is included as Appendix C.

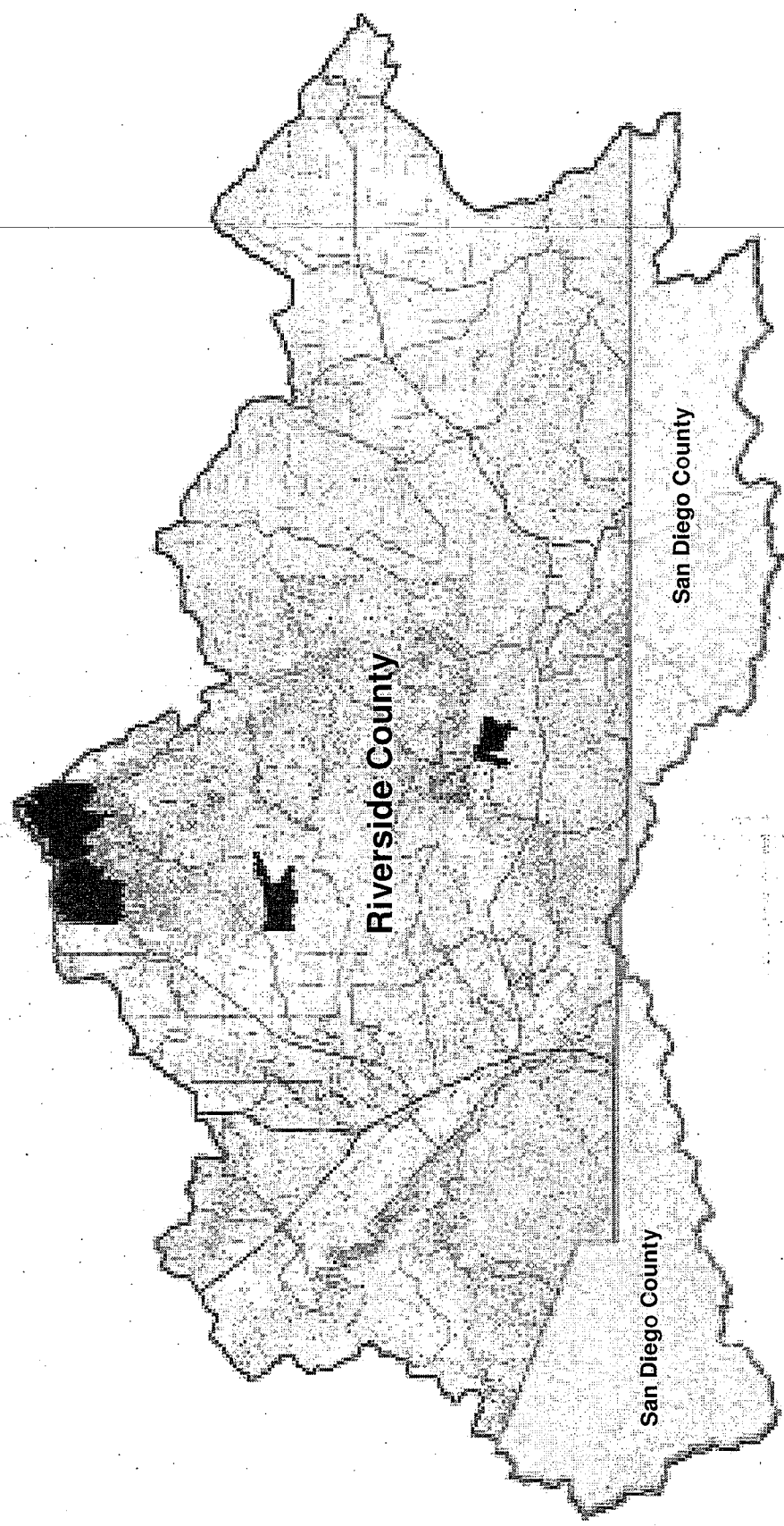
² Some municipalities applied for and received storm water discharge permits prior to the USEPA promulgation of the "Final Rule for NPDES Permit Application for Storm Water Discharges." Such permits have been referred to as "Early" permits.

³ USEPA objected to the Receiving Water Limitations (RWL) in Order No. 98-02. The RWL in Order No. 98-02 were consistent with existing State Water Resources Control Board (SWRCB) policy as expressed in its Order WQ 98-01 adopted on January 22, 1998. SWRCB has subsequently modified its RWL policy to conform with USEPA Region IX's RWL policy by adopting Order WQ 99-05 on June 17, 1999.

⁴ San Diego Regional Water Quality Control Board, Addendum 1 to Order No. 98-02, NPDES Permit No. CAS0108766, November 8, 2000.

Riverside County DAMP – Santa Ana and Santa Margarita Regions

Figure 2-3. Santa Margarita Region



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2.3 SANTA ANA REGION WATERSHED BACKGROUND

2.3.1 Permit Area Land Use and Population Characteristics

The SAR is located in the northwestern corner of Riverside County. The SAR is bounded on the south by the Santa Margarita watershed, on the east by the Salton Sea watershed, on the south/west by Orange County and on the north/west by San Bernardino County. The Santa Ana River watershed, including the San Jacinto River sub-watershed, encompasses 1,603 square miles (22 percent of the 7,300 square miles within Riverside County) and includes 12 of the 24 cities within Riverside County. The California Department of Finance estimates that as of January 1, 2006, the population of Riverside County was about 1,953,330. About 1,232,980 of those persons (63% of the Riverside County population) live within the SAR—approximately 864,540 persons residing within the 12 municipalities⁵ and an additional 368,440 persons residing in the unincorporated area. The areas of the most significant recent growth in population in the SAR include the Cities of Beaumont, Calimesa, and San Jacinto, and this trend is expected to continue between 2006 and 2010.

Based on Riverside County Assessor's Roll as of February 2006, general land uses within the portion of the Santa Ana River watershed within Riverside County are:

- ◆ 46.0 square miles zoned for commercial/industrial purposes (3.3 percent)
- ◆ 110.2 square miles zoned for residential purposes (7.9 percent)
- ◆ 15.3 square miles zoned for parks and recreational facilities (1.1 percent)
- ◆ 18.4 square miles zoned for streets and roads (1.3 percent)
- ◆ 109.6 square miles zoned for rural residential (7.9 percent)
- ◆ 709.3 square miles zoned for preserves or open space (50.8 percent)
- ◆ 76.0 square miles zoned for agricultural purposes (5.4 percent)
- ◆ 311.0 square miles of federal, state, tribal, and other lands that are not under the jurisdiction of the Permittees (22.3 percent)

Section 3.4.1 of the DAMP describes the limits of the Permittees' authority over discharges from federal, state and other lands. Although runoff from these areas may be discharged into the MS4 owned and operated by the Permittees, the Permittees do not have the authority to apply the DAMP to these entities.

The Draft Western Riverside County Multi-Species Habitat Conservation Plan prepared in November 2002 states that planned land uses indicate a shift in future use of land within Western Riverside County. At build-out, approximately 491,300 acres of currently vacant and agricultural lands are anticipated to shift to community development/rural uses.

⁵ Population figures for the City of Murrieta have been omitted because only 375 acres (2%) of its land area is within the Permit Area.

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2.3.2 Physiography and Geology

The Santa Ana River watershed represents one of nine major California watershed systems between Santa Barbara and the U.S.-Mexico Border at Tijuana. The SAR is located in the Peninsular Ranges and Transverse Ranges Geomorphic Provinces of Southern California (California Geological Survey Note 36). The highest elevations (upper reaches) of the Riverside County region of the watershed occur in the San Bernardino Mountains (San Gorgonio Peak with elevation 11,485 feet) and in the San Jacinto Mountains (Peninsular Ranges Province, Mt. San Jacinto with elevation 10,804 feet). The primary slope direction is northeast to southwest, with secondary slopes controlled by local topography.

As is true for much of California, the geology of the SAR is defined and created by seismic activity. The dominant structural feature is the San Andreas Fault zone, which trends in a southeast-northwest direction at the base of the San Bernardino Mountains. The major fault structures in the SAR include the San Jacinto fault zone and the Elsinore Fault Zone; the San Jacinto Mountains are caused by motion from both the San Andreas and San Jacinto zones. The area between the San Jacinto zone and the Elsinore Zones is a down-dropped block that is partly in-filled with sediments from the surrounding mountains.

There are too many geologic units in the SAR to describe separately, but the predominant features are intrusive rocks of the southern California batholith (granitic and andesitic rocks) that have been uplifted/eroded to form the mountain ranges, alluvial/fluvial sediments (materials eroded from the mountains and deposited in the basins), and semi-consolidated sedimentary units.

2.3.3 Climate

The climate of the SAR is Mediterranean with hot, dry summers and cooler, wetter winters. Average annual precipitation ranges from 10-13 inches per year in the inland alluvial valleys, reaching 36 inches or more in the San Bernardino and San Jacinto Mountains. Most of the precipitation in the SAR occurs between November and March in the form of rain with variable amounts of snow in the higher elevations. The climatological cycle of the Region results in high surface water flows in the spring and early summer followed by low flows during the dry season. Winter and spring floods generated by storms are not uncommon in wet years. The types of storms that occur in the SAR include:

- ◆ General winter storms during the period of December to March, inclusive. They originate over the Pacific Ocean as a result of the interaction between polar Pacific and tropical Pacific air masses and move eastward over the basin. These storms, which often last for several days, reflect orographic influences and are accompanied by widespread precipitation in the form of snow or rain.
- ◆ General summer storms usually occur during the period from July through September. They are associated with an influx of tropical maritime air originating over the Gulf of Mexico or the South Pacific Ocean and entering the area from a southeast to a southwest direction. Usually the influx of tropical air is caused by circulation about a high-pressure area centered in the southeastern United States, but occasionally it is caused by the remnants of a tropical hurricane. General summer thunderstorms are accompanied by heavy precipitation over large areas for periods up to 24 hours, but showers may continue for as long as three days.

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- ◆ Local thunderstorms can occur at any time of the year, either during general storms or as isolated phenomena. However, they are most common during the period from July through September, when the Southern California area may be covered by moist unstable air originating over the Gulf of Mexico. These storms cover comparatively small areas and result in high intensity precipitation of short duration.

2.3.3.1 Surface Water

As the SAR is arid, there is little natural perennial surface water. Surface waters start in the upper erosion zone of the watershed - primarily the San Bernardino, Santa Ana and San Jacinto Mountains. This upper zone has the highest gradient and soils/geology that do not allow large quantities of percolation of surface water into the ground. Flows consist mainly of snowmelt and storm runoff from the lightly developed San Bernardino National Forest,

From the City of San Bernardino to the City of Riverside, the Santa Ana River flows perennially, mostly due to treated discharges from wastewater treatment plants. From the City of Riverside to Prado Dam, the flow in the Santa Ana River consists of highly treated wastewater and groundwater discharges, potable water transfers, irrigation runoff, groundwater forced to the surface by shallow/rising bedrock and minor amounts of Urban Runoff. Urban Runoff provides a proportionately greater contribution to the flow of the River during significant storm events.

Lake Elsinore is the only natural freshwater lake of any size in the SAR. A variety of water storage reservoirs (e.g., Lake Perris, Canyon Lake, and Lake Mathews) and flood control areas (Prado Dam area) have been created to hold surface water in Riverside County.

The San Jacinto watershed is part of the southernmost portion of the Santa Ana watershed. It is tributary to the Santa Ana River through Lake Elsinore and Temescal Wash. The 780 square mile watershed includes 18.1 square miles regulated by Lake Perris and Pigeon Pass dam. Major tributaries include Bautista Creek, Poppet Creek, Potrero Creek, Perris Valley Drain and Salt Creek.

The San Jacinto watershed is bounded by two strike-slip fault zones: the San Jacinto fault zone to the northeast and the Elsinore fault zone to the southwest. The San Jacinto Valley is among the most seismically active of the major strike-slip fault zones in southern California, and also the site of rapid subsidence (20 mm per year) due to tectonic activity and groundwater withdrawal (Morton, 1999). The rapid rate of subsidence has resulted in the formation of a strike-slip "pull-apart basin" or graben that has developed along parallel fault strands in the fault zone. The Elsinore fault zone is also a strike-slip fault zone and the subsidence along the fault formed Lake Elsinore. Due to the large amount of flood storage available in Lake Elsinore, flows from the San Jacinto River rarely reach the Santa Ana River.

Lake Elsinore and Canyon Lake are located at the terminus of the San Jacinto River watershed in southwestern Riverside County. Lake Elsinore is one of the few natural lakes in southern California. It was formed in a geologically active graben area and has been in existence over thousands of years. Due to the Mediterranean climate and watershed hydrology, lake level fluctuations in Lake Elsinore have been extreme, with alternate periods of a dry lakebed and extreme flooding. These drought/flood cycles have a great impact on lake water quality. Fish kills and excessive algal blooms have been reported in Lake Elsinore since the early 20th century. As a result, in 1994, the Santa Ana Regional Board placed Lake Elsinore on the 303(d) List of impaired waters due to excessive levels of nutrients.

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Canyon Lake, located approximately five miles upstream of Lake Elsinore, was formed by the construction of Railroad Canyon dam in 1928. Approximately 735 square miles of the 780 square mile San Jacinto River watershed drains to Canyon Lake. Only during wet or moderately wet years does Canyon Lake overflow to Lake Elsinore; during most years, runoff from the watershed terminates at Canyon Lake without reaching Lake Elsinore, resulting in the buildup of nutrients in Canyon Lake. While Canyon Lake does not have as severe an eutrophication problem as Lake Elsinore, there have been periods of algal blooms. In 1998, the Regional Board added Canyon Lake to the 303(d) List of impaired waters due to eutrophication.

The high subsidence rate of the San Jacinto valley along the fault zone has resulted in a closed depression that periodically fills with water to form the ephemeral Mystic Lake. In very wet years, the surface area of Mystic Lake can expand up to 4000 acres. The San Jacinto River makes a 90-degree turn and flows southwest at Mystic Lake. The very low river gradient westward from Mystic Lake forms a broad fluvial plain. The San Jacinto River then flows through the narrow Railroad Canyon, Canyon Lake, and exits the Perris Block into the lower Elsinore basin created by the Elsinore fault zone.

2.3.4 Drainage Area Description

2.3.4.1 Surface Water Bodies

Less than one-fifth (1/5) of the entire acreage within Riverside County drains into waterbodies within the SAR. Those surface water bodies (or portions thereof) are:

Rivers and Streams

Santa Ana River, Reaches 3 and 4

Tributaries to the south bank of the Santa Ana River

Temescal Creek, Reaches 1, 2, 3, 4, 5 and 6

Tributaries to Temescal Creek

Coldwater Canyon Creek and its tributary drainages

Bedford Canyon Creek and its tributary drainages

Tequesquite Arroyo (Sycamore Creek) and its tributary drainages

Tributaries to the north bank of the Santa Ana River

Day Creek

San Sevaine Creek

San Jacinto River Basin

San Jacinto River, Reaches 1, 2, 3, 4, 5, 6 and 7

San Jacinto River, North Fork

Bautista Creek, headwaters to debris dam

Fuller Mill Creek

Salt Creek

Strawberry Creek

Stone Creek

Other tributaries: Indian, Hurkey, Poppet, and Potrero

San Timoteo Creek Basin

San Timoteo Creek, Reaches 3 and 4 and tributaries

Little San Gorgonio Creek and its tributaries

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Lakes and Reservoirs

- ◆ Canyon Lake
- ◆ Lake Fulmor
- ◆ Lake Perris
- ◆ Lake Elsinore
- ◆ Lake Hemet
- ◆ Lee Lake
- ◆ Lake Evans
- ◆ Lake Mathews
- ◆ Mockingbird Reservoir

The beneficial uses of these surface water bodies include: municipal and domestic supply, agricultural supply, industrial service supply, industrial process supply, groundwater recharge, water contact recreation, non-contact water recreation, warm freshwater habitat, cold freshwater habitat, wildlife habitat, and preservation of rare and endangered species. The ultimate goal of the DAMP is to protect the beneficial uses of the Receiving Waters from impacts related to Urban Runoff.

2.3.4.2 Municipal Separate Storm Sewer Systems

The MS4 facilities operated by the District in the SAR consist of an estimated 75 miles of underground storm drain and 59 miles of open channel. The MS4 facilities operated by the Co-Permittees include approximately 395 miles of underground storm drain and 65 miles open channel. Each year, the Permittees identify additions to their respective MS4 facilities to the District. These new facilities are then added to the updated MS4 maps that are included in the Annual Report to the Santa Ana Regional Board.

2.3.5 Current Water Quality Concerns and Issues

Urban Runoff discharged to MS4s in Riverside County ultimately flows to various surface water bodies (inland streams, lakes and reservoirs) and typically carries pollutants that originate from numerous dispersed and uncontrolled sources. Examples of pollutants that may be present in Urban Runoff are fertilizer, heavy metals, nutrients, petroleum products, sediment, bacteria, chemicals, and litter.

Because the SAR is large and has many land uses, the water quality concerns in sub-watersheds vary. However, each land use can potentially contribute pollutants to nearby streams, rivers, and lakes. The infrastructure that supports people's activities (e.g., roads, parks, MS4, and wastewater collection and treatment facilities) may contribute to water quality concerns if not properly managed. Other sources of storm water runoff, including agricultural areas, are exempt from the requirements of the NPDES permitting program established under the CWA. In addition, some pollutants, such as total suspended solids, may be found at elevated levels in runoff from non-urban land uses. Further, certain activities that generate pollutants present in Urban Runoff are beyond the ability of the Permittees to eliminate. Examples of these include operation of internal combustion engines, atmospheric deposition, brake pad wear, tire wear, residues from lawful application of pesticides, nutrient runoff from agricultural activities, and leaching of naturally occurring minerals from local geography.⁶

Some Receiving Waters in the SAR (for example, Reaches 3 and 4 of the Santa Ana River, Cucamonga Creek, Mill Creek) are identified as impaired due to causes such as nutrients (nitrogen and/or phosphorus), pathogens (including coliform), sediment, and unknown toxicity. The 2006 303(d) List for

⁶ Order No. 98-02 Fact Sheet, pgs. 5-6.

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the area under the jurisdiction of the Santa Ana Regional Board can be viewed or downloaded from the following website: http://www.waterboards.ca.gov/tmdl/docs/303dlists2006/final/r8_final303dlist.pdf. The prior listing of Lake Elsinore as impaired by sediment does not appear in the 2006 303(d) List. A summary of the 2006 303(d) List for the SAR is presented in Table 2-1.

Table 2-1. 2006 303(d) List of Water Quality Limited Segments

Waterbody	Pollutants	Potential Sources
Canyon Lake (Railroad Canyon Reservoir)	Pathogens	Nonpoint Source
Chino Creek Reach 1	Nutrients	Agriculture; Dairies
Lake Elsinore	PCBs; Unknown Toxicity	Source Unknown; Unknown Nonpoint Source
Fulmor Lake	Pathogens	Unknown Nonpoint Source
Mill Creek (Prado Area)	Total Suspended Solids	Agriculture; Dairies
Santa Ana River Reach 4	Pathogens	Nonpoint Source

Additionally, the Santa Ana Regional Board has identified Receiving Waters that require additional monitoring to improve the quantity and/or quality of data used to develop the 303(d) List. Currently, some Receiving Waters within the SAR have been designated as needing additional monitoring data for parameters such as metals (aluminum, copper, silver, and zinc), salinity, chlorides, or total dissolved solids.

2.3.6 TMDLs

2.3.6.1 Lake Elsinore

According to the Lake Elsinore and Canyon Lake Nutrient Total Maximum Daily Loads staff report, prepared by the Santa Ana RWQCB (revised 5/21/04), Lake Elsinore and Canyon Lake are located at the terminus of the San Jacinto River watershed in southwestern Riverside County. The entire San Jacinto River watershed encompasses 780 square miles. Lake Elsinore is one of the few natural lakes in southern California. It was formed in a geologically active graben area and has been in existence over thousands of years. Due to the mediterranean climate and watershed hydrology, lake level fluctuations in Lake Elsinore have been extreme with periods of dry lake bed during some drought cycles. These drought cycles have a great impact on lake water quality.

Fish kills and excessive algae blooms have been reported in Lake Elsinore since the early 20th century. As a result, the Regional Board placed Lake Elsinore on the 1994 303(d) List of impaired waters due to excessive levels of nutrients. In December 2004 a nutrient TMDL⁷ was established for Lake Elsinore and Canyon Lake. Storm Water and non-storm water discharges from septic systems, agriculture, dairy, urban, forested and open space lands, as well as in-lake sediments, have been identified as potential sources of impairment. More information on this TMDL is available in Section 13 of the DAMP.

⁷ This TMDL can be viewed or downloaded from website: http://www.waterboards.ca.gov/santaana/html/elsinore_tmdl.html.

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2.3.6.2 Canyon Lake

According to the Lake Elsinore and Canyon Lake Nutrient Total Maximum Daily Loads staff report, prepared by the Santa Ana RWQCB (revised 5/21/04), Canyon Lake, located approximately five miles upstream of Lake Elsinore, was formed by the construction of Railroad Canyon dam in 1928. Approximately 735 square miles of the 780 square mile San Jacinto River watershed drains to Canyon Lake. Only in wet years does Canyon Lake overflow to Lake Elsinore; during most years, runoff from the watershed terminates at Canyon Lake without reaching Lake Elsinore, resulting in the buildup of nutrients in Canyon Lake.

While Canyon Lake does not have as severe an eutrophication problem as does Lake Elsinore, the Regional Board believes there have been periods of algal blooms and occasional fish kills (anecdotal evidence, no written documentation). The Regional Board added Canyon Lake to the 1998 303(d) List of impaired waters due to eutrophication. Storm Water and non-storm water Discharges from septic systems, agriculture, dairy, urban, forested and open space lands have been identified as potential sources of impairment. In December 2004 a nutrient TMDL⁸ was established for Lake Elsinore and Canyon Lake. More information on this TMDL is contained in Section 13 of the DAMP.

2.3.6.3 Santa Ana River, Reach 3 (Middle Santa Ana River)

According to Santa Ana Regional Board Resolution R8-2005-001, the Santa Ana River Reach 3 watershed covers approximately 488 square miles and lies largely in the southwest corner of San Bernardino County, and the northwestern corner of Riverside County. A small part of Los Angeles County (Pomona/Claremont area) is also included.

Several waterbodies within, and including the Middle Santa Ana River, have been listed for pathogen indicator impairments. These waterbodies include Middle Santa Ana River, Chino Creek Reaches 1 and 2, Mill Creek (Prado Area), Cucamonga Creek Reach 1, and Prado Park Lake. The Santa Ana Regional Board placed these waterbodies on the 1998 303(d) List of impaired waterbodies for pathogen indicators. In 2005, the Regional Board adopted a pathogen indicator TMDL for these same waterbodies. Potential sources of the impairment include storm water and non-storm water discharges from agricultural lands, dairy lands, urban lands, failed septic systems, open space areas, forested lands, and natural background sources. Recreational use of these waterbodies may also serve as a source of pathogens. More information on this TMDL is contained in Section 13 of the DAMP.

2.4 SANTA MARGARITA REGION WATERSHED BACKGROUND

The Santa Margarita watershed represents one of nine major California watershed systems between Santa Barbara and the U.S.-Mexico Border at Tijuana. The basin includes a watershed area of 746 square miles, ranking it as a moderately large system among coastal drainages. Physiographically, the basin is split into a mountainous highland (upper drainage basin) and broad, flat topped sea terrace (coastal drainage basin). The boundary between the upper drainage basin and the coastal drainage basin transitions at the County line between Riverside and San Diego Counties

⁸ This TMDL can be viewed or downloaded from website: http://www.waterboards.ca.gov/santaana/html/elsinore_tmdl.html.

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The upper Santa Margarita watershed includes two major basins, drained by Temecula and Murrieta Creeks. Over 50% of the Santa Margarita River watershed has been controlled by the construction of Vail Dam in 1949 and Skinner Reservoir in 1974, which created significant storage capacity in the upper watershed.⁹ Due to this storage capacity, peak flow rates during major flow events for both existing and future land use conditions will be lower than under natural conditions (assuming average storage conditions in the reservoirs).¹⁰

Temecula Creek has a drainage area of 366 square miles, with steep rugged topography in the Palomar and Thomas Mountain areas and rolling hills below. The upper 316 square miles of this basin is controlled by Vail Lake (completed in 1949). Murrieta Creek has a drainage area of 222 square miles, with over 50 square miles controlled by Skinner Reservoir (completed in 1974). Although the watershed area is somewhat smaller and less rugged than the Temecula Basin, flood flows have the potential to create greater damage as they flow through the Cities of Temecula and Murrieta.

Temecula and Murrieta Creeks join along the Elsinore fault zone at the head of Temecula Canyon to form the Santa Margarita River. The Temecula Canyon is approximately five miles long, and is a steep, narrow, and rocky canyon. The San Diego-Riverside County Line crosses through the Temecula Canyon. From here, the river traverses 27 miles to the Pacific Ocean.¹¹

2.4.1 Permit Area Land Use and Population Characteristics

The SMR is approximately 548 square miles, which is less than 8 percent of the 7,300 square miles within Riverside County. Only three of the 24 municipalities within Riverside County are under the jurisdiction of the San Diego Regional Board. The California Department of Finance estimates that as of January 1, 2004, the total population of Riverside County was about 1,776,700. Of the 1.78 million people, approximately 167,000 persons (approximately 10 percent) reside within the SMR. Approximately 12,900 persons reside in the unincorporated area while approximately 153,600 persons reside within the Cities of Murrieta and Temecula.

Based on Riverside County Assessor's Roll for Fiscal Year 2004 general land uses within the SMR are:

- ◆ 7.0 square miles used or zoned for commercial/industrial purposes (1.3 percent);
- ◆ 16.2 square miles zoned for urban residential (<1 acre) purposes (3.0 percent);
- ◆ 184.8 square miles zoned for rural residential (>1 acre) purposes (33.7 percent);
- ◆ 3.6 square miles zoned for parks and recreation facilities purposes (0.7 percent);
- ◆ 19.0 square miles zoned for improved roadways, including roadways owned by Caltrans (3.4 percent);

⁹ Santa Margarita Watershed Study: Hydrologic and Watershed Processes, Phillips, Williams and Associates, Ltd., October 26, 1998, page 14.

¹⁰ Santa Margarita Watershed Study: Hydrologic and Watershed Processes, Phillips, Williams and Associates, Ltd., October 26, 1998, page 20.

¹¹ Santa Margarita Watershed Study: Hydrologic and Watershed Processes, Phillips, Williams and Associates, Ltd., October 26, 1998, page 1.

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- ◆ 96.0 square miles zoned vacant or utilized for open space (17.5 percent);
- ◆ 6.5 square miles without land use designation (1.2 percent); and
- ◆ 59.3 square miles zoned for agricultural purposes (10.8 percent).

Additionally, within the SMR, approximately 155.1 square miles are owned by the federal government (28 percent) and not under the control of the Permittees. Section 3.4.1 of the DAMP describes the limits of the Permittees' authority over discharges from federal, state and other lands. Although runoff from these areas may be discharged into the MS4 owned and operated by the Permittees, the Permittees do not have direct or indirect authority over these areas.

In 1956, only 0.3 percent of the SMR (less than two square miles) was urbanized.¹² Almost half a century later, even with a significant rate of growth in population relative to the State and neighboring counties, 94 percent of the SMR remains in non-urban land uses (rural residential, agriculture, preserves and open space, state lands, federal lands, and tribal lands). Further, almost one-third of the SMR consists of federal, state, and tribal lands¹³ that are not under the jurisdiction of the Permittees' MS4 programs. It is projected that the population of Riverside County will increase approximately 22 percent by 2010 with slower growth occurring in the south county, down from 20% to 10%.¹⁴ Assuming that the urbanized area increases proportional to population, 92 percent of the SMR would remain in non-urban land uses in 2010. Much of the remaining lands will ultimately be incorporated into the Western Riverside County Multi-Species Habitat Conservation Plan (MSHCP). The MSHCP requires the ongoing conservation of 500,000 acres within the County, a large portion of which are in the SMR.

2.4.2 Climate and Hydrology

The climate of the SMR is typically Mediterranean, being characterized by warm dry summers and cool rainy winters. About 75% of the precipitation occurs during the four-month period from December through March. Mean seasonal depth of precipitation ranges from less than 10 inches near Vail Reservoir to over 40 inches west of Palomar Observatory, varying with elevation and topographic influences.¹⁵ Precipitation increases with increasing elevation to the summit of the Coastal range. Shading effects of the Coastal range lead to a marked decrease of precipitation throughout the lower portions of the Inland area. Precipitation increases again farther away from the Coastal range in the northeastern area of the Inland area.¹⁶

The upper drainage basin is formed almost solely by Murrieta Creek. Murrieta Creek is a major tributary of the greater 750 square mile Santa Margarita River watershed. This watershed consists of three major portions; the Murrieta Creek sub-watershed to the north, Temecula Creek subwatershed to the southeast, and Santa Margarita River to the southwest.

¹² State of California Department of Public Works, Division of Water Resources, Bulletin No. 57, Santa Margarita River Investigation, Volume I, June 1956.

¹³ Riverside County Assessor Parcel Data, Close of Roll 2004.

¹⁴ Southern California Association of Governments, May 2003.

¹⁵ Ibid., pg. 11

¹⁶ Ibid., pg. 38.

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The watershed currently contains three major water storage reservoirs; Lake Skinner and the recently completed Diamond Valley Reservoir, which are part of the Murrieta Creek sub-watershed, and Vail Lake, which is part of the Temecula Creek sub-watershed. These reservoirs control over 50% of the Santa Margarita watershed. Runoff entering the reservoirs will be initially stored. Excess flows (depending on available storage volume) are discharged downstream. The combined reservoirs have a substantial storage capacity capable of significantly reducing downstream flows from the natural condition.

2.4.3 Physiography and Geology

Murrieta Creek flows between two lengthy strands of the Elsinore fault zone on land that has been down-dropped, relatively, by the faulting. Murrieta Creek flows southeasterly from the Wildomar area through the cities of Murrieta and Temecula to the confluence with Temecula Creek. It courses through the Elsinore trough at an average elevation of 1,100 feet above sea level. The lower 12.5 miles of Murrieta Creek drops in elevation 200 feet from an elevation of 1,200 feet. Physiographic features to the southwest include the Santa Rosa Plateau, and foothills of the Elsinore and Santa Ana Mountains which rise as much as 2,200 feet above Murrieta Creek. Land areas to the northeast of the creek consist of rolling hills and valleys which rise much less abruptly and are known as the "Perris block," a structural geologic feature that has been uplifted relative to the creek. Over the first 1.5 miles northeast of the creek, those rolling hills rise gradually to about 300 ft above the creek. Ultimately, they reach as much as 1,025 feet above the creek.¹⁷

Geologically, the Upper Santa Margarita watershed may originally have been a part of the Santa Ana River drainage system with the ancestral Temecula-Murrieta Creek flowing westward through Lake Elsinore. Over geologic time, the Santa Margarita River eroded the coastal mountain ridge headward sufficiently to "capture" the ancestral stream and eventually reverse the direction of Murrieta Creek.¹⁸ These processes are continuing due to continued down-faulting and soils conditions, leading to significant natural erosion and sedimentation processes along the Santa Margarita River.

2.4.3.1 Surface Water

Murrieta and Temecula Creeks are perennial interrupted streams, that is, they include reaches in which the flow is continuous and others where flow is ephemeral. The areas of perennial flow are located in mountain area tributaries. The perennial flows disappear by seeping into the sands and gravels and resurfacing upstream of the confluence of Murrieta and Temecula Creeks. The creeks in the urbanized areas of the watershed, located primarily in the valley, are ephemeral and flows are observed only during and immediately after significant storm events. During major storms, after initial wetting, periods of intense rainfall result in rapid increases in streamflow in steep foothill and mountain areas.¹⁹ Runoff in streams in the watershed is derived primarily from rainfall, and as a result, stream flow exhibits monthly and seasonal variations similar to those shown by the precipitation records. Absence of snow pack in the tributary watershed results in a rapid decrease in stream flow at the conclusion of the winter precipitation

¹⁷ U.S. Army Corps of Engineers, Los Angeles District, Murrieta Creek Flood Control, Environmental Restoration and Recreation Final Feasibility Report, September 2000, pg. 25.

¹⁸ State of California Department of Public Works, Division of Water Resources, Bulletin No. 57, Santa Margarita River Investigation, Volume I, June 1956, pgs. 10 & 11.

¹⁹ Riverside County Flood Control & Water Conservation District, "Hydrologic Data for 1975-76 Season," March 1982, pg. 49.

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season. Following severe storms, discharge in the larger streams often increases in a few hours time from practically no flow to a rate of thousands of cubic feet per second. Stream flows vary greatly from month to month and from season to season.²⁰

Rising groundwater is currently observed in Murrieta Creek below its confluence with the Santa Gertrudis Channel. This is consistent with the observations with the rising groundwater conditions observed by the State of California in 1956.²¹ Rising groundwater is also observed in Temecula Creek approximately one-quarter mile upstream of the Interstate 15 bridge. In 1956, the State of California observed rising groundwater occurring as far upstream as the Highway 74 Bridge. Based on the virtual absence of non-storm water flows and the rising groundwater conditions in lower Murrieta and Temecula Creeks observed prior to development of the watershed, there is no evidence that the rising groundwater is due to Urban Runoff nor that Urban Runoff has affected the quality of rising groundwater. However, use and disposal of reclaimed water and agricultural and landscape irrigation in the watershed may affect groundwater quality. Until October 2002, the Rancho California Water District augmented the flow of the Santa Margarita River with reclaimed water at a point about five miles upstream from the Temecula gaging station. Since that time, the Rancho California Water District has discharged imported water downstream of the confluence of Murrieta and Temecula Creeks.

For the average annual event, it is estimated that approximately 89 percent of the volume of runoff in the SMR is due to non-urban land uses not regulated under the federal storm water program. For the 100-year 24-hour event, 93 percent of the volume of runoff will be due to non-urban land uses. These estimates are based on the assumption that precipitation is constant across the watershed. However, precipitation (and resultant runoff volumes) in the non-urbanized upland areas is as much as four times greater than that from the urbanized valley areas.²²

²⁰ State of California Department of Public Works, Division of Water Resources, Bulletin No. 57, Santa Margarita River Investigation, Volume I, June 1956, pg. 48.

²¹ Ibid.

²² Ibid., pg. 11

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2.4.4 Drainage Area Description

2.4.4.1 Surface Water Bodies

Approximately 8 percent of Riverside County drains into surface water bodies within the SMR. Those inland surface waters (or portions thereof) and their identified Beneficial Uses are:

Inland Surface Waters

Santa Margarita River (Hydrologic Unit Basin Number 2.22)

- Murrieta Creek
 - Slaughterhouse Canyon
- Cole Canyon
 - Warm Springs Creek
 - Diamond Valley Reservoir
- Santa Gertrudis Creek
 - Tucalota Creek
 - Lake Skinner
- Temecula Creek (Hydrologic Unit Basin Number 2.92)
 - Iron Spring Canyon
- Temecula Creek (Hydrologic Unit Basin Number 2.84)
 - Tule Creek
 - Million Dollar Canyon
 - Cottonwood Creek
- Vail Lake
 - Wilson Creek
- Cahuilla Creek (Hydrologic Unit Basin Number 2.73)
 - Hamilton Creek
- Cahuilla Creek (Hydrologic Unit Basin Number 2.71)
 - Elder Creek
- Arroyo Seco Creek
- Kolb Creek
- Temecula Creek (Hydrologic Unit Basin Number 2.52)
 - Pechanga Creek

Santa Margarita River (Hydrologic Unit Basin Number 2.21)

- DeLuz Creek

The Beneficial Uses of these inland surface water bodies include: municipal and domestic supply, agricultural supply, industrial service supply, industrial process supply, groundwater recharge, water contact recreation, non-contact water recreation, warm freshwater habitat, cold freshwater habitat, wildlife habitat, and preservation of rare and endangered species.

2.4.4.2 Municipal Separate Storm Sewer System

The MS4 facilities operated by the Permittees in the SMR consist of an estimated 145 miles of major MS4 facilities (e.g., storm drains, channels, retention basins, etc.). A map of the MS4 facilities within the SMR is provided in Appendix D. Each SMR Permittee maintains a labeled map of their entire MS4 and the associated drainage areas. The SMR Permittees review their MS4 map on an annual basis and update their maps, as needed. The updated MS4 maps are then included in each Annual Report.

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2.4.5 Current Water Quality Concerns and Issues

Urban Runoff discharged to MS4s in Riverside County ultimately flows to various surface water bodies (inland streams, lakes, and reservoirs) and typically carries pollutants that originate from numerous dispersed and uncontrolled sources. Examples of pollutants that may be present in Urban Runoff are fertilizer, heavy metals, nutrients, petroleum products, sediment, bacteria, chemicals, and litter.

Because the SMR is large and has many land uses, the water quality concerns in sub-watersheds vary. However, each land use can potentially contribute pollutants to nearby streams, rivers, and lakes. The infrastructure that supports people's activities (e.g., roads, parks, MS4, and wastewater collection and treatment facilities) may contribute to water quality concerns if not properly managed. Other sources of storm water runoff, including agricultural areas, are exempt from the requirements of the NPDES permitting program established under the CWA. In addition, some pollutants, such as total suspended solids, may be found at elevated levels in runoff from non-urban land uses. Further, certain activities that generate pollutants present in Urban Runoff are beyond the ability of the Permittees to eliminate. Examples of these include operation of internal combustion engines, atmospheric deposition, brake pad wear, tire wear, residues from lawful application of pesticides, nutrient runoff from agricultural activities, and leaching of naturally occurring minerals from local geography.

Some Receiving Waters in the SMR (for example, Murrieta Creek and the Upper Santa Margarita River) are identified as impaired due to phosphorus. The 2006 303(d) List for the area under the jurisdiction of the San Diego Regional Board can be viewed or downloaded from the following website: http://www.waterboards.ca.gov/tmdl/docs/303dlists2006/final/r9_final303dlist.pdf. However, the San Diego Regional Board has identified Receiving Waters that require additional monitoring to improve the quantity and/or quality of data used to develop the 303(d) List. Currently, some Receiving Waters within the SMR have been designated as needing additional monitoring data for parameters such as metals (iron, manganese), total dissolved solids, sediment, or sulfates. No TMDLs have been established for Receiving Waters in the SMR. A summary of the 2006 303(d) List for the SMR is presented in Table 2-2.

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Table 2-2. 2006 303(d) List of Water Quality Limited Segments

Waterbody	Pollutants	Potential Sources
Santa Margarita Lagoon	Eutrophic;	Nonpoint/Point Source
De Luz Creek	Iron Manganese	Source Unknown Source Unknown
Long Canyon	Total Dissolved Solids	Source Unknown;
Murrieta Creek	Iron Manganese Nitrogen Phosphorous	Source Unknown Source Unknown Source Unknown Urban Runoff/Storm Sewers Unknown Nonpoint Source Unknown Point Source
Rainbow Creek	Iron Sulfates Total Dissolved Solids	Source Unknown Source Unknown Source Unknown
Sandia Creek	Iron Manganese Nitrogen Sulfates Total Dissolved Solids	Source Unknown Source Unknown Source Unknown Source Unknown Urban Runoff/Storm Sewers Flow Regulation/Modification Natural Sources Unknown Nonpoint Source Unknown Point Source
Santa Margarita River (Upper)	Phosphorus;	Urban Runoff/Storm Sewers Unknown Nonpoint Source Unknown Point Source
Temecula Creek	Nitrogen Phosphorus Total Dissolved Solids	Source Unknown Source Unknown Source Unknown

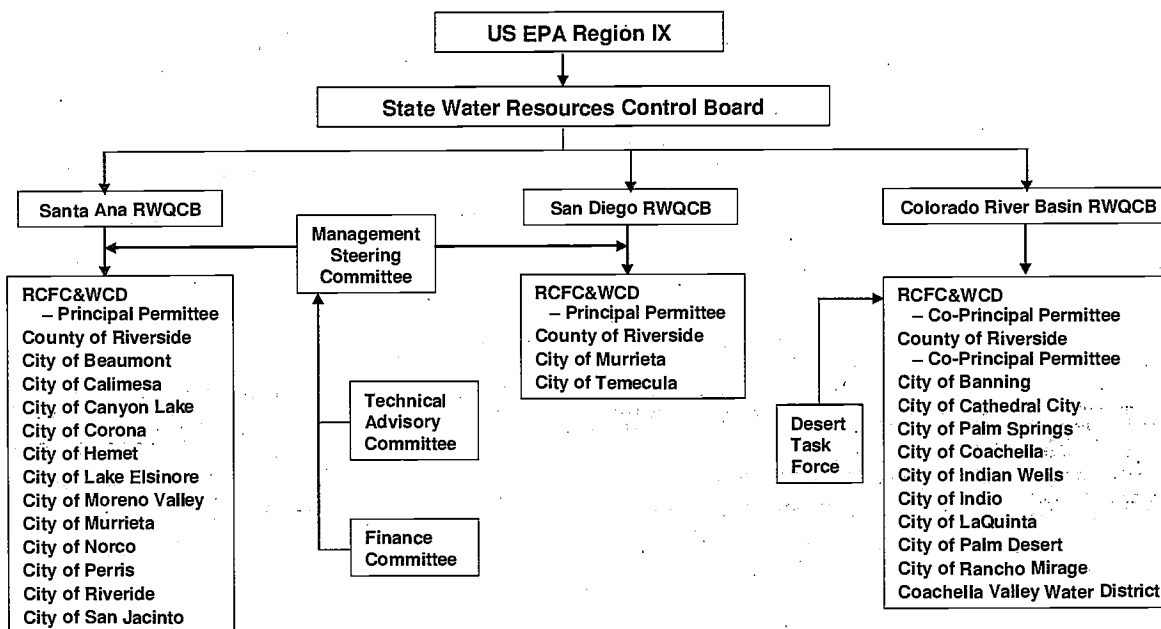
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3.0 PROGRAM MANAGEMENT

3.1 PRINCIPAL PERMITTEE AND PERMITTEE RESPONSIBILITIES

Riverside County is located within the jurisdictions of the Colorado River Basin, San Diego and Santa Ana Regional Boards, each of which has issued an MS4 Permit for the areas within their jurisdiction. Although each MS4 Permit is unique, they address the same program elements. The overall organization of the Riverside County Urban Runoff Management Program is described in Figure 3-1 and described further in the remainder of this subsection.

Figure 3-1. Organizational Chart Riverside County Municipal Storm Water NPDES Permits



RWQCB: Regional Water Quality Control Board
 RCFC&WCD: Riverside County Flood Control & Water Conservation District

3.1.1 Implementation Agreements

3.1.1.1 Santa Ana Region

In November 1991 the District, Riverside County, and the cities of Beaumont, Corona, Hemet, Lake Elsinore, Moreno Valley, Norco, Perris, Riverside, and San Jacinto entered into a formal NPDES Storm Water Discharge Permit Implementation Agreement for the SAR. The purpose of the Implementation Agreement was to establish the responsibilities of the Principal Permittee and the Co-Permittees and to provide for funding of “umbrella” activities. The Implementation Agreement was subsequently amended to add the cities of Canyon Lake, Calimesa and Murrieta, address additional requirements of the subsequent versions of the MS4 Permit and establish the responsibilities of the Permittees as defined in the Third-term SAR MS4 Permit. The Third-term SAR MS4 Permit requires the Permittees to evaluate

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the Implementation Agreement by November 30th of each year to determine the need, if any, for revision. The Annual Report must include the findings of this review and a schedule for any necessary revision(s).

Under the terms of the 2003 SAR Implementation Agreement (included as Appendix E, the Principal Permittee is required to:

- ◆ Comply with Section I.A (Responsibilities of the Principal Permittee) of the Third-term SAR MS4 Permit.
- ◆ Comply with Section II (Discharge Limitations/Prohibitions), Section III (Receiving Water Limitations), Section IV (Implementation Agreement), Section V (Legal Authority/ Enforcement), Section VI (Illicit Connections/Illegal Discharges; Litter, Debris and Trash Control), Section VII (Sewage Spills, Infiltration into MS4s from Leaking Sanitary Sewer Lines, Septic System Failures, and Portable Toilet Discharges), Section VIII (New Development, Including Significant Redevelopment), Section IX (Municipal Inspection Program), Section X (Education and Outreach), Section XI (Municipal Facilities Programs and Activities), Section XII (Municipal Construction Projects/Activities), Section XIII (Program Management/DAMP Review), Section XIV (Monitoring and Reporting Program), Section XV (Provisions) and Section XVI (Permit Expiration and Renewal) of the Third-term SAR MS4 Permit as they pertain to District facilities and operations.
- ◆ Perform all the sampling data collections and assessment requirements described in the Monitoring and Reporting Program of the Third-term SAR MS4 Permit. Specifically, the District prepares the required narrative for all reports and provides the SAR Co-Permittees an opportunity to review and comment on any such narrative.
- ◆ Perform all of the reporting requirements described in the Monitoring and Reporting Program of the Third-term SAR MS4 Permit. With respect to such reporting requirements, the District:
 - a) Prepares the required narrative for such reports; and
 - b) Provides the Co-Permittees an opportunity to review and comment on such narrative.

Also under terms of the 2003 SAR Implementation Agreement, each Permittee is required to:

- ◆ Comply with Section I.B (Responsibilities of the SAR Co-Permittees) of the Third-term MS4 Permit.
- ◆ Comply with Section II (Discharge Limitations/Prohibitions), Section III (Receiving Water Limitations), Section IV (Implementation Agreement), Section V (Legal Authority/ Enforcement), Section VI (Illicit Connections/Illegal Discharges; Litter, Debris and Trash Control), Section VII (Sewage Spills, Infiltration into MS4s from Leaking Sanitary Sewer Lines, Septic System Failures, and Portable Toilet Discharges), Section VIII (New Development, Including Significant Redevelopment), Section IX (Municipal Inspection Program), Section X (Education and Outreach), Section XI (Municipal Facilities Programs and Activities), Section XII (Municipal Construction Projects/Activities), Section XIII (Program Management/DAMP Review), Section XIV (Monitoring and Reporting Program), Section XV (Provisions) and Section XVI (Permit Expiration and Renewal) of the Third-term SAR MS4 Permit as they pertain to each Permittee's facilities and operations.

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- ◆ Demonstrate compliance with all requirements of the Third-term SAR MS4 Permit through timely implementation of the approved DAMP and any approved modifications, revisions, or amendments.
- ◆ Provide the District all information needed to satisfy the reporting requirements described in the Monitoring and Reporting Program of the Third-term SAR MS4 Permit. Specifically, the Co-Permittees provide information on storm water facilities and/or other data when requested by the District; submit the requested individual information to the District no later than November 1 of each year, and provide the required information on District-approved forms.

In accordance with the 2003 SAR Implementation Agreement, in the event that the District requires the services of a consultant (or consultants) to prepare manuals, develop program components, or perform studies relevant to the SMR, the cost of the consultant services are shared by the District and the Co-Permittees. The shared costs are allocated as a 50% contribution from the District and a 50% contribution from the Co-Permittees. The percentage contribution from each of the Co-Permittees is a function of population. The 2003 SAR Implementation Agreement is updated as necessary to reflect evolving DAMP implementation needs.

3.1.1.2 Santa Margarita Region

Since 1991 the Permittees have coordinated implementation of the storm water compliance program through NPDES Storm Water Discharge Permit Implementation Agreement for the San Diego Region (SMR). The 2004 San Diego Region Implementation Agreement is provided in Appendix F.

Under the 2004 San Diego Region Implementation Agreement, the District (Principal Permittee) is required to:

- ◆ Comply with Provision M (Principal Permittee Responsibilities) of the Third-term SMR MS4 Permit, including providing the Co-Permittees an opportunity to review and comment on the Watershed Storm Water Management Plan (SWMP), Watershed SWMP Annual Report and any other reports prepared by the District on behalf of the Permittees.
- ◆ Comply with Provisions A through N (Prohibitions, Non-Storm Water Discharges, Receiving Water Limitations, Legal Authority, SWMP, Development Planning, Construction, Existing Development, Education, Illicit Discharge Detection and Elimination Program, Watershed-Based Activities, Monitoring and Reporting Program, and Standard Provisions, respectively) of the Third-term SMR MS4 Permit, as they pertain to District facilities and operations, at no cost to the Co-Permittees.
- ◆ Coordinate watershed efforts specified in Provision K.
- ◆ Conduct public education activities on a regional basis that focus on reducing pollution of Urban Runoff, including radio, print or other forms of advertising, developing brochures, and attending public events.
- ◆ Develop and implement mechanisms to determine the effectiveness of the regional public education program.

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- ◆ Perform sampling of surface water and Urban Runoff in accordance with the provisions of the Monitoring and Reporting Program, Provision II.A of the Third-term SMR MS4 Permit. The Permittees have identified sampling locations, subject to approval by San Diego Regional Board.
- ◆ Contract with a water quality analytical laboratory to provide analysis of water quality samples collected for compliance with the Monitoring and Reporting Program.

Also under terms of the 2004 San Diego Region Implementation Agreement, each Co-Permittee is required to:

- ◆ Comply with Provisions A through N (Prohibitions, Non-Storm Water Discharges, Receiving Water Limitations, Legal Authority, SWMP, Development Planning, Construction, Existing Development, Education, Illicit Discharge Detection and Elimination Program, Watershed-Based Activities, Monitoring and Reporting Program, and Standard Provisions, respectively) of the Third-term SMR MS4 Permit, as they pertain to Co-Permittee facilities and operations.
- ◆ Enforce local ordinances and regulations within their respective jurisdictions to ensure compliance with the Third-term SMR MS4 Permit, including the exercise of land use controls and the exercise of police powers.
- ◆ Demonstrate compliance with the Third-term SMR MS4 Permit requirements through timely implementation of the approved Individual and Watershed SWMPs and any approved modifications, revisions or amendments thereto.
- ◆ Provide to the District (on District-provided forms) the information needed to satisfy the reporting requirements as described in the Provisions E, L, and K or to respond to information requests from the San Diego Regional Board. The Co-Permittees:
 - a) Submit their Individual SWMPs and data necessary to prepare the Watershed SWMP and Receiving Waters Monitoring Reports no later than September 15 of each year.
 - b) Provide information on existing MS4 facilities and/or other data as it pertains to Co-Permittee facilities when requested by District.
- ◆ Develop and implement public education programs targeted at individual communities or stakeholders within their respective jurisdictions.
- ◆ Comply with Provision II.B of the Monitoring and Reporting Program.

In accordance with the 2004 San Diego Region Implementation Agreement, the Permittees jointly provide funding for certain regional efforts that benefit the SMR, including but not limited to: County Environmental Health's Compliance Assistance Program; the County Fire Department's Hazardous Materials Team; County Environmental Health's Household Hazardous Waste (HHW) and Antifreeze, Batteries, Oil and Paint (ABOP) collection program; the District's membership with the California Stormwater Quality Association (CASQA) on behalf of Permittees; the District's administration of Principal Permittee duties, and other NPDES support activities as needed. Additionally, if the District requires the services of a consultant or consultants to assist in preparing manuals, developing programs or performing studies relevant to the entire SMR, the cost of the consultant services are shared by Permittees in accordance with the cost sharing provisions set forth in Section 3 of the 2004 San Diego Region

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Implementation Agreement. The District notifies the Co-Permittees in writing of the District's request for proposals from consultants, selection of a consultant, consultant's fee, contract timetable, and payment schedule. The Co-Permittees the opportunity to participate in decisions related to consultant's services.

3.1.2 Management Steering Committee

The Permittees established the Management Steering Committee to address Urban Runoff management policies for the SAR and SMR and to review and approve revisions to the DAMP and the SAR and SMR Implementation Agreements. In addition, the Management Steering Committee facilitates coordination with related water quality management programs and monitoring and establishes positions relative to legislative and regulatory initiatives. The Management Steering Committee consists of city managers or equivalent representatives from each of the Co-Permittees and an executive-level representative from the County. The General Manager-Chief Engineer of the District participates on the Management Steering Committee as Chair. The District provides staff support to the Management Steering Committee. The Management Steering Committee meets quarterly or as determined by the Chair. The Third-term SAR MS4 Permit requires the designated representatives to attend three out of four Management Steering Committee meetings each year.

3.1.2.1 Finance Committee

In 2003, the Management Steering Committee recognized the need to evaluate long term funding solutions of Urban Runoff management programs and regional facilities and established the Finance Committee. The Finance Committee is appointed by the Management Steering Committee and consists of Permittee staff with expertise in public finance. The Finance Committee reviews financial issues and develops findings and provides recommendations to the Management Steering Committee.

3.1.2.2 Technical Committee and Work Groups

A Technical Committee has been established consisting of representatives formally appointed by the city manager or equivalent of each Permittee. The purpose of the Technical Committee is to direct the development of the DAMP and to coordinate the implementation of the overall MS4 Permit compliance program. The Technical Committee members also provide technical assistance and support to facilitate coordination with related water quality management programs and monitoring and to respond to legislative and regulatory initiatives. The District chairs and provides staff support to the Technical Committee. The Third-term SAR MS4 Permit requires designated members to attend eight out of ten Technical Committee meetings each year.

Work Groups have been established by the Technical Committee to oversee the development and implementation of the DAMP program components. The Work Groups include Permittee representatives and may also include industry representatives, representatives of environmental special interest groups, and other stakeholders as appropriate. A Permittee representative chairs each Work Group. Work Groups have been established to guide the following program components:

- ◆ Program Implementation / Public Education
- ◆ New Development/Redevelopment
- ◆ Construction

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- ◆ Industrial and Commercial Facility Compliance
- ◆ Monitoring

3.2 INTERAGENCY AGREEMENTS AND COOPERATIVE ACTIVITIES

The District, in its role as Principal Permittee, administers or participates in several interagency programs in consultation with the SAR and SMR Co-Permittees. These programs generally at least benefit the SAR and/or SMR, but may also look at broader issues. Copies of the interagency agreements supporting these areas-wide programs are provided in Appendix G. These efforts may be expanded, reduced or abandoned over time based on budget, changing regulations, program needs, program effectiveness consideration, or other factors.

Those interagency programs under agreement as of May 2005 include:

- ◆ Storm Water Quality Task Force
- ◆ Storm Water Monitoring Coalition
- ◆ Hazardous Materials Emergency Response,
- ◆ Household Hazardous Waste Collection/ Antifreeze, Battery, Oil and Latex Paint (ABOP) Program,
- ◆ Santa Margarita River Executive Management Team
- ◆ Commercial/Industrial Compliance Assistance Program, and
- ◆ Various Public Education and Outreach Programs.

In addition, the District, in consultation with the Permittees, participates in several cooperative activities through informal or formal regional stakeholder workgroups. Stakeholders often include other public and private entities within the SAR or SMR. These efforts can broadly be categorized as watershed management efforts to address storm water quality issues within the SAR and/or SMR. These efforts may be expanded, reduced or abandoned over time based on budget, changing regulations, program needs, program effectiveness consideration, or other factors.

As of May 2005, the District and Permittees are participating in the following regional stakeholder efforts:

- ◆ Lake Elsinore / San Jacinto Watershed Authority
- ◆ San Jacinto Watershed Council
- ◆ Santa Ana Reach 3 Bacterial Indicator TMDL Workgroup
- ◆ Lake Elsinore/Canyon Lake Nutrient TMDL Stakeholder Workgroup
- ◆ Canyon Lake Bacterial Indicator TMDL Stakeholder Workgroup
- ◆ San Diego Proposition 13 Santa Margarita Watershed Project Team.

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3.3 FUNDING SOURCES

The costs incurred by the Permittees in implementing the DAMP fall into two broad categories:

- ◆ **Shared Costs.** These are costs that fund activities performed mostly by the District under the Implementation Agreements. These activities include overall storm water program coordination; interagency agreements; representation at the CASQA, meetings of the Regional Boards or State Water Resources Control Board (State Board) and other public forums; preparation and submittal of compliance reports (including the DAMP) and other reports required under the Third-term MS4 Permits, Urban Runoff monitoring, Water Code Section 13267 requests, public education, CAP, budget and other program documentation; coordination of consultant studies, Permittee meetings, and training seminars.
- ◆ **Individual Permittee Costs for DAMP Implementation.** These are costs incurred by each Permittee for implementing within its jurisdiction the BMPs (drainage facility inspections for illicit connections, drainage facility maintenance, drain inlet/catch basin stenciling, emergency spill response, street sweeping, litter control, public education, construction activity inspection, development of implementation plans, etc.) comprising the DAMP.

Historically, the Permittees have employed four funding methods to finance their MS4 Permit compliance activities. Further, many Permittees utilize a combination of these funding sources. The different methods include:

- ◆ **Santa Ana and Santa Margarita Watershed Benefit Assessment Areas.** In 1991, the District established the Santa Ana and Santa Margarita Watershed Benefit Assessment Areas to fund its MS4 NPDES permit activities in the respective watersheds. Currently, the Benefit Assessment revenues fund both area-wide MS4 NPDES permit program activities and the District's compliance activities as a Permittee. In 2003/04 The Santa Ana Benefit Assessment generated approximately \$1.7 million dollars in revenue, and the Santa Margarita Benefit Assessment generated approximately \$345,000 dollars in revenue. Available fund balances allowed the Benefit Assessment fund to contribute approximately \$2.6 million towards District NPDES compliance costs and regional NPDES program implementation. Revenue generated in a particular Benefit Assessment area must be spent only within that area.
- ◆ **County Service Area (CSA) 152.** In December 1991, the County of Riverside formed CSA 152 to provide funding for compliance activities associated with the SAR MS4 Permit. Under the laws that govern CSAs, sub-areas may be established within the overall CSA area with different assessment rates set within each sub-area. The cities of Corona, Lake Elsinore, Moreno Valley, Norco, Riverside, Murrieta and San Jacinto participate in CSA 152.
- ◆ **Utility Charge.** The City of Hemet funds a portion of its MS4 Permit compliance program activities through a utility charge
- ◆ **General Fund /Other Revenues.** The remaining Permittees (Beaumont, Calimesa, Canyon Lake, Hemet, Murrieta, Temecula and Perris) utilize general fund revenue to finance their MS4 Permit compliance activities. Other Permittees may also utilize general fund revenues to supplement financing of MS4 Permit compliance activities.

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- ◆ Fees. Several Permittees charge fees for services such as inspections, plan check, and other recoverable costs relative to the Third-term MS4 Permits.

New funding sources or alternative combinations of funding sources may be required to ensure perpetual funding of Third-term MS4 Permit requirements. The Permittees continually review and modify their funding sources based on changing regulatory requirements, changing state and federal law, local municipal priorities and other considerations as necessary.

3.4 LEGAL AUTHORITY AND ENFORCEMENT

3.4.1 Legal Authority

Although other state and federal agencies, including the Regional Boards, may have overlapping legal authority over some discharges to and from MS4s (i.e., through the State's General Permits for storm water discharges associated with industrial facilities or construction activities), the Permittees must still independently establish, maintain and enforce adequate legal authority to control discharges to the MS4s (40 CFR §122.26(d)(2)(i)(A-F)). Conversely, the other state and federal agencies are independently responsible for enforcing their own legal authorities. Permittee legal authority can take the form of ordinances, statutes, permits, contracts or similar means, as necessary. At minimum, the Permittee's legal authority must:

- ◆ Prohibit Illegal Discharges (spills, dumping or disposal of materials other than storm water) to the MS4. Examples of Illegal Discharges include discharges of:
 - Sewage;
 - Wash water from cleaning or hosing of residential, municipal, industrial or commercial areas;
 - Runoff from material storage areas containing chemicals, fuels, grease, oil or other pollutants.
 - Pool or fountain water containing chlorine, biocides, or other chemicals; discharges of pool or fountain filter backwash water;
 - Sediment, pet waste, vegetation clippings, or other landscape or construction related wastes; and
 - Food-related wastes (e.g., grease, fish processing, and restaurant kitchen mat and trash bin wash water, etc.).

It should be noted that some non-storm water discharges need not be prohibited. Section 4 of the DAMP provides additional information regarding these discharges.

- ◆ Prohibit and eliminate Illicit Connections to the MS4 as described in Section 4 of this DAMP;

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- ◆ Control the contribution of pollutants to the MS4 through Urban Runoff associated with Development Projects²³, construction, industrial, residential and municipal activities within their jurisdiction as described in Sections 5, 6, 7, 8, and 9 of this DAMP;
- ◆ Require compliance with storm water ordinances, permits, contracts or orders;
- ◆ Authorize the Permittee to conduct the inspections, surveillance and monitoring necessary to determine compliance and noncompliance with local storm water ordinances, permits and the DAMP;
- ◆ Utilize enforcement mechanisms to require compliance with Permittee storm water ordinances, permits, contracts, or orders; and
- ◆ Control the contribution of pollutants associated with Urban Runoff through interagency agreements among Permittees.

Adequate legal authority is a prerequisite for Permittees to effectively implement compliance programs to reduce pollutants in discharges of Urban Runoff to the MEP. The legal authority necessary to implement compliance programs and pursue enforcement is provided to the Permittees through local storm water and erosion control ordinances. All Permittees (excluding the District²⁴) have adopted a comprehensive storm water ordinance based on a model developed and adopted by the County of Riverside. The ordinances provide the Permittees with the legal authority to implement the requirements of the Third-term SAR MS4 Permit.

Santa Ana Region Specific Elements

The ordinances provide the Permittees with the legal authority to implement the requirements of the Third-term SAR MS4 Permit.

Santa Margarita Region Specific Requirements

Certification of adequate legal authority to comply with the Third-Term Santa Margarita MS4 Permit, signed by their chief legal counsel, is provided in the Individual Storm Water Management Plans. This includes certification that the Permittee's ordinances require implementation of the minimum BMPs designated by the Permittees for various activities and provides for the following sanctions or their equivalent: stop work authority, non-monetary penalties, fines, financial security, and/or permit denials for non-compliance.

The management and discharge controls addressed by the Permittees' local storm water and erosion control ordinances may be summarized as follows:

- ◆ The disposal of pollutants onto public or private land is prohibited;

²³ "Development Projects" refers to "Priority Projects" as defined in Section F.2.b.1 of the SMR MS4 Permit or "New Development and Significant Redevelopment" as defined in Section VIII.B.1 of the SAR MS4 Permit.

²⁴ The District already had the authority needed to implement the requirements of the enforcement/compliance programs and as such did not need to adopt the model storm water ordinance.

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- ◆ Construction activities are required to comply with the local storm water ordinance and applicable erosion and sediment control ordinances;
- ◆ Development Projects²⁵ are required to implement BMPs to prevent deterioration of receiving water quality that could impair subsequent or competing beneficial uses of the water;
- ◆ Illicit connections to the MS4 are prohibited;
- ◆ Illegal Discharges (e.g., Non-storm water discharges), with the exception of discharges permitted by the Santa Ana or San Diego Regional Boards and those non-prohibited discharges identified in Section 4.1 of the DAMP, are prohibited. Illegal Discharges are defined in the Glossary (Appendix A).

The Permittees do not have legal authority over storm water discharges into their respective MS4s from agricultural activities, state and federal facilities, utilities and special districts, Native American tribal lands, wastewater management agencies and other point and non-point source discharges otherwise permitted by, or under the jurisdiction of, the Santa Ana or San Diego Regional Boards. Examples of non-point sources of pollutants not under the control of the Permittees include materials from operation of internal combustion engines, atmospheric deposition, brake pad wear, tire wear, residues from lawful application of pesticides, nutrient runoff from agricultural activities, and leaching of naturally occurring minerals from local geography. In the Third-term SAR MS4 Permit, the Santa Ana Regional Board recognizes that the Permittees should not be held responsible for such facilities and/or discharges. Similarly, certain activities that generate pollutants present in Urban Runoff are beyond the ability of the Permittees to eliminate.

Also, Permittees do not have the authority to enforce the provisions of California's General Permit for Storm Water Discharges Associated with Industrial Activities (General Permit-Industrial) or California's General Permit for Storm Water Discharges Associated with Construction Activity (General Permit-Construction). The State Board issues these NPDES permits, and neither the State Board nor the Santa Ana or San Diego Regional Board has the authority under the CWA to delegate responsibility for administering these permit programs to the Permittees. However, local storm water and erosion control ordinances may address items similar to those identified in these statewide permits.

If the Permittee's Illicit Connection/Illegal Discharge (IC/ID) Detection and Elimination Program or Receiving Waters Monitoring Program identifies a non-jurisdictional discharge causing, or threatening to cause, a condition of pollution, contamination or nuisance (as defined in CWC Section 13050), in waters of the State, the following minimum guidelines will be followed:

- 1) The non-jurisdictional discharge will be documented.
- 2) When appropriate, samples of the non-jurisdictional discharge will be collected.
- 3) In emergency situations, the Hazardous Materials Emergency Response Team will be utilized and the Permittees will coordinate with the Office of Emergency Services and the applicable

²⁵ "Development Projects" refers to "Priority Projects" as defined in Section F.2.b.1 of the SMR MS4 Permit or "New Development and Significant Redevelopment" as defined in Section VIII.B.1 of the SAR MS4 Permit.

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Regional Board to control the impact of the non-jurisdictional discharge on MS4s and Receiving Waters.

- 4) Notify the discharger verbally, at minimum, of their illegal discharge and the impact on MS4s and Receiving Waters and provide appropriate educational materials.
- 5) If necessary, notify the appropriate enforcement agency and/or the applicable Regional Board of the non-jurisdictional discharge causing, or threatening to cause, a condition of pollution, contamination or nuisance, in MS4s or Receiving Waters.

Santa Margarita Region Specific Elements

Where non-jurisdictional IC/Ids are identified, the Permittees will notify the responsible entity of the availability of technical assistance and provide guidance in seeking grants and other assistance to address the non-jurisdictional discharge. Also, the Permittees will, as appropriate, participate in watershed management efforts with other federal, state, regional and local agencies and other watershed stakeholders to address Urban Runoff issues within the watershed.

3.4.2 Enforcement/Compliance Strategy

As required under the Second-term SAR MS4 Permit, the Permittees developed an Enforcement/Compliance Strategy for ensuring that construction sites, commercial establishments, and industrial facilities operate in compliance with the local storm water and Urban Runoff ordinances and local erosion control ordinances. The goal of the Enforcement/Compliance Strategy was to document the enforcement of storm water ordinances fairly and consistently throughout the SAR. It is recognized that there is no clear, standard approach to handling all of the enforcement situations that may be encountered and that the judgment of each jurisdiction's staff will guide the appropriate level of response.

The Enforcement/Compliance Strategy has been integrated into the appropriate elements of this DAMP and those sections provide guidelines for Permittees in implementing enforcement actions appropriate for a given violation. Appendix H contains information regarding which Permittee departments are responsible for implementing the various aspects of the enforcement/compliance programs within its jurisdiction.

The Permittees have obtained all necessary legal authority to comply with the Third-term MS4 Permits through adoption of ordinances and/or municipal code modifications. As required by the Third-term MS4 Permits, the Permittees have reviewed their ordinances to verify that they include sanctions to ensure compliance. In addition, the Permittees have reviewed their litter/trash control ordinances to determine the need for revision to improve the effectiveness of these ordinances and their grading/erosion control ordinances in order to reduce erosion. Where needed, these ordinances have been revised.

3.4.2.1 Prioritize Violations

The local storm water and erosion control ordinances cover a wide range of prohibited activities with varying magnitudes of potential impact on the beneficial uses of Receiving Waters. For example, discharges of either hazardous materials (e.g., solvents and pesticides) or non-hazardous materials (e.g., food wastes, trash, and debris) into the MS4 are violations of storm water ordinances subject to enforcement. Similarly, an accidental spill into a catch basin inlet and an intentional discharge from an

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illicit connection are both violations. Prioritizing violations is important in focusing local resources on those violations that may have the greatest potential impact on the quality of Receiving Waters.

It is not feasible to quantify the magnitude of violations of the storm water and erosion control ordinances. Instead, prioritizing violations is based on many factors, including the experience and professional judgment of the jurisdiction's staff. The factors that should be considered in prioritizing violations of local storm water and erosion control ordinances are presented in Table 3-1.

Table 3-1. Prioritization Factors for Violations

Prioritization Factor	Description
Characteristics of the potential pollutant	Based on chemical characteristics and potential to impact beneficial uses of receiving waters. The more toxic, hazardous, or detrimental to the beneficial uses of the receiving waters a pollutant is the higher priority the discharge.
Sensitivity of the affected receiving waters	The sensitivity of the affected receiving waters should be considered directly proportional to the priority of the violation because, for example, a more sensitive receiving water may suffer severe adverse effects from the discharge of a particular pollutant whereas a less sensitive receiving water may suffer no adverse effects from the same pollutant discharge. It is also important to consider that a receiving water may be highly sensitive to one potential pollutant discharge while, at the same time, completely insensitive to another potential pollutant. Examples of receiving waters that may be particularly sensitive include those with municipal supply or wildlife habitat designated beneficial uses.
Proximity of receiving waters	The closer a receiving water is to the discharge, the less chance there is for dispersion, dilution, or degradation of the potential pollutant. Therefore, the closer the discharge is to receiving waters, the higher priority of the violation.
Magnitude of discharge (volume and mass)	A larger illegal discharge should be of a higher priority than a smaller illegal discharge because as the magnitude of the pollutant discharge increases the extent of impact of the discharge on the environment increases as well.
Responsiveness of the discharger in taking corrective actions	A discharger who is responsive and implements a good faith effort to correct a violation is more likely to minimize adverse impacts to surface water quality than a discharger who takes no action to correct a violation. Therefore, the priority of a violation should decrease as the responsiveness of the discharger increases.
Intent of the discharger	Is the violation accidental or the result of an accident or a deliberate attempt to circumvent regulations?
Frequency of the violation	Violations of local storm water and erosion control ordinances that are continuous or reoccurring should be of a higher priority than isolated occurrences of violations. The more frequent a violation, the more likely it is that the discharge will impact surface water quality.
Previous history of non-compliance of the responsible party	A poor history of non-compliance of a discharger should result in a higher prioritization of subsequent violations as compared to a discharger with a good history of compliance because a history of non-compliance is evidence of a discharger's lack of concern for complying with local storm water and erosion control ordinances.

Table 3-2 has been developed to facilitate consistency in enforcement actions by the Permittees in the SAR and SMR. Table 3-2 provides general guidance for categorizing the severity of violations based upon the factors and/or circumstances associated with a violation. Table 3-2 also describes criteria for characterizing the severity of a violation as "high", "medium", or "low." For example, using Table 3-2, the accidental dumping of 20 gallons of trash several hundred yards away from an ephemeral stream would be considered a "low" priority violation. However, the intentional discharge of 2,000 gallons of pesticide directly into aquatic wildlife habitat would be a "high" priority violation.

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In some cases, based on Permittee evaluation of circumstances, an individual violation may be categorized higher or lower than is indicated in Table 3.2. Violations may also not clearly fall into any single severity priority level described in Table 3-2. It is more likely that a violation would be characterized by factors representing more than one of the priority levels described in Table 3-2. In this case, a subjective evaluation of the violation would be required to select the priority level most representative of the characteristics and circumstances surrounding the violation.

Table 3-2. Severity of Violations

Factors Affecting the Severity of Violations	Severity Priority Level		
	High	Medium	Low
Pollutant Characteristics	Hazardous Materials (e.g., pesticides and solvents)	Metals, Nutrients, Sediment, other Non-Hazardous Materials	Trash and Debris
Sensitivity of Receiving Waters	Drinking Water Source, Wildlife Refuge, Illegal Discharges containing pollutants identified as impairing the receiving water.	Recreational reservoir, riparian habitat	Dry, ephemeral stream
Proximity of Receiving Waters	Adjacent	Several hundred feet away	Several hundred yards away
Discharge Magnitude	1000's Gallons	100's Gallons	10's Gallons
Responsiveness of Discharger	No action to contain or mitigate discharge	Reactive to control discharge when requested (i.e., cooperative)	Implements spill control plan at own initiative or shows good faith effort to respond
Intent of Violation	Intentional	Discharge due to lack of controls or negligence	Implemented and maintained controls that failed (i.e., accident)
Frequency of Violation	Continuous	Intermittent	Isolated incident
Previous History of Discharger	Enforcement and cleanup historically resisted and more than one previous violation	Enforcement and cleanup performed when threatened and one or less previous violations	Enforcement and cleanup performed when requested and no previous violations

3.4.2.2 Enforcement and Compliance Responses

The enforcement/compliance response should be based on the severity of the violation. The types of enforcement/compliance responses available, in typical order of increasing severity, are:

- ◆ Education and information,
- ◆ Verbal warning,
- ◆ Written warning,
- ◆ Notice of violation or non-compliance,
- ◆ Administrative compliance order,
- ◆ Stop work order or cease and desist order,

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- ◆ Civil citation or injunction,
- ◆ Administrative fine, and
- ◆ Referral to the Environmental Crimes Strike Force for criminal prosecution (infraction or misdemeanor).

Administrative Remedies

Notice of Noncompliance. The Notice of Noncompliance constitutes a basic request that the property owner or facility operator rectify the condition causing or threatening to cause noncompliance with the storm water or erosion control ordinance. The Notice of Noncompliance is generally issued when one or more of the following circumstances exist:

- ◆ The violation or threat is not significant and has been short in duration,
- ◆ The responsible party is cooperative and has indicated a willingness to remedy the conditions,
- ◆ The violation or threat is an isolated incident, and
- ◆ The violation or threat does not affect and will not harm human health or the environment.

Administrative Compliance Orders. The Administrative Compliance Order is generally an appropriate enforcement tool in the following circumstances:

- ◆ An actual condition of noncompliance exists, but the condition cannot be remedied within a relatively short period of time.
- ◆ The owner of the property or facility operator has indicated willingness to come into compliance by meeting milestones established in a reasonable schedule.
- ◆ The violation does not pose an immediate threat to human health or the environment.

Stop Work Order or Cease and Desist Order. The Stop Work Order or Cease and Desist Order are appropriate when the immediate action of the owner of property or operator of a facility is necessary to stop an existing discharge, which is occurring in violation of an ordinance. The Cease and Desist Order may also be appropriately issued as a first step in ordering the removal of nuisance conditions, which threaten to cause an unauthorized discharge of pollutants if exposed to rain or surface water runoff. The Cease and Desist Order is generally issued when one or more of the following circumstances exist:

- ◆ The violation or threat is immediate in nature and may require an emergency spill response or immediate nuisance abatement if left unattended.
- ◆ The violation or threat exhibits a potential situation that may harm human health or the environment.
- ◆ Contacts with the property owner or facility operator indicate that further authority of the Permittee may need to be demonstrated before remedial action is forthcoming.
- ◆ Prior Notices of Noncompliance have not obtained a favorable response.

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Prior to issuance of any Administrative Compliance Order, Cease and Desist Order or commencement of other civil or criminal enforcement action against any person, the Permittee should deliver to the person a written Notice of Noncompliance, which states the act or acts constituting the violation and directs that the violation be corrected. The Notice of Noncompliance should provide the person with a reasonable time period to correct the violation before further proceedings are brought against the person. However, a Notice of Noncompliance should not be the first enforcement method used if egregious or unusual circumstances indicate that a stronger enforcement method is appropriate.

Criminal Enforcement

Misdemeanors. Criminal enforcement is appropriate when evidence of noncompliance indicates that the violator of the Ordinance has acted willfully with intent to cause, allow continuing or concealing a discharge in violation of the Ordinance.

Infractions. At the discretion of the Permittees' attorneys, misdemeanor acts may be treated as infractions. Factors that the attorney may use in determining whether the misdemeanor is more appropriately treated as an infraction may include the:

- ◆ Duration of the violation or threatened violation.
- ◆ Compliance history of the person, business or entity.
- ◆ Effort made to comply with an established compliance schedule.
- ◆ Existence of prior enforcement actions.
- ◆ Actual harm to human health or the environment from the violation.

Issuance of Citation. Where criminal enforcement is indicated, the inspector will issue a citation including the:

- ◆ Name and address of the violator,
- ◆ Provisions of the Ordinance violated,
- ◆ Time and place of required appearance before a magistrate.

The offending party must sign the citation thereby promising to appear. If the cited party refuses to sign the citation, the inspector may cause the arrest of the discharger, or may refer the matter to the municipal attorney for issuance of a warrant for arrest. Inspectors should be aware that cited parties have the right to demand the immediate review by a magistrate, and such a request must be granted. Inspectors should respond to such a request by referring the request to the Permittee's police department.

Referral to Environmental Crimes Strike Force

The Riverside County Environmental Crimes Strike Force is a committee designed to pursue enforcement of serious environmental crimes. Referral of a case to the Environmental Crimes Strike Force would occur after repeated attempts at obtaining compliance have failed.

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Appropriate Enforcement/Compliance Responses

Permittees will emphasize and encourage voluntary compliance with storm water and erosion control ordinances to the maximum extent practicable. However, if routine inspections or dry weather monitoring indicate illicit connections or illegal discharges, they will be investigated and eliminated or permitted²⁶ as soon as possible, but no later than sixty (60) calendar days of receipt of notice by its staff or from a third party. Illicit discharges that are a serious threat to public health or the environment will be eliminated immediately.

Table 3-3 provides an example of appropriate enforcement responses that correspond to the severity priority level of a violation of a Permittees ordinances or other storm water laws, regulations or contracts as determined from Table 3-2. Permittees and the respective Regional Board should work cooperatively in implementing enforcement/compliance responses according to their respective authorities. State law limits the authority of Permittees to assess fines and penalties. However, the Regional Boards have substantial abilities to assess fines and penalties under State and federal law that can be used to augment local enforcement where superior regulatory authority and the ability to assess fines and penalties would be beneficial.

Table 3-3. Enforcement Responses for Violations Where Overlapping Authority Exists

Incident Severity Priority Level	Appropriate Enforcement Responses ¹	Lead Enforcement Agency	
		Permittee	Regional Board Support
High	Referral to Environmental Crimes Strike Force	X	X
	Citation	X	X
	Infraction	X	X
	Misdemeanor	X	X
Medium	Infraction	X	X
	Misdemeanor	X	X
	Stop work order or cease and desist order	X	
	Administrative compliance order	X	
	Notice of non-compliance	X	
Low	Administrative compliance order	X	
	Notice of non-compliance	X	
	Written warning	X	
	Verbal warning	X	
	Education and information	X	

¹ Education and information should be incorporated into all enforcement responses.

Table 3-3 also provides an example of how coordinated responses in areas of overlapping authority should occur, unless there is justification for implementing alternate actions. In general, the respective Regional Board may be asked to provide support in enforcement actions related to incidents that are or

²⁶ Unauthorized non-storm water discharges to surface waters and a MS4 must be permitted through the applicable Regional Board.

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escalate to a high-priority status. The Permittees take the lead in initiating enforcement actions related to medium and low priority incidents. Finally, the respective Regional Board will take all enforcement actions related to compliance with the State General Permits.

Coordination of Enforcement/Compliance Activities with Other Permittees

Coordination with other Permittees and government agencies including the Santa Ana and San Diego Regional Boards is essential for successful implementation of an enforcement/compliance program. The entire MS4 is not controlled by a single Permittee, nor does any single Permittee have authority to take enforcement action for violations occurring outside of its jurisdiction. Further, other governmental agencies may have additional enforcement authorities that are appropriate to the situation. Each Permittee coordinates its enforcement activities, as practicable, with the appropriate Permittees and agencies in accordance with the following guidelines:

- ◆ Enforcement will be coordinated when multiple agencies have jurisdiction and an agency has not been able to obtain compliance by the discharger.
- ◆ Unless otherwise agreed to in writing, the lead enforcement agency role will be assigned on the basis of the origin of the discharge.
- ◆ The Regional Board may be asked to be the lead enforcement agency for higher priority illegal discharges in areas of overlapping authority and will be lead enforcement agency for all enforcement actions related to compliance with the State General Permits.
- ◆ Investigation and other relevant information will be shared between the participating agencies in a timely fashion.

Lead Enforcement Agency Responsibilities. The lead enforcement agency will assume the following responsibilities:

- ◆ Coordinating activities and assigning responsibilities (e.g., investigations, site visits, etc.) among participating agencies;
- ◆ Maintaining communication and information exchange among participating agencies; and
- ◆ Ensuring that follow-up actions are implemented.

Enforcement Activities Directory. A list of contact names identifying who should be contacted to coordinate enforcement activities for each Permittee, as well as the Regional Board and other potentially interested agencies is maintained by the District and distributed to the Permittees and others as appropriate to facilitate coordination of enforcement activities.

Coordination with the Regional Board

Under the Porter-Cologne Water Quality Act, the State has provided the Regional Boards with overriding authority to manage water quality and administer compliance with state and federal water quality law. This authority includes the ability to impose more significant fines and other sanctions than the Permittees. With this authority, the Regional Board may be more effective in obtaining the cooperation and compliance from those who violate storm water ordinances or regulations. The appropriate Regional

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Boards are notified by the Permittees when findings of potential non-compliance with the State's General Storm Water Permits or the San Jacinto Watershed Construction Activities Permit have been identified or when Permittees have been unable to obtain the compliance of a party responsible for violating local storm water or erosion control ordinances. The list of contact names maintained by the District identifies the appropriate Regional Board staff to contact to initiate coordination of enforcement activities or to notify the Regional Board of potential findings of non-compliance. Where appropriate, notifications of potential non-compliance should be forwarded to the designated Regional Board contact person by the Permittee's storm water compliance coordinator.

Coordination with Other Agencies

In addition to the Regional Board, Permittees may also find it useful or necessary to coordinate or report findings of potential non-compliance to other government agencies with jurisdiction over water quality issues including the California Department of Fish and Game and the United States Fish and Wildlife Service. The list of contact names maintained by the District identifies the appropriate staff at these agencies to contact to initiate coordination of enforcement activities or to notify of potential findings of non-compliance.

3.4.23 Recordkeeping and Reporting

Minimum Guidelines for Recordkeeping

Information to be retained by the Permittees regarding their enforcement program includes:

- ◆ Documentation of staff training;
- ◆ Inspection notes or reports;
- ◆ Warning letters, violation notices, etc.;
- ◆ Documentation of follow-up actions;
- ◆ Contact reports from meetings or conversations with violators, Permittees, or other agencies; and
- ◆ Copies of notifications of potential non-compliance.

Annual Summary of Enforcement Actions

Each Permittee completes an annual summary of enforcement actions to document implementation of their enforcement and compliance programs. The summaries document the responsible party, address, type of facility, description of violation, date of initial violation, and enforcement/compliance actions implemented for violations identified by a Permittee. The Third-term MS4 Permits do not specify a minimum period for record retention; however, consistent with requirements specified in the General Permit-Industrial, the Permittees maintain compliance records for a minimum of five years.

3.4.3 Training for Enforcement

Training is necessary for successfully implementing the Permittee's enforcement/compliance programs so that staff can continue to recognize and respond to violations in an appropriate manner. Therefore, staff involved in implementing a Permittee's enforcement/compliance program are made aware of the local, state, and federal storm water regulations and the procedures developed to enforce these regulations.

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Permittees provide storm water training to staff that are involved in inspections of industrial facilities and construction sites, enforcement of storm water and erosion control ordinances, administration of the enforcement/compliance program, and other staff as appropriate.

Staff training addresses the following areas:

- ◆ Requirements of the local storm water and erosion control ordinances;
- ◆ Requirements of the Third-term MS4 Permits and DAMP;
- ◆ Requirements of the General Permit- Industrial and General Permit- Construction;
- ◆ Requirements of the San Jacinto Watershed Construction Activities Permit, where applicable; and
- ◆ Requirements of the Enforcement/Compliance Strategy.

Industrial facility and construction site inspectors also receive training regarding storm water pollution prevention plans (SWPPPs) for construction sites, and selection of appropriate BMPs for industrial facilities and construction sites. Knowledge of the applicable requirements and the overall storm water program helps inspectors and other staff to recognize potential violations, respond with appropriate levels of enforcement, and effectively coordinate with other agencies. The Permittees individually maintain a log of trained staff and report training and this information is summarized in the Annual Reports.

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**4.0 ELIMINATION OF ILLICIT CONNECTIONS
AND ILLEGAL DISCHARGES**

4.1 DISCHARGE LIMITATIONS AND PROHIBITIONS

The Third-term MS4 Permits require the Permittees to comply with the following in order to meet the provisions contained in Division 7 of the Water Code and regulations adopted there under, and the provisions of the CWA, as amended and the regulations and guidelines adopted there under:

- ◆ Under §122.26(d)(2)(i)(F) of the CWA, the Permittees must continue to prohibit illicit connections and illegal discharges (non-storm water) from entering their MS4.
- ◆ The discharge of Urban Runoff from each Permittee's MS4 facilities to the Waters of the U. S. containing pollutants that have not been reduced to the MEP is prohibited.
- ◆ Discharges from the MS4 that cause or contribute to exceedances of Receiving Water Quality Standards for surface or groundwater are prohibited.
- ◆ The Permittees must continue to effectively prohibit the discharge of non-storm water into their respective MS4s and to the Waters of the U. S. unless such discharge is authorized by a separate NPDES permit or specifically allowed by the following provisions. The Permittees are not required to prohibit the discharges identified below. If, however, any of the following allowable non-storm water discharges are identified by either a Permittee or the Executive Officer as a significant source of pollutants, coverage under Santa Ana Regional Board Order No. R8-2003-0061, NPDES No. CAG998001²⁷ (General Permit-De Minimus Discharges) as amended by Order Nos. R8-2006-0004 and R8-2005-0041, or other NPDES Permit or waste discharge requirements, may be required.
 1. Discharges covered by a NPDES permit, Waste Discharge Requirements, or waivers issued by the Regional Board or State Board. Unless a Permittee is the discharger, the Permittees are not responsible for any exceedances of Receiving Water Limitations associated with such discharges;
 2. Discharges from potable water line flushing and other potable water sources;
 3. Discharges from landscape irrigation, lawn/garden watering and other irrigation waters;
 4. Air conditioning condensate;
 5. Diverted stream flows;
 6. Rising ground waters and natural springs;
 7. Groundwater infiltration (as defined in 40 CFR 35.2005(20)) and uncontaminated pumped groundwater²⁸;
 8. Passive foundation drains;

²⁷ General Waste Discharge Requirements for Discharges to Surface Waters Which Pose an Insignificant (De Minimus) Threat to Water Quality Order No. R8-2003-0061, NPDES No. CAG998001.

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9. Passive footing drains;
 10. Water from crawl space pumps;
 11. Flows from riparian habitats and wetlands;
 12. Dechlorinated swimming pool discharges;
 13. Waters not otherwise containing wastes as defined in Water Code Section 13050 (d);
and
 14. Other types of discharges identified and recommended by the Permittees and approved
by the Regional Board.
- ◆ The Regional Board may issue Waste Discharge Requirements for discharges exempted from NPDES requirements, such as agricultural irrigation waters, if identified to be a significant source of pollutants.
 - ◆ The Regional Board may amend the Third Term MS4 Permit to add categories of allowable non-storm water discharges based on a finding that they are not significant sources of pollutants; or remove categories of allowable non-storm water discharges listed above, based upon a finding that the discharges are a significant source of pollutants.

Santa Ana Region Specific Elements

- ◆ Emergency water flows (i.e., flows necessary for the protection of life and property) do not require BMPs and need not be prohibited. However, appropriate BMPs must be considered where practicable when not interfering with emergency public health and safety issues;
- ◆ When allowable non-Urban Runoff discharges are identified as a significant source of pollutants to the Waters of the U.S., a Permittee must either: prohibit the discharge category from entering its MS4 or ensure that Structural BMPs and Source Control BMPs are implemented to reduce or eliminate pollutants resulting from the discharge. The Permittees must evaluate the allowed non-Urban Runoff discharges, as listed above, and notify the Executive Officer if any are a significant source of pollutants to their MS4s.
- ◆ The discharge of pollutants, including trash and debris, from the MS4 to Receiving Waters must continue to be reduced to the MEP.
- ◆ MS4 discharges in the Santa Ana Region must be in compliance with the discharge prohibitions contained in Chapter 5 of the Santa Ana Region Basin Plan.
- ◆ Discharge of Urban Runoff from the MS4 cannot cause or contribute to a condition of nuisance as the term is defined in Section 13050 of the Water Code.

Santa Margarita Region Specific Elements

- ◆ Discharges into and from the MS4 in a manner causing, or threatening to cause, a condition of pollution, contamination, or nuisance (as defined in CWC Section 13050), in Waters of the State are prohibited.

²⁸ Groundwater that meets the surface water quality objectives of the receiving water to which it will be discharged as specified in the Basin Plan.

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- ◆ Discharges from the MS4s are subject to the Basin Plan Prohibitions cited in Attachment A to San Diego Region Board Order R9-2004-001 (Appendix C).
- ◆ Non-emergency fire fighting flows need not be prohibited.
- ◆ If emergency fire fighting activities are determined to be a significant source of pollutants to Waters of the United States, the Permittees will require the implementation of appropriate BMPs to reduce the discharge of pollutants to the MEP, when not interfering with the protection of health and property.
- ◆ Non-commercial vehicle washing, [e.g., residential car washing (excluding engine degreasing) and car washing fundraisers by non-profit organization] need not be prohibited;
- ◆ If allowable non-storm water discharge categories are found by the Permittees or the San Diego Regional Board to be a source of pollutants to Waters of the United States, the Permittees either prohibit the discharge category or develop and implement appropriate control measures under the DAMP to reduce pollutants to the MEP and submit the report to the San Diego Regional Board pursuant to Section III.A.1.d of Monitoring and Reporting Program No. R9-2004-001 (Appendix C).

4.2 PERSISTENT EXCEEDANCES OF WATER QUALITY STANDARDS

If the Permittees determine an exceedance of Water Quality Standards due to Urban Runoff discharges persists, notwithstanding the implementation of the DAMP and other requirements of the Third-term MS4 Permits, the Permittees will:

Santa Ana Region Specific

Implement the Procedure described in Section III.D of the Third-term SAR MS4 Permit.

Santa Margarita Region Specific

Implement the procedure described in Provision C.2 of the Third-term SMR MS4 Permit.

So long as the Permittees have complied with the procedures set forth above and are implementing the revised DAMP, the Permittees do not have to repeat the same procedure for continuing or recurring exceedances of the same Water Quality Standards unless the Executive Officer determines it is necessary to develop additional BMPs and provides written notice to the Permittees of this determination.

4.3 DETECTION AND ELIMINATION OF ILLICIT CONNECTIONS

The Permittees have programs in place to identify and eliminate illicit connections. Some of the Permittees conduct this aspect of their MS4 Permit compliance program as a part of the routine maintenance of their MS4 facilities. The Permittees have also surveyed their MS4 facilities to identify illicit connections. In the mid-1990s, reconnaissance surveys were conducted to identify illicit and illegal discharges to the MS4. The reconnaissance surveys were limited to underground storm drains of 36-inch diameter or larger and open channels and most Permittees utilized video taping. Each undocumented connection to the MS4 was traced to its origin. Although 200 undocumented connections to the underground MS4 facilities were found, none of the connections were determined to be illegal

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connections with regard to the MS4 NPDES program. As underground facilities are difficult to access and the Permittees inspect the construction of new underground MS4 facilities to verify that no illicit connections are being made, it has been determined that additional inspections of the underground MS4 facilities are not warranted. However, inspections of open channel facilities to identify illicit connections are conducted as an element of routine facility maintenance. Illicit connections identified during these surveys are documented and removed where necessary in order to comply with the MS4 Permit requirements.

The Permittees actively seek to eliminate and prohibit illicit connections and illegal discharges to the MS4. In addition, the Permittees implement and improve routine inspection and monitoring and reporting programs for their MS4. If routine inspections or dry weather monitoring indicate illicit connections or illegal discharges, they are investigated and eliminated or permitted²⁹ as soon as possible, but no later than sixty (60) calendar days of receipt of notice by Permittee staff or from a third party. However, illicit discharges that are a serious threat to public health or the environment are eliminated immediately.

Santa Margarita Region Specific Element

The SMR Permittees implement a program to actively seek and eliminate illicit discharges and connections to their respective MS4s as described in the Individual SWMPs. Each SMR Permittee maintains a labeled map of their entire MS4 and the associated drainage areas. The SMR Permittees review their MS4 map on an annual basis and update their maps, as needed. Each SMR Permittee implements an Illicit Discharge Monitoring Program, which is described in their Individual SWMP. The Illicit Discharge Monitoring Programs include numeric criteria that are used to determine when laboratory analytical results indicate that a follow-up investigation is warranted.

4.4 ILLEGAL DISCHARGES RESPONSE AND REPORTING

The Permittees have programs in place to respond to illegal discharges. Predominantly, illegal discharges are reported by the public or by Permittee field personnel. Appropriate Permittee field personnel are trained to identify potential illicit connections and illegal discharges during the course of their normal duties. Illicit connections and illegal discharges may also be determined from complaint calls from the public. For example, the District currently operates, on behalf of the Permittees, a centralized 24-hour hotline (1-800-506-2556) that may be used by the public to, among other things, report illegal dumping from urban areas into public streets, the MS4 and other waterbodies. These calls can be received in English or Spanish and are routed to the appropriate Permittee departments or contacts. The Permittees also implement wet and dry weather monitoring programs that may indicate the presence of illicit connections or illegal discharges.

To assist in response to complaint calls, and as part of the area-wide program on behalf of the Permittees, the District continues to provide financial support to the County's Hazardous Materials Emergency Response Team to ensure that hazardous materials from spills or illegal dumping have minimal impact on

²⁹ Unauthorized non-storm water discharges to surface waters and a MS4 must be permitted through the applicable Regional Board.

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MS4s and receiving waters. Each Permittee also has code enforcement or other trained staff who are assigned the responsibility to respond to illegal discharges or illicit connections. In addition, as a proactive deterrent to potential illegal discharges, the District, on behalf of the Permittees, also provides funding to support the County Department of Environmental Health's Household Hazardous Waste collection program. This facilitates the proper management and disposal of used oil, toxic materials and other household hazardous wastes.

Response

When put on notice by staff or a third party of a potential illicit connection or illegal discharge that is not being responded to by another responsible agency (e.g., other Permittee, sewerage agency, fire department, etc.), the Permittee shall immediately determine if it is a threat to human health or the environment. Any sewage spill over 1,000 gallons or that could impact water contact recreation, any spill that could impact wildlife, any hazardous material spill where residents or evacuated, any spill of reportable quantities of hazardous waste (as defined by 40 CFR 117 and 40 CFR 302), or any other spill reportable to the OES is classified as a threat to human health or the environment. Based on the Permittee's initial assessment, the Permittee with jurisdiction over the affected MS4 facility will take the following actions:

Illicit Connections and Illegal Discharges that are Threats to Human Health and the Environment

- ◆ Follow reporting procedures specified below.
- ◆ Immediately investigate and remediate the situation and/or coordinate with the appropriate response agencies to remediate the situation.
- ◆ Lead or coordinate with other agencies regarding appropriate enforcement against the discharger per the guidelines of Section 3.4.

Non-Threatening Illicit Connections and Illegal Discharges

Permittees meet the following minimum guidelines when responding to reports of non-threatening illegal discharges:

- ◆ If the reported incident is outside of a Permittee's jurisdiction, referral to the appropriate agency and/or the respective Regional Board will be made within two (2) business days;
- ◆ Permittees respond to reports of illicit connections or illegal discharges within their jurisdiction within ten (10) business days;
- ◆ Inspections performed in response to a report are documented appropriately; and
- ◆ When appropriate, samples of illegal discharges are collected.

Reporting

The Permittees with jurisdiction over the portion of the MS4 affected by the illegal discharge, upon being notified, shall immediately investigate the circumstances of potential illegal discharges and/or illicit connections to their MS4 to determine if the potential discharge is a threat to human health or the

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environment as defined above. Based upon their assessment and as specified below, the Permittees report all discharges that endanger human health or the environment:

1. By phone to the Office of Emergency Services (the "OES") at (800-852-7550) and to the Executive Officer [Santa Ana: (951) 782-3238; San Diego: (619) 467-2952]. Alternatively, the report to the Executive Officer may be provided by e-mail at sw@waterboards.ca.gov
2. At a minimum, any sewage spill above 1,000 gallons or that could impact water contact recreation, any oil spill that could impact wildlife, any hazardous material spill where residents are evacuated, any spill of reportable quantities of hazardous waste (as defined in 40CFR 117 and 40 CFR 302), or any other spill or discharge that is reportable to the OES (collectively, an "Emergency Situation") is reported within twenty-four (24) hours of the Permittee(s) becoming aware of the circumstances.
3. All other spill incidents, including any unauthorized discharges that are not reportable to the OES are reported to the Regional Board via each Permittees Annual Report.

4.5 ENFORCEMENT FOR ILLICIT CONNECTIONS AND ILLEGAL DISCHARGES

Investigations are performed by each Permittee in response to reports of illicit connections or illegal discharges received from the public, Permittee staff or other agencies within their jurisdictions. The sources of these discharges may include residential, commercial, industrial and construction activities and other sources. As described in Section 3.4, the Co-Permittee's have adopted ordinances prohibiting such discharges and established programs to enforce them.

Construction site inspectors, industrial and commercial facility inspectors, and other Permittee departments, including fire and wastewater inspectors, will report potential illicit connections and illegal discharges discovered during the course of existing routine inspections to the appropriate Regional Board if they are perceived to be in violation of the General Permits. In addition, although construction site and industrial/commercial site violations may be enforced initially through local storm water and erosion control ordinances, referrals are made to the Regional Board if compliance is not achieved. In all cases, the notification of potential non-compliance should be routed through the Permittee's storm water compliance coordinator before notifying Regional Board staff.

4.6 LITTER CONTROL

The Permittees implement control measures to reduce and/or to eliminate the discharge of pollutants, including trash and debris, from the MS4 to the Receiving Waters. In the SAR, these control measures are reported in the Annual Report. Typical litter control activities may include public education, street sweeping, code enforcement activities targeted at illegal dumping, watershed cleanup events and/or other activities implemented by the Permittees collectively or individually.

4.7 SANITARY WASTES

The Executive Officer of the Santa Ana Regional Board requested the local sewerage agencies to take the lead in the development of a unified response to sewage spills that may have an impact on Receiving Water quality. This procedure includes notification of all sewage spills from private laterals and failing

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septic systems into the MS4 and coordination of sewage spill prevention, containment and response activities through appropriate departments, programs and agencies. The District collaborated with the local sewerage agencies in the development of this procedure, a copy of which is included as Appendix I. However, the response procedure is implemented in both the SAR and the SMR. The Permittees provide local sanitation districts 24-hour access to the MS4s to address sewage spills. The Permittees work cooperatively with the local sewerage agencies to determine and control the impact of infiltration from leaking sanitary sewer systems on Urban Runoff quality.

The County Health Department regulates septic tanks and portable toilets under Ordinance No. 712. This ordinance requires sanitary waste haulers to inform residential septic tank pumping customers in writing of:

- ◆ The number of compartments within the system to be pumped;
- ◆ An assessment of tank condition as to necessity for pumping chambers, in addition to the primary chamber. For routine maintenance, all compartments of a septic tank should be made available for pumping of liquid and solids;
- ◆ The number of compartments actually pumped;
- ◆ The number of gallons removed;
- ◆ The pH value of the load.

In cooperation with the County Health Department, the Permittees have identified procedures to control septic system failures to prevent impacts on Urban Runoff quality and continue to follow procedures established by the State Health Department to address such failures. The County also implements regulations adopted by the State Board pursuant to California Water Code Section 13290-13291.7 through a memorandum of understanding with the Regional Board. The design review of septic systems is performed by Memorandums of Understanding with the Regional Boards. Statewide standards for construction are being developed by the State Board, in conjunction with other stakeholders, under the provisions of AB 885 of 2000. It is expected that the final regulations implementing AB885 will include provisions for ongoing, regular monitoring of some or all septic systems.

In addition, Ordinance No. 650 establishes the construction requirements for septic systems, and, in conjunction with the California Health and Safety Code sections 5411 and 5461 establishes the authority and responsibility of the Department of Environmental Health (DEH) to investigate system failures. Primarily a complaint driven process, the Department investigates all suspected incidents of improper discharge. Staff use a variety of enforcement tools including citation, criminal prosecution and summary abatement to mitigate discharges from septic system failures.

The overwhelming majority of septic system failures are confined to the property and are effectively abated, providing minimal impact to the MS4. In cases where there are clustered failures or violations indicating a previously unknown or deteriorating geological condition, DEH has and will continue to provide additional investigations to identify the geological condition and its extent. Where necessary for the ongoing control of on-site waste generation DEH provides support to efforts to bring sewers to the community.

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The above process is being applied to Quail Valley, from which septic failures are implicated in pathogenic, nitrogen and phosphorus contamination to Canyon Lake. DEH has conducted a sanitary survey of the Quail Valley area and is working with the local sewerage agencies and the Santa Ana Regional Board to evaluate the provision of sewers. DEH is also drafting revisions to Ordinance No. 650 to provide additional controls to mitigate these failures.

Further, the Permittees have added the base of operations for portable toilet suppliers to their industrial/commercial inspection lists and prioritized them according to their threat to water quality.

Santa Margarita Region Specific Element

The SMR Permittees do not operate sanitary sewer systems nor do they have any authority over the design, operation or maintenance of these systems. In their Individual SWMP, each SMR Permittee describes their program element that addresses the prevention, response procedures, containment, and cleanup of sewage spills into the MS4 and the prevention of contamination of surface waters, groundwaters, and soil by sanitary waste to the MEP. In developing their program element, the SMR Permittees considered the following actions:

- ◆ Development and implementation of a procedure to be notified of all sewage spills from private laterals and failing septic systems into the MS4.
- ◆ Coordination of sewage spill prevention, containment, and response activities through appropriate departments, programs, and agencies to ensure protection of Receiving Waters.
- ◆ Conducting municipal activities such as street repair and tree planting in a manner that minimizes damage to sewer lines and blockage of sewer lines by tree roots.
- ◆ Identifying priority areas for sewage spills within their jurisdiction.
- ◆ Educating the public on actions they can take to prevent sewage spills.

4.8 WASTE COLLECTION PROGRAMS

4.8.1 Household Hazardous Waste (HHW) Collection and Anti-freeze, Batteries, Oil, and Latex Paint (ABOP) Collection Programs

The Permittees participate in the HHW and ABOP collection programs in conjunction with the Riverside County Department of Environmental Health (DEH). The DEH has conducted the collections of HHW and ABOP materials since 1993 to discourage illegal disposal and to assist residents in properly disposing potentially hazardous or toxic materials.

At least two mobile HHW collection events are held at sites in the SAR and two within the SMR and at additional sites countywide. Collection events are scheduled periodically on weekends from 9:00 AM until 2:00 PM. The District also supports five permanent HHW/ABOP collection sites. Two of these sites are in the SAR, one is in the SMR, and two are in the Whitewater Region. The sites are open Saturdays from 9:00 AM until 2:00 PM with the exception of holiday weekends. Mobile and permanent site locations may vary over time. Details, site locations, maps and schedules of operation for both the

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HHW and ABOP collection events are available on the DEH web site at <http://www.rivcoeh.org/hhhw.htm> or by calling (800) 506-2555 or (951) 358-5256.

Examples of wastes that are accepted at HHW collection events include the following items:

- ◆ Kitchen - Aerosol cans, aluminum cleaner with acid, ammonia-based cleaner, furniture polish, oven cleaner.
- ◆ Bathroom - Household batteries, flea powder, kerosene/lamp oil, lighter fluid, nail polish remover, toilet/tub/tile cleaner.
- ◆ Garage - Antifreeze, auto batteries, transmission & brake fluid, carburetor cleaner, gasoline, diesel fuel, motor oil, engine de-greaser.
- ◆ Gardening - Fertilizer, fungicide, insecticides/pesticides, weed killer/herbicides, slug and snail poison.
- ◆ Workshop - Chlorine bleach, pool/spa chemicals, lighter fluid, paint stripper with solvent, paint thinner/turpentine, photographic chemicals, varnish, wood preservative, caulking material, latex & oil based paints.

No wastes from businesses or non-profit facilities or activities are accepted. Examples of wastes that are not accepted at HHW collection events include the following items:

- ◆ explosives/ammunition;
- ◆ 30 or 55 gallon drums;
- ◆ radioactive materials;
- ◆ appliances;
- ◆ tires;
- ◆ televisions or computer monitors (CRTs); and
- ◆ medical waste except syringes and hypodermic needles (sharps) in an acceptable container.

Along with materials collected at HHW and ABOP sites, CRTs can be taken to County landfills for recycling. Used motor oil for recycling may be taken to drop off at certified collection centers throughout Riverside County in addition to the ABOP sites.

4.8.2 Conditionally Exempt Small Quantity Generator (CESQG)

The CESQG Program is a hazardous waste pick-up disposal service for eligible businesses/non-profit organizations in Riverside County. This program provides an affordable way to legally dispose of limited quantities of hazardous waste.

Businesses that generate 27 gallons or 220 pounds of hazardous waste or 2.2 pounds of extremely hazardous waste per month can participate in the CESQG program. Businesses are required to use a licensed hazardous waste hauler to manifest and transport their waste. The most common participants in the CESQG program are painters, print shops, auto shops, builders, churches, schools, non-profit groups

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and property managers. An appointment for pickup of hazardous waste or further information on the CESQG program can be obtained by calling 1-800-952-5566.

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5.0 PERMITTEE FACILITIES AND ACTIVITIES

5.1 PLANNING PERMITTEE PROJECTS

The requirement for managing the quality and quantity of storm water runoff applies to Permittee projects meeting the definition of New Development or Significant Redevelopment³⁰ in the SAR or Priority Development Project³¹ in the SMR. Although the Permittees do not plan, design, or construct most of the project categories defined as New Development or Priority Development per se, some Permittee projects may have similar functions or characteristics, or may conduct similar activities after construction is completed. For example, a corporation yard may include a vehicle and equipment maintenance facility, which is very similar to an automotive repair shop. Other examples are a civic center or library that is very similar in its characteristics to that of a commercial office building, and a senior citizens center or a jail may have a cafeteria, which is similar to a restaurant. In the SMR region certain road improvement projects would also be classified as Development Projects³². However, the SAR Third-Term MS4 Permit does not consider road improvements as Development Projects³³.

The process for planning, design, approval, and construction oversight of Permittee projects differs from the process of planning and permitting for private sector development projects. For example, typically private sector Development Projects³⁴ are regulated through a process of a development plan approval (i.e., conditions of approval); building or grading permit applications, and permit conditions. In comparison, Permittee projects may undergo design review by the contracting agency of the municipality; be issued permits or similar administrative authorizations; and are then regulated through the enforcement of contract terms and approved plans and specifications.

Each Permittee will incorporate the development of a project-specific WQMP into the process of planning, designing, and preparing construction plans and specifications for their public Development Projects³⁵ or provide an equivalent approach. Other public projects comply with Section 6.4.4 of the DAMP. Typically, the Permittee's design/engineering department or the design architect/engineer contractor would prepare a project-specific WQMP for a Permittee project. However, a discussion of funding will not be required in a Permittee's project-specific WQMP, as funding of the long-term operation and maintenance will be the responsibility of the Permittee owning and operating the public project once construction is completed. Also, where applicable, the operation and maintenance procedures for the Treatment Control BMPs included in a Permittee's project-specific WQMP will be incorporated into a municipal facility Pollution Prevention Plan (see DAMP Section 5.3.2 and Appendix J). For Permittee projects, upon completion of construction when contract close-out occurs the responsibility for implementation, operation, and maintenance of BMPs will transfer from the contractor

³⁰ As defined in Section VIII.B.1 of the Third-term SAR MS4 Permit.

³¹ As defined in section F.2.b.1 of the SMR MS4 Permit.

³² "Development Projects" refers to "Priority Projects" as defined in Section F.2.b.1 of the SMR MS4 Permit or "New Development and Significant Redevelopment" as defined in Section VIII.B.1 of the SAR MS4 Permit.

³³ Ibid.

³⁴ Ibid.

³⁵ Ibid.

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to the appropriate Permittee department and become part of the Permittee Facilities and Activities Program (DAMP Section 5.3).

Each Permittee has developed and implemented policies and procedures to ensure that the planning and design of its projects reflect these requirements.

5.2 PERMITTEE CONSTRUCTION ACTIVITIES

The Permittees conduct construction projects in compliance with the latest version of the General Permit-Construction or the San Jacinto Watershed Construction Activity Permit, as applicable. Projects one acre or larger or which are part of a construction project one acre or larger must comply with these Construction Activity Permits.

Santa Ana Specific Elements

Permittee construction projects must comply with the General Permit-Construction, or the General Permit for Storm Water Discharges Associated with Construction Activity from Small Linear Underground/Overhead Projects³⁶, as applicable. However, they are conducted under authority of the Third-term SAR MS4 Permit. Prior to commencement of construction activities in the SAR, the Permittees notify the Executive Officer of the proposed construction project by submitting a Notice of Intent (NOI), which is provided in Attachment 5 of the Third-term SAR MS4 Permit. The NOI submittal fee is waived for the Permittee construction activities. If the Permittee construction site is within the San Jacinto watershed, the terms and conditions of the San Jacinto Watershed Construction Activities Permit apply, with the exception of the requirement for the Regional Board to review and approve the site-specific SWPPP. The Permittees give advance notice to the Executive Officer of planned changes in the construction activity that may result in non-compliance with the latest version of the Construction Activity Permits, as applicable. Upon completion of the construction project, the Permittees notify the Executive Officer of the completion of the project by submitting a Notice of Termination (NOT), which is also provided in Attachment 5 of the Third-term SAR MS4 Permit.

Santa Margarita Specific Elements

In the SMR, Permittee construction projects must comply with the General Permit-Construction or the General Permit for Storm Water Discharges Associated with Construction Activity from Small Linear Underground/Overhead Projects in the same manner as private construction projects. Additionally, the Standard Notes for Plans specified in Section 6.4.7.1 of the DAMP are minimum BMPs for Permittee construction projects.

Prior to the commencement of construction activities, the Permittees (or their contractor) develop and implement a Storm Water Pollution Prevention Plan (SWPPP) and a monitoring and reporting program that is site-specific for each construction project. As an aspect of routine construction oversight, Permittee staff will verify compliance with the applicable General Permit, if any, as well as conformance with plans or specifications and local ordinance. The SWPPP is kept at the construction site and is made

³⁶ SWRCB Order No. 2003-0007-DWQ; NPDES General Permit No. CAS000005.

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available to the public and/or Regional Board staff upon request. Additionally, upon request, the Permittees will provide the Regional Board staff with a copy of the site-specific SWPPP. Emergency public works projects required to protect public health and safety are not required to prepare a SWPPP, nor are they required to file a NOI or provide advance notice to the Executive Officer of planned changes that may result in non-compliance with the Construction Activity Permits.

The SWPPP and the monitoring and reporting program prepared and implemented for a Permittee's construction project is consistent with the requirements of the latest version of the General Permit-Construction, as applicable for the size and location of the site.

5.3 OPERATION AND MAINTENANCE OF PERMITTEE FACILITIES

5.3.1 MS4 Maintenance

The Permittees developed maintenance schedules for the structural control and treatment control BMPs and the MS4, are implementing those maintenance schedules and report on the BMP and MS4 maintenance activities annually. These maintenance schedules address clean-out schedules and frequencies for the Permittees open channels, catch basins, retention/detention basins, and wetlands created for Urban Runoff treatment. Wastes and materials removed are disposed of per applicable laws and appropriate BMPs, as described in Section 5.3.2, are deployed to minimize impacts to the Receiving Waters to the MEP.

Santa Margarita Specific Elements

In the SMR, the maintenance activities implemented by each Permittee include, at a minimum, the following:

- a) Inspection of all of the Permittee's catch basins and storm drain inlets at least annually between May 1 and September 30. If accumulated waste is visible, the catch basin, or storm drain inlet, is cleaned out. Additional cleaning is conducted as necessary;
- b) Anthropogenic litter is removed from the Permittee' open channels at least annually between May 1 and September 30, with additional removal as necessary;

5.3.2 Other Municipal Facilities and Activities

The 1996 SAR MS4 Permit required the Permittees develop a Municipal Facilities Strategy to identify BMPs for activities conducted at Permittee facilities. The 1996 SAR MS4 Permit also identified the municipal activities for which the Permittees were required to select BMPs to reduce the potential for storm water pollution. These municipal facilities and activities included street sweeping, catch basin cleaning, maintenance yards, vehicle and equipment maintenance areas, waste transfer stations, corporation and storage yards, parks and recreational facilities, landscape and swimming pool maintenance activities, MS4 maintenance activities, and the application of pesticides. The Municipal Facilities Strategy is incorporated into this section of the DAMP.

As part of the development of the Municipal Facilities Strategy, the Permittees identified the types of municipal facilities they operate. During this process, the types of municipal facilities and the activities conducted at those facilities were identified as having the potential to contribute pollutants to Urban

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Runoff as shown in Tables 5-1a and 5-1b. Table 5-2a lists the types and numbers of municipal facilities operated by the Permittees in the SAR. Table 5-2b lists the types and numbers of municipal facilities operated by the Permittees in the SMR. Antifreeze, battery, oil, and paint collection centers (ABOPs) were not identified as facilities of concern in the SAR as they are otherwise regulated under the Resource Conservation and Recovery Act (RCRA). Permittee facilities such as wastewater treatment plants, airports, and landfills have coverage under the General Permit-Industrial or under an individual NPDES permit. ABOPs and those facilities identified as covered under the General Permit-Industrial are listed in the SMR MS4 Permit and are included in Table 5-1b.

No waste transfer stations were identified as being operated by the Permittees and facilities that consisted of only administrative buildings and parking areas were not identified to be of concern regarding Urban Runoff pollution. Identification of the potential pollutants at each Permittee's municipal facilities was necessary in order to select appropriate candidate BMPs to reduce pollutants in Urban Runoff to the MEP. In addition, the Permittees were surveyed to identify the potential pollutants of concern typically associated with the activities performed at or based from the identified facilities of concern. Table 5-3 identifies pollutants of concern that may be associated with activities conducted at or based from Permittees' municipal facilities.

During the development of the facility specific strategies, the Permittees identified existing non-storm water discharges and characterized the discharges with respect to frequency, volume, flow, and duration. The Permittees eliminated or permitted such discharges. A template facility Pollution Prevention Plan for Permittee facilities, including an annual inspection form, was developed and is provided in Appendix J. Facility-specific Pollution Prevention Plans based on this template, or similar templates, have been prepared for each of the facilities and activities listed in Table 5.2. These Pollution Prevention Plans are maintained and updated by the Permittees annually. Re-inspections and corrective actions are taken where deficiencies are found. The inspection reports, and documentation of resulting corrective actions, are kept for five years and are incorporated into the Pollution Prevention Plans.

Based on the facilities, associated activities and the pollutants of concern identified, a list of potential source control BMPs was developed by the Permittees. This list utilizes the BMP designations used in the 2003 California Stormwater Best Management Practice Handbooks³⁷ (Industrial and Municipal Handbooks). The list of potential source control BMPs includes:

Industrial Handbook References

- ◆ SC-10 Non-Storm Water Discharges
- ◆ SC-11 Spill Prevention, Control and Cleanup
- ◆ SC-20 Vehicle and Equipment Fueling
- ◆ SC-21 Vehicle and Equipment Cleaning
- ◆ SC-22 Vehicle and Equipment Repair
- ◆ SC-30 Outdoor Loading /Unloading of Materials

³⁷ California Stormwater Quality Association. January 2003. <http://www.cabmphandbooks.com/> or CASQA, P.O. Box 2105, Menlo Park, California, 94026-2105.

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- ◆ SC-31 Outdoor Liquid Container Storage
- ◆ SC-33 Outdoor Storage of Raw Materials
- ◆ SC-34 Waste Handling and Disposal
- ◆ SC-35 Safer Alternative Products
- ◆ SC-40 Contaminated or Erodible Areas
- ◆ SC-41 Building & Grounds Maintenance
- ◆ SC-42 Building Repair and Construction
- ◆ SC-43 Parking/Storage Area Maintenance
- ◆ SC-44 Drainage System Maintenance

Municipal Handbook References

- ◆ SC-10 Non-Storm Water Discharges
- ◆ SC-11 Spill Prevention, Control and Cleanup
- ◆ SC-20 Vehicle and Equipment Fueling
- ◆ SC-21 Vehicle and Equipment Cleaning
- ◆ SC-22 Vehicle and Equipment Repair
- ◆ SC-30 Outdoor Loading/Unloading
- ◆ SC-31 Outdoor Container Storage
- ◆ SC-32 Outdoor Equipment Maintenance
- ◆ SC-33 Outdoor Storage of Raw Materials
- ◆ SC-34 Waste Handling and Disposal
- ◆ SC-41 Building and Grounds Maintenance
- ◆ SC-43 Parking/Storage Area Maintenance
- ◆ SC-60 Housekeeping Practices
- ◆ SC-61 Safer Alternative Products
- ◆ SC-70 Road and Street Maintenance
- ◆ SC-71 Plaza and Sidewalk Cleaning
- ◆ SC-72 Fountains & Pools Maintenance
- ◆ SC-73 Landscape Maintenance
- ◆ SC-74 Drainage System Maintenance
- ◆ SC-75 Waste Handling and Disposal
- ◆ SC-76 Water and Sewer Utility Maintenance

This list is not intended to be all-inclusive. However, the BMPs listed are both effective and widely accepted. Permittees are encouraged to consult other sources of BMP information and consider implementation of additional methods and measures as appropriate. These BMPs are incorporated into the facility-specific Pollution Prevention Plans, as appropriate. A matrix identifying potential BMPs that

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may be appropriate to implement for the municipal facilities and their associated activities is presented in Table 5-4. Fact sheets describing each of the source control BMPs can be viewed or downloaded from <http://www.cabmphandbooks.com/>.

Santa Margarita Region Specific Element

The SMR MS4 Permit requires the Permittees to prepare an inventory of the municipal facilities and activities listed in Tables 5-1a and 5-1b. The BMPs identified in Table 5-4 are minimum BMPs for these facilities in the SMR and are incorporated into the facility Pollution Prevention Plans. However, for Permittee facilities and/or activities tributary to CWA Section 303(d) impaired water bodies that generate pollutants for which the water body is impaired, additional specific BMPs to target that pollutant are implemented as necessary.

The Third-Term SMR MS4 Permit also requires the implementation of specific BMPs to manage the application, storage, and disposal of pesticides, herbicides, and fertilizers as associated with their municipal facilities and activities. At a minimum, the SMR Permittees:

- 1) Ensure that municipal applicators and distributors have appropriate training, permits, and certifications;
- 2) Utilize integrated pest management measures that rely on non-chemical solutions, to the extent practicable;
- 3) Incorporate native vegetation into facility landscaping;
- 4) Develop schedules for irrigation and chemical application; and
- 5) Collect and properly dispose unused pesticides, herbicides, and fertilizers.

These BMPs are addressed in the fact sheets for the following BMPs, which are included in Section 5.3.2 and identified as minimum BMPs:

- ◆ SC-35/SC-61, Safer Alternative Products
- ◆ SC-41, Building & Grounds Maintenance
- ◆ SC-60, Housekeeping Practices
- ◆ SC-73, Landscape Maintenance

5.4 FIRE BMPs

In coordination with the Riverside County Fire Agencies, the Permittees developed a list of appropriate BMPs to be implemented to reduce pollutants from fire training activities, fire hydrant/sprinkler testing or flushing and BMPs feasible for emergency fire fighting flows. These BMPs and the strategy for providing training and updating the list of BMPs are described in Appendix K.

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5.5 TRAINING FOR MUNICIPAL MAINTENANCE EMPLOYEES

Staff involved in implementing a Permittee's municipal maintenance program receive annual training on the following topics:

- ◆ Requirements of the local storm water ordinances;
- ◆ Requirements of the Third-term MS4 Permits and DAMP;
- ◆ Municipal BMPs as described in Section 5.3.2 of the DAMP;
- ◆ Fertilizer and Pesticide Management
- ◆ Municipal Facilities Pollution Prevention Plan
- ◆ Other applicable pollution control measures.
- ◆ Requirements of EPA approved TMDLs.

In addition, staff responsible for restricted use pesticide application are trained and certified under the Federal Insecticide Fungicide and Rodenticide Act (FIFRA) requirements and the California Food and Agriculture Code. The Permittees sponsor training twice a year for municipal maintenance staff. Permittee staff may also attend training sponsored by third parties (for example, California Stormwater Quality Association) in lieu of Permittee-sponsored training. The Permittees individually maintain a log of trained staff and report training in the Annual Reports.

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Table 5-1a. Municipal Facilities and Activities

Type of Municipal Facility	Activities of Concern Conducted
Corporate Yards ¹	Loading, unloading, handling, and storage of animal wastes, anti-freeze, asphalt, batteries, chemicals, concrete, diesel wastes, emulsions, fertilizer, fuel, green wastes, hazardous materials, new and used oil, paint products, pesticides, scrap metal, solvents, trash and debris, and wash water Filling of aboveground and underground storage tanks (ASTs and USTs) with fuels Dispensing of fuels to vehicles, equipment, and portable fuel containers Vehicle and equipment parking and storage Vehicle, equipment, and material washing and steam cleaning Leak and spill cleanup Landscape, garden, and general maintenance and cleaning
Warehouses	Loading, unloading, handling, and storage of materials Landscape, garden, and general maintenance and cleaning
Fire and Police Stations	Loading, unloading, handling, and storage of antifreeze, chemicals, new and used oil, scrap metal, and trash and debris Filling of ASTs and USTs with fuels Dispensing fuel Vehicle and equipment maintenance Vehicle and equipment parking and storage Vehicle washing and steam cleaning Leak and spill cleanup Landscape, garden and general maintenance and cleaning
Hazardous Materials Storage Facilities ²	Loading, unloading, handling, and storage of potentially hazardous materials Leak and spill cleanup
Animal Shelters	Loading, unloading, handling, and storage of animal wastes for off-site recycling, chemicals, and fuel Vehicle, equipment, and material washing Leak and spill cleanup Landscape, garden, and general maintenance and cleaning
Swimming Pools	Storage and use of chemicals, including chlorine Filter maintenance and backwashing Landscape, garden, and general maintenance and cleaning
Water Treatment Facilities	Loading, unloading, handling, and storage of materials Filling of ASTs and USTs with fuels Vehicle washing and steam cleaning Leak and spill cleanup Landscape, garden, and general maintenance and cleaning

- 1 Corporation yards include equipment, transit maintenance, public works, fleet maintenance, civic centers, and parks and recreation equipment yards.
- 2 Includes household hazardous waste collection facilities

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Table 5-1b. Additional Municipal Facilities and Activities in Santa Margarita Region Inventory

Type of Municipal Facility	Activities of Concern Conducted
Roads, streets, highways and parking facilities	Leak and spill cleanup
	Stripping
	Sawcutting
	Sealing
Flood management projects, flood control devices and drainage facilities and associated maintenance activities	Leak and spill cleanup
	Vegetation control
Active or closed municipal/sanitary landfills	Vehicle and equipment parking and storage
	Vehicle and equipment maintenance
	Leak and spill cleanup
POTWs and sanitary sewage collection facilities	Loading, unloading, handling and storage of materials
	Filling of ASTs and USTs with fuels
	Vehicle washing and steam cleaning
	Landscape, garden and general maintenance and cleanup
Sites for disposing and treating sewage sludge	Sewage sludge application
Municipal airfields	Leak and spill cleanup
	Filling of ASTs and USTs with fuels.
	Landscape, garden and general maintenance and cleaning
	Vehicle and equipment parking and storage
Parks and recreational facilities, including golf courses	Leak and spill cleanup
	Filling of ASTs and USTs with fuels
	Landscape, garden and general maintenance and cleaning
Cemeteries	Landscape, garden and general maintenance and cleaning
Other landscaped areas	Landscape, garden and general maintenance and cleaning
Facilities and activities tributary to a 303(d) listed water body or ESA	Where pollutants are generated for which the water body is impaired or which discharge directly to an Environmentally Sensitive Areas (ESAs).
Other facilities and activities	Facilities and activities that Permittee determines may contribute a significant pollutant load to the MS4

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Table 5-2a. Santa Ana Region Permittees Municipal Facilities Matrix¹

Permittee	Corporate Yards	Parks & Recreation Facilities	Warehouses	Fire Stations	Police Stations	Hazardous Materials Storage Facilities	Animal Shelters	Swimming Pools	Potable Water Treatment Facilities
District	1								
Riverside County	19		1	60		5	3		
Beaumont	2				1			1	
Calimesa	1								
Canyon Lake ²									
Corona	1	2	1	7	1	1	1	2	3
Hemet	2			3	1				
Lake Elsinore	1								
Moreno Valley	1	19		3	1		1	1	
Murrieta	1			2			1	1	
Norco	1								
Perris	1								
Riverside	1			13	2	10		8	
San Jacinto	1				1			1	

¹ This matrix does not include Permittee facilities having coverage under individual NPDES permits or the General Permit for Storm Water Discharges Associated with Industrial Activity.
² The City of Canyon Lake does not own nor operate any municipal facilities.

Table 5-2b. Santa Margarita Region Permittees Municipal Facilities Matrix¹

Permittee	Corporate Yards	Parking Lots & Structures	Parks & Recreation Facilities	Swimming Pools	Airfields	Fire Stations	Police Stations	Closed Landfills	Solid Waste Transfer Facilities	HHW Collection Facility
District	1									
Riverside County	3	8	3		1	11	1	1	1	1
Murrieta	1		34	1		3	1			
Temecula	1	3	35	3		2				

¹ The SMR Permittees do not own or operate facilities in the following facility categories identified in the Third-term MS4 Permit: golf courses; cemeteries; warehouses; hazardous materials storage facilities; animal shelters; potable water treatment facilities; sanitary sewer collection systems; wastewater treatment facilities; land application sites; sites for treatment or disposal of sewage sludge; active landfills; uncontrolled sanitary landfills; incinerators; or hazardous waste treatment, disposal, and recovery facilities

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Table 5-3. Potential Pollutants of Concern

Potential Pollutants	Material Loading, Unloading, Handling, or Storage	Filling of ASTs & USTs	Dispensing Fuel	Vehicle & Equipment Maintenance	Vehicle & Equipment Parking and Storage	Vehicle & Equipment Material Washing & Steam Cleaning	Leak & Spill Cleanup	Landscape, Garden, and General Maintenance & Cleaning
Animal Wastes	X							
Anti-freeze	X			X	X		X	
Asphalt	X							
Acid	X			X				
Chemicals	X			X	X		X	
Concrete	X						X	
Diesel Wastes	X			X			X	
Emulsions	X						X	
Fertilizer	X						X	
Fuel		X	X	X			X	
Green Wastes	X							X
Hazardous Materials	X			X	X		X	X
Herbicides	X						X	X
New/Used Oil	X			X			X	
Oil and Grease Spills	X			X	X	X	X	
Paint Products	X						X	X
Pesticides	X						X	X
Scrap Metal	X			X				
Solvents	X			X			X	
Trash and Debris	X							X
Wash Waters						X		

Table 5-4. Potential Source Control BMPs for Municipal Facilities and Activities

Activities	BMP References from Industrial Handbook												BMP References from Municipal Handbook																																			
	SC-10	SC-11	SC-20	SC-21	SC-22	SC-30	SC-31	SC-32	SC-33	SC-34	SC-40	SC-41	SC-42	SC-43	SC-44	SC-10	SC-11	SC-20	SC-21	SC-22	SC-30	SC-31	SC-32	SC-33	SC-34	SC-41	SC-43	SC-44	SC-50	SC-51	SC-70	SC-71	SC-72	SC-73	SC-74	SC-75	SC-76											
Material Loading/Unloading/Handling/Storage						X																																										
Waste Handling and Disposal	X																								X														X									
Filling of ASTs/USTs			X																																													
Dispensing Fuel			X																																													
Vehicle/Equipment Maintenance/Repair					X																																											
Vehicle/Equipment Parking and Storage																																																
Vehicle and Equipment Cleaning	X			X																																												
Leak and Spill Cleanup	X																																															
Construction																																																
Landscaping, Garden, and General Maintenance and Cleaning	X																																															

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6.0 DEVELOPMENT PLANNING

6.1 INTRODUCTION

With the adoption of the Third-term MS4 Permits, the Permittees were required to modify the DAMP, including revisions to meet requirements related to the planning and permitting of Development Projects³⁸ within their jurisdictions and to ensure that pollutant loads from development projects have been reduced to the MEP. This program element links a Co-Permittee's General Plan, environmental review process, and development approval and permitting processes to the later phases of detailed design, construction and operation. A General Plan specifies policies that guide development. The environmental review process examines potential impacts from proposed development with respect to the General Plan policies and many environmental issues, including water quality, and includes consideration of mitigation measures to reduce any identified significant impacts.

The development approval and permitting processes carries forth project-specific requirements in the form of conditions of approval, design specifications, tracking, inspection, and enforcement actions. These three "front-end" planning processes must be coordinated and linked to the later phases of design, construction and operation for development projects to ensure Urban Runoff quality protection features are planned, designed and evaluated in accordance with the Permittees' goals for protection of Receiving Waters. Figure 6-1 is a generalized flow diagram that depicts the relationship of the General Plan, environmental review process and development planning and permit process, as well as the project design, construction, and operation phases.

6.2 GENERAL PLAN

6.2.1 Background

The General Plan consists of seven mandatory elements and any optional element that a city or county chooses to adopt. The mandatory elements include:

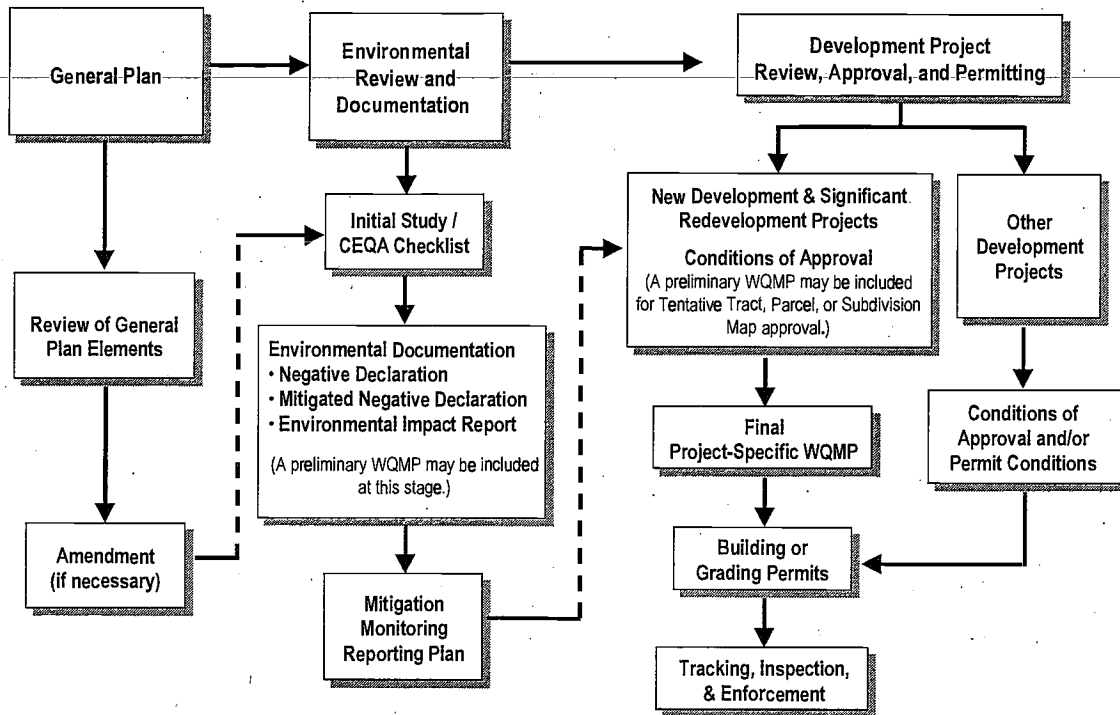
- ◆ Land Use
- ◆ Open Space
- ◆ Circulation and Infrastructure
- ◆ Conservation
- ◆ Housing
- ◆ Safety
- ◆ Noise

Any optional elements that are adopted by a city or the County, such as Public Facilities, have equal authority as the mandatory elements. Each city council and the County Board of Supervisors adopt zoning, subdivision and other ordinances to regulate land uses and to carry out the policies in the General Plan. The General Plan is also used to guide decision-makers in determining whether or not land use proposals are consistent with the applicable goals, objectives, and policies.

³⁸ "Development Projects" refers to "Priority Projects" as defined in Section F.2.b.1 of the SMR MS4 Permit or "New Development and Significant Redevelopment" as defined in Section VIII.B.1 of the SAR MS4 Permit.

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Figure 6-1. Relationship between General Plan, Environmental Review Process and Development Permit Process



A General Plan Amendment is a request to revise some component of a city's or the County's General Plan. This can include addition, deletion or modification of goals and policies; modifications to the land use map or other diagrams; or other changes. A General Plan Amendment is a legislative act. Under State law, General Plan Amendments are allowed four times per year (California Government Code §65358(b)). Most General Plan Amendments are carried out in conjunction with a specific development proposal, although a city, the County, or any other agency or party can request an amendment without a specific development proposal in mind. A General Plan Amendment must be approved by the planning commission and city council or at the County level by the Board of Supervisors at public hearings. In approving a General Plan Amendment, the approving body must assess the policy implications of the proposed General Plan Amendment and the impact and compatibility of the proposed General Plan Amendment on the long-term goals and desires of a city or the County and its citizens. In evaluating a proposed General Plan Amendment, the approving body must look at the "global" impacts of the proposed amendment. Although a General Plan Amendment may be proposed in conjunction with a specific development proposal, the amendment proposed might have policy and/or land use impacts far beyond any given project or property.

Various elements of a city's or the County's General Plan may contain existing goals and policies that can be related to watershed protection and the management of Urban Runoff. For example, the quantity and quality of Urban Runoff may be controlled by the type, location, and density of development. Such controls may be established through policies commonly found in the Land Use and Open Space Elements of the General Plan (e.g., development policies, development location guidelines, landscaping guidelines, open space policies, policies on preservation of and integration with natural features).

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Development of local streets and roads (regulated under the policies of the Circulation and Infrastructure Element and to some extent, the Safety Element) results in increased impervious surfaces and accumulation of storm water pollutants from vehicles. The Public Facilities Element provides management policies for construction, operation and maintenance of various public facilities including flood control channels and storm drains, which convey Urban Runoff. The Conservation Element contains policies on water conservation that can be linked to water quality protection through efficient use of irrigation systems to prevent runoff.

6.2.2 General Plan Review and Amendment

The Permittees recognize the importance of addressing watershed protection and the management of Urban Runoff in the land development process. Therefore, watershed protection principles and objectives for managing Urban Runoff for land development are reflected in the appropriate policies, goals, and objectives of each Co-Permittee's General Plan. The Permittees have reviewed their General Plans to ensure that the following principles and policies are properly considered:

Santa Ana Region Specific Elements

- ◆ Limit disturbance of natural water bodies and drainage systems; conserve natural areas; protect slopes and channels; minimize impacts from Urban Runoff on the biological integrity of natural drainage systems and water bodies;
- ◆ Minimize changes in hydrology and pollutant loading; require incorporation of source control and structural BMPs to mitigate the projected increases in pollutant loads and flows; ensure that post-construction runoff rates and velocities from a site do not result in significant adverse impact on downstream erosion and stream habitat; limit the quantity of Urban Runoff directed to impermeable surfaces and the MS4s; and maximize the percentage of permeable surfaces to allow more percolation of Urban Runoff into the ground;
- ◆ Preserve wetlands, riparian corridors, and buffer zones; establish reasonable limits on the clearing of vegetation from the project site;
- ◆ Encourage the use of BMPs to manage Urban Runoff quality and quantity;
- ◆ Provide for appropriate permanent measures to reduce pollutant loads in Urban Runoff from the development site; and
- ◆ Establish development guidelines for areas particularly susceptible to erosion and sediment loss.

Santa Margarita Region Specific Elements

- ◆ Minimize the amount of impervious surfaces and directly connected impervious surfaces areas of development and, where feasible, slow runoff and maximize on-site infiltration of runoff.
- ◆ Implement pollution prevention methods supplemented by source control and treatment control BMPs. Use small collection strategies located at, or as close as possible to, the source

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(i.e., the point where water initially meets the ground) to minimize the transport of urban runoff and pollutants offsite and into an MS4.

- ◆ Preserve, and where possible, create or restore areas that provide important water quality benefits, such as riparian corridors, wetlands, and buffer zones. Encourage land acquisition of such areas.
- ◆ Limited disturbance of natural water bodies and natural drainage systems caused by development including roads, highways, and bridges.
- ◆ Prior to making land use decisions, utilize methods available to estimate increases in pollutant loads and flows resulting from projected future development. Require incorporation of appropriate BMPs to mitigate the projected increases in pollutant loads and flows.
- ◆ Avoid development of areas that are particularly susceptible to erosion and sediment loss; or establish development guidance that identifies these areas and protects them from erosion and sediment loss.
- ◆ Reduce pollutants associated with vehicles and increasing traffic resulting from development.
- ◆ Post-development runoff from a site shall not contain pollutant loads that cause or contribute to an exceedance of receiving water quality objectives and which have not been reduced to the MEP.

It should be noted that in some cases, these concepts are better addressed in other areas of Development Planning such as in the CEQA process or through the conditioning of a project in the development review process. Further, many Permittees within the SAR and SMR have incorporated the Western Riverside County Multi-Species Habitat Conservation Plan (MSHCP) into their general plan. The MSHCP addresses many of the concepts identified in the Third-term MS4 Permits. The MSHCP requires the conservation of over 500,000 acres of new land within the County, including significant lands adjacent to or encompassing receiving waters such as the San Jacinto River, Santa Ana River, and Santa Margarita River, including tributaries. The plan transfers approximately 1,000,000 acres of existing conservation lands to a specified land conservancy. The MSHCP also finds that participating Permittee's existing general plans, zoning ordinances and polices include measures capable of implementing the following planning concepts consistent with the Third-term MS4 Permit considerations identified above:

- ◆ Measures to ensure that the quality and quantity of runoff discharged to MSHCP conservation areas is not altered in any adverse way when compared to existing drainage conditions;
- ◆ Measures to avoid discharge of untreated surface runoff from developed and paved areas into MSHCP conservation areas; and
- ◆ Measures to require storm water systems to be designed to prevent the release of toxins, chemicals, petroleum products, exotic plant materials or other elements that might degrade or harm biological resources or ecosystem processes within MSHCP conservation areas.

When reviewing the General Plan in the future, special attention will be given to how the elements address the potential impacts of Urban Runoff on Receiving Waters. The Co-Permittees will keep in mind the following questions during this review, which may trigger the need for specific Urban Runoff

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pollution protection policies in various elements of their General Plan either as new policies and objectives or amended text to existing policies and objectives:

- ◆ Are there sensitive Receiving Waters in or downstream of the jurisdiction?
- ◆ Are there existing or proposed Total Maximum Daily Loads (TMDLs) or other such regulations pertaining to receiving waters within the jurisdiction?
- ◆ Are major Development Projects expected?
- ◆ Are major new infrastructure projects anticipated (e.g., roads, sewer, flood control, storm drains)?
- ◆ Is Urban Runoff affecting recreational use of water bodies within the jurisdiction?

If a Co-Permittee initially determines that elements of their General Plan do not adequately consider watershed protection principles and objectives for managing Urban Runoff, the need for and the extent of revisions to the General Plan should be coordinated with its legal counsel. If a Co-Permittee, in consultation with its legal counsel, determines that it needs to amend elements of its General Plan to incorporate watershed and Urban Runoff management policies, goals or objectives, the Co-Permittee will develop a work plan and schedule for the General Plan amendment(s). In revising elements of the General Plan, associated maps will be revised, as necessary, to reflect location-specific watershed protection/Urban Runoff quality management policies, and eliminate conflicts among land use districts, permitted land uses, and Urban Runoff-specific goals and policies. For further reference, the Co-Permittees may review the sample general plan amendment text and sample urban runoff water quality general plan element outlined in Model Urban Runoff Program, A How to Guide for Developing Urban Runoff Programs for Small-Municipalities (City of Monterey, et al, July 1998). This document can be viewed or downloaded at <http://www.waterboards.ca.gov/stormwtr/murp.html>.

Should a Co-Permittee amend elements of its General Plan, the Co-Permittee will provide the draft General Plan amendments to the Regional Board for comment.

6.3 CEQA ENVIRONMENTAL REVIEW PROCESS

6.3.1 CEQA Initial Study Process

The Third-term MS4 Permits required the Permittees to review their CEQA processes to ensure that Urban Runoff issues are properly considered and addressed. Where necessary, the processes were revised to consider and mitigate impacts to Urban Runoff quality and Receiving Waters.

Santa Ana Region Specific Elements

The Third-term SAR MS4 Permit (Section VIII.8.A.8) identifies the following potential impacts to be considered during the CEQA process:

- ◆ Potential impact that construction of the project may have on Urban Runoff.
- ◆ Potential impact that operation of the project may have on Urban Runoff.

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- ◆ Potential for discharge of pollutants in Urban Runoff from areas identified within the project site to be used for material storage, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas or loading docks, or other outdoor work areas.
- ◆ Potential for pollutants in Urban Runoff discharged from a project site that may affect the beneficial uses of the Receiving Waters.
- ◆ Potential for significant changes in the flow velocity or volume of Urban Runoff from a project site that would result in environmental harm.
- ◆ Potential for significant increases in erosion of a project site or surrounding areas.
- ◆ Potential for the project to discharge Pollutants identified as impairing downstream Receiving Waters.

Santa Margarita Region Specific Elements

The Third-term SMR MS4 Permit (Section F.3) identifies the following potential impacts to be considered during the CEQA process:

- ◆ Could the proposed project result in increased impervious surfaces and associated increased runoff? Consider water quality parameters such as temperature, dissolved oxygen, turbidity and other typical storm water pollutants (e.g., heavy metals, pathogens, petroleum derivatives, synthetic organics, sediment, nutrients, oxygen demanding substances, and trash).
- ◆ Could the proposed project result in significant alteration of receiving water quality during or following construction?
- ◆ Could the proposed project result in increased impervious surfaces and associated increased runoff?
- ◆ Could the proposed project create significant adverse environmental impact to drainage patterns due to changes in runoff flow rates or volumes?
- ◆ Could the proposed project result in increased erosion downstream?
- ◆ Is the project tributary to an already impaired water body, as listed on the CWA section 303(d) list? If so, can it result in an increase in any pollutant for which the water body is already impaired?
- ◆ Is the project tributary to other environmentally sensitive areas? If so, can it exacerbate already existing sensitive conditions?
- ◆ Could the proposed project have a potentially significant environmental impact on surface water quality of marine, fresh, or wetland waters?
- ◆ Could the proposed project have a potentially significant adverse impact on groundwater quality?
- ◆ Could the proposed project cause or contribute to an exceedance of applicable surface or groundwater receiving water quality objectives or degradation of beneficial uses?

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- ◆ Can the project impact aquatic, wetland, or riparian habitat?

These Urban Runoff pollution issues have been considered in the Initial Study process (project application form and checklist) and in the preparation and reviews of Environmental Impact Reports (EIRs) discussed in the subsections that follow.

6.3.1.1 Project Application Form

The current project application form contained in Appendix L (CEQA Guidelines, State of California Office of Planning and Research, February 2001) is used by nearly all the Permittees in their environmental review process. The CEQA Guidelines identify specific questions about the project to help environmental planners assess the potential for significant environmental impacts. However, there are no specific project description questions that help characterize the potential for impacts associated with Urban Runoff. For this reason, each Permittee has reviewed their existing project application forms and, as necessary, has revised their application form to include line items for:

- ◆ Expected percent change in pervious surface area of the site; and
- ◆ Submittal of preliminary project-specific Water Quality Management Plan (WQMP), if applicable, (along with required submittal of other development plans).

6.3.1.2 Initial Study Checklist

The current Initial Study Checklist contained in Appendix M [CEQA Guidelines, State of California Office of Planning and Research, February 2001] is also used by nearly all Permittees in their environmental review process. This Initial Study Checklist contains the following considerations under the environmental impact category "Hydrology and Water Quality (Section VIII)":

Would the project:

- a) Violate any water quality standards or waste discharge requirements?
- b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted?
- c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site?
- d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?
- e) Create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?
- f) Otherwise substantially degrade water quality?

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- g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?
- h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?
- i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?
- j) Inundation by seiche, tsunami, or mudflow?

The Permittees have concluded that considerations of potential impacts associated with Urban Runoff are generally covered in questions a) through f) of the Initial Study Checklist (Appendix M), but with less specificity than the questions provided in the Third-term MS4 Permits. To ensure that issues related to Urban Runoff are thoroughly considered in completing the Initial Study Checklist, the Permittees have reviewed the Initial Study checklist and made appropriate changes. The Permittees have considered adding the following question to the Hazardous and Hazardous Materials Section (Section VII) or Utilities and Service Systems Section (Section XVI) of the Initial Study Checklist used for projects within their jurisdiction:

“Would the project include new or retrofitted storm water Treatment Control BMPs, (e.g., water quality treatment basin, constructed treatment wetlands), the operation of which could result in significant environmental effects (e.g., increased vectors and odors)?”

Further, to promote the consideration of the various impacts related to Urban Runoff, the Permittees may provide the list of permit considerations specified in the Third-term SAR (Section VIII.A.8) and SMR (Section F.3) MS4 Permits to:

- ◆ Environmental planning staff for use in preparing and reviewing CEQA documents for internal city/county projects and when reviewing CEQA documents prepared by the private sector
- ◆ Consultants and other members of the private sector for use in preparing CEQA documents
- ◆ Project applicants during the CEQA preliminary review process
- ◆ Participants attending training related to the requirements of the Third-term MS4 Permit, the DAMP, or the WQMP.

6.3.2 Environmental Review Guidance for CEQA Initial Studies and CEQA Document Preparation and Review

In evaluating the questions in Section VIII, Hydrology and Water Quality, of the CEQA Initial Study Checklist (or any additional questions added in response to provisions of the Third-term MS4 Permits), the Permittees may use the guidance provided in Appendix N of this DAMP. The guidance provided in Appendix N may also be used for the preparation or review of CEQA documents including Negative Declarations, Mitigated Negative Declarations and EIRs.

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6.4 DEVELOPMENT PROJECT REVIEW, APPROVAL, AND PERMITTING

6.4.1 Project Review, Approval, and Permitting Process Overview

Development Projects³⁹ submitted to the SAR Co-Permittees after December 31, 2004 are conditioned to require the preparation, review, and approval of a project-specific WQMP. Development Projects under the jurisdiction of the SMR Co-Permittees that do not have Conditions of Approval or Tentative Tract, Subdivision, or Parcel map approval by July 13, 2005 are conditioned to require the preparation, review, and approval of a project-specific WQMP. Other development projects are required to incorporate site design, source control, and/or treatment control BMPs through Co-Permittee Conditions of Approval or permit conditions. This section describes the processes for incorporating post-construction (permanent) BMPs into the development project review, approval, and permitting process. This section also describes modifications to conditions of approval and plan check processes to assure consistency with the requirements of the Third-term MS4 Permits.

6.4.2 Identifying Development Projects Requiring a Project-Specific WQMP

To ensure that Development Projects are identified as early in the planning process as possible, the Permittees utilize a checklist to document the determination as to whether a project requires a project-specific WQMP or not. Example checklists that may be used by the Co-Permittees for this purpose are shown in Figure 6-2a and Figure 6-2b, the SAR and the SMR, respectively.

6.4.3 Development Projects

For Development Projects⁴⁰ submitted to the SAR Co-Permittees after December 31, 2004 are conditioned to the project applicant is required to prepare a project-specific WQMP that is in conformance with the Riverside County Water Quality Management Plan for Urban Runoff (a copy of which is included as Appendix O), prior to issuance of the first permit. For Development Projects under the jurisdiction of the SMR Co-Permittees that do not have Conditions of Approval or Tentative Tract, Subdivision, or Parcel map approval by July 13, 2005, the project applicant is required to prepare a project-specific WQMP that is in conformance with the Riverside County Water Quality Management Plan for Urban Runoff, prior to issuance of the first permit. At its discretion, a Co-Permittee may require a project-specific WQMP for projects prior to these implementation dates. The primary objective of the Riverside County Water Quality Management Plan for Urban Runoff, through application of Site Design, Source Control, and Treatment Control BMPs on a project-specific and/or sub-regional or regional basis, is to ensure that the land use approval and permitting process of each Co-Permittee will minimize the impact of Urban Runoff.

Since some Development Projects are subject to discretionary approval during the planning phase (land use entitlement) and ministerial approval for subsequent grading or building permits, project applicants may be required to submit a preliminary project-specific WQMP for discretionary project approval (land use entitlement). The level of detail in a preliminary project-specific WQMP submitted during the land

³⁹ "Development Projects" refers to "Priority Projects" as defined in Section F.2.b.1 of the SMR MS4 Permit or "New Development and Significant Redevelopment" as defined in Section VIII.B.1 of the SAR MS4 Permit.

⁴⁰ Ibid.

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use entitlement process depends upon the level of detail known about the overall project design at the time project approval is sought. Project applicants are required to submit for Co-Permittee review and approval, a final project-specific WQMP that is in substantial conformance with the preliminary project-specific WQMP prior to the issuance of any building or grading permit.

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Figure 6-2a. Checklist – Projects Requiring Project-Specific WQMPs within the Santa Ana Region

**Checklist for Identifying Projects Requiring a Project-Specific WQMP
 within the Santa Ana Region**

Project File No.	
Project Name:	
Project Location:	
Project Description	

Proposed Project Consists of or Includes:	Yes	No
Significant Redevelopment: The addition or creation of 5,000 square feet or more of impervious surface on an existing developed site. This includes, but is not limited to, construction of additional buildings and/or structures, extension of the existing footprint of a building, construction of impervious or compacted soil parking lots. Does not include routine maintenance activities that are conducted to maintain original line and grade, hydraulic capacity, the original purpose of the constructed facility or emergency actions required to protect public health and safety.		
Residential development of 10 dwelling units or more, including single family and multi-family dwelling units, condominiums, or apartments.		
Industrial and commercial development where the land area ¹ represented by the proposed map or permit is 100,000 square feet or more, including, but not limited to, non-residential developments such as hospitals, educational institutions, recreational facilities, mini-malls, hotels, office buildings, warehouses, light industrial, and heavy industrial facilities.		
Automotive repair shops [Standard Industrial Classification (SIC) codes ² 5013, 7532, 7533, 7534, 7537, 7538, and 7539].		
Restaurants (SIC code 5812) where the project site is 5,000 square feet or more.		
Hillside development that creates 10,000 square feet or more, of impervious surface(s) including developments in areas with known erosive soil conditions or where natural slope is 25 percent or more.		
Developments creating 2,500 square feet or more of impervious surface that is adjacent to (within 200 feet) or discharging directly into areas designated in the Basin Plan ³ as waters supporting habitats necessary for the survival and successful maintenance of plant or animal species designated under state or federal law are rare, threatened, or endangered species (denoted in the Basin Plan as the "RARE" beneficial use) or waterbodies listed on the CWA Section 303(d) list of Impaired Waterbodies ⁴ . "Discharging directly to" means Urban Runoff from subject Development or Redevelopment site flows directly into aforementioned waterbodies. Urban Runoff is considered a direct discharge unless it first flows through a) a municipal separate storm sewer system (MS4) that has been formally accepted by and is under control and operation of a municipal entity; b) a separate conveyance system where there is co-mingling of flows with off-site sources; or c) a tributary or segment of a water body that is not designated with "RARE" beneficial uses nor listed on the 303(d) list before reaching the water body or segment designated as RARE or 303(d) listed.		
Parking lots of 5,000 square feet or more of impervious surface exposed to Urban Runoff, where "parking lot" is defined as a site or facility for the temporary storage of motor vehicles.		

- 1 Land area is based on acreage disturbed.
- 2 Descriptions of SIC codes can be found at <http://www.osha.gov/pls/mis/sicsearch.html>.
- 3 The Basin Plan for the Santa Ana River Basin, which has beneficial uses for Receiving Waters listed in Chapter 3, can be viewed or downloaded from www.swrcb.ca.gov/rwqcb8/pdf/R8BPlan.pdf.
4. The most recent CWA Section 303(d) list can be found at www.swrcb.ca.gov/tmdl/303d_lists.html.

DETERMINATION: Circle appropriate determination.

Any question answered "YES" → Project requires a project-specific WQMP.

All questions are answered "NO" → Project requires incorporation of Site Design BMPs and Source Control BMPs imposed through Conditions of Approval or permit conditions.

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**Figure 6-2b. Checklist – Projects Requiring Project-Specific WQMPs
 within the Santa Margarita Region**

Checklist for Identifying Projects Requiring a Project-Specific SUSMP
 within the Santa Margarita Region

Project File No.	
Project Name:	
Project Location:	
Project Description	

Proposed Project Consists of or Includes:	Yes	No
Significant Redevelopment: The addition, creation, or replacement of at least 5,000 square feet of impervious surfaces on an already developed site of a project category or location as listed below in this table. This includes, but is not limited to: the expansion of a building footprint or addition or replacement of a structure; structural development including an increase in gross floor area and/or exterior construction or remodeling; replacement of impervious surface that is not part of a routine maintenance activity; and land disturbing activities related with structural or impervious surfaces. [Note: Where redevelopment results in an increase of less than 50% of the impervious surfaces of a previously existing development, and the existing development was not subject to SUSMP requirements, the requirement for treatment control BMPs [MS4 Permit requirement F.2.b(3)], applies only to the addition, and not to the entire development.]		
Housing subdivisions of 10 or more dwelling units. Includes single-family homes, multi-family homes, condominiums, and apartments.		
Commercial development greater than 100,000 square feet. Defined as any development on private land that is not for heavy industrial or residential uses where the land area for development is greater than 100,000 square feet. Includes, but is not limited to: hospitals; laboratories and other medical facilities; educational institutions; recreational facilities; municipal facilities; commercial nurseries; multi-apartment buildings; car wash facilities; mini-malls and other business complexes; shopping malls; hotels; office buildings; public warehouses; automotive dealerships; airfields; and other light industrial facilities.		
Automotive repair shops. Includes facilities characterized by any one of the following Standard Industrial Classification (SIC) codes ¹ : 5013, 5014, 5541, 7532, 7533, 7534, 7536, 7537, 7538, or 7539.		
Restaurants. A facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (SIC code 5812), where the land area for development is greater than 5,000 square feet. Restaurants where land development is less than 5,000 square feet shall meet all SUSMP requirements except for treatment control BMPs [MS4 Permit requirement F.2.b(3)] and peak flow management [MS4 Permit requirement F.2.b(2)(a)].		
All Hillside development greater than 5,000 square feet. Any development that creates greater than 5,000 square feet of impervious surface which is located in an area with known erosive soil conditions, where the development will include grading on any natural slope that is 25% or greater.		
Environmentally Sensitive Areas (ESAs)². All development located within or directly adjacent to or discharging directly to an ESA (where discharges from the development or redevelopment will enter receiving waters within the ESA), which either creates 2,500 square feet of impervious surface on a proposed project site or increases the area of imperviousness of a proposed project site to 10% or more of its naturally occurring condition. "Directly adjacent" means situated within 200 feet of the ESA. "Discharging directly to" means outflow from a drainage conveyance system that is composed entirely of flows from the subject development or redevelopment site, and not commingled with flows from adjacent lands.		
Parking lots of 5,000 square feet or more. A land area or facility for the temporary parking or storage of motor vehicles used personally for business or commerce.		
Streets, roads, highways, and freeways. Includes any paved surface that is 5,000 square feet or greater used for the transportation of automobiles, trucks, motorcycles, and other vehicles.		
Retail Gasoline Outlets (RGOs). Includes RGOs that meet the following criteria: (a) 5,000 square feet or more, or (b) a projected Average Daily Traffic (ADT) of 100 or more vehicles.		

¹ Descriptions of SIC codes can be found at <http://www.osha.gov/pls/timis/sicsearch.html>.

² Areas "in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which would easily be disturbed or degraded by human activities and developments. ESAs subject to urban runoff requirements include, but are not limited to: all CWA Section 303(d) impaired water bodies; areas designated as Areas of Special Biological Significance by the Basin Plan; water bodies designated with a RARE beneficial use in the Basin Plan; areas within the Western Riverside County Multi-Species Habitat Conservation Plan area that contain rare or especially valuable plant or animal life or their habitat; and any other equivalent environmentally sensitive areas that the Permittees have identified. The Basin Plan for the San Diego Basin (beneficial uses listed in Chapter 2) can be viewed or downloaded from www.swrcb.ca.gov/rwqcb9/programs/basinplan.html. The most recent CWA Section 303(d) list can be found at www.swrcb.ca.gov/mdl/303d_lists.html.

DETERMINATION: Circle appropriate determination.

Any question answered "YES" → Project requires a project-specific WQMP.

All questions are answered "NO" → Project requires incorporation of Site Design BMPs and Source Control BMPs imposed through Conditions of Approval or permit conditions.

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6.4.4 Other Development Projects

The Co-Permittees require Other Development projects (projects that are not Development Projects) to incorporate Site Design BMPs and Source Control BMPs, as applicable and feasible, into project plans through conditions of approval or building/grading permit conditions. For Other Development projects that directly discharge Urban Runoff to Receiving Waters listed as impaired on the State Board's 303(d) List, project-specific and/or sub-regional or regional Treatment Control BMPs may be required on a case-by-case basis. A summary of the BMP requirements for Other Development projects is shown in Table 6-1. Brief descriptions of Site Design BMPs and Source Control BMPs are provided in Appendix O, the Riverside County Water Quality Management Plan for Urban Runoff, Sections 4.5.2.1 and 4.5.2.2, respectively.

Table 6-1. Summary of BMPs for Other Development Projects

BMP Category		Applicable Projects
Site Design BMPs (See Appendix O, Section 4.5.1)		Required for all Other Development projects, to the extent applicable and feasible.
Source Control BMPs	Non-Structural BMPs (See Appendix O, Section 4.5.2.1)	Required for all Other Development projects. <ul style="list-style-type: none"> • Education/Training for Property Owners, Operators, Tenants, Occupants, or Employees • Activity Restrictions • Irrigation System and Landscape Maintenance • Common Area Litter Control • Street Sweeping Private Streets and Parking Lots • Drainage Facility Inspection and Maintenance
	Structural BMPs (See Appendix O, Section 4.5.2.2)	Required for all Other Development projects that incorporate the target project features. <ul style="list-style-type: none"> • MS4 Stenciling and Signage • Landscape and Irrigation System Design • Protection of Slopes and Channels • Provide: <ul style="list-style-type: none"> – Community Car Wash Racks – Wash Water Controls for Food Preparation Areas • Properly Design and Maintain: <ul style="list-style-type: none"> – Fueling Areas – Air/Water Supply Area Drainage – Trash Storage Areas – Loading Docks – Maintenance Bays – Vehicle and Equipment Wash Areas – Outdoor Material Storage Areas – Outdoor Work Areas or Processing Areas
Treatment Control BMPs: Project-Specific, Regional, or Sub-Regional (See Appendix O, Sections 4.5.3 and 5.0)		May be required on a case-by-case basis for Other Development projects that discharge Urban Runoff to Receiving Waters listed as impaired on the State Board's 303(d) List.

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6.4.5 Conditions of Approval

The Permittees have reviewed and revised their standard conditions of approval to ensure that the standard conditions are not in conflict with any provisions of the Third-term MS4 Permits, the DAMP, the General Permit-Construction, the San Jacinto Watershed General Permit for Storm Water Discharges Associated with Construction Activity, the General Permit-Industrial, and adopted Total Maximum Daily Load allocations within their jurisdiction. For example, a condition requiring “sweeping or washing public access points within 30 minutes of dirt deposition” should be revised to specify that “washing” must include capture and proper disposal of all wash water.

To minimize the short-term and long-term impacts of Urban Runoff on Receiving Water quality from Development Projects and Other Development projects, Permittees have reviewed and will revise, or supplement their standard conditions of approval or building/grading permit conditions that may be used for projects to include the following conditions or the equivalent, as deemed appropriate:

- ◆ Prior to the issuance of any grading or building permits for projects that will result in soil disturbance of one or more acres of land, the applicant shall demonstrate that coverage has been obtained under California’s General Permit for Storm Water Discharges Associated with Construction Activity (or the San Jacinto Watershed General Permit for Storm Water Discharges Associated with Construction Activity) by providing a copy of the Notice of Intent (NOI) submitted to the State Board (or the Santa Ana or San Diego Regional Boards) and a copy of the subsequent notification of the issuance of a Waste Discharge Identification (WDID) number or other proof of filing.
- ◆ Projects that must comply with either the statewide General Permit for Storm Water Discharges Associated with Construction Activity or the San Jacinto Watershed General Permit for Storm Water Discharges Associated with Construction Activity shall prepare and implement a storm water pollution prevention plan (SWPPP). A copy of the current SWPPP shall be kept at the project site and be available for review upon request.
- ◆ Prior to grading or building permit close-out and/or the issuance of a certificate of use or a certificate of occupancy, the applicant shall:
 - Demonstrate that all structural BMPs have been constructed and installed in conformance with approved plans and specifications; and
 - Demonstrate that applicant is prepared to implement all non-structural BMPs included in the conditions of approval or building/grading permit conditions.
- ◆ For industrial facilities subject to California’s General Permit for Storm Water Discharges Associated with Industrial Activity as defined by Standard Industrial Classification (SIC) code, prior to grading or building permit close-out and/or the issuance of a certificate of use or a certificate of occupancy, the applicant shall demonstrate that coverage has been obtained by providing a copy of the Notice of Intent (NOI) submitted to the State Board and a copy of the notification of the issuance of a Waste Discharge Identification (WDID) Number or other proof of filing.

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Santa Margarita Region Specific Elements

Grading during the wet season should be limited and scheduled to coincide with seasonal dry weather periods to the extent feasible. Grading during the wet season should identify additional BMPs for rain events that may occur as necessary for compliance with the Third-term SMR MS4 Permit.

These and other conditions of approval applicable to Development Projects are provided in Section 2.2 of the Riverside County Water Quality Management Plan for Urban Runoff (Appendix O).

6.4.6 Review and Approval of Project-Specific WQMPs

Project-specific WQMPs may be submitted as “preliminary” during the discretionary or land use entitlement phase depending upon the level of detail known about the overall project design at the time project approval is sought. However, prior to issuance of grading or building permits, the project applicant must submit the final project-specific WQMP for review and approval by the Co-Permittee. The review and approval of a final project-specific WQMP is one of the last critical points at which a Permittee can impose conditions or standards that will minimize the impacts of Urban Runoff. To assist the Co-Permittees in conducting thorough and consistent reviews of project-specific WQMPs, the Co-Permittees utilize a WQMP Review Checklist. An example WQMP Review Checklist is included as Appendix P.

When reviewing project-specific WQMPs submitted for approval, Co-Permittees assess the potential project impacts on Receiving Waters and ensure that the project-specific WQMP adequately identifies such impacts, including all pollutants and hydrologic conditions of concern. The Co-Permittees examine the identified BMPs, as a whole, to ensure that they address the pollutants and conditions of concern identified within the project-specific WQMP. The project-specific WQMP is a project planning level document and as such is not expected to contain final BMP design drawings and details (these will be in the construction plans). However, the project-specific WQMP must identify and denote the location of selected structural BMPs, provide design parameters including hydraulic sizing of treatment BMPs and convey final design concepts. BMP fact sheets can be used in conjunction with project-specific design parameters and sizing to convey design intent. BMP fact sheets typically contain detailed descriptions of each BMP, applications, advantages/disadvantages, design criteria, design procedure, and inspection and maintenance requirements to ensure optimal performance of the BMPs

6.4.7 Plan Check: Issuance of Grading or Building Permits

6.4.7.1 Standard Notes for Plans

Prior to the issuance of a grading or building permit, Permittees require the applicant to include on the plans the following notes (or notes of substantially similar intent) that address pollution prevention to the MEP during the construction phase of a project on a year-round basis:

- ◆ Erosion control BMPs shall be implemented and maintained to minimize and/or prevent the entrainment of soil in runoff from disturbed soil areas on construction sites.

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- ◆ Sediment control BMPs shall be implemented and maintained to prevent and/or minimize the transport of soil from the construction site.
- ◆ Stockpiles of soil shall be properly contained to eliminate or reduce sediment transport from the site to streets, drainage facilities or adjacent properties via runoff, vehicle tracking, or wind.
- ◆ Appropriate BMPs for construction-related materials, wastes, spills or residues shall be implemented to eliminate or reduce transport from the site to streets, drainage facilities, or adjoining properties by wind or runoff.
- ◆ Runoff from equipment and vehicle washing shall be contained at construction sites and must not be discharged to receiving waters or the local storm drain system.
- ◆ All construction contractor and subcontractor personnel are to be made aware of the required best management practices and good housekeeping measures for the project site and any associated construction staging areas.
- ◆ At the end of each day of construction activity all construction debris and waste materials shall be collected and properly disposed in trash or recycle bins.
- ◆ Construction sites shall be maintained in such a condition that a storm does not carry wastes or pollutants off the site. Discharges other than storm water (non-storm water discharges) are prohibited, except as authorized by an individual NPDES permit, the statewide General Permit-Construction, or the San Jacinto Watershed General Permit for Storm Water Discharges Associated with Construction Activity. Potential pollutants include but are not limited to: solid or liquid chemical spills; wastes from paints, stains, sealants, solvents, detergents, glues, lime, pesticides, herbicides, fertilizers, wood preservatives, and asbestos fibers, paint flakes or stucco fragments; fuels, oils, lubricants, and hydraulic, radiator or battery fluids; concrete and related cutting or curing residues; floatable wastes; wastes from engine/equipment steam cleaning or chemical degreasing; wastes from street cleaning; and super-chlorinated potable water from line flushing and testing. During construction, disposal of such materials should occur in a specified and controlled temporary area on-site physically separated from potential storm water runoff, with ultimate disposal in accordance with local, state and federal requirements.
- ◆ Discharging contaminated groundwater produced by dewatering groundwater that has infiltrated into the construction site is prohibited. Discharging of contaminated soils via surface erosion is also prohibited. Discharging non-contaminated groundwater produced by dewatering activities may require a National Pollutant Discharge Elimination System (NPDES) permit issued by the Santa Ana or San Diego Regional Board.
- ◆ Construction sites shall be managed to minimize the exposure time of disturbed soil areas through phasing and scheduling of grading to the extent feasible and the use of temporary and permanent soil stabilization.
- ◆ BMPs shall be maintained at all times. In addition, BMPs shall be inspected prior to predicted storm events and following storm events.

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6.4.7.2 Plan Check for Development Projects

Construction plans submitted by the applicant for plan check must incorporate the structural BMPs identified in the approved final project-specific WQMP. Once a Development Project⁴¹ reaches the plan check phase, the project applicant should have an approved final project-specific WQMP in accordance with Section 2.2 of the Riverside County Water Quality Management Plan for Urban Runoff (Appendix O).

To gain an understanding of the water quality issues and structural BMPs required, Co-Permittees review the relevant CEQA documentation (including the Mitigation Monitoring and Reporting Program) if applicable, the conditions of approval, and the project-specific WQMP as part of the plan check process. Construction plans are reviewed for consistency with the project-specific WQMP. If the selected BMPs were approved in concept during the land use entitlement process, the applicant is required to submit detailed construction plans showing locations and design details of all BMPs that are in substantial conformance with the preliminary approvals. The construction plans are reviewed to assure that the plans are consistent with the BMP design criteria and guidance provided in Appendix O, the Riverside County Water Quality Management Plan for Urban Runoff.

6.4.7.3 Plan Check for Other Development Projects

For Other Development projects (projects that do not qualify as Development Projects), applicants will typically submit a grading or building permit application with construction plans that incorporate the BMPs (Site Design and Source Control) required by the conditions of approval.

6.4.8 Permit Closeout, Certificates of Use, and Certificates of Occupancy

The end of the construction phase is typically accompanied by the close out of permits and issuance of certificates of use and/or occupancy. The Co-Permittees use this juncture to assure satisfactory completion of all requirements in a project-specific WQMP or the conditions of approval for Other Development projects by requiring the applicant to demonstrate, where applicable, that:

- ◆ All structural BMPs have been constructed and installed in conformance with approved plans and specifications;
- ◆ A mechanism or agreement acceptable to the Co-Permittee has been executed for the long-term funding and implementation, operation, maintenance, repair, and/or replacement of BMPs;
- ◆ The applicant is prepared to implement all non-structural BMPs;
- ◆ An adequate number of copies of the project-specific WQMP, if applicable, are available onsite; and
- ◆ Industrial facilities subject to California's General Permit for Storm Water Discharges Associated with Industrial Activity as defined by Standard Industrial Classification (SIC) code provide proof of coverage by providing a copy of the Notice of Intent (NOI) submitted to the State Board and/or a copy of the notification of the issuance of a Waste Discharge Identification (WDID) Number.

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BMPs for Development Projects and Other Development projects cannot be considered effective unless a mechanism is in place to provide for long-term reliability, which is achieved through proper implementation, operation, and maintenance. Therefore, once construction of a project is complete, assurance is required for the long-term implementation, operation and maintenance of BMPs, and most particularly for Treatment Control BMPs.

The responsibility for implementation, operation, and maintenance of BMPs may be with a private entity or a public agency (for example, a Permittee) under various arrangements and with various funding sources. The responsibility to provide for the long-term implementation, operation, and maintenance of BMPs associated with Development Projects or Other Development projects may:

- ◆ Remain with a private entity (property owner, home owners association, etc.); or
- ◆ Be transferred to a public entity (e.g., a city, county, special district, etc.) through dedication of the property; or
- ◆ Be transferred to a public entity, or another private party through a contract.

Following satisfactory inspection, the Permittee may accept structural BMPs within public right-of-ways, and may accept structural BMPs on land dedicated to public ownership. Upon acceptance, responsibility for operation and maintenance will transfer from the developer or contractor to the appropriate entity, including the funding mechanism identified in the approved final project-specific WQMP for Development Projects or the conditions of approval or building/grading permit conditions for Other Development projects.

If a property owner or a private entity retains or assumes responsibility for implementation, operation, and maintenance of BMPs, the Permittee require an agreement that can take the form of:

- ◆ A Covenant and Agreement recorded with the County Recorder,
- ◆ A Home Owners Association or Property Owners Association Covenants, Codes, and Restrictions,
- ◆ The formation of, or annexation to, a maintenance district or assessment district, or
- ◆ Other instrument sufficient to guarantee long-term implementation, operation, and maintenance of BMPs.

Examples of requirements for typical maintenance mechanisms and a sample of a Covenant and Agreement are provided in Appendix O (Riverside County Water Quality Management Plan for Urban Runoff, Exhibits E and F, respectively).

⁴¹ "Development Projects" refers to "Priority Projects" as defined in Section F.2.b.1 of the SMR MS4 Permit or "New Development and Significant Redevelopment" as defined in Section VIII.B.1 of the SAR MS4 Permit.

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6.5 TRAINING

6.5.1 Educational Program for Developers and Contractors

The Riverside County Water Quality Management Plan contains the legal, administrative, and technical information needed to acquaint developers and contractors with the requirements for post construction BMPs in Development Projects. It also provides information relevant and useful to Other Development projects. The Co-Permittees make the approved Riverside County Water Quality Management Plan for Urban Runoff available as part of the review process for project planning and permitting. The Permittees may also coordinate with the University Extension and other groups to provide training to the property owners, developers, builders, architectural and engineering firms, planning firms, etc.

6.5.2 Training Programs for Municipal Development Planning Staff

Co-Permittee staff responsible for implementing development planning requirements receive annual training regarding the following topics:

- ◆ Federal, state and local water quality laws and regulations applicable to development projects,
- ◆ The connection between land use decisions and short and long-term water quality impacts; and
- ◆ How impacts to receiving water quality resulting from development can be minimized via the WQMP process.
- ◆ TMDL requirements and appropriate post-construction BMPs to mitigate the impacts of development.

The Permittees have developed a PowerPoint presentation that can be provided to municipal development planning staff.

Co-Permittee staff responsible for conducting development planning may also attend other Permittee sponsored training, training sponsored by industry associations (e.g., Building Industry Association, American Society of Civil Engineers, etc.), the California Storm Water Quality Association, or training sponsored by other entities in lieu of Permittee sponsored training. The Permittees individually maintain a log of trained staff and type of training, and then include this information in the Annual Reports.

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7.0 PRIVATE DEVELOPMENT CONSTRUCTION ACTIVITY

The initial construction site inspection program element was described in the Enforcement/Compliance Strategy (E/CS) as required by the 1996 SAR MS4 Permit. The construction site inspection program has been an effective element of the Riverside County DAMP. However, this program element has been revised to address the requirements of the Third-term MS4 Permits.

7.1 CONSTRUCTION SITE BMPs

The erosion control BMPs appropriate for use during construction are listed in Table 7-1 with cross references to the BMP designations used in the *2003 California Stormwater Best Management Practice Handbook, Construction*⁴² and the Caltrans *Construction Site BMP Manual* (March 2003)⁴³. Since BMP technology is constantly changing, the jurisdictional Permittee may consider other BMPs of equivalent or better performance on a case-by-case basis.

Santa Margarita Region Specific Elements

Each Permittee requires the use of a set of minimum BMPs that address pollution prevention by construction site owners, developers, contractors and other responsible parties, as appropriate, through standard notes that must appear on grading plans as described in Section 6.4.7.1 of the DAMP. Each Permittee also requires the implementation of additional controls as needed for construction sites tributary to CWA Section 303(d) listed water bodies impaired for sediment. In addition, the Permittees require construction sites discharging directly to receiving waters within Environmentally Sensitive Areas (ESAs) to implement additional controls as necessary to comply with the Third-term SMR MS4 Permit.

⁴² California Stormwater Quality Association. January 2003. <http://www.cabmphandbooks.com/> or CASQA, P.O. Box 2105, Menlo Park, California, 94026-2105.

⁴³ California Department of Transportation. March 2003. http://www.dot.ca.gov/hq/construc/stormwater/CSBMPM_303_Final.pdf

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Table 7-1. Construction Site BMPs

BMP Name	California BMP Handbook – Construction	Caltrans Construction Site BMP Manual	Included in USEPA Construction Site Menu of BMPs
<i>Stabilize Exposed Soils</i>			
Chemical Stabilization (Soil Binders)	EC-5	SS-5	X
Polyacrylamide	EC-13		
Mulching			
Hydraulic Mulch	EC-3	SS-3	X
Straw Mulch	EC-6	SS-6	X
Wood Mulching	EC-8	SS-8	X
Permanent Seeding			X
Sodding			X
Soil Roughening			X
Temporary Seeding/Hydroseeding	EC-4	SS-4	
<i>Protect Steep Slopes</i>			
Earth Dikes/Drainage Swales/Lined Ditches	EC-9	SS-9	
Fiber Roll	SE-5	SC-5	
Geotextiles	EC-7	SS-7	X
Gradient Terraces			X
Soil Retention			X
Straw Bale Barrier	SE-9	SC-9	
Temporary Slope Drain	EC-11	SS-11	X
<i>Protect Waterways</i>			
Check Dams	SE-4	SC-4	X
Outlet Protection/Velocity Dissipation Devices	EC-10	SS-10	
Streambank Stabilization	EC-12	SS-12	
Temporary Stream Crossings	NS-4	NS-4	X
Vegetated Buffer			X
<i>Phase Construction</i>			
Construction Sequencing (Scheduling)	EC-1	SS-1	X
Dust Control	WE-1	WE-1	X
<i>Preserve Site Condition</i>			
Entrance/Outlet Tire Wash	TC-3	TC-3	
Preservation of Existing Vegetation	EC-2	SS-2	
Stabilized Construction Entrance	TC-1	TC-1	
Stabilized Construction Roadway	TC-2	TC-2	

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7.2 INVENTORY DATABASE

Santa Ana Region Specific Elements

In conformance with Section IX.A.1 of the Third-term SAR MS4 Permit, each SAR Co-Permittee developed and maintains an inventory database (or databases) of construction sites 1-acre or larger for which they have issued a building or grading permit. Construction sites are included in the inventory regardless of whether the construction site is subject to the General Construction Activity Storm Water Permit or other individual construction storm water NPDES permits. In addition, New Development/Significant Redevelopment projects meeting the criteria defined in Section VIII.B.1 of the 2007 SAR MS4 Permit are also included in this database. These databases are updated with new projects added when the project is issued a building or grading permit or when the pre-construction meeting has occurred. Projects may be removed from the database when construction is completed and the project's building or grading permit is closed. At a minimum, the Co-Permittees' databases include the following project information:

- ◆ Facility/Project name,
- ◆ Facility/Project address,
- ◆ Tract number(s) or Assessor Parcel Number (APN),
- ◆ Watershed,
- ◆ Project type,
- ◆ Project priority,
- ◆ Number of inspections performed,
- ◆ Site size,
- ◆ WDID#,
- ◆ Grading Permit #,
- ◆ Other permits,
- ◆ Developer's information,
- ◆ Site contact information, and
- ◆ Enforcement status.

Santa Margarita Region Specific Elements

Annually, prior to the rainy season, each SMR Co-Permittee updates their inventory of construction sites within their jurisdiction regardless of site size or ownership.

7.3 CONSTRUCTION SITE INSPECTION

Santa Ana Region Specific Elements

Each construction site/project included in a Co-Permittee's inventory database is assigned a priority of High, Medium, or Low to reflect the potential for impairing Receiving Water quality. In order to standardize prioritization the Permittees developed a matrix for the relationship between priority ratings and Receiving Water pollution threat. This Construction Site Prioritization Matrix is presented in Table 7-2.

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After each inspection, the priority assigned to the construction site/project is re-assessed based upon the prioritization matrix shown in Table 7-2 and the inspection frequency is determined. This information is used to update the construction site/project database. As shown in Table 7-2, the minimal inspection frequency is:

- ◆ Once every two weeks for construction sites designated as High priority.
- ◆ Once a month for construction sites designated as Medium priority.
- ◆ Once during the rainy season (October 1 through May 31) for construction sites designated as Low priority.
- ◆ Within two weeks for follow-up inspections related to non-compliance with the SAR Co-Permittee's storm water ordinance.

However, the MS4 Permit does not require the Co-Permittees to inspect construction sites already inspected by Regional Board staff. To facilitate this, Regional Board staff will post a list of construction sites/projects inspected on their website (http://www.waterboards.ca.gov/santaana/html/regional_ind_con_db.html/santaana/html/regional_ind_con_db.html) or make this information available to the Co-Permittees by other pre-arranged means.

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Table 7-2. Construction Site Prioritization Matrix

Priority	Supporting Criteria ^(a)	Wet Season ^(b) Inspection Frequency
High	<u>Project Size</u> Sites that disturb an area greater than 50 acres (initial inventory) <u>Project Location</u> Sites that disturb an area greater than one(1) acre and are located adjacent to, within 200 feet, of an identified impaired water body within the Permit Area (initial inventory) Sites that disturb an area greater than one (1) acre and directly discharge to an identified water body within the Permit Area (initial inventory) <u>Soil Erosion Potential</u> Hillside sites that disturb an area greater than five acres <u>History of Compliance</u> Sites that disturb an area greater than one (1) acre with a low-range (0-50%) compliance with respective city/County NPDES site inspection/verification checklists	Once every two weeks
Medium	<u>History of Compliance</u> Sites that received repeated verbal notification of non-compliance with respective city/County NPDES site inspection/verification checklists	Once each month
Low	<u>History of Compliance</u> Sites that are in compliance with respective city/County NPDES site inspection/verification checklists Sites that disturb an area of one (1) acre or greater	Once

Notes:

- (a) Prioritization factors listed in Third-term SAR MS4 Permit §IX.A.2 include soil erosion potential, project size, proximity and sensitivity to Receiving Waters, and history of compliance. §IX.A.3 of the Third-term SAR MS4 Permit describes the minimum inspection requirements, which are reflected in inspection checklists.
- (b) Wet season: October 1st to May 31st
- (c) Dry season: June 1st to September 30th

Santa Margarita Region Specific Elements

During the wet season, the Permittees inspect the following construction sites at least every two weeks:

- 1) All sites 50 acres or more in size and grading will occur during the wet season;
- 2) All sites 5 acres or more, and tributary to a CWA section 303(d) water body impaired for sediment or within or directly adjacent to or discharging directly to a receiving water within ESA; and
- 3) Other sites determined by the Permittee or the San Diego Regional Board as a significant threat to water quality. In evaluating threat to water quality, the following factors are considered: (1) soil erosion potential; (2) site slope; (3) project size and type; (4) sensitivity of receiving water bodies; (5) proximity to receiving water bodies; (6) non-storm water discharges; and (7) any other relevant factors.

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However, any site meeting these criteria may be inspected on a monthly basis if the Permittee certifies in a written statement to the San Diego Regional Board that the Permittee has a record of construction site's WDID number documenting the site's coverage under the General Construction Permit, the Permittee has reviewed the construction site's SWPPP and finds it to be in compliance with local ordinances, permits and plans, and the Permittee finds that the SWPPP is being properly implemented on site.

The Permittees inspect all construction sites that do not meet these criteria but encompass 1 acre or more of soil disturbance at least three times during the wet season. Construction sites less than 1 acre in size are inspected on an as-needed basis. All construction sites are inspected as needed during the dry season.

Conducting Inspections

At a minimum, the following items are addressed during construction site inspections:

- ◆ For projects of one acre or more, verify that an NOI has been submitted to the State Board or to the Santa Ana Regional Board (projects in the San Jacinto watershed). Verification is typically made by reviewing a copy of the NOI Receipt letter from the State Board showing the Waste Discharge Identification (WDID) Number issued for the site.
- ◆ For projects of one acre or more, verify that a SWPPP is on-site.
- ◆ Confirm compliance with the Co-Permittee's storm water ordinance.
- ◆ Check for poorly managed authorized non-storm water discharges or evidence of unauthorized non-storm water discharges that may be potential illicit connections or illegal discharges to a MS4.

Some Co-Permittees have chosen to document this construction site inspection information on a separate form, while other Co-Permittees have chosen to incorporate this information into existing inspection forms. An example construction site inspection form is shown in Figure 7-1. Based on the inspection findings, the Permittees implement follow-up actions as necessary to comply with the requirements of the Third-term MS4 Permits.

7.4 ENFORCEMENT

If determined during a routine inspection or an inspection in response to a complaint that a site/project is non-compliant with the Co-Permittee's storm water or erosion control ordinance, the Co-Permittee begins enforcement procedures as described in Section 3.4.2 of the DAMP. As described in Section 3.4 (Legal Authority and Enforcement), the severity of the violation is based on various factors. After considering the various factors, the Co-Permittee determines the level of enforcement required consistent with the enforcement levels described in Table 3-3.

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7.5 REGIONAL BOARD NOTIFICATION REQUIREMENTS

The Co-Permittees notify the respective Regional Board when construction site inspectors, other Co-Permittee staff, or third parties report observing potential non-compliance with the Construction Activity Permits of a non-Emergency Situation nature. Such notifications are made by telephone or email within 2 working days of receiving notice from its staff or a third party. Examples of non-compliance of a non-Emergency Situation nature are a site that cannot demonstrate coverage under the applicable Construction Activity Permit, a site that does not have a SWPPP available, or a site with BMPs that are not properly maintained. The Regional Board staff will then determine if an inspection and enforcement action for the Construction Activity Permit is appropriate. Upon providing notification to the Regional Board, no further action is taken by Co-Permittee staff with respect to enforcement of the Construction Activity Permits. However, the Co-Permittee continues with progressive enforcement of its ordinances and permits at the site as described in Section 3.4.2 of the DAMP. Notifications regarding Emergency Situations are described in Section 4.3.

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Figure 7-1. Example Construction Site Inspection Form

Insert Co-Permittee logo here		Construction Activity Compliance Inspection Notice Public Works Department and/or Division Insert Co-Permittee address here, CA	
		Date: _____	
TRACT/PARCEL #:	WDID#:	WEATHER:	SITE INSPECTION PRIORITY LEVEL: <input type="checkbox"/> HIGH <input type="checkbox"/> MEDIUM <input type="checkbox"/> LOW
APN:	GRADING PERMIT #:	SIZE/DISTURBED ACREAGE:	OFFICE USE: <input type="checkbox"/> -PAID <input type="checkbox"/> -INVOICE
SITE NAME AND ADDRESS:		PROPERTY OWNER AND MAILING ADDRESS (IF DIFFERENT):	
CROSS STREETS:	INSPECTED BY:	PHONE #:	DATE FOR REINSPECTION:
FUTURE SITE USAGE: <input type="checkbox"/> RESIDENTIAL <input type="checkbox"/> INDUSTRIAL <input type="checkbox"/> COMMERCIAL <input type="checkbox"/> MIXED-USE		POST-CONSTRUCTION BMPs ON-SITE: <input type="checkbox"/> YES <input type="checkbox"/> NO	
NOTES-			
<p>NOTICE: The [Insert Co-Permittee Name] performs a construction site inspection to determine if the site is in compliance or not in compliance with the [Insert Co-Permittee Name] Stormwater Ordinance, local permits, regulations, and codes.</p> <p>1. PERMITS: (MS4 Permit Ref: Section IX.A.3.a)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Copy of NOI located at the project site? <input type="checkbox"/> Copy of WDID located at the project site? <input type="checkbox"/> Copy of [Insert Co-Permittee Name] permit at project site? <p>2. STORM WATER POLLUTION PREVENTION PLAN (SWPPP): (MS4 Permit Ref: Section IX.A.3.b)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Copy of SWPPP located at the project site? If not, Regional Board must be notified. <p>3. BEST MANAGEMENT PRACTICES (BMPs):</p> <ul style="list-style-type: none"> <input type="checkbox"/> BMPs installed in conformance with local permits and [Insert Co-Permittee Name] Stormwater Ordinance, i.e. perimeter controls, storm drain inlet protection, etc? <input type="checkbox"/> BMPs in place for the various subcontractor trades, i.e. PCC cleanout, material storage, waste storage, etc? <input type="checkbox"/> Project site BMPs effective? <input type="checkbox"/> Effective combination of erosion and sediment controls on site? <p>4. EROSION CONTROL:</p> <ul style="list-style-type: none"> <input type="checkbox"/> No evidence of erosion present on manufactured and/or denuded slopes? <input type="checkbox"/> No evidence of rill or gully erosion present? <input type="checkbox"/> Erosion control BMPs installed in conformance with local permits and [Insert Co-Permittee Name] Stormwater Ordinance? <p>5. SEDIMENT CONTROL:</p> <ul style="list-style-type: none"> <input type="checkbox"/> No evidence of sediment outside the permit area or present on the site in an area that requires protection? <input type="checkbox"/> No evidence of construction site sediment on City-maintained streets, downstream storm drains and/or drainage ways? <input type="checkbox"/> No evidence of "Track-out" observed on surface streets adjoining the project site? <input type="checkbox"/> Sediment controls installed and maintained in conformance with local permits and [Insert Co-Permittee Name] Stormwater Ordinance? <p>6. ILLEGAL/ILLCIT DISCHARGES:</p> <ul style="list-style-type: none"> <input type="checkbox"/> No evidence that structural controls are breached or failed under storm events of minor intensity? <input type="checkbox"/> No evidence that active non-storm water discharges or potential illicit connections or illegal discharges to the streets or storm drains? 			
VIOLATIONS:			
<input type="checkbox"/> Verbal warning:		<input type="checkbox"/> Written warning: (attach copy)	
<input type="checkbox"/> NOV: (attach copy)		<input type="checkbox"/> Stop Work: (attach copy)	
<input type="checkbox"/> Other:			
ADDITIONAL:			
RECEIVED BY:		NAME/SITE CONTACT (PRINT):	24-HOUR PHONE:
DATE:	VIOLATIONS: <input type="checkbox"/> CORRECTED <input type="checkbox"/> NOT CORRECTED		PAGE ____ OF ____
REGIONAL BOARD NOTIFICATION: <input type="checkbox"/> YES <input type="checkbox"/> NO	DATE:	TIME:	CONTACT:

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7.6 REPORTING REQUIREMENTS

For purposes of annual reporting, the Permittees developed the standardized spreadsheet shown in Figure 7-2 for listing construction sites within their jurisdiction and the associated inspection and enforcement information.

7.7 TRAINING REQUIREMENTS

Co-Permittee staff responsible for conducting construction site inspections receive annual training regarding the following topics:

- ◆ A summary of federal, state and local regulations (including the General Permit-Construction and the San Jacinto Watershed Construction Activities Permit, Third-Term MS4 Permits, the DAMP and the WQMP) that impact construction activities;
- ◆ The impacts of construction activities on water quality;
- ◆ Proper selection and maintenance of BMPs necessary to meet requirements of Permittee storm water ordinances and other local ordinances, resolutions and codes related to the protection of water quality;
- ◆ Local enforcement and compliance strategy/policy for construction sites;
- ◆ How to identify construction sites subject to the General Permit-Construction or the San Jacinto Watershed Construction Activities Permit and what actions to take if the appropriate permit has not been obtained by the construction site owner; and
- ◆ How to provide guidance to contractors on proper selection, implementation and maintenance of construction BMPs and compliance with the requirements of the Storm Water Ordinance during site inspections.
- ◆ TMDL requirements and appropriate BMPs to mitigate the impacts of construction activities.

This annual training for construction site inspectors is conducted prior to October 1, the start of the rainy season. The Permittees individually maintain a log of trained staff and report training in their annual reports.

Santa Ana Region Specific Elements

The Co-Permittees ensure that newly hired municipal staff or transferred municipal staff receive formal training within 6 months of beginning their inspection duties. When planning formal classroom training related to construction site inspectors, the Co-Permittees will notify and coordinate with Regional Board staff. Co-Permittee staff responsible for conducting construction site inspections may also attend training sponsored by industry associations (e.g., Building Industry Association, International Erosion Control Association, American Society of Civil Engineers, etc.), the California Storm Water Quality Association, or other entities in lieu of Permittee sponsored training.

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Santa Margarita Region Specific Elements

Permittees are also required to implement a program to ensure that project applicants, contractors, developers, property owners and other responsible parties have an understanding of the topics identified above for Co-Permittee staff responsible for conducting construction site inspections. This is generally accomplished by the distribution of public education materials to responsible parties and by reviewing project site compliance deficiencies and necessary corrective actions with responsible parties during the inspection process. The Permittees may also coordinate with university extension programs and industry associations (e.g., Building Industry Association, International Erosion Control Association, American Society of Civil Engineers, etc.), the California Storm Water Quality Association, or other entities in lieu of Permittee sponsored training.

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Figure 7-2. Standardized Spreadsheet for Co-Permittee Construction Site Inspections

FACILITY NAME (SIS) Bldg. No. A.	PROJECT GENERAL INFORMATION						DEVELOPER INFORMATION				MUNICIPAL PERMITS SEE PAGE C.				SITE CONTACT INFORMATION			ENFORCEMENT STATUS SEE PAGE D.										
	Street Address	Cross Street	City	Zip	Tract Nos. or Assessor's Parcel Nos.	Site No. B.	Project Type	Project Priority	No. of Stormwater Inspections	Site Size	WQIA No. (General Permit)	Other Permits (SCE, SD, SDD, SDR, SDC, SDE, SDF, SDR, etc.)	Name	Contact Name	Street Address	City	Zip	Phone Number	Name (24 Hour)	Phone Number (Cell)	Satisfactory	Verbal Warning	Written Warning	Notice of Violation	Stop Work Order	Referred to RWQCB		
																											Mailing Address	

Notes: A. Name of project, developer, or planning area. The facility name as used by Regional Boards can be obtained from the State Water Resources Control Board Construction General Permit Database (Csdmains) using Facility, Shortname/ or from a copy of the applicant's Notice of Intent.
B. Enter the Municipal Parcel No. as applicable to the facility (Project).
C. Enter the number of each type of enforcement action for each Facility (Project).
D. Enter the number of each type of enforcement action for each Facility (Project).

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8.0 INDUSTRIAL AND COMMERCIAL SOURCES

The initial industrial and commercial sources program element was described in the Enforcement/Compliance Strategy as required by the 1996 SAR MS4 Permit. The program included implementation of the Compliance Assistance Program (CAP), which made use of existing site County Department of Environmental Health inspections. As the responsible Certified Unified Program Agency (CUPA) in Riverside County, the County Department of Environmental Health was responsible for regularly inspecting all sites within the County that handle hazardous waste. There are approximately 5,500 facilities with hazardous materials permits, of which 2,300 are inspected annually. The remaining facilities are inspected at least every other year. The County Department of Environmental Health also inspects all food services restaurants (approximately 6,500 facilities) within the County at least annually. The Cities of Corona and Riverside also implemented a separate storm water inspection program as part of their Municipal Wastewater Pre-Treatment inspection program.

Under the CAP, County Department of Environmental Health inspectors added a storm water compliance survey to their regular inspection process. Completed surveys are forwarded to the appropriate Permittees for their records, review and further action, if necessary. The CAP and Municipal Wastewater Pre-Treatment industrial and commercial sources program has been an effective element of the DAMP.

This program element was revised to address the requirements of the Third-term MS4 Permits, including an expansion of the commercial businesses not covered by the CAP and Municipal Wastewater Pre-Treatment inspection programs. The expansion has required some Permittees to hire inspectors to address those facilities not currently covered by the CAP or the Municipal Wastewater Pre-Treatment Program. In addition, the Third-Term MS4 Permits required inventories/databases of facilities, prioritization of industrial and commercial sources relative to the potential to impact water quality, and specified inspection frequencies based upon facility priority. The revised industrial and commercial sources program continues to have both regional and local jurisdiction components. However, the Permittees will review the effectiveness of these programs annually and make additional program modifications as necessary.

8.1 INDUSTRIAL/COMMERCIAL FACILITY DATABASE

Each Co-Permittee has developed and maintains an inventory database (or databases) of industrial and commercial facilities within their respective jurisdictions. Facilities are included in these inventories regardless of whether the facility is subject to the General Industrial Activities Storm Water Permit, or other individual NPDES permits issued by the State or Regional Boards. Each Co-Permittee that presently has an existing local industrial inspection program (the cities of Corona and Riverside as to their respective POTW pre-treatment inspections and the County through the CAP) includes in their respective inventory information derived from existing compliance survey and inspection programs. Each Co-Permittee without an industrial/commercial facility inspection program includes in their inventory information from the CAP that is relevant to its jurisdiction and may include information derived from other agencies providing services within its jurisdiction, including, but not limited to, the appropriate Fire Department, health departments, and POTW servicing the Permit Area.

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Co-Permittee maintenance of the facility inventory/database includes regularly updating the inventory/database for information obtained during facility inspections or from any of the following sources: conditional use permits, plot plans, building permits, business licenses, occupancy permits, hazardous materials permits, and hazardous waste generator permits are approved for the development of a new industrial facility, additional facilities are identified through the CAP, and as compliance surveys and inspections are completed and industrial facilities are identified. The Permittees existing inventory/database of industrial and commercial facilities were updated to include the following categories:

- ◆ Mobile automobile or other vehicle washing (base of operations),
- ◆ Mobile carpet, drape or furniture cleaning (base of operations),
- ◆ Nurseries and greenhouses,
- ◆ Landscape and hardscape installation (base of operations), and
- ◆ Other commercial sites/sources that the SAR Co-Permittee determines may contribute a significant pollutant load to the MS4.

Santa Ana Region Specific Elements

Mobile high pressure or steam cleaning (base of operations)

Santa Margarita Region Specific Element

Many of these facility types are covered by the CAP within each Permittees jurisdiction. Each Permittee has reviewed the CAP site list and supplemented their local inspection programs to include any of the following facility types not covered by the CAP inspections:

- ◆ Automobile, airplane, and boat mechanical repair, maintenance, fueling, or cleaning
- ◆ Equipment repair, maintenance, fueling, or cleaning
- ◆ Automobile and other vehicle body repair or painting
- ◆ Automobile (or other vehicle) parking lots and storage facilities
- ◆ Retail or wholesale fueling;
- ◆ Pest control services (base of operations)
- ◆ Eating or drinking establishments
- ◆ Concrete mixing or cutting (base of operations)
- ◆ Painting and coating (base of operations)
- ◆ Golf courses, parks, and other recreational facilities
- ◆ Cemeteries
- ◆ Pool and fountain cleaning (base of operations)
- ◆ Port-a-Potty servicing (base of operations)

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- ◆ Facilities subject to the General Permit-Industrial⁴⁴
- ◆ Closed municipal landfills
- ◆ Facilities subject to SARA Title III
- ◆ Facilities tributary to a Receiving Water included on the 303(d) List of impaired waterbodies, where the facility generates pollutants causing the impairment(s)

At a minimum, the Co-Permittees' databases include the following information:

- ◆ Facility name,
- ◆ Facility street address,
- ◆ City,
- ◆ Zip code,
- ◆ Standard Industrial Classification (SIC) Codes,

Santa Ana Region Specific Element

- ◆ Mailing address (if different),
- ◆ Location reference (such as, geographic coordinates, cross streets, etc.),
- ◆ Facility contact
- ◆ Facility contact phone number,
- ◆ WDID Number associated with the General Permit-Industrial (if any)
- ◆ Other NPDES permit or Waste Discharge Requirements,
- ◆ Assessor's parcel number, and
- ◆ Site size.

Santa Margarita Region Specific Element

Narrative description that best reflects the principal products or services provided by each facility.

8.2 SMR MINIMUM BMPs FOR INDUSTRIAL/COMMERCIAL FACILITIES

In their Individual SWMP each SMR Co-Permittee has designated minimum BMPs for the industrial and commercial facilities within their jurisdiction to reduce the discharge of pollutants to the MEP. For those industrial and commercial facilities that are discharging directly to Receiving Waters that are included in the 303(d) List as impaired, each SMR Co-Permittee has designated additional BMPs as necessary to specifically target the pollutants contributing to the identified impairment. For those industrial and commercial facilities that are within, directly adjacent to, or discharging directly to ESAs, each SMR Co-

⁴⁴ See Attachment 1 to the General Permit-Industrial which can be reviewed or downloaded from the following website:
<http://www.waterboards.ca.gov/stormwtr/docs/induspmt.pdf>.

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Permittee has designated additional BMPs as necessary to protect the ESAs. Each SMR Co-Permittee's designated additional BMPs are reflected in their Individual SWMP.

The Co-Permittees have notified the industrial and commercial facilities of the minimum BMPs and additional BMPs (when appropriate) applicable to facilities within their jurisdiction. This notification identified and included a description of the Co-Permittee's storm water ordinance. Where implementation of the minimum BMPs and the additional BMPs are identified as being insufficient to achieve compliance with the SMR MS4 Permit, the Co-Permittees require the implementation of additional site-specific BMPs.

8.3 INDUSTRIAL/COMMERCIAL FACILITY PRIORITIZATION AND INSPECTION FREQUENCY

For each facility/business included in a Permittee's industrial and commercial inventory, the Permittees have assigned a priority of High, Medium, or Low to reflect the facility's/business's potential for contributing to the impairment of Receiving Water quality. In order to develop a consistent prioritization standard, the Permittees developed a matrix for the relationship between priority ratings (High, Medium, and Low) and Receiving Water pollution threat. This Industrial and Commercial Facility/Business Prioritization Matrix is presented in Table 8-1.

Table 8-1. Industrial and Commercial Facility/Business Prioritization Matrix

Priority	Inspection Frequency
High	Once a year
Medium	Once every two years
Low	Once during the Third-term Permit period

Criteria considered include types of industrial and commercial activities (SIC codes), materials or wastes used or stored outdoors, types of activities conducted outdoors, pollutant discharge potential, facility size, proximity and sensitivity of Receiving Waters, history of unauthorized non-storm water discharges, whether facility is subject to General Permit-Industrial, available facility-specific monitoring data, frequency of existing inspections based upon other California statutes or regulations, or local regulations, ordinances, or codes, and any relevant factors.

The initial priority assigned to a facility/business by the Permittees was based upon (1) completed survey forms from inspections conducted as part of the CAP, or (2) information provided in inspection reports completed as part of the Municipal Wastewater Pre-Treatment Inspection Programs (Cities of Corona and Riverside).

Santa Ana Region Specific Element

Within the SAR, at a minimum, a facility must be categorized as high priority if it is a facility subject to Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 or if it is a facility with a high potential for or history of unauthorized non-storm water discharges.

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8.4 INDUSTRIAL AND COMMERCIAL FACILITY INSPECTIONS

The Permittees have developed a mechanism to identify compliance of industrial and commercial facilities with local storm water ordinances and, where applicable, potential non-compliance with the General Permit-Industrial. There are two main components of this existing program: the Compliance Assistance Program and the local POTW inspection programs. When conducting facility/business inspections, at a minimum, the following are addressed:

- ◆ Verification of the type (or types) of industrial and/or commercial activities and facility SIC codes.
- ◆ Submittal of a NOI to comply with the General Permit-Industrial, if applicable based upon the facility's SIC code.
- ◆ Compliance with the local jurisdiction's storm water ordinance.
- ◆ Observation for non-storm water discharges, potential illicit connections, and illegal discharges to the MS4.
- ◆ Potential discharge of pollutants in Urban Runoff from areas of material storage, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas or loading docks, or other outdoor work areas.
- ◆ Implementation and maintenance of appropriate or minimum BMPs.
- ◆ Qualitative assessment of the effectiveness of the BMPs implemented.
- ◆ Education regarding storm water pollution prevention.

8.4.1 Compliance Assistance Program

Regionally, the County's Department of Environmental Health implements the Compliance Assistance Program (CAP) for oversight and inspection of industrial and commercial sources. This is the baseline program for the SAR and SMR. The inspections performed as part of the CAP are conducted at frequencies required by other regulatory programs. All Co-Permittees either implement the CAP or an equivalent industrial and commercial facility inspection program.

In April 2004, the District and the County's Department of Environmental Health executed an agreement that provides continued support for the area-wide CAP. The CAP involves a detailed storm water compliance survey for facilities that must secure a hazardous materials permit for storing, handling or generating such materials and for retail food facilities. Many types of industrial and commercial establishments are inspected by the County's Department of Environmental Health Hazardous Materials Management staff including those that conduct automobile mechanical repair, maintenance, fueling, or cleaning operations, automobile or other vehicle body repair or painting operations, and painting or coating operations. There are approximately 5,500 facilities having a hazardous materials permit of which approximately 2,300 are inspected annually and all facilities are inspected at least once during a two-year cycle. There are approximately 6,750 retail food facilities, all of which are inspected one to three times annually.

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Blank copies of the forms used by the County's Department of Environmental Health when conducting these storm water compliance surveys are included in Appendix Q. Completed survey forms are forwarded to the District and then to the appropriate Co-Permittee. The respective jurisdiction's representative identifies those surveys that indicate non-compliance to initiate a follow-up inspection.

During the CAP surveys of the hazardous materials permit facilities the following minimum BMPs are verified:

- ◆ Hazardous waste/materials storage areas are clean, no signs of leakage, and protected from rainfall and runoff;
- ◆ Trash bin areas are clean, the bin lids are closed, the bins are not filled with liquid, and no signs of leakage from the trash bins;
- ◆ Aboveground tanks have been properly maintained including no signs of leakage, and secondary containment in good condition;
- ◆ Onsite storm drain inlets are protected from inappropriate non-storm water discharges;
- ◆ Oil/water separators are connected to sanitary sewer;
- ◆ Wash water from wash pads (steam cleaning or high pressure cleaning) is directed to the sanitary sewer and does not discharge to the MS4;
- ◆ Mop bucket wash water is discharged to sanitary sewer via clarifier;
- ◆ Parking lot areas are free of trash, debris, and fluids other than water; and
- ◆ Facility has coverage under the General Permit-Industrial, if appropriate.

These specific topics are addressed in questions 1-10 of the "Hazardous Waste/Hazardous Materials Facility Storm Water Compliance Survey" form included in Appendix Q.

The Third-term MS4 Permits required the Permittees to ensure that the storm water compliance surveys of restaurants are conducted. During the CAP restaurant surveys the following minimum BMPs are verified:

- ◆ Oil and grease wastes are not discharged onto a parking lot, street or adjacent catch basin;
- ◆ Trash bin areas are clean, the bin lids are closed, the bins are not filled with liquid, and the bins have not been washed out into the MS4;
- ◆ Floor mats, filters and garbage containers are not washed in adjacent parking lots, alleys, sidewalks, or streets and that no wash water is discharged to MS4s; and
- ◆ Parking lot areas are cleaned by sweeping, not by hosing down, and that the facility operator uses dry methods for spill cleanup.

These specific topics are addressed in questions 1-8 of the "Food Facility Storm Water Compliance Survey" form included in Appendix Q.

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The CAP includes educational outreach to the inspected facilities and completion of a detailed storm water compliance survey. In conducting a facility inspection, if it appears that the facility may be required to have coverage under the General Permit-Industrial and the facility operator indicated that an SWPPP is not onsite, the inspector provides the facility operator with an informational sheet on the requirements of the General Permit-Industrial and makes a notes on the compliance survey that the SWPPP was not available onsite. Each Permittee also verifies the SIC codes of each facility to ensure that the General Permit-Industrial is obtained where necessary.

8.4.2 Municipal Wastewater Pre-Treatment Inspection Programs

The Cities of Corona and Riverside, which operate publicly owned treatment works (POTWs), in combination conduct annually on average, approximately 4,400 wastewater pre-treatment inspections on a variety of industrial and commercial establishments, including, but not limited to, retail food establishments, car washes, and carpet, drape & furniture cleaning establishments. When conditions are observed during these wastewater pre-treatment inspections that appear to be a violation of either the General Permit- Industrial or other permit issued by the Regional Board (for example, an individual NPDES permit or Waste Discharge Requirements), the Cities of Corona and Riverside notify Santa Ana Regional Board staff.

During commercial or industrial facility inspections, the inspectors document whether the facility:

- ◆ Appears to be in compliance with local storm water ordinances;
- ◆ If applicable, has submitted an NOI to comply with the General Permit-Industrial; and
- ◆ Appears to have poorly managed authorized non-storm water discharges or evidence of unauthorized non-storm water discharges, which may be illicit connections or illegal discharges to the MS4.

This information is documented on a separate report or included on an inspection form. Inspections resulting in enforcement action are referred to the appropriate jurisdictional entity.

8.4.3 County Business License Inspection Program

The Riverside County Department of Building and Safety has been tasked with developing a pilot project to establish a stand alone Storm Water Compliance Inspection and Enforcement Program (CIEP) for industrial/commercial facilities in the unincorporated areas of the County Ordinance 857 (Business Registration and Licensing) was adopted on September 12, 2006 by the County Board of Supervisors and provides the basis for registering all businesses that are within the unincorporated areas of the County. Once a database has been established and businesses are registered, inspections will occur to determine the compliance status of the registrants with the County's Storm Water Ordinance. Businesses that are determined to have a potential impact on the requirements of the MS4 Permit will be prioritized and inspected based upon a yet-to-be-defined compliance inspection schedule. The CIEP will be phased in over time with the initial inspections to start sometime in fiscal year 2007-2008. As the CIEP is implemented, the CAP will diminish except in the incorporated cities that rely on the CAP to meet their inspection requirements or until another compliance inspection option becomes available.

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8.5 ENFORCEMENT

If during a routine inspection or an inspection in response to a complaint, an inspector observes that a business/facility is non-compliant with the Co-Permittee's storm water ordinance (including the prohibition of non-exempt non-storm water discharges or minimum BMPs); the Co-Permittee begins enforcement procedures. As described in Section 3.4 (Legal Authority and Enforcement), the severity of the violation is based on various factors. After considering the various factors, the Co-Permittee determines the level of enforcement that is required consistent with the enforcement levels described in Table 3-3.

8.6 REGIONAL BOARD NOTIFICATION REQUIREMENTS

The Permittees notify the Regional Board when inspectors, other Permittee staff, or third parties report observing potential non-compliance of a non-Emergency Situation nature with the General Permit-Industrial or other permits issued by the State Board or Regional Board. Such notifications are made by telephone or email within 2 working days of receiving notice from its staff or a third party. Examples of non-compliance of a non-Emergency Situation nature are a facility that cannot demonstrate coverage under the General Permit-Industrial when it is apparent that it should have coverage, a facility that has coverage under the General Permit-Industrial but does not have a SWPPP available on-site, or a facility that is not properly implementing or maintaining BMPs. The Regional Board staff will then determine if an inspection and enforcement action is appropriate. Upon providing notification to the Regional Board, Permittee staff take no further action with respect to enforcement of the General Permit-Industrial. However, the Permittee continues with progressive enforcement of its ordinances at the site as described in Section 3.4.2 of the DAMP.

Notifications regarding Emergency Situations are described in Section 4.3.

8.7 INVENTORY AND REPORTING

Santa Ana Region Specific Element

For purposes of annual reporting, the Permittees developed a standardized spreadsheet for inventorying industrial and commercial facilities/businesses within their jurisdiction and the associated inspection and enforcement information. That standardized spreadsheet is shown in Figure 8-1.

Santa Margarita Specific Element

Each Permittee inventories industrial and commercial facilities/businesses within their jurisdiction on a spreadsheet similar to the one in Figure 8-1 and maintains it in their Individual SWMP. Each Permittee also reports a list of industrial facilities that may require coverage under the General Industrial Permit, and for which a NOI has not been filed in their annual reports. The annually reported list of non-filers will include name, address, and SIC code(s) of the facility.

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8.8 INDUSTRIAL/COMMERCIAL FACILITY INSPECTOR TRAINING

Co-Permittee staff and contractor personnel responsible for conducting industrial/commercial facility inspections or follow-up inspections receive annual training regarding the following topics:

- ◆ Selection, implementation, and maintenance of appropriate or minimum BMPs for industrial or commercial facilities,
- ◆ The General Permit-Industrial and NOI requirements,
- ◆ The local jurisdiction's Storm Water Ordinance and other local jurisdiction resolutions and codes related to protection of water quality,
- ◆ The local jurisdiction's enforcement and compliance strategy/policy for industrial commercial facilities
- ◆ The Third-term MS4 Permits and the DAMP, and
- ◆ How to provide guidance to facility operators on proper selection, implementation and maintenance of industrial/commercial BMPs and compliance with the requirements of the Storm Water Ordinance during site inspections.
- ◆ TMDL requirements and appropriate BMPs to mitigate the impacts of industrial and commercial facilities.

Santa Ana Region Specific Element

The Co-Permittees ensure that newly hired municipal staff or transferred municipal staff receive formal training within 6 months of beginning their inspection duties. Also, when planning formal classroom training related to conducting inspections of industrial or commercial facilities, the Co-Permittees notify and coordinate with Regional Board staff. Co-Permittee staff responsible for conducting industrial or commercial facility inspections may also attend training sponsored by industry associations (e.g., American Society of Civil Engineers, American Public Works Association, etc.), the California Storm Water Quality Association, other area-wide MS4 permittees, or other entities in lieu of Permittee sponsored training. The Permittees individually maintain a log of trained staff and report training in their annual reports.

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9.0 RESIDENTIAL SOURCES

The Residential Sources program element is applicable only to the SMR.

9.1 HIGH PRIORITY RESIDENTIAL ACTIVITIES

Each SMR Co-Permittee has identified for its own jurisdiction the high priority residential activities that it believes may be contributing a significant pollutant load to its MS4. The residential activities that have been identified as high priority by each SMR Co-Permittee's are reflected in the Individual SWMPs. In identifying their high priority residential activities, the SMR Co-Permittees considered the following activities:

- ◆ Automobile repair and maintenance
- ◆ Automobile washing
- ◆ Automobile parking
- ◆ Home and garden care activities and product use (pesticides, herbicides, and fertilizers)
- ◆ Disposal of household hazardous waste
- ◆ Disposal of pet waste
- ◆ Disposal of green waste

9.2 MINIMUM BMPs FOR RESIDENTIAL ACTIVITIES

For each of the high priority residential activities identified for their jurisdiction, the Co-Permittees have designated a set of minimum BMPs to reduce the discharge of pollutants from these activities to the MEP. These designated minimum BMPs for high priority residential activities are identified in each Co-Permittee's Individual SWMP. The proposed Minimum BMPs are consistent with the public education programs targeting residential activities in Section 10 of the DAMP.

For those residential areas that are tributary to Receiving Waters that are included in the 303(d) List as impaired, each Co-Permittee has designated additional BMPs as necessary to specifically target the pollutants contributing to the identified impairment. For those residential areas that are within, directly adjacent to, or discharging directly to Environmentally Sensitive Areas (ESAs), each Co-Permittee has designated additional BMPs as necessary to protect the ESAs. Each Co-Permittee's designated additional BMPs are reflected in their Individual SWMP.

The Co-Permittees have notified the residents of the minimum BMPs and additional BMPs (when appropriate) applicable to their residences through the Public Education program. This notification identified and included a description of the Co-Permittee's storm water ordinance.

9.3 ENFORCEMENT

If during an inspection in response to a complaint, an inspector observes that a residence is non-compliant with the local jurisdiction's storm water ordinance (including the prohibition of non-exempt non-storm

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water discharges); the Co-Permittee begins enforcement procedures. As described in Section 3.4 (Legal Authority and Enforcement), the severity of the violation is based on various factors. After considering the various factors, the Co-Permittee determines the level of enforcement that is required consistent with the enforcement levels described in Table 3-3.

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10.0 PUBLIC EDUCATION AND OUTREACH

10.1 INTRODUCTION

Public education is an essential part of a municipal storm water program. Developing programs to increase public awareness and to involve the public can be an effective method for controlling pollution associated with Urban Runoff. Emphasizing the relevant impact of Urban Runoff to each particular target audience increases the likelihood that the messages will be noticed and that the audience will support and participate in program implementation. The Permittees have developed a strong area-wide public education and outreach program.

To leverage finite resources, the public education program has frequently partnered with various entities (Riverside County's Waste Management Department, Western Riverside Council of Governments, Los Angeles County Department of Public Works, Riverside Corona Resource Conservation District, and the California Conservation Corp, etc.) to promote conservation, pollution prevention and environmental awareness. The education program also expands outreach opportunities by collaborating with entities such as Riverside County's Agricultural Commissioner and University California Cooperative Extension to promote proper use of pesticides and herbicides to specific target groups such as pesticide applicators and home gardeners.

The public education program developed an Internet website that provides information to residents and businesses about the problem of storm water pollution and offers simple storm water pollution prevention activities. The website also provides materials order form for all educational materials. The website also has a tracking mechanism for the number of queries. The website address is <http://www.floodcontrol.co.riverside.ca.us/stormwater/>.

10.2 MS4 PERMIT REQUIREMENTS

The Third-term MS4 Permits require the Permittees to continue and expand implementation of public information activities, and other appropriate outreach activities to facilitate the development and implementation of the Urban Runoff management program. In general, the Third-term MS4 Permits require the Permittees to meet the following goals:

- ◆ Incorporation of Public Involvement in the program development and implementation process.
- ◆ To continue to participate in joint outreach efforts to ensure that a consistent and effective message on Urban Runoff pollution prevention is brought to the public.
- ◆ To establish a Public Education Committee to oversee and guide the implementation of the public education program.
- ◆ Expand the existing public educational program to include a concentrated, business-specific element. This education program must include information to encourage commercial facility owners and/or operators to comply with the local jurisdiction's storm water ordinance and, where applicable, the General Permit-Industrial or other NPDES permit or Waste Discharge Requirements issued by the State Board, Santa Ana or San Diego Regional Board.

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- ◆ To target residents, including businesses, commercial, and industrial establishments.
- ◆ To measurably increase the awareness of Urban Runoff issues.
- ◆ To develop targeted BMP guidance for specific pollutants and residential and business activities, including identification of actions to prevent sewage spills.
- ◆ To develop, implement and promote a 1-800 hotline for reporting clogged storm drains, faded or missing catch basin stencils, illegal dumping from residential, industrial, construction and commercial sites into public streets, storm drains and waterbodies, and providing general Urban Runoff and BMP information.

10.3 OBJECTIVES

The public education program element has established the following guiding objectives.

Outreach Objectives:

- ◆ Foster broad public awareness of water pollution concerns;
- ◆ Increase public acceptance of pollution prevention activities to curtail everyday human behaviors that contribute to water quality problems;
- ◆ Educate/inform the general public, regulators and key local government and state decision makers on Urban Runoff conditions in Riverside County;
- ◆ Promote stewardship of local water resources.

Pollution prevention based education BMPs are a major focus of the outreach program. The outreach program includes three categories: Public Behavior, Business Activity, and Potential Pollutants. Table 10-1 identifies typical audience and outreach programs for the three categories of the outreach program.

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Table 10-1. Public Education and Outreach Methods

Category	Audience	Potential Outreach Methods
Public Behavior	Residents; General Public	• Pamphlets • Brochures • Radio • TV/Cable • Billboards • Utility Bill Inserts • Direct Mail • Newspaper Inserts • Advertisements • Community Events • Surveys • Community Presentations
	Students	• Classroom Presentations • Videos • Workbook Materials • Coloring Contests
	Home Gardeners	• Focused Brochures • Posters • Workshops • Newspaper Inserts
Business Activity	Commercial; Industrial	• Brochures • Posters • Site Inspections
	Mobile Operators (auto maintenance; vehicle washing; mobile carpet, drape and furniture cleaning; mobile steam cleaning)	• Brochures • Information at Public Permit Counters • Site Inspections (base of operations)
	Groundskeepers, landscape installation, nurseries, greenhouses	• Focused Brochures • Posters • Workshops • Newspaper Inserts • Site Inspections (base of operations)
	Architects; Developers	• Focused Brochures • Information at Public Permit Counters • WQMP and Supplement A Compliance reviews
	General Contractors; Construction Contractors	• Focused Brochures • Information at Public Permit Counters • New Development Guidelines • Site Inspections
Potential Pollutants	Users or Generators of fertilizers, pesticides, chemicals, and other pollutants	• Pamphlets • Brochures • Radio • TV/Cable • Utility Bill Inserts • Newspaper Inserts • Advertisements • Community Events • Community Presentations • Surveys • Licensing

Program Management Objectives:

- ◆ Encourage/educate/inform the regulators, Permittee personnel and other key local government and state decision makers on the purpose, use and requirements of the DAMP;
- ◆ Solicit public involvement in the development of local water quality programs;
- ◆ Focus on water quality issues specific to each Region.
- ◆ Coordinate public education efforts with adjacent storm water management programs and other related education programs to share resources, coordinate outreach efforts, and avoid costly duplication of effort; and
- ◆ Adapt public education programs and objectives, based on feedback surveys, monitoring data, and other methods, to address changing MS4 program needs and objectives.

Program management objectives serve as a management strategy for public education program implementation and development. These objectives are achieved through techniques such as local coordination meetings, participation in regional organizational efforts, advertising and outreach to adjacent programs. Table 10-2 identifies secondary objectives and typical techniques used to implement them.

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Table 10-2. Public Management Methods

Category	Potential Outreach Methods
DAMP Education (Section 10.5.2.1)	<ul style="list-style-type: none"> • Management Steering Committee • Permittee Technical Committee • Personnel Training Programs • Coordination Meetings with other Departments/Agencies • Comments on CEQA Documents
Public Participation (Section 10.5.2.2)	<ul style="list-style-type: none"> • Information at Public Permit Counters • Public Workshops • Public Notifications • Posting Notices on Web Sites • Notifying Interested Parties
Program Coordination (Section 10.5.2.3)	<ul style="list-style-type: none"> • Participation in California Association of Stormwater Quality Agencies • Participation in various Watershed Management Efforts • Direct contact with adjacent or overlapping program managers (storm water, waste, others)
Adaptive Management (Section 10.5.2.4)	<ul style="list-style-type: none"> • Surveys of attendants of public fairs and events • Online web surveys • Review of monitoring data • Participation in surveys organized and coordinated by other local/state agencies • Staff Feedback • Incorporation of new state or federal guidelines or information

10.4 IMPLEMENTATION

10.4.1 Public Education Committee

The Permittees established the Public Education Committee to provide oversight and guidance for the implementation of the public education program. The Public Education Committee includes members of the Technical Committee and is chaired by the Public Education Coordinator. The Committee meets as needed but at least twice per year.

10.4.2 Program Framework

The Public Education Program is implemented at a countywide, regional and local level. The following subsections describe how the public education program is implemented at each level.

10.4.2.1 Countywide Level

As Principal Permittee for the County's three NPDES MS4 permits, the Riverside County Flood Control and Water Conservation District acts as administrator for the Public Education program and is responsible for developing a consistent and effective message on Urban Runoff pollution prevention throughout the County. This countywide element consists of developing a program image and core message, implementing countywide education programs, and coordinating countywide events and countywide interagency activities. The countywide program maintains a consistent look, theme and focus of the public education materials in each region. Countywide activities coordinated by the District include school education programs, distribution of public education materials to countywide inspection programs, participation in state organizations such as the CASQA, coordinating with other county agencies on various advertising campaigns, developing a look and theme for all public education materials and operation of the County's 24-hour 1-800 storm water pollution hotline.

10.4.2.2 Regional Level

The public education program is also tailored for each of the three regions in the County. This approach integrates elements of the countywide program while focusing on the specific geography and water quality issues of the area and allows the program to address the impacts of local activities on local water

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quality. As Principal Permittee for each of the County's three MS4 permits, the District incorporates regional public education requirements established by each region's MS4 permit. The District also works with each region's Permittees to incorporate other regional public educational needs into that region's public education activities. Regional public education needs are established through formal and informal public education committees who discuss public education requirements and funding requirements each year. Regional public education programs may include participation in large community fairs, customized public education materials to address regional water quality issues, and participation in other local agencies regional public education efforts.

10.4.2.3 Local Level

Outside of the countywide and regional public education activities undertaken by the District on behalf of the Permittees, each Permittee may also undertake individual public education activities to address specific local needs or MS4 Permit requirements. These local activities may include distribution of public education information during construction site/business inspections; distribution of public education materials at front counters, local fairs and other community activities; and/or development of specific public education programs/materials to address specific needs.

10.5 PROGRAM COMPONENTS

The following subsections identify specific programs currently implemented by the Permittees to address program objectives. These programs are adaptively managed by the Permittees to meet the changing needs of the overall MS4 program based on changing regulations, water quality conditions, and feedback surveys.

10.5.1 Outreach Objectives

10.5.1.1 Public Behavior Education Program

The following programs are currently being implemented to foster broad public awareness of water pollution concerns; increase public acceptance of pollution prevention activities to curtail everyday human behaviors that contribute to water quality problems; and to promote stewardship of local water resources:

- ◆ **School Education Outreach.** Outreach to schoolchildren is the core to developing an environmental ethic in the next generation that can help prevent storm water pollution. The objective of this element of the public education program is implementation of a coordinated and comprehensive program that combines multiple elements – classroom or assembly presentations, teacher workshops and field events, and has the greatest potential to leave a lasting impression on school children. The program is implemented through contracts with the Riverside-Corona Resource Conservation District and the Mission Resource Conservation District. The program focuses on K through 6th grade. Videos on how to conduct an environmentally friendly car wash are passed out to secondary schools and secondary school level student organizations.
- ◆ **Brochures.** Brochures regarding illegal dumping, disposal of Household Hazardous Waste and Antifreeze, Batteries, Oil and Paint disposal information, lawn and garden maintenance

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brochures, car washing, fertilizer, pesticide and household chemical use, pet care brochure, and home garden care guide.

- ◆ **Outreach Materials.** Various materials including oil containers, dust pans, pens, pencils, etc., based on availability and budget are provided free of charge to the public at community events to promote pollution prevention activities.
- ◆ **1-800 Hot Line.** The District operates a countywide 1-800 hotline number to encourage the public to report clogged storm drains, faded or missing catch basin stencils and illegal dumping from residential, industrial, construction and commercial sites into public streets, storm drains and waterbodies. This hotline is capable of receiving reports in both English and Spanish 24 hours/day seven days per week.
- ◆ **Website.** The District operates a website that provides information on how to report illegal dumping, clogged storm drains and lack of curb markers, as well as provides information on upcoming activities, opportunities for public participation in program development, and general information about Urban Runoff pollution prevention techniques. It also provides information for kids and teachers as well as an online media library and materials order form.
- ◆ **Mailing Inserts.** The District currently distributes various public education materials as mailing inserts. Public education materials have been distributed through mailings from the County of Riverside Environmental Health Division, County Mail, County Auditor and Controller, County Libraries, County Fleet, etc.
- ◆ **Media Outreach.** The Permittees have implemented radio-advertising campaigns and are evaluating the use of billboard campaigns to communicate pollution prevention concepts and information to the public.
- ◆ **Partnerships.** The District partners with several agencies:
 - Animal Care Services. The County Community Health Services provides pet licensing and patrol services to contracted cities and unincorporated areas of the County. They routinely distribute education materials that provide guidelines for pet care activities throughout Riverside County.
 - Riverside County Waste Management. Riverside County Waste Management (RCWMD) manages the recycling and composting programs and utilizes a variety of educational materials to recommend alternatives for reducing, reusing and the recycling of unwanted hazardous products, food wastes, paper and aluminum. There has been close coordination with RCWMD to ensure that the Permittees promote the proper disposal of unwanted waste in most forms of media print, as well as at outreach events. For example, the Permittees contribute funds towards the operation and maintenance of several Antifreeze, Battery, Oil and Paint (ABOP) and Household Hazardous Waste (HHW) Recycling centers, both fixed and mobile, throughout the County. In further support of this activity, the Permittees, Environmental Health and RCWMD also coordinate on the development of several outreach materials that identify the times and locations of HHW/ABOP recycling activities. These materials include a free environmental calendar that is passed out at public events, two page fliers that are mailed to residents via the Penny Saver, as well as a brochure regarding

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HHW/ABOP disposal that describes how and where to properly dispose of HHW/ABOP items.

- Public Outreach Events. Participation in several public outreach events including Children's Groundwater Festival, Southern California Fair, Community Water Festival, Santa Margarita Watershed Clean Up, and Keep Riverside Clean and Beautiful, and Orange Blossom Festival.

10.5.1.2 Business Specific Education Program

The business education program consists of the development and distribution of formal BMP guidance for certain potentially polluting business activities including mobile detailing, automotive service center and restaurant cleaning operations; and outreach to business associations. The business specific public education program also attempts to educate businesses regarding the State Board's General Permit-Industrial. The business specific education efforts currently include:

- ◆ **Food Services Inspection Program.** This program focuses on the inspection of retail and wholesale food facilities. The Permittees have collaborated with County Environmental Health to ensure that storm water issues are discussed during food services inspections. The Registered Environmental Health Specialists (REHS) inspect over 6,700 food establishments throughout Riverside County. During these inspections food establishments are provided brochures such as entitled "What you should know for...The Food Service Industry" and the poster entitled "Good Cleaning Practices for the Food & Restaurant Industry." The materials provide food service employees, managers and owners with the best management practices that businesses should employ while performing various maintenance activities. In addition, Inspectors discuss common pollution prevention activities that food services facilities can undertake to prevent storm water pollution. The inspectors generally review appropriate methods for cleaning of dumpster and grease bin areas; replacement of leaking or dirty dumpsters; reducing liquid waste in trash and double bagging trash to prevent leaks; encouraging dry sweeping and using dry methods for spill clean up; disposing of wash water to the sanitary sewer rather than the storm drain system; stopping spills at their source; and proper maintenance of outdoor grease interceptors.
- ◆ **Industrial Business Inspection Program.** The Permittees have partnered with County Environmental Health's Hazardous Materials Management Division (HMMD) to ensure that storm water issues are discussed during HMMD's CUPA inspections of Riverside County businesses. HMMD implements the Hazardous Waste Inspection Program throughout Riverside County. Specialists in this program inspect 2,300 facilities that generate hazardous waste, evaluate hazardous waste generating industries, investigate reports illegal hazardous waste disposal, and respond to emergency spills of hazardous chemicals. During inspections, specialists routinely distribute appropriate storm water pollution prevention brochures, such as "What you should know for...Automotive Maintenance & Car Care" with a supporting poster entitled, "Keep Your Shop in Tune" to business owners. They also distribute brochures regarding the requirements of the General Permit-Industrial. In addition, Inspectors discuss common pollution prevention activities that facilities can undertake to prevent storm water pollution. Common activities discussed include proper disposal of automotive fluids; working on transmissions, engines, and miscellaneous repairs; preventing & cleaning up leaks and spills/dry method clean up; control of wastewater discharges; vehicle fueling and battery removal and storage; solvent

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and grease management; metal grinding and finishing; storing and disposal of waste; outdoor parking and wash water management during outdoor cleaning; and steam cleaning practices.

- ◆ **Construction Inspection Program.** Each Permittee inspects construction projects within its jurisdiction to ensure compliance with their local ordinances and to ensure that the site is covered under the General Permit-Construction, or equivalent Regional Water Quality Control Board Construction Permit, as appropriate. During these inspections, the inspectors discuss appropriate methods to prevent pollutants from being mobilized at construction sites.
- ◆ **Water Quality Management Plan and DAMP Section 6 Review.** The Permittees within the SAR and SMR of Riverside County review development projects within their regions for compliance with the Riverside County Water Quality Management Plan for Urban Runoff and Section 6 of the DAMP. During this review, the Permittees discuss appropriate BMPs with developers and engineers to ensure their developments incorporate reasonable site design, source control, and treatment control BMPs to protect downstream Receiving Waters.
- ◆ **Brochures.** Outdoor Cleaning Activities, General Storm Water Protection Information, General Construction and Site Supervision, Automotive Maintenance and Car Care, Outdoor Cleaning Activities, You Know... Your Facility May Need a Storm Water Permit (GIASP) and Food Service Industry.
- ◆ **BMP Posters.** Posters to address activities associated with the automotive repair industry, and the food/restaurant industry that may pose a threat to water quality and recommends BMPs that can be implemented to reduce the impact on the environment.
- ◆ **Website.** The District operates a website that provides downloadable Page Display Format (PDF) versions of brochures and posters, as well as additional information that businesses and developers can use to ensure that they are implementing appropriate BMPs at their sites. An online media library and materials order form is also available.
- ◆ **Media Outreach.** The Permittees have used radio campaigns and considered billboard campaigns to deliver pollution prevention messages to appropriate businesses.
- ◆ **Community Events.** Information and materials may be delivered to business people during trade shows, trade meetings, or other appropriate community events.

10.5.1.3 Potential Pollutants Education Program

The District has developed a number of brochures and outreach methods to address specific targeted pollutants such as fertilizers, pesticides, household hazardous waste chemicals, antifreeze, oil, batteries, and paint.

- ◆ **Partnerships.** The District partners with several agencies:
 - **Riverside County Waste Management.** Riverside County Waste Management manages the recycling and composting programs and utilizes a variety of educational materials to recommend alternatives for reducing, reusing and the recycling of unwanted hazardous products, food wastes, paper and aluminum. There has been close coordination with RCWMD to ensure that the Permittees promote the proper disposal of unwanted waste in most forms of media print, as well as at outreach events.

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- **Public Outreach Events.** Participation in several public outreach events including Children's Groundwater Festival, Southern California Fair, Community Water Festival, Santa Margarita Watershed Clean Up, and Keep Riverside Clean and Beautiful, and Orange Blossom Festival.
- ◆ **Brochures.** Brochures regarding illegal dumping, disposal of household hazardous waste and antifreeze, batteries, oil and paint disposal information, lawn and garden maintenance brochures, car washing, fertilizer, pesticide and household chemical use, pet care brochure, and home garden care guide.
- ◆ **Outreach Materials.** Various materials including oil containers, dust pans, etc., based on availability and budget are provided free of charge to the public at community events to promote pollution prevention activities.
- ◆ **1-800 Hot Line.** The District operates a countywide 1-800 hotline that local residents can use to report illegal dumping, clogged storm drains, and obtain schedules for household hazardous waste and antifreeze, batteries, oil and paint clean-up locations and schedules.
- ◆ **Website.** The District operates a website that provides information on how to report illegal dumping, clogged storm drains and lack of curb markers, as well as provides information on upcoming activities, opportunities for public participation in program development, and general information about urban runoff pollution prevention techniques. It also provides information for kids and teachers as well as an online media library and materials order form.
- ◆ **Mailing Inserts.** The District currently distributes various public education materials as mailing inserts. Public education materials have been distributed through mailings from the County of Riverside Environmental Health Division, County Mail, County Auditor and Controller, County Libraries, County Fleet, etc.
- ◆ **Media Outreach.** The Permittees have implemented radio-advertising campaigns and are looking at billboard campaigns to deliver pollution prevention concepts and information to a broader range of the public.

10.5.2 Management Objectives

In order for the DAMP to be an effective planning tool for reducing pollutants in storm water, it is essential to involve the general public in the development of compliance documents, to train Permittee staff on the purpose, requirements and implementation of the programs outlined in the DAMP, to ensure that a consistent and cost effective message is brought to the public by coordinating with other regional education programs, and to ensure that the public education message is adaptively managed to ensure that it keeps up with the most recent regulatory requirements, watershed information, and changing MS4 program needs and objectives.

10.5.2.1 DAMP Education

The Permittees have incorporated methods into their DAMP programs to ensure that regulators, Permittee personnel and other key local government and state decision makers are educated regarding the purpose, use and requirements of the DAMP. The following paragraphs describe some of the specific practices used:

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- ◆ **Management Steering Committee** – As Principal Permittee, the District chairs quarterly meetings with Permittee City Managers or Executive Officers to discuss program requirements, regulatory requirements, upcoming activities, and budgeting issues that impact the operations of their Cities/County. These meetings ensure that the top levels of each local government are aware of the changing needs and requirements of the NPDES Program.
- ◆ **Permittee Technical Committee** – Each month the District chairs a meeting of the Permittees for each of the NPDES Permit regions in Riverside County. These meetings are open to the public. Members of regulatory agencies and other local government and state agencies are invited to attend, particularly when issues affecting their operations are addressed. These meetings are used to discuss progress on DAMP development, upcoming activities, changes to the regulatory framework, and to present information on available BMP technologies. Special presentations are also occasionally made by other NPDES permit holders to discuss their programs and how they inter-relate with our programs.
- ◆ **Permittee Staff Training Programs** – The District provides staff training at least twice a year for the Permittee groups that the following four broad categories of activities: construction inspection, new development review, municipal activities, and industrial/commercial business inspection. These training programs provide a broad overview of the NPDES regulatory framework, discuss other state permits that impact Permittee activities, discuss DAMP and local ordinance requirements, and BMPs to be deployed during those activities. These programs are coordinated with Regional Board staff. The Permittees continue to review the adequacy of the existing staff training programs and continue to develop and improve them. The Permittees are also seeking to work with neighboring MS4 programs to cooperate in the development of staff training materials.
- ◆ **Coordination Meetings with other Agencies/Departments** – As needed the Permittees coordinate with other local governments and state agencies to discuss the requirements of the DAMP and the NPDES MS4 programs. These meetings are used to coordinate agency activities.
- ◆ **Comment on CEQA Documents** – Each Permittee reviews CEQA documents for public and private projects in their jurisdictions. The CEQA review includes specific questions regarding water quality and compliance with the DAMP and local ordinances. These questions help to ensure that other public and private entities are aware of water quality requirements.

10.5.2.2 Public Participation

In order for the DAMP to be an effective planning tool for reducing pollutants in storm water, it is essential to educate both the general public and other agencies on the purpose, requirements and implementation of programs outlined in the DAMP. The public participation process integrates public values into the planning, decision-making and problem-solving process. Under the public participation approach, interested and affected persons are afforded opportunities to influence the planning and decision-making process prior to the identification of a recommended solution. This approach allows solutions to public sector problems to be developed that are much more likely to be acceptable to the public and therefore implementable. The following methods may be used to facilitate the public participation process:

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- ◆ **Open Meetings** – The Permittees currently hold Technical Advisory Committee meetings regarding the ongoing development of the DAMP and related programs. These programs are open to the public and they may provide comment on any activity that the Permittees are undertaking in support of the DAMP.
- ◆ **Public Notice** – The Permittees use public notices, posted on their websites and in local newspapers, to notify the public of the upcoming development of compliance programs, or of the release of draft compliance documents. These notices identify the period in which public comment will be accepted, where public comments may be submitted, and where copies of draft documents or supporting information may be located.
- ◆ **Public Workshop** – The Permittees may use formal or informal public workshops to facilitate an interactive discussion on draft compliance documents. These public workshops are usually publicly noticed at least two weeks prior to their date and are usually held in conjunction with publicly noticed comment periods.
- ◆ **Community Meetings** – The Permittees may use Community Meetings, such as City Council Meetings, local agency meetings, or others, to solicit comments from the public and other agency staff.

10.5.23 Program Coordination

A key factor in planning a cost effective and well-organized public education program is coordinating with existing, related programs at the local, state and national level. Such Programs include storm water pollution programs being developed in counties adjacent to Riverside County and throughout California; environmental education programs at the community level offered through other local agencies, environmental organizations, or schools; and County-wide or municipal efforts to promote ride-sharing, recycling, water conservation, and proper household hazardous waste disposal. These programs are coordinated to deliver a consistent message regarding Urban Runoff to the public.

The Permittees currently coordinate activities with several agencies and entities including the San Bernardino County MS4 Program; San Diego County MS4 Program; CASQA; Riverside-Corona and Mission Resource Conservation Districts; Riverside County Environmental Health, the Farm Bureau, the Building Industry Association, Riverside County Waste Management, City of Riverside Utilities, the Auditor-Controllers Office, the Regional Water Quality Control Boards and Caltrans.

10.5.24 Adaptive Management

The success of the public education program will depend on its ability to assess its effectiveness and adapt to changing water quality issues within each region of Riverside County. At least twice a year, the public education committee, convened as an individual sub-committee or as part of a budget committee, meets to discuss the effectiveness of the Countywide and Regional public education programs, to discuss countywide and regional needs, and to discuss necessary changes to the public education program to ensure that it adapts to those needs. The following tools may be used by the Permittees to assess the effectiveness of the public education program or to determine changing needs:

- ◆ **Monitoring Data** – The Permittees are collecting storm water monitoring data from each region of Riverside County. This data is analyzed for trends in pollutant loading and to see if pollutant

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problems can be tied to particular activities or land uses. This data may be used to modify the public education program to address potential pollutant problems or activity problems within specific regions or countywide.

- ◆ **Public Surveys** – The Permittees either conduct surveys or may coordinate with surveys conducted by other agencies, to help assess the effectiveness of Permittee public education outreach activities. The Permittees have been conducting a storm water survey of attendants of various community fairs for the past three years. The Permittees also recently coordinated with the Lake Elsinore/San Jacinto Watershed Council on a phone survey of residents of the San Jacinto Watershed regarding water quality concerns. Results from these surveys will be used to adaptively manage the Permittees public education program. In addition, the Permittees Public Education subcommittee is conducting a review of the adequacy of our existing survey program and may make recommendations to modify the survey format or scope to better assess public education program effectiveness. Expansion and/or modification of the public survey program may include analysis of results from construction inspection and industrial/commercial inspection forms. The Permittees may also develop or coordinate with other agencies on other surveys, such as phone surveys or web based surveys in lieu of, or addition to, existing surveys in order to assess effectiveness.
- ◆ **Staff Feedback** – The Permittees may modify the public education program based on staff feedback or knowledge of water quality issues affecting Riverside County or specific regions of Riverside County.
- ◆ **Incorporation of New State or Federal Guidelines** – The Permittees may modify the public education program to address changes to the regulatory framework or regulatory requirements for specific DAMP related programs or activities.

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11.0 MONITORING PROGRAM

11.1 OVERVIEW OF THE CONSOLIDATED PROGRAM FOR WATER QUALITY MONITORING

As Riverside County is within the jurisdiction of three Regional Boards, a Consolidated Program for Water Quality Monitoring (Consolidated Monitoring Program or CMP) was developed in 1994 to integrate the requirements of the three area-wide MS4 Permits. The overall goal of the CMP continues to be to develop information that can be used to support effective implementation of the Urban Runoff management programs throughout Riverside County.

The purpose of the MS4 Urban Runoff program is to manage the quality of Urban Runoff to the MEP to prevent impacts to Receiving Waters. The monitoring program goals necessary to support this purpose are:

- ◆ Develop and support an effective MS4 management program.
- ◆ Identify those Receiving Waters, which, without additional action to control pollution from Urban Runoff, cannot reasonably be expected to achieve or maintain applicable Water Quality Standards.
- ◆ Characterize pollutants associated with Urban Runoff and assess the influence of urban land uses on Receiving Water quality.
- ◆ Analyze and interpret the collected data to identify trends, if any, both to prevent impairments through the implementation of preventive BMPs and to track improvements based on the MS4 management program.

The Permittees have revised the CMP to address the detailed objectives specified in the Third-term MS4 Permits⁴⁵ and to more effectively utilize finite monitoring resources. The core part of the CMP identifies general monitoring elements common to the three MS4 permits applicable to Riverside County, while appendices to the CMP address watershed-specific requirements. The Permittees have also revised the CMP to reflect an integrated watershed monitoring approach consistent with the detailed objectives specified in the Third-term MS4 Permits. The CMP addresses the following:

- ◆ TMDL/303(d) monitoring
- ◆ Microbial monitoring
- ◆ Bioassessment monitoring
- ◆ Field Reconnaissance
- ◆ Evaluation of other sources of data
- ◆ Mass emission monitoring
- ◆ Water column toxicity monitoring
- ◆ Hydrologic monitoring
- ◆ Land use correlations
- ◆ Special studies

⁴⁵ Order No. R8-2002-0011, Appendix 3 (Monitoring and Reporting Program), Section II; Order No. R9-2004-001, Monitoring and Reporting Program, Section I.

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The water quality monitoring activities require sampling and analysis from both wet weather and dry weather flows. Wet weather sampling involves weather forecasting, scheduling and mobilization of field crews, collection of representative samples from the runoff hydrograph, compositing samples, laboratory analysis, and maintenance of the laboratory analytical results in a water quality database. Dry weather flow in the MS4 indicates a source not related to a rainfall event, which may reflect an illicit connection, an illegal discharge, rising groundwater or other permitted or non-permitted non-storm water discharges. Therefore, the CMP also addresses mobilization guidance; water quality sampling procedures; quality assurance and quality control (QA/QC) procedures; data collection and analysis guidance; monitoring costs; and health and safety issues.

The CMP monitoring stations primarily sample Receiving Waters and discharges from MS4 outfalls. Receiving Water sampling locations were selected to provide baseline information of ambient water quality. The Receiving Water sampling stations include creeks, rivers, lakes, and reservoirs. A summary of the CMP stations is maintained in a sampling data base (spreadsheet format) that includes channel type, location information, nearest rain gauge, type of sampling location (MS4 outfall vs. Receiving Water), sampling methods and equipment, tributary area, and land use mix.

Santa Ana Region Specific Elements

In coordination with the Santa Ana Regional Board staff, the Permittees have identified monitoring locations that focus on areas in the SAR with elevated pollutant concentrations. The intent of these monitoring stations is to characterize Urban Runoff quality from urban land uses.

San Diego Region Specific Elements

San Diego Regional Board staff specified the monitoring locations that are to be used for the triad⁴⁶ and tributary monitoring stations and require the Permittees to identify IC/ID stations. This is intended to provide information regarding how the MS4 program as a whole is working by tracking changes in these stations over time.

The CMP is reviewed and updated annually by the Permittees in consultation with the Regional Boards based on program findings and changes in program needs, including TMDL development and implementation. The CMP is also revised to reflect modifications to procedures or to modify the location of monitoring stations as needed to incorporate new technology, address site safety deficiencies, address updated or revised sampling protocols or make other minor modifications to ensure the ongoing effectiveness of the CMP. Major revisions of the CMP, including addition or deletion of stations, or changes to monitoring constituents, are submitted for approval by the Regional Boards.

In addition, the State Board is required to develop a statewide municipal storm water (Urban Runoff) monitoring and reporting program. Once this statewide monitoring and reporting program has been developed, the Permittees will incorporate appropriate components into the CMP.

⁴⁶ A station where chemical, toxicity, and bioassessment monitoring occur.

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11.2 PARTICIPATION IN REGIONAL AND WATERSHED-BASED MONITORING EFFORTS

The Permittees participate in several regional and/or watershed based efforts that either collect monitoring data or utilize existing monitoring data.

Santa Ana Region Specific Elements

As authorized by the Third-term SAR MS4 Permit, the Permittees may participate in statewide, national, and other monitoring programs in lieu of portions of the Urban Runoff monitoring program. The Permittees also participate in special studies in collaboration with universities, research organizations or other MS4 programs. The purpose of this collaboration is to leverage finite resources to obtain information that will be beneficial on a watershed or region-wide basis. The Permittees coordinate participation in these activities with the Regional Board and summarize such participation in the Annual Report.

Santa Margarita Region Specific Elements

The Third-term SMR MS4 Permit authorizes the Permittees to participate and coordinate with federal, state, and local agencies and other dischargers in the Santa Margarita watershed in development and implementation of a regional watershed monitoring program as directed by the Executive Officer. The intent of a regional monitoring program is to maximize the efforts of all monitoring partners using a more cost-effective monitoring design and to best utilize the pooled resources of the watershed. During a coordinated watershed sampling effort, the Permittees' sampling and analytical effort may be reallocated to provide a regional assessment of the impact of discharges to the watershed.

11.2.1 Storm Water Monitoring Coalition

The District participates in the Storm Water Monitoring Coalition on behalf of the Permittees. The Storm Water Monitoring Coalition includes representatives from the Los Angeles, San Diego and Santa Ana Regional Boards and each of the Principal Permittees in Southern California (i.e., the counties of Los Angeles, Orange, San Bernardino, San Diego and Ventura), and other interested municipalities. The overall goal for the Storm Water Monitoring Coalition is to establish a Southern California storm water research and monitoring agenda that would focus on improving storm water monitoring science, coordinate data collection efforts, and evaluate the effects of storm water discharges to receiving waters specific to Southern California.

11.2.2 Santa Margarita River Executive Management Team

The latest Memorandum of Agreement (MOA) for the "Santa Margarita Watershed Water Supply Augmentation, Water Quality Protection, and Environmental Enhancement Program", Agreement No. 02-AA-35-0078, between the United States Bureau of Reclamation, The Department of the Navy, United States Marine Corps, Riverside County Flood Control and Water Conservation District, Murrieta County Water District, Rancho California Water District, Fallbrook Public Utilities District, and County of San Diego Planning and Land Use Department, was executed on May 21, 2003. This MOA is for the support and development of Phase 3A of the SMR Study. The MOA established the Santa Margarita River Executive Management Team (SMREMT). The purpose of Phase 3A was:

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- ◆ The development of a Santa Margarita River watershed water quality model,
- ◆ The evaluation of its usefulness for future TMDL development, and
- ◆ The evaluation of its usefulness to model assimilative capacity of the watershed.

Data used in development of the Santa Margarita River watershed model came from Fallbrook Public Utilities District, Rancho California Water District, Eastern Municipal Water District, Riverside County Flood Control and Water Conservation District, the Santa Margarita River Watermaster, the Pechanga, Cahuilla, Pauma, and Ramona Band of Indians, US Bureau of Indian Affairs, and the Camp Pendleton Marine Corps Base Office of Water Resources.

11.2.3 San Diego Prop 13 Santa Margarita Watershed Project Team

The County of San Diego obtained funding through a contract with the SWRCB pursuant to the Costa-Machado Water Act of 2000 (Proposition 13) to prepare a Watershed Management Plan for the Santa Margarita River watershed as required to implement California's Non-Point Source Pollution Control Program. A Watershed Management Plan is intended to be a mechanism by which watershed and land use decisions can be made with due consideration of all foreseeable effects on resources throughout the entire watershed. Due to funding limitations, the Santa Margarita River Watershed Management Plan is a less comprehensive effort that basically identifies existing water quality problems within the watershed, and potential solutions to those problems. The document can also be used to assist stakeholders who wish to pursue grant proposals.

A Technical Advisory Committee was formed to assist with the watershed planning effort. The Technical Advisory Committee consists of the U.S. Bureau of Reclamation, U.S. Forest Service, U.S. Marine Corps Base Camp Pendleton, the County of Riverside; the County of San Diego; City of Temecula; the Metropolitan Water District of Southern California, Mission Resource Conservation District, Fallbrook Land Conservancy, San Diego State University Field Station Programs, Boldt Consulting; and RB Rigger and Associates. In addition to the Technical Advisory Committee members, key stakeholders include, among others, San Diego Regional Board; the Murrieta County Water District, the Rancho California Water District, Eastern Municipal Water District, the Santa Margarita Ecological Reserve, the City of Murrieta; the Friends of Santa Margarita; and the U.S. Army Corps of Engineers.

11.2.4 Water Quality Standards Task Force

The Water Quality Standards Task Force is made up of the Principal Permittees of the San Bernardino, Orange and Riverside County MS4 programs, the Santa Ana Regional Water Quality Control Board and other interested stakeholders. The objective of the group is to review the REC-1 Beneficial Use and its assigned Water Quality Objectives to determine if they are appropriate to the needs of the Santa Ana watershed. The group is particularly focused on the appropriateness of the water quality objective for pathogens associated with REC-1.

11.3 WATER QUALITY ASSESSMENT

Precipitation and water quality data are maintained in a proprietary integrated data management system by the District. Stringent quality control procedures, including data analysis and reporting procedures, are

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implemented to ensure the integrity of the data in the data management system. Other software may be used as needed to analyze the data and create reports. The Permittees meet at least annually to review and assess available water quality data, assess overall program effectiveness, and review and update the DAMP as necessary.

Specific procedures for assessing the water quality of Receiving Waters based on existing water quality data, results from ongoing IC/ID and Monitoring Programs, and data obtained from other sources are incorporated into CMP. Variations from these procedures will be noted in the Annual Reports. When assessing water quality, the Permittees consider known impairments for Receiving Waters.

The 2006 303(d) List⁴⁷ identified some Receiving Waters in the SAR and SMR as impaired. The identified causes for the various impairments include nutrients (nitrogen and/or phosphorus), pathogens, sediment, suspended solids, and unknown toxicity. Additionally, the Regional Boards also identified Receiving Waters that require additional monitoring to improve the quantity and/or quality of the data used to develop the 303(d) List. Some Receiving Waters in the SAR and SMR were designated for additional monitoring for parameters such as metals (aluminum, copper, iron, manganese, and silver), sulfates, total dissolved solids, and salinity.

11.4 IC/ID PROGRAM

The CMP contains a general procedure used to identify and eliminate illicit discharges. The procedure will be updated as appropriate within the SAR Region. The SMR MS4 permit specifies a procedure that must be followed within the SMR.

⁴⁷ The current 303(d) List can be viewed or downloaded from the following websites:
http://www.waterboards.ca.gov/tmdl/docs/303dlists2006/final/r8_final303dlist.pdf or
http://www.waterboards.ca.gov/tmdl/docs/303dlists2006/final/r9_final303dlist.pdf.

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12.0 PROGRAM EVALUATION, REPORTING AND REVISION

12.1 ANNUAL REPORTING

Each year the Permittees prepare an Annual Report summarizing the implementation of the programs described in the DAMP for submittal to the Regional Boards. To support preparation of the Annual Reports, the Permittees submit to the District documentation of their implementation of the DAMP compliance programs utilizing standardized reporting forms. Copies of these standardized reporting forms are included in Appendix R. The reporting forms will be amended by the Permittees as needed to facilitate changes in compliance programs or more accurate reporting of compliance programs.

12.2 PROGRAM EVALUATION

The Permittees will regularly assess the component programs of the DAMP to identify improvements that will promote the reduction of pollutants in Urban Runoff to the MEP while also supporting the responsible management and allocation of the public resources available to implement the DAMP.

The short-term strategy for assessing the effectiveness of the DAMP will focus on quantitative, but indirect methods (that is, not directly based on the quality of Urban Runoff or receiving water quality) of assessment. The Permittees will track and report the following data that are believed to have a positive influence on Urban Runoff and receiving water quality:

- ◆ The estimated quantity of material removed from the MS4. (Regional and Permittees)
- ◆ The estimated quantity of material collected under litter removal and street sweeping programs. (Co-Permittees)
- ◆ The total number of construction sites inspections for storm water compliance. (Co-Permittees)
- ◆ The total number of industrial and commercial facility inspections for storm water compliance (Co-Permittees).
- ◆ The quantity of household hazardous waste material collected through the HHW Collection and ABOP Programs. (Regional)
- ◆ The number of Permittee staff receiving training for activities related to DAMP implementation. (Regional and Permittees)
- ◆ The number of Urban Runoff complaints received through hotlines. (Regional and Permittees)
- ◆ The number of illicit connections detected and eliminated. (Permittees)
- ◆ Construction outreach events conducted. (Regional and Co-Permittees)
- ◆ Industrial/Commercial outreach events conducted. (Regional and Co-Permittees);
- ◆ Media impressions. (Regional and Co-Permittees)
- ◆ Classroom presentations. (Regional)
- ◆ Public education events conducted. (Regional and Co-Permittees)

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In addition to assessing the effectiveness of the various program elements, the Permittees will conduct an assessment of the effectiveness of their overall programs. In the SMR, the Permittees will assess the overall program effectiveness using the measurable goals and direct and indirect assessment measurements described in their Individual SWMPs. The legal authority and program management elements of the Permittee programs will also be considered in this assessment. Major accomplishments and changes to be implemented in the subsequent year to improve the effectiveness of the program will be included in the evaluation.

The long-term strategy for assessing the effectiveness of the DAMP will focus on water quality data obtained as part of the CMP. This is by necessity a long-term strategy since the first step will be to develop and understand baseline data, and then due to the inherent variability of Urban Runoff, years of monitoring data will be necessary to identify statistically significant trends or conclusions. Additionally, because there are numerous program elements being implemented concurrently and because other environmental regulation indirectly impacts Urban Runoff, the ability to identify cause-and-effect relationships between a specific program element and/or BMP and improvement in the quality of Urban Runoff is complicated, if not infeasible.

12.3 DAMP REVISIONS

As part of the annual reporting process for the SAR and SMR, the Permittees review the DAMP to identify the need, if any, for revisions. The Annual Reports will include the findings of these reviews. Additionally, the Permittees will propose revisions to the DAMP under the following conditions:

- ◆ As directed by the Executive Officer to reflect regional and watershed-specific requirements and/or Waste Load Allocations developed and approved pursuant to the TMDL process for Impaired Waterbodies.
- ◆ As directed by the Executive Officer where the DAMP must be revised in order to address exceedances of Receiving Water Limitations that have been determined to be contributed to or caused by Urban Runoff.

Specific TMDL requirements and programs will also be incorporated into the DAMP as the TMDLs are incorporated into the Basin Plan. The DAMP is sufficiently flexible to allow many TMDL requirements to be incorporated without the need for revision. These requirements may include schedules for meeting interim and final Urban Runoff Waste Load Allocations, evaluating the effectiveness of BMPs and/or other control actions implemented to meet the Waste Load Allocations, and evaluating compliance with the Waste Load Allocations. Interagency Agreements or Memoranda of Agreement may be developed to identify Permittee and non-Permittee responsibility in TMDL activities. Current TMDLs that are in process include:

- ◆ San Jacinto Watershed Nutrient TMDL – Board Order R8-2004-0037
- ◆ Reach 3 Santa Ana River Bacteria TMDL – Tentative Order R8-2005-0001
- ◆ Canyon Lake Pathogen TMDL – Board Order not assigned

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The revised Riverside County DAMP will be submitted with the respective SAR or SMR ROWD. Upon approval by the Executive Officer, the Permittees will implement the DAMP revisions in accordance with the schedule included as part of the ROWD.

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13.0 TMDL IMPLEMENTATION

13.1 INTRODUCTION

The federal Clean Water Act Section 303(d) requires that states identify receiving waters that do not or are not expected to meet Water Quality Standards (beneficial uses, Water Quality Objectives and the antidegradation policy). Once a waterbody has been so identified placed on the 303(d) List of impaired waters, states are required to develop a TMDL to address each Pollutant causing impairment. A TMDL defines how much of a Pollutant a waterbody can tolerate and still meet Water Quality Standards. Each TMDL must account for all sources of the Pollutant, including: discharges from wastewater treatment facilities; runoff from homes, forested lands, agriculture, and streets or highways; contaminated soils/sediments, legacy contaminants; on-site disposal systems (septic systems) and aerial deposition.

Federal regulations require that the TMDL, at a minimum, account for contributions from point sources (permitted discharges) and contributions from non-point sources, including natural background. In addition to accounting for past and current activities, TMDLs may consider projected growth that could increase Pollutant levels. TMDLs allocate allowable Pollutant loads to each source, and identify management measures that, when implemented, will assure that Water Quality Standards are attained. State Water Code Section 13000 also requires the Regional Boards to develop implementation plans to define schedules, dischargers, tasks, and other actions necessary to attain Water Quality Standards.

This section summarizes the Permittees programs to comply with TMDL Waste Load Allocations and TMDL implementation plan tasks assigned to the Permittees. It should be noted that TMDLs are waterbody specific, and therefore do not always regulate all of the Permittees in either the SAR or the SMR. Specific Permittees identified as discharging to TMDL regulated waterbodies are identified in Tables 13-1 and 13-2. Existing TMDL Waste Load Allocations and implementation plan tasks assigned to the various Permittees as part of USEPA approved TMDLs are also summarized in Tables 13-1 and 13-2.

Several tables from Chapter 5 of the Santa Ana Region Basin Plan are summarized in this section of the DAMP. However, the Basin Plan is a living document and is amended on occasion. The Basin Plans should always be reviewed for the most accurate and up-to-date information regarding TMDL compliance requirements.

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Table 13-1. TMDLs Adopted and Approved by the Regional Board and USEPA and Associated Waste Load Allocations

Waterbody	Pollutant/Stressor	Assigned Dischargers	WLA
Canyon Lake (Resolution R8-2004-0037)	Total Phosphorus – MS4 Discharges	County of Riverside, Cities of Lake Elsinore, Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Murrieta, Riverside and Beaumont	306 kg/yr (total) based on a 10 year running average to be achieved as soon as possible, but no later than by December 31, 2020
	Total Nitrogen – MS4 Discharges	County of Riverside, Cities of Lake Elsinore, Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Murrieta, Riverside and Beaumont	3,974 kg/yr (total) based on a 10 year running average to be achieved as soon as possible, but no later than by December 31, 2020
Lake Elsinore (Resolution R8-2004-0037)	Total Phosphorus – MS4 Discharges	County of Riverside and City of Lake Elsinore	124 kg/yr (total) based on a 10 year running average to be achieved as soon as possible, but no later than by December 31, 2020
	Total Nitrogen – MS4 Discharges	County of Riverside and City of Lake Elsinore,	349 kg/yr (total) based on a 10 year running average to be achieved as soon as possible, but no later than by December 31, 2020
Middle Santa Ana River Reach 3 (Resolution R8-2005-0001)	Pathogen Indicators – MS4 Discharges	County of Riverside, Cities of Corona, Riverside and Norco	Fecal Coliform: log mean less than 200 organisms/100 ml based on five or more samples per 30 day period, and not more than 10% of the samples exceed 400 organisms/100 ml for any 30-day period to be achieved as soon as possible, but no later than December 31, 2020

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Table 13-2. Adopted TMDLs and Implementation Tasks

TMDL	Implementation Plan Task	Responsible Party
Nutrient TMDLs for Lake Elsinore and Canyon Lake (Resolution R8-2004-0037)	Task 4 – Nutrient Water Quality Monitoring Program for Lake Elsinore, Canyon Lake and the San Jacinto Watershed	County of Riverside, Cities of Lake Elsinore, Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Murrieta, Riverside and Beaumont
	Task 6 – On site Disposal Systems (Septic System) Management Plan	County of Riverside, Cities of Perris, Moreno Valley, and Murrieta
	Task 7 – Urban Discharges – Revise DAMP and WQMP	County of Riverside, Cities of Lake Elsinore, Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Murrieta, Riverside and Beaumont
	Task 9 – Lake Elsinore In-Lake Sediment Nutrient Reduction Plan	County of Riverside, Cities of Lake Elsinore, Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Murrieta, Riverside and Beaumont
	Task 10 – Canyon Lake In-Lake Sediment Treatment Evaluation	County of Riverside, Cities of Lake Elsinore, Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Murrieta, Riverside and Beaumont
	Task 11 – Watershed and Canyon Lake and Lake Elsinore In-Lake Model Updates	County of Riverside, Cities of Lake Elsinore, Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Murrieta, Riverside and Beaumont
	Task 12 – Pollutant Trading Plan	County of Riverside, Cities of Lake Elsinore, Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Murrieta, Riverside and Beaumont
Middle Santa Ana River Watershed Bacterial Indicator TMDL (Resolution R8-2005-0001)	Task 3 – Develop and Implement Watershed Wide Bacterial Indicator Water Quality Monitoring Program	County of Riverside, Cities of Perris, Moreno Valley, and Murrieta
	Task 4 – Urban Discharges – Develop Urban Source Evaluation Plan, Revise DAMP and WQMP	County of Riverside, Cities of Perris, Moreno Valley, and Murrieta

13.2 TMDL IMPLEMENTATION STRATEGY

USEPA’s Interim Permitting Approach for Water Quality Based Effluent Limitations in Storm Water Permits, 60 Federal Register 43761 (Aug 26, 1996) recognizes the need for an iterative BMP approach to control Pollutants in storm water discharges. In addition, USEPA recommends the use of the term

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"phased TMDLs" for TMDLs with significant data uncertainty where the State expects that the loading capacity and allocation scheme will be revised in the near future as additional information is collected⁴⁸.

TMDLs are often based on preliminary and incomplete data. Further, the variability in hydrologic systems and minimal data generally available make it difficult to determine with precision or certainty actual and projected loadings and load reductions for individual dischargers or groups of dischargers.

The Permittees have continued to work with the Regional Board staff to determine if it is appropriate to implement TMDL Waste Load Allocations through a phased TMDL and/or iterative BMP process. The Regional Board describes the TMDL Waste Load Allocation and implementation requirements in the TMDL implementation plan. TMDL implementation plans assign responsibilities to specific MS4 dischargers to identify sources of impairment, to propose BMPs to address those sources, and to monitor, evaluate and revise BMPs based on the effectiveness of the BMP implementation program. Once a TMDL is approved by USEPA, the Permittees begin efforts, to comply with TMDL Waste Load Allocations as defined by the TMDL implementation plan requirements. In many cases compliance efforts are already underway prior to approval of the TMDL.

Because TMDLs often regulate a broad cross-section of dischargers beyond MS4 permittees, the stakeholders generally form a task force to address implementation plan task assigned to multiple dischargers. A task force utilizes economies of scale for implementing TMDL compliance tasks and assist in the pursuit of grant opportunities. Task forces specifically are useful to develop a regional BMP compliance document, implement regional compliance monitoring, and develop stakeholder consensus on necessary recommendations regarding modification to the TMDL or Basin Plan that are necessary to protect Beneficial Uses or to recognize site specific conditions. Such Basin Plan amendments are usually submitted to the Regional Board through the Basin Plan Triennial Review Process.

13.3 PROGRAMMATIC DAMP COMPLIANCE EFFORTS

The DAMP contains several provisions that are intended to function as essential BMPs for any adopted TMDL. These BMPs form the foundation for compliance with TMDL requirements. Additional BMPs necessary to address specific TMDL Waste Load Allocations and implementation plan tasks are described in the following sections.

Programmatic TMDL BMPs:

- ◆ Permittees are required to review their CEQA processes to ensure that related TMDL issues are properly considered and addressed (Section 6.3).
- ◆ TMDL compliance requirements are discussed in formalized training prepared for the Permittees (Section 5.5, 6.5, 7.7, and 8.8).

⁴⁸ US EPA 2006. Clarification Regarding "Phased" Total Maximum Daily Loads,
http://www.epa.gov/owow/tmdl/tmdl_clarification_letter.html

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- ◆ Pollutants that are impairing downstream Receiving Waters are recommended as a high priority for violations IC/ID activities (Table 3-2).
- ◆ New Developments and Significant Redevelopments are required to implement BMPs with a high or medium effectiveness when there is a potential for Pollutants from the project site to aggravate impairments in downstream Receiving Waters (Appendix O – Section 4.3 and 4.5.3). In addition, the Permittees are developing a revised Storm Water Quality BMP Design Handbook that will further promote BMPs that are effective at addressing impairments.
- ◆ Section 2.3.5 and Section 2.4.5 summarize existing water quality issues within each watershed.
- ◆ Section 13 has been added to the DAMP to describe TMDL implementation.

13.4 LAKE ELSINORE / CANYON LAKE NUTRIENT TMDL

13.4.1 Regional Board Action History

In 1998, the Santa Ana Regional Board listed Lake Elsinore and Canyon Lake as impaired water bodies in the Clean Water Act Section 303 (d) list for excessive levels of nutrients. Lake Elsinore was also listed for low dissolved oxygen among other constituents.

In 2000, the Santa Ana Regional Board initiated the process to develop a nutrient TMDL (with response targets for Chlorophyll *a*, low dissolved oxygen, and ammonia) for Canyon Lake and Lake Elsinore, as required by the federal Clean Water Act and California's Non-point Source Pollution Control Plan. This process included the formation of the Lake Elsinore/Canyon Lake TMDL Workgroup in August 2000, as well as, the development and implementation of various in-lake and watershed water quality monitoring programs.

In December 2004, the Santa Ana Regional Board adopted the proposed Lake Elsinore and Canyon Lake nutrient TMDL Basin Plan Amendment. The Basin Plan Amendment established nutrient Waste Load Allocations and Load Allocations and included an implementation plan. The implementation plan requires stakeholders to develop various nutrient management plans and long term monitoring plans aimed at identifying appropriate lake management measures reducing nutrient discharges to Lake Elsinore and Canyon Lake and assessing the appropriateness of TMDL targets and allocations. Work on the TMDL is on-going through the efforts of the TMDL Task Force.

The Santa Ana Regional Board is in the process of developing additional TMDLs to address the Canyon Lake pathogen impairment and the Lake Elsinore PCB and toxicity impairments.

USEPA recommends the use of the term "phased TMDLs" for TMDLs with significant data uncertainty where the State expects that the loading capacity and allocation scheme will be revised in the near future as additional information is collected. The Lake Elsinore/Canyon Lake TMDL has implemented a phased approach in recognition of the limits of the current data and that optimum strategies for TMDL compliance may change with better data.

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13.4.2 TMDL Task Force

Since August 2000, TMDL Task Force efforts have been coordinated and administered through the Lake Elsinore San Jacinto Watersheds Authority (LESJWA), a joint powers authority. As a result of the adoption of the TMDL in 2004 the TMDL dischargers formally organized the existing TMDL stakeholder group into a funded TMDL Task Force in 2006. The purpose of the Task Force is to conduct studies necessary to collect data to analyze the appropriateness of the TMDL, identify in-lake and regional watershed solutions, pursue grants, coordinate activities among all of the various stakeholders, and recommend appropriate revision to the Basin Plan language regarding Lake Elsinore and Canyon Lake based on data collection and analysis.

13.4.3 Lake Elsinore San Jacinto Watersheds Authority's Role

The LESJWA was formed in April of 2000 after California voters passed Proposition 13, a bond measure to fund water projects throughout the state. Proposition 13 specifically earmarked \$15 million for LESJWA to implement projects to address the impairments in Lake Elsinore and Canyon Lake. LESJWA is made up of representatives from the Santa Ana Watershed Project Authority, Elsinore Valley Municipal Water District, the City of Lake Elsinore, the City of Canyon Lake and County of Riverside. LESJWA is charged with improving water quality and protecting wildlife habitats, primarily in Lake Elsinore, but also in Canyon Lake and the surrounding watershed.

Several LESJWA projects are central to the stakeholders TMDL compliance strategies. Specific LESJWA projects include:

- ◆ Lake Elsinore Aeration System
- ◆ Lake Elsinore Wetland Enhancement
- ◆ Lake Elsinore Carp Removal
- ◆ Lake Elsinore Axial Flow Pumps
- ◆ Lake Elsinore Island Wells
- ◆ Lake Elsinore Dredging Project

In addition, LESJWA has conducted several studies to evaluate lake conditions, alternative management measures and potential funding mechanism. These efforts form the basis of the ongoing compliance work of the TMDL Task Force. In addition, the TMDL Task Force continues to rely on the LESJWA Technical Advisory Committee for technical guidance.

13.4.4 Permittee Compliance Strategy

13.4.4.1 Implementation Plan

Due to limits in the quality of monitoring data, the Santa Ana Regional Board and dischargers agreed to incorporate USEPA's interim approach for TMDL implementation (60 FR 43761) by proposing a phased implementation of the Canyon Lake and Lake Elsinore TMDL. The TMDL also allows the dischargers until 2020 to comply with nutrient Waste Load Allocations and Load Allocations so that iterative BMP implementation can also be considered. The TMDL Implementation Plan also provides for an initial

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phase of data collection and analysis necessary to determine if a Use Attainability Analysis, Site Specific Objective or other regulatory actions such as modifications to TMDL numeric targets, Load Allocations or Waste Load Allocations are appropriate. Preliminary recommendations from the Task Force to the Regional Board are scheduled for 2010.

13.4.4.2 Overall Approach to Achieve Waste Load Allocations

As noted in the Santa Ana Regional Board TMDL Staff Report dated December 17, 2004, the costs to implement watershed based BMPs believed capable of meeting current TMDL requirements is between \$2.7 - \$40 billion dollars. These costs indicate that achieving the specified Waste Load Allocations for Urban Runoff may be infeasible. In addition, there is no guarantee that such an expenditure on watershed based BMPs would be capable of fully achieving compliance with the adopted Waste Load Allocations. The experts who conducted a peer review of the TMDL on behalf of the Santa Ana Regional Board noted that compliance with the TMDL may be infeasible.

To comply with the Lake Elsinore / Canyon Lake Waste Load Allocations, the Permittees, in conjunction with the TMDL Task Force proposed a phased BMP implementation strategy prioritizing in-lake treatments systems under development through LESJWA and the Task Force over watershed-based BMPs in order to maximize the likelihood for success and cost effectiveness. This strategy would help quantify the effectiveness of in-lake BMPs and focus initial TMDL resources toward BMPs that would most likely produce the greatest gains toward TMDL compliance.

The County of Riverside and City of Lake Elsinore, as member agencies of LESJWA, are also contributing towards the construction of the Lake Elsinore Aeration System and participating in the ongoing operations and maintenance cost of the axial flow pumps and various bio-manipulation projects such as carp removal and wetland enhancements. These projects are expected to jointly achieve the 35% reductions in in-lake phosphorous concentrations required by the TMDL. These projects may attain further reductions that can be used to offset excess nutrient discharges from other sources.

The TMDL Task Force will review the TMDL assumptions and evaluate opportunities for site specific objectives, pollutant trading strategies and integration strategies; that will be coordinated with the development of Basin Plan Amendment language with the RWQCB. If necessary the TMDLs will be revised as part of the RWQCB's Triennial Reviews at a minimum, or no later than by June 2010. In addition, the TMDL requires that models be updated to evaluate appropriateness of Waste Load Allocations and Load Allocations. These models will consider natural background loads, effects of lake water level management activities, changes in land use, changes in water use, hydrologic modifications, impacts of watershed BMPs, and in-lake water quality control projects. These model updates will help the Permittees with adaptive management of the watershed.

The Permittees have also identified feasible watershed-based BMP, such as BMPs for New Development and Significant Redevelopments that are tributary to the lakes to control the discharge of nutrients.

To comply with the initial phase of the TMDL, the Task Force would evaluate attainment of Water Quality Standards by LESJWA projects. The Task Force will also evaluate opportunities for Pollutant trading and additional steps, if required, to achieve Waste Load Allocations. Current Task Force work and studies are intended to be complete by 2010.

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The TMDL Task Force or LESJWA have obtained the following grants that help stakeholders to comply with TMDL:

- ◆ In January 2002, LESJWA received a Water Quality Planning Program “205(j) Grant” to perform the “Lake Elsinore and Canyon Lake Nutrient Source Assessment,” which was completed in January 2003.
- ◆ In August 2002, LESJWA obtained Proposition 13 funding to develop a “Nutrient Management Plan”, completed in April 2004. This Plan identified alternative implementation measures to control excess nutrients in the watersheds.
- ◆ In December 2005, the TMDL Task Force obtained, through the San Jacinto Watershed Council, a Proposition 50 grant to fund data collection.

13.4.4.3 TMDL Task specific to Permittee Dischargers

13.4.4.3.1 Task 6 of the Lake Elsinore and Canyon Lake Nutrient TMDL Implementation Plan

Task 6 of the Lake Elsinore and Canyon Lake Nutrient TMDL Implementation Plan requires that no later than 6 months after the effective date of an agreement between the County of Riverside and the Santa Ana Region Regional Water Quality Control Board (RWQCB) to implement regulations adopted pursuant to Water Code Sections 13290-13291.7, or if no such agreement is required or completed, within 12 months of the effective date of these regulations, the County and the cities of Perris, Moreno Valley, and Murrieta shall, as a group, submit a Septic System Management Plan to identify and address nutrient discharges from septic systems within the San Jacinto Watershed. The Septic System Management Plan shall implement regulations adopted by the State Water Resources Control Board pursuant to California Water Code Section 13290 – 13291.7.

Regulations promulgating Sections 13290-13291.7 are still pending. Upon adoption of these regulations by the SWRCB, the named Permittees will develop the required Septic System Management Plan in accordance with Task 6. The Septic System Management Plan may be incorporated into the DAMP and/or Water Quality Management Plan (WQMP) upon its completion.

In the interim, the County of Riverside has adopted Ordinance 856 which prohibits new septic systems in two designated areas of Quail Valley, which is within the San Jacinto Watershed. This prohibition affects 1530 lots, which constitutes 59% of the undeveloped lots in those areas. The Ordinance also mandates the connection of all existing homes in Quail Valley to a sewer system within one (1) year of its availability. In addition to this Ordinance the Department of Environmental Health is refining the review process for septic systems and has drafted revisions to County Ordinance 650 to preclude lots that would be contributory to the surfacing septic waste issue in the region.

In addition, the Permittees have partnered with the San Jacinto River Watershed Council to obtain a Prop 50 IRWM Planning Grant, which includes a task to develop a septic system management plan for the San Jacinto Watershed. The Permittees are using this grant money to initiate the development of the compliance document consistent with the requirements of Task 6. The Prop 50 IRWM Planning Grant is proposed be used to develop a map of areas of concentrated septic systems that may be adversely impacting surface waters or groundwaters within the watershed. Potential mitigation measures for these areas will also be proposed. The Prop 50 IRWM Planning Grant septic system management plan will form the basis for the final Task 6 Septic System Management Plan, which will be completed no later than 6 months after the effective date of an agreement between the County of Riverside and the Santa Ana

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Region Regional Water Quality Control Board (RWQCB) to implement regulations adopted pursuant to Water Code Sections 13290-13291.7, or if no such agreement is required or completed, within 12 months of the effective date of these regulations.

13.4.4.3.2 Task 7 of the Lake Elsinore and Canyon Lake Nutrient TMDL Implementation Plan

Task 7 of the Lake Elsinore and Canyon Lake Nutrient TMDL Implementation Plan mandates that various Urban Runoff dischargers modify compliance documents as necessary to comply with the Lake Elsinore and Canyon Lake Nutrient TMDL. Tasks 7.1 and 7.2 require the specified Permittees (County of Riverside, Cities of Lake Elsinore, Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Murrieta, Riverside and Beaumont) to modify the DAMP and WQMP (Appendix O to the DAMP), respectively to address TMDL Implementation Plan requirements. Necessary revisions to comply with Tasks 7.1 and 7.2 are incorporated throughout the DAMP and are summarized in the following paragraphs. Specifically:

- Section 13.4.4.2 summarizes the Permittees strategy for complying with the Lake Elsinore and Canyon Lake TMDL WLA assigned to the specified Permittees.
- Section 13.3 describes programmatic BMPS implemented by the Permittees to address this and other TMDLs, including public education and outreach, inspection and enforcement actions taken by the Permittees. Section 13.4.4.2 and 13.4.4.3 describes the Permittees participation in the Lake Elsinore and Canyon Lake TMDL Task Force and LESJWA and their roles in assisting the Permittees in implementing Tasks 4, 9, 10, 11 and 12 of the Lake Elsinore and Canyon Lake Nutrient TMDL Implementation Plan.
- Section 13.4.4.5 describes how the Permittees propose to address BMP Effectiveness evaluations.
- Section 13.4.4.6 describes how the Permittees propose to conduct monitoring to determine compliance with Lake Elsinore and Canyon Lake Nutrient TMDL Waste Load Allocations assigned to the Permittees.
- In addition to the compliance programs specified above, the Permittees also implement the following additional compliance programs that manage nutrient discharges to Canyon Lake and Lake Elsinore:
 - The Permittees have coordinated with local sanitary sewer operators to develop a Sanitary Sewer Overflow (SSO) response procedure designed to protect the MS4 from impacts of SSOs (Section 4.7 of the DAMP). In addition, the Permittees have summarized County Health Department regulations related to septic system management.
 - The Permittees implement a comprehensive Household Hazardous Waste collection program (Section 4.8.1 of the DAMP) designed to collect fertilizers among other potential pollutants. These collection programs help to reduce the nutrient loading from urban areas to Lake Elsinore and Canyon Lake.

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- Applicable Permittee public works projects are required to comply with WQMP requirements (Section 5.1 of the DAMP). See Section 6.4.3 of the WQMP (Appendix O) for specific WQMP requirements that address the TMDLs.
- Permittee construction projects are required to comply with the provisions of the General Construction Permit, including the preparation of a SWPPP (Section 5.2 of the DAMP). The SWPPP ensures that stormwater and non-stormwater pollutant discharges, including sediments, nutrients, and other pollutants from Permittee construction projects are mitigated.
- The Permittees developed maintenance schedules and report on BMP and MS4 maintenance activities annually (Section 5.3.1 of the DAMP). The maintenance schedules promote proper operation of publicly owned BMPs and MS4 facilities and assist with mitigating pollutant discharges from MS4s and effective pollutant removal from BMPs.
- The Permittees are required to develop, implement and maintain facility specific Pollution Prevention Plans. Section 5.3.2 of the DAMP includes a summary of applicable nutrient-related BMPs to be incorporated into the facility-specific PPPs. Nutrient management measures include BMPs for outdoor material storage, building and grounds maintenance, housekeeping practices, landscape maintenance, and water and sewer utility maintenance. Additional BMPs are identified and incorporated as necessary to address unique discharges from the facility.
- During General Plan updates, the Permittees are asked to evaluate their General Plan's ability to address several policy questions including "Are there existing or proposed TMDLs or other such regulations pertaining to receiving waters in the jurisdiction?" If so, the Permittees are asked to consider additional watershed protection principals and objectives for managing Urban Runoff (Section 6.2 of the DAMP).
- The Permittees have implemented procedures to ensure that new development and redevelopment projects address their water quality impacts (Section 6.4). These procedures include requiring developers to identify the impacts of their projects, propose appropriate BMPs to mitigate those impacts, and identify perpetual maintenance mechanisms to ensure that those BMPs will continue to function throughout the life of the development. Requirements for project types rising to WQMP status are addressed in Section 6.4.3 of the WQMP (Appendix O). Projects not rising to WQMP status, defined as "Other Development Projects" in DAMP Section 6.4.4, are also required to mitigate their impacts. Section 6.4.4 specifically notes that Other Development Projects are required to implement Site Design BMPs and Source Control BMPs. Other Development Projects may also be required to implement Treatment Control BMPs if they discharge Urban Runoff to Receiving Waters listed as impaired on the State Board's 303(d) List.
- The WQMP is designed to specifically address the TMDL requirements. Per Provision VIII.B.1 of the MS4 Permit, the Permittees must require developments of the applicable categories to implement a WQMP. Applicable projects must complete a project-specific WQMP. In the project-specific WQMP the project proponents must characterize the development site, including identification of any pollutants that may be generated by the development and legacy pollutants from previous land uses, identify any 303(d) listed waterbodies or TMDL regulated Receiving Waters within the Watershed to which they are tributary, and compare the list of pollutants for which the Receiving Waters are

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impaired with the pollutants expected to be generated by the Project (Section 4.3 of the WQMP). Pollutants associated with impairments must implement medium or high effectiveness BMPs as defined by Table 3 of the WQMP. In addition, developments must implement Site Design BMPs and Source Control BMPs designed to reduce nutrient discharges from stormwater discharges and prevent non-stormwater discharges. Site Design BMPs include minimizing Urban Runoff, conserving natural areas and minimizing directly connected impervious areas. Source Control BMPs include resident education (including garden and lawn care guides, pet waste brochures and HHW/ABOP event brochures), irrigation system and landscape maintenance restrictions, common area litter control, drainage facility inspection and maintenance, wash water controls for food preparation areas, and properly designed trash storage areas and outdoor material storage areas. Developers must also propose adequate operation, maintenance and funding mechanisms to ensure the efficacy of the BMPs for the life of the development.

- The Permittees are also developing new, more comprehensive BMP guidance for use by the Permittees and the development community to assure compliance with the nutrient WLAs for Urban Runoff. The revised guidance will focus on landscape based BMPs with infiltration components. These BMPs will be more effective at addressing nutrient sources from new development by reducing runoff volume and trapping nutrients in sand media. The Permittees are also reviewing BMP guidance recently issued by Caltrans that may more effectively address nutrient treatment and removal. The guidance will include detailed design criteria to assist in ensuring the ongoing functionality of BMPs. The Permittees expect to complete the proposed guidance by October 1, 2008.
- Construction sites that disturb an area greater than one acre and are located adjacent to, within 200 feet of, or directly discharge to an identified impaired waterbody within the Permit area are assigned a high priority for wet weather inspections (Section 7.7 of the DAMP).
- The Permittees are required to inspect a number of industrial and commercial businesses including nurseries, greenhouses, landscape and hardscape installation business base of operations, restaurants, and facilities handling hazardous wastes. The Permittees review the activities of these businesses to ensure compliance with local stormwater ordinances and the NPDES MS4 Permit. Inspectors specifically look for observations of non-stormwater discharges, potential illicit connections, and illegal discharges to the MS4, and for implementation and maintenance of appropriate minimum BMPs, including a quantitative assessment of the effectiveness of the BMPs implemented. Appropriate education materials are also distributed (Section 8 of the DAMP).

13.4.4.4 Other TMDL Tasks Including Permittee Dischargers

The following tasks outlined in the Lake Elsinore/Canyon Lake TMDL⁴⁹ are assigned to a number of stakeholders in the TMDL, including specific Permittees. Compliance documents are being prepared through the TMDL Task Force to collectively comply with the TMDL. The tasks are outlined in Table 13.2 as well as listed below:

⁴⁹ http://www.sawpa.org/tmdl/Lake_elsinore_Canyon_lake.html

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- ◆ Task 4 – Nutrient Water Quality Monitoring Program for Lake Elsinore, Canyon Lake and the San Jacinto watershed
- ◆ Task 9 – Lake Elsinore In-Lake Sediment Nutrient Reduction Plan
- ◆ Task 10 – Canyon Lake In-Lake Sediment Treatment-Evaluation
- ◆ Task 11 – Watershed and Canyon Lake and Lake Elsinore In-Lake Model Updates
- ◆ Task 12 – Pollutant Trading Plan

13.4.4.5 Effectiveness Analysis

The existing effectiveness and qualitative assessments described in Section 12 of the DAMP meet TMDL BMP evaluation requirements. In summary, the Permittees annually review their programs for indications of internal process/procedure deficiencies that need to be addressed to properly implement specified BMPs. Every five years as part of the ROWD the Permittees evaluate the overall effectiveness of their MS4 programs, including attainment of specified Waste Load Allocations and TMDL implementation plan requirements and make appropriate changes to MS4 Permit compliance programs.

13.4.4.6 Monitoring for Compliance with the TMDL

Urban Waste Load Allocation compliance monitoring is achieved through Task 4 of the TMDL Implementation Plan, which requires three separate monitoring programs (watershed-wide, Lake Elsinore, and Canyon Lake monitoring programs). The three monitoring programs are administered by the TMDL Task Force to determine compliance with TMDL Waste Load Allocations and Load Allocations. The monitoring program is supported by District staff and funding from designated Permittees. The TMDL Task Force prepares and submits annual reports on behalf of the Permittees.

In addition, the Permittees' NPDES MS4 Monitoring Program also collects data on nutrient discharges. The Permittees also participate in regional monitoring efforts sponsored by the Storm Water Monitoring Coalition, the Southern California Coastal Watershed Research Group, California Stormwater Quality Association, and other groups as appropriate. Data and conclusions from these programs are analyzed and summarized as part of the Permittees' Annual Monitoring Reports.

13.5 THE MIDDLE SANTA ANA RIVER TMDL

13.5.1 Regional Board Action History

In August 2001, the Santa Ana Regional Board initiated TMDL development to address the excess levels of pathogen indicators in Reach 3 of the Santa Ana River, Cucamonga Creek, and Mill Creek. This effort included the formation of the Middle Santa Ana River TMDL Workgroup. This workgroup (which includes representatives from cities in Riverside, San Bernardino, and Los Angeles counties, the Counties of Riverside and San Bernardino, agriculture and dairy operators, and environmental groups) worked in cooperation with Santa Ana Regional Board staff to assess pathogen indicator sources to the impaired waterbodies and identify potential mitigation measures.

The objectives of the workgroup efforts include the development and implementation of a water quality monitoring program to evaluate in-stream "pathogen indicator" concentrations. In addition, a field survey

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to evaluate the extent, frequency, and degree to which these waterbodies are used by the public for recreational activities (REC-1 and REC-2). Funding for this project has been provided in full or in part through an agreement with the State Board pursuant to the Costa-Machado Water Act of 2000 (Proposition 13) and any amendments thereto for the implementation of California's Nonpoint Source Pollution Control Program.

Beginning in February 2002, the workgroup developed and implemented an extensive pathogen water quality monitoring program. Samples were collected by Santa Ana Regional Board staff and stakeholder agencies at 10-13 locations on weekly basis during nine 30-day sampling periods. These sampling periods occurred during February, March, July and September of 2002, January and March of 2003, and from January through mid-April 2004. Agencies participating in the monitoring program included San Bernardino County Flood Control District, City of Riverside, Orange County Water District, Inland Empire Utilities Agency, and Chino Basin Watermaster. Results of this program verified significant impairments to the identified water bodies and established the basis of the Santa Ana Regional Board TMDL report.

The TMDL Workgroup also conducted a beneficial use survey of the watershed as part of the data collection effort to support the development of TMDLs for the Middle Santa Ana River watershed. The primary objective of this effort was to collect data to evaluate the extent, frequency, and degree to which the Santa Ana River channel and its Chino Basin tributaries are used by the public for recreational activities (REC-1 and REC-2). The Middle Santa Ana River TMDL was adopted by the Regional Board on August 26, 2005.

13.5.2 TMDL Task Force

In 2002 the stakeholder groups formed a TMDL Task Force. TMDL Task Force efforts have been coordinated and administered through the Santa Ana Watershed Project Authority (SAWPA) a joint powers authority. SAWPA jurisdiction extends throughout the Santa Ana watershed, crossing over multiple jurisdictional lines. Their jurisdictional scope and expertise have been instrumental in carrying out interagency functions. The purpose of the Task Force is to conduct studies necessary to collect data to analyze sources of impairments and potential mitigation measures, pursue grants, and coordinate activities among all of the various stakeholders.

The TMDL Implementation Plan also provides for an initial phase of data collection and analysis necessary to determine if a Use Attainability Analysis, Site Specific Objective or other regulatory actions such as modifications to TMDL numeric targets, Load Allocations or Waste Load Allocations are appropriate. The Storm Water Quality Standards Task Force (SWQSTF) was created to reevaluate Water Quality Standards as they relate to storm water and dry weather flows within the Watershed necessary to protect REC-1 beneficial uses. Changes to the Water Quality Standards and an evaluation of beneficial uses would be incorporated into the Basin Plan through the Triennial Review process.

A \$600,000 grant for this TMDL has been received to be used primarily for monitoring efforts. Currently a source assessment is underway to identify urban sources. In addition a Use Attainability Analysis has been conducted to very recreational uses and water contact recreations that are occurring in waters that impact the Santa Ana River. Monitoring efforts will continue to be developed through stakeholder groups.

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13.5.3 Permittee Compliance Strategy

13.5.3.1 Implementation Plan

The TMDL recognized the efforts to amend REC-1 Water Quality Standards by the SWQSTF. Therefore, per USEPA guidance, the TMDL is phased. It is expected that the SWQSTF will change the Water Quality Standards and Beneficial Uses through the Basin Plan's Triennial Review process. Phase 1 is a data collection effort. In order to properly channel funds to efforts that will result in the greatest benefit toward TMDL compliance, Phase 1 of the TMDL is pending results from the SWQSTF. Phase 2 is implementation of waste load and Load Allocation compliance strategies, which will follow Phase 1 tasks and are due to be completed by 2020.

13.5.3.2 Overall Approach to Achieve Waste Load Allocations

Once the TMDL and basin plan amendments have been adopted, the specific tasks that are assigned to all stakeholders including Permittees will be identified in this section, per the Implementation Plan.

13.5.3.3 TMDL Task specific to Permittee Dischargers

Once the TMDL and basin plan amendments have been adopted, the specific tasks that are assigned to all stakeholders including Permittees will be identified in this section, per the Implementation Plan.

13.5.3.4 Other TMDL Task which include Permittee Dischargers

Once the TMDL and basin plan amendments have been adopted, the specific tasks that are assigned to all stakeholders including Permittees will be identified in this section, per the Implementation Plan.

13.5.3.5 Effectiveness analysis

The existing effectiveness and qualitative assessments described in Section 12 of the DAMP meet TMDL BMP evaluation requirements. In summary, the Permittees annually review their programs for indications of internal process/procedure deficiencies that need to be addressed to properly implement specified BMPs. Every five years as part of the ROWD the Permittees evaluate the overall effectiveness of their MS4 programs, including attainment of specified Waste Load Allocations and TMDL implementation plan requirements and make appropriate changes to MS4 Permit compliance programs.

13.5.3.6 Monitoring for TMDLs

Urban Waste Load Allocation compliance monitoring is achieved through the TMDL Implementation Plan. The monitoring program is administered by the TMDL Task Force to determine compliance with TMDL Waste Load Allocations and Load Allocations. The monitoring program is supported by District staff and funding from the Permittees. The TMDL Task Force prepares and submits annual reports on behalf of the Permittees.

In addition, the Permittees' NPDES MS4 Monitoring Program also collects data on pathogen discharges. The Permittees also participate in regional monitoring efforts sponsored by the Storm Water Monitoring Coalition, the Southern California Coastal Watershed Research Group, California Stormwater Quality Association, and other groups as appropriate. Data and conclusions from these programs are analyzed and summarized as part of the Permittees' Annual Monitoring Reports.

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ATTACHMENT 43

MS4 Permit Improvement Guide



U.S. ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF WATER

OFFICE OF WASTEWATER MANAGEMENT

WATER PERMITS DIVISION

APRIL 2010

EPA 833-R-10-001



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

APR 14 2010

Dear NPDES Stormwater Managers,

OFFICE OF
WATER

I am pleased to announce that the Environmental Protection Agency (EPA) has completed the "Municipal Separate Storm Sewer System Permit Improvement Guide." The primary purpose of this guidance document is to assist National Pollutant Discharge Elimination System (NPDES) permit writers in strengthening municipal separate storm sewer system (MS4) permits.

This Guide contains examples of permit conditions and supporting rationale that could be used in fact sheets that accompany NPDES permits. The Guide also includes recommendations for permit writers on how to tailor the language depending on the type of permit. For example, permits covering traditional municipalities may contain different permit provisions than those covering non-traditional entities like departments of transportation, universities, and prisons.

I ask that permit writers review the permit language and corresponding discussion presented in this Guide and consider how to incorporate this, or similar, language into their MS4 permits. Some modification of the language may be necessary to make it suitable for use with specific MS4 permits, and to better tailor it to meet the needs and goals of the various permitting authorities.

The permit language suggested in this Guide is not intended to override already existing, more stringent or differently-worded provisions that are equally as protective in meeting the applicable regulations. EPA expects the permitting authority to continue to make significant progress and ensure that the intent of the regulations or more stringent requirements is captured in the permit.

In addition, EPA would like to particularly stress the following key principles:

- Permit provisions should be clear, specific, measurable, and enforceable. Permits should include specific deadlines for compliance, incorporate clear performance standards, and include measurable goals or quantifiable targets for implementation.
- Permits should contain a performance standard for post-construction that is based on the objective of maintaining or restoring stable hydrology to protect water quality of receiving waters or another mechanism as effective.

EPA has begun a rulemaking to strengthen the stormwater program. Using this Guide to improve permits represents the direction that EPA is taking to strengthen the program. This Guide is a living document that will be updated as new information for improving the stormwater program is obtained.

I appreciate your continued efforts in strengthening the NPDES municipal stormwater program. If you have any questions about this Guide or suggestions for further improvements, please contact Rachel Herbert of my staff at herbert.rachel@epa.gov or call her at 202-564-2649.

Sincerely,

A handwritten signature in cursive script that reads "Linda Y. Boornazian".

Linda Y. Boornazian, Director
Water Permits Division

CC: State Stormwater Coordinators
Association of State and Interstate Water Pollution Control Administrators

MS4 Permit Improvement Guide

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INTRODUCTION & GETTING STARTED

Purpose

The primary purpose of the MS4 Permit Improvement Guide (Guide) is to assist National Pollutant Discharge Elimination System (NPDES) permit writers in strengthening municipal separate storm sewer system (MS4) stormwater permits. The objective of the Guide is to facilitate the creation of MS4 permits which are clear, consistent with applicable regulations, and enforceable. This Guide contains examples of permit conditions and supporting rationale that could be used in fact sheets that accompany NPDES permits. Permit language should include controls that identify specific actions permittees must perform to comply with the Permit Requirements.

This Guide focuses in large part on permits for small (Phase II) MS4s. However, while the contents of the Guide are generally organized consistent with the six minimum control measures (40 CFR 123.34(b)) applicable to Phase II MS4 permits, however, permit writers may find this Guide useful for Phase I MS4 permits. In addition, the Guide specifically addresses Phase I MS4 Permit Requirements with regard to the industrial program elements set forth in the Phase I regulations at 40 CFR 122.26(d)(2)(ii) and (iv)(C). These are addressed in Chapter 7. The Guide may also be useful for "non-traditional" MS4 permittees, such as departments of transportation (DOTs), universities and prisons.

EPA has developed a Stormwater Phase II Final Rule Fact Sheet Series (www.epa.gov/npdes/stormwater/swfinal) to assist permitting authorities and permittees in understanding the Phase II regulations. Further, EPA has developed the National Menu of Stormwater Best Management Practices (www.epa.gov/npdes/stormwater/menuofbmps) which provides descriptive information in fact sheets about various best management practices associated with the Phase II six minimum control measures.

The Guide was created by reviewing numerous MS4 permits and fact sheets from around the country. Some of the example permit and fact sheet language presented in this Guide has been adapted from these permits; in those instances where existing language that meets the purpose of this document was not available, EPA has crafted new language.

Contents of this Guide

This document is divided into parts, as noted above, based largely on the six minimum control measures required in the Phase II stormwater regulations (see 40 CFR 122.34(b)). Chapters 1-6 address development and implementation of a stormwater management program (SWMP) and the six minimum control measures that must be included in the SWMP. Chapter 7 addresses industrial facilities programs relevant for Phase I MS4 permits. Chapter 8, Overall Evaluation and Adaptive Management, discusses reporting, evaluation, and tracking requirements. This Guide does not focus on the water quality provisions of the Clean Water Act, which may require more stringent requirements than those programmatic elements specified here.

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Each chapter opens with an introduction providing a brief overview of relevant regulatory requirements pertaining to the subject of the chapter. Each chapter is then divided into sections in which the following topics are addressed:

- *Example Permit Provision* – This section includes example MS4 permit language. The language has been formatted and numbered in such a way that each section corresponds directly to a permit structured in accordance with the chapter sequence of this Guide. EPA developed these examples by first surveying existing EPA and State MS4 permit language and drawing upon agency experience in implementing permits. EPA has identified the source of the language (in footnotes) if adapted from specific permits.
- *Example Permit Requirement Rationale for the Fact Sheet* – This section describes the rationale for the example permit provision. This language can assist the permit writer in developing the fact sheet, which accompanies all NPDES permits; however, it is up to the permit writer to ensure that a complete and customized version of the fact sheet accompanies the permit. Example Permit Requirement Rationale for the Fact Sheet sections often describe “requirements” or steps that “must” be taken. To the extent this language is used in these sections, it is intended to describe requirements included in the example permit provisions. It does not mean that all permits “must” include the specific “requirement” described.
- *Recommendations for the Permit Writer* (included where appropriate) – This section discusses issues the permit writer should consider in determining how to use the example permit provisions.

How to Use this Guide

This guidance includes “example” MS4 permit language for specific program elements, but is not intended to be definitive or comprehensive for all MS4 Permit Requirements.¹ EPA recommends that permit writers review the example permit language presented in this guide and consider how to incorporate this, or similar, language into MS4 permits as appropriate. Each state may have different NPDES requirements along with varied experience overseeing MS4 programs, and MS4 permittees vary widely in storm water management experience and sophistication, size, topography, precipitation patterns, land use, receiving water conditions and other factors. In most instances, EPA anticipates that permit writers will modify the language to make it suitable for specific MS4 permits, and to tailor example provisions to meet the various needs and goals that apply.

When possible, this Guide has tried to provide examples that can be used for both Phase I and Phase II permits. However, in some instances EPA has provided suggestions for how the language can be tailored to better fit within the context of a Phase I or Phase II permit. In addition, EPA acknowledges that some language presented in this Guide may be more suitable for an individual permit rather than a general permit. While EPA has presented a discussion for ways the language could be altered to fit these scenarios in Recommendations for the Permit Writer sections, it is up to the permit writer to determine the best use of the material for the permit being crafted.

¹ For example, the guide does not explicitly address provisions for compliance with CWA section 402(p)(3)(B)(ii), water quality standards, applicable wasteload allocations in TMDLs or such other conditions as the permitting authority deems necessary. For information on integrating TMDLs into stormwater permits see USEPA’s DRAFT TMDLs to Stormwater Handbook (www.epa.gov/owow/tmdl/stormwater)

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The example permit language in this Guide has been written as if the permit is a reissued permit and not an initial permit, since most MS4 permittees have been subject to NPDES permits for at least one permit term. Requirements to develop the initial SWMP are not included in this Guide since they would have been included in the first permit term. It is important that permit writers consider the different stages in the development and implementation of SWMPs when establishing permit conditions as well as the experience learned from other more advance programs. So, for example, this Guide includes brackets to indicate the place for an appropriate schedule or deadline rather than indicating specific timeframes in all instances. These examples are available to the permit writer, along with other resources such as the permittee's draft or existing SWMP document, annual reports, prior permit experience, receiving water quality information and the permit writer's best professional judgment, to issue permits suitable for their specific MS4s.

The permit language suggested in this Guide is not intended to override already existing, more stringent or differently-worded provisions that are equally as compliant in meeting the applicable regulations and protective of water quality standards. EPA expects the permitting authority to ensure that the intent of all applicable regulations is captured in the permit. States with more stringent permit provisions should continue to strengthen these provisions as the permits are reissued. This Guide includes suggestions on how to develop permit language for MS4 permittees. This Guide does not impose any new legally binding requirements on EPA, States, or the regulated community, and does not confer legal rights or impose legal obligations upon any member of the public. In the event of a conflict between the discussion in this Guide and any statute, regulation, or permit the statute, regulation or permit controls.

Terminology: SWMP and SWMP Document

This guide uses the term SWMP to refer to the stormwater management program that is required by the Phase I and Phase II regulations to be developed by MS4 permittees. The SWMP document is the written plan that is used to describe the various control measures and activities the permittee will undertake to implement the stormwater management program.

Preparing to Write an MS4 Permit

Most Phase II MS4 permittees are regulated under a general permit (with some exceptions where individual permits have been used for Phase II and non-traditional MS4 permittees). Phase I MS4 permittees are regulated under individual permits, and can include multiple co-permittees. EPA regulations require that initial MS4 permits (i.e. first permit term) set the foundation of the permittee's SWMP. For Phase II MS4 the focus is on the six minimum control measures in 40 C.F.R. 122.34(b), while the Phase I MS4 permittees are informed by the regulations at 40 C.F.R. 122.26(d). See Chapter 1 of this Guide.

As the permit writer prepares to reissue an MS4 permit, regardless of whether the permit is an individual or general permit, EPA recommends that the permit writer review, at a minimum, the following sources of information:

Past annual reports

For currently regulated MS4s, annual reports submitted by the permittee can include information that will help permit writers develop more specific and measurable Permit Requirements. The most recent annual report is usually the most helpful to review, but additional annual reports can be reviewed if time allows. If the permit writer is developing a general permit, a broad selection of

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annual reports from various permittees should be reviewed. In particular, EPA recommends that the permit writer review, at a minimum, the following specific information:

Areas of obvious strengths or weaknesses in the SWMP

- For example, is the permittee vague about specific activities (often an indicator of a weak program area), or is the permittee clearly meeting the requirements of the permit and/or going above and beyond the minimum requirements?

Trends or common compliance problems

- For example, does the permittee analyze the data to assess the most common compliance problems, and then modify their controls/programs to address these problems? For example, do they use the common compliance issues identified to target their training and outreach/education efforts for construction operators?

Level of implementation of SWMP activities (e.g., frequency and numbers of inspections, frequency of catch basin cleaning, street sweeping)

- Does the permittee report the total universe when reporting the quantity of an activity achieved? For example, if the MS4 is required to conduct industrial inspections, does it report it did 100 inspections (which may be good or bad, depending on how many it was required to inspect), or that it did 100 out of 5,000 (only 2% of the total)?

Water quality priorities for the permittee (e.g. impaired waters, TMDLs, high quality waters)

- Does the permittee's annual report describe priority pollutants for impaired waters and other water quality programs and what was done to reduce and/or eliminate their contact with stormwater? Does the SWMP target both impaired and high quality waters?

Specific sources or pollutants of concern permittee is currently focusing on

- Does the SWMP target pollutants of concern in its activities?

Level and type of enforcement currently being used by permittee

- Does the annual report provide data and summary information on the different types of enforcement actions taken (how many verbal warnings, written notes, fines, etc)?

Any trends (i.e. water quality, compliance, control measure implementation levels) being reported by Permittees which indicate success or failure of particular SWMP components

- Does the permittee analyze the data, or just report the data in the MS4 annual report?

Types of measurable goals being applied and achieved by permittees

- Has the permittee met the measurable goals stated in the permit and SWMP?

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Stormwater management program (SWMP)

Review the most current SWMP documents for potential gaps that may need to be specifically addressed in the reissued MS4 permit. EPA's *MS4 Program Evaluation Guidance* (available at www.epa.gov/npdes/pubs/ms4guide_withappendixa.pdf) can be used to assess the key elements in a SWMP.

NPDES MS4 audit reports, construction/industrial/commercial site inspection reports

Review the findings from any MS4 audits conducted during the past permit term to help identify key issues that should be addressed in the next permit. For example, if the audits identified weak or missing program elements and other controls, these should be addressed in the reissuance of the permit. Construction, industrial, and/or commercial site inspection reports for facilities within the MS4's boundary should be reviewed to determine if there are common compliance issues that should be addressed in the MS4 permit (for example, more training, more frequent inspections, more complete inventory or prioritization, etc.).

Monitoring/Information on Quality of Receiving Waters

Review any monitoring data collected by the permittee or any other entity that has collected useful monitoring data to identify potential pollutants of concern. In addition, the most recent information on impaired waters and total maximum daily loads (TMDLs) for the permit area should be reviewed. If there are waste load allocations (WLAs) applicable to the permittee, these should be addressed in the permit. If no WLA has been assigned to the MS4, the permit writer should still consider pollutants of concern identified in 303(d) lists and TMDLs when developing Permit Requirements. Such information will help identify whether more targeted permit conditions are needed to reduce the discharge of these pollutants. This Guide does not specifically address the inclusion of TMDL requirements in MS4 permits.

Permit renewal application data or past notice of intent (NOI) information

Review any permit renewal applications or NOIs submitted to establish coverage for the previous permit term. Permit writers should consider the recommendations made in the EPA "Interpretive Policy Memorandum on Reapplication Requirements for Municipal Separate Storm Sewer Systems" (www.epa.gov/npdes/pubs/owm0125.pdf) published in 1996 (40 CFR Part 122; Federal Register, Volume 61, Number 155). This document provides information which clarifies the MS4 reapplication requirements and explains that MS4 permit applicants and NPDES permit writers have discretion to customize appropriate and streamlined reapplication requirements on a case-by-case basis.

Previous MS4 permit

Finally, review any past MS4 permits to identify where permit language should be revised or completely rewritten, for example, because language was vague. This MS4 permit improvement Guide should be used help strengthen key areas in the permit.

Note that if the MS4 permit is being issued for the first time, some of the above information will not exist yet, such as past annual reports or old SWMP documents.

MS4 Permit Writing Tips

There are a few general tips to keep in mind when writing MS4 permits. First, and most importantly, permit provisions should be clear, specific, measurable, and enforceable. Permits should include specific

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deadlines for compliance, incorporate clear performance standards, and include measurable goals or quantifiable targets for implementation. Doing so will allow permitting authorities to more easily assess compliance, and take enforcement actions as necessary.

For example, the following permit provision could be strengthened: “The permittee shall demonstrate compliance with this Permit through the timely implementation of control measures and other actions to reduce pollutants in discharges to the maximum extent practicable in accordance with their SWMP...” This permit provision does not define what “timely implementation” is, allowing the permittee to determine what is timely. Timely implementation could be, although it probably was not intended to be, interpreted as meaning up to five years, or it could mean that implementation must occur within six months. In addition, “other actions” are mentioned in this provision, but they are never described. If a permit requires “other actions,” these actions should be specifically described in the permit. Finally, it is important to strike a balance of providing specific Permit Requirements while still allowing the permittee come up with innovative controls.

In addition, vague phrases such as “as feasible” and “as possible” should be avoided because they result in inconsistent implementation by permittees and difficulties in permit authority oversight and enforcement. The permit writer’s role is to determine what is necessary to achieve in a permit term, and to develop clear, enforceable language that conforms to these determinations. Accordingly, the permit should set forth objective standards, criteria or processes, which will aid the permittee in complying with the permit, as well as the permitting authority in determining compliance in the MS4 permit.

In order for permit language to be clear, specific, measurable and enforceable, each Permit Requirement will ideally specify:

- *What* needs to happen
- *Who* needs to do it
- *How much* they need to do
- *When* they need to get it done
- *Where* it is to be done

For each Permit Requirement: “What” is usually the stormwater control measure or activity required. “Who” in most cases is implied as the permittee (although in some cases the permitting authority may need to specify who exactly will carry out the requirement if there are co-permittees). “How much” is the performance standard the permittee must meet (e.g., how many inspections). “When” is a specific time (or a set frequency) when the stormwater control measure or activity must be completed. “Where” indicates the specific location or area (if necessary). These questions will help determine compliance with the permit requirement.

The Use of Partnerships in MS4 Permits

Since the Phase II Rule applies to all small MS4s within an urbanized area regardless of political boundaries it is very likely that multiple governments and agencies within a single geographic area are subject to MS4 permitting requirements. For example, a city government that operates a small MS4 within an urbanized area may obtain permit coverage under a general Phase II permit while other MS4s in the same vicinity (such as a county, other cities, or a state DOT) may have individual Phase I MS4 permits. All permittees are responsible for permit compliance in their permitted area. Given the

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potential for overlapping activities in close proximity, EPA encourages permittees in a geographic area to establish cooperative agreements in implementing their stormwater programs. Partnerships and agreements between permittees and/or other agencies can minimize unnecessarily repeating activities and result in using available resources as efficiently as possible. Using existing tools and programs instead of creating new ones can allow permittees to focus resources on high priority program components instead. In addition by forming partnerships, water quality can be examined and improved on a larger, consolidated scale rather than on a piece-meal, site-by-site basis.

In addition to requiring MS4 permittees to maintain records of program implementation such as inspection forms, monitoring data, dry weather screening reports, and notices of violation, EPA recommends that MS4 permits include requirements for permittees to summarize and analyze data and submit the analysis to the permitting authority. For example, as permittees are required to evaluate program compliance and appropriateness of best management practices, the permit could require permittees to address in annual reports questions such as:

- For illicit discharge data, what are the most prevalent sources and pollutants in the illicit discharge data, and where are these illicit discharges occurring? How many illicit discharges have been identified, and how many of those have been resolved? How many outfalls or screening points were visually screened, how many had dry weather discharges or flows, at how many were field analyses completed and for what parameters, and at how many were samples collected and analyzed? Does the permittee need to conduct more inspections in these areas, or develop more specific outreach targeting these sources and pollutants?
- For the construction data, what are the most common construction violations, and are there any trends in the data (e.g., construction operators who receive more violations than others, areas of the MS4 with more violations, need to refine guidance or standards to more clearly address common violations) How has the permittee responded to these trends? Over the last year, how many construction site SWPPP reviews were completed and approved? How many inspections were conducted, how many noncompliant sites were identified, and how many enforcement actions (and of what type) were taken?

Also, although the stormwater Phase II rule requires reports, after the first permit term, reports are required to be submitted only in years two and four of the permit term. EPA strongly encourages annual reports for all permittees. (See 40 CFR 122.34(g)(3))

CHAPTER 1: ESTABLISHMENT OF THE STORMWATER MANAGEMENT PROGRAM

Introduction

An over-arching legal authority framework must be established in order for the SWMP to be effective. Ensuring that the permittee has established the legal authority to meet the requirements of the permit, created a well described enforcement response plan (ERP), and allocated adequate resources will set a necessary foundation for the SWMP.

Legal Authority

Permittees must have the authority to carry out all aspects of their stormwater management programs, including requiring the control of pollutants flowing into the MS4 system, having access to inspect sources of pollutant discharges, and being able to compel compliance and issue citations in the event of violations. Legal authority is especially critical for construction site runoff control, post-construction/permanent runoff control, industrial and commercial inspections, and illicit discharge detection and elimination programs. (See 40 CFR 122.26(d)(2)(i) and 40 CFR 122.34(b)(3)(ii)(B), (b)(4)(ii)(A), and (b)(5)(ii)(B))

A permittee seeking permit coverage under individual permits is required to describe the legal authority it has to implement and enforce the SWMP. EPA recommends that general permits also require regulated MS4s to describe their applicable legal authority in their Notices of Intent (NOIs) (40 CFR 122.26(d)(2)(i), 122.33(b)). This legal authority is typically established through the adoption of one or more ordinances, or by modifying existing ordinances to provide the necessary authority. In some cases, a permittee might already have codified water quality provisions to address previous MS4 Permit Requirements; in this case, the permittee should be required to review existing codes and ordinances and prepare a statement detailing any necessary changes required to address the new MS4 permit requirements. Some permittees, such as, DOTs, universities, and prisons, may not have the authority to create and enforce ordinances. For these entities other mechanisms and authorities that they do possess should be utilized (e.g. DOT right-of-way permits).

Enforcement Measures and Tracking

Permittees are required by the Phase I and Phase II regulations to include in their ordinance, or other regulatory mechanism, penalty provisions to ensure compliance with construction and industrial requirements, to require the removal of illicit discharges, and to address noncompliance with post-construction requirements. In complying with these requirements, EPA recommends the use of enforcement responses that vary with the type of permit violation, and escalate if violations are repeated or not corrected. EPA recommends that the permittee be required to develop and implement an enforcement response plan (ERP), which clearly describes the action to be taken for common violations associated with the construction program, industrial and commercial program, or other SWMP programs. A well-written ERP provides guidance to inspectors on the different enforcement

Included Concepts

- ▶ Requirement to develop a stormwater management program
- ▶ Necessary legal authority
- ▶ Enforcement Measures and Tracking
- ▶ Adequate resources

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responses available, actions to address general permit non-filers, when and how to refer violators to the State, and how to track enforcement actions.

Adequate Resources

Each permittee will fund its SWMP differently; therefore, in order to assess whether adequate resources have been allocated to carry out the requirements of the MS4 permit, the permitting authorities should require their permittees to submit an accounting of stormwater-related budgets, costs, and staffing resources updated annually. The fiscal analysis should document and explain changes to budgets from year to year and describe how each type of funding can and cannot be used for stormwater program activities. (See 40 CFR 122.26(d)(2)(vi)).

1.1 Requirement to Develop a Stormwater Management Program

Example Permit Provision

- 1.1.1 Requirement to Develop Program – The permittee must revise and update its written stormwater management program (SWMP) document and submit the SWMP to the [insert name of Permitting Authority] for review by [insert deadline, e.g., within one year of permit issuance]. The permittee must continue to implement the current SWMP until the revised SWMP is submitted. The SWMP does not contain effluent limitations; the limitations are contained in Parts [insert relevant part of the permit] of the permit.
- 1.1.2 Contents of the SWMP document – At a minimum, the permittee must include the following information in its SWMP document:
- a. Ordinances, or other regulatory mechanisms, providing the legal authority necessary to implement and enforce the requirements of this permit (see Part 1.1);
 - b. Statement by the permittee's legal counsel certifying to adequacy of legal authority (see Part 1.2);
 - c. Written procedures describing how the permittee will implement provisions described in Parts 2-8.
- 1.1.3 Modifications to the SWMP document – The [insert applicable name of permitting authority] may notify the permittee of the need to modify the SWMP document to be consistent with the permit, in which case the permittee will have [insert deadline, e.g. 90 days] to finalize such changes to the program. The permittee is required to keep the SWMP document up to date during the term of the permit. Where the permittee determines that modifications are needed to address any procedural, protocol, or programmatic change, such changes must be made as soon as practicable, but not later than [insert deadline, e.g. 90 days].

Example Permit Requirement Rationale for the Fact Sheet

The permittee is required to develop a SWMP document that describes how the permittee will meet the control requirements in the permit. (See 40 CFR 122.26(d)(2)(iv), 122.34(a)). The SWMP document is a consolidation of all of the permittee's relevant ordinances or other regulatory requirements, the description of all programs and procedures (including standard forms to be used for reports and inspections) that will be implemented and enforced to comply with this permit and to document the selection, design, and installation of all stormwater control measures. The permittee is required to submit its SWMP document to the permitting authority. If modifications to the SWMP are necessary then the permitting authority will notify the permittee.

Recommendation for the Permit Writer

The permit writer should include in this section the relevant parts of the permit that require specific descriptions or justifications to be included in the SWMP document. Also, permit writers may need to include an additional requirement regarding the submittal of the SWMP document since some information contained in the SWMP document is required to be submitted prior to the permittee obtaining permit coverage. In addition, permit writers should refer to the memo entitled *Interim Guidance on Implementation of NPDES Regulations for Storm Water Phase II for Small Municipal Separate Storm Sewer Systems in Response to Recent Ninth Circuit Decision in Environmental Defense Center, et al. v. EPA, No. 00-70014 & consolidated cases (9th Cir.)* for additional guidance on the implementation of regulations for Phase II MS4s (www.epa.gov/npdes/pubs/interim_guidelines_memo_final.pdf).

1.2 Requirement to Develop Adequate Legal Authority to Implement and Enforce Stormwater Management Program

Example Permit Provision

- 1.2.1 Within [insert deadline, e.g., one year from permit issuance] the permittee must review and revise its relevant ordinances or other regulatory mechanisms, or adopt any new ordinances or other regulatory mechanisms that provide it with adequate legal authority to control pollutant discharges into and from its MS4, and to meet the requirements of this permit.
- 1.2.2 To be considered adequate, this legal authority must, at a minimum, address the following:
- a. Authority to Prohibit Illicit Discharges – Prohibit and eliminate illicit connections and discharges to the MS4. Illicit connections include pipes, drains, open channels, or other conveyances that have the potential to allow an illicit discharge to enter the MS4. Illicit discharges include all non-stormwater discharges except fire fighting discharges, discharges from NPDES permitted industrial sources and discharges not otherwise authorized under Part 1.2.2.b. of this permit.

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- b. Allowable Non-Stormwater Discharges – Exceptions to the prohibition in Part 1.2.2.a. may include the following, only if they are considered non-significant contributors of pollutants: water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20)) to separate storm sewers, uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, and street wash water.
- c. Authority to Prohibit Spills or Other Releases – Control the discharge of spills, and prohibit dumping or disposal of materials other than stormwater into the MS4.
- d. Authority to Require Compliance – Require compliance with conditions in the permittee’s ordinances, permits, contracts, or orders (i.e., hold dischargers accountable for their contributions of pollutants and flows).
- e. Authority to Require Installation, Implementation, and Maintenance of Control Measures – Require owners/operators of construction sites, new or redeveloped land, and industrial and commercial facilities to minimize the discharge of pollutants to the MS4 through the installation, implementation, and maintenance of stormwater control measures consistent with *[insert references to applicable stormwater control measure manuals, guidance documents, etc.]*.
- f. Authority to Receive and Collect Information – The permittee must have the authority to request from operators of construction sites, new or redeveloped land, and industrial and commercial facilities information such as stormwater plans, inspection reports, and monitoring results, and other information deemed necessary to assess compliance with this permit. The permittee must also have the authority to review designs and proposals for new development and redevelopment to determine whether adequate stormwater control measures will be installed, implemented, and maintained.
- g. Authority to Inspect – The permittee must have the authority to enter private property for the purpose of inspecting at reasonable times any facilities, equipment, practices, or operations related to stormwater discharges to determine whether there is compliance with local stormwater control ordinances/standards or requirements in this Permit.
- h. Response to Violations – The permittee must have the ability to promptly require that violators cease and desist illicit discharges or discharges of stormwater in violation of any ordinance or standard and/or cleanup and abate such discharges, including the ability to:
 - 1. Effectively require the discharger to abate and clean up their discharge, spill, or pollutant release within *[insert deadline, e.g. 48 hours]* of notification; or
 - 2. For uncontrolled sources of pollutants that could pose an environmental threat, require abatement within *[insert timeframe, e.g. 30 days of notification]*; or,

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3. Perform the clean up and abatement work and bill the responsible party, if necessary.
 4. If a situation persists where pollutant-causing sources or activities are not abated, provide the option to order the cessation of activities until such problems are adequately addressed.
 5. When all parties agree that clean-up activities cannot be completed within the timeframe provided, determine a new timeframe and notify the *[insert name of permitting authority]*.
- i. Monetary Penalties – The permittee must have the ability to:
 1. Levy citations or administrative fines against responsible parties either immediately at the site, or within a few days.
 2. Require recovery and remediation costs from responsible parties.
 - j. Civil/Criminal Penalties – The permittee must have the ability to impose more substantial civil or criminal sanctions (including referral to a city or district attorney) and escalate corrective response, consistent with its enforcement response plan developed pursuant to Part 1.3, for persistent non-compliance, repeat or escalating violations, or incidents of major environmental harm.
 - k. Interagency Agreements – Control of the contribution of pollutants from one portion of the shared MS4 to another portion of the MS4 through interagency agreements or other similar agreements with other owners of the MS4, such as *[insert other applicable permittees]*.
- 1.2.3 The permittee must include as part of its written SWMP document a statement certified by its chief legal counsel that the permittee has taken the necessary steps to obtain and maintain full legal authority to implement and enforce each of the requirements contained in this permit. This statement must include:
- a. Identification of all departments within the permittee's jurisdiction that conduct stormwater-related activities and their roles and responsibilities under this permit. Include an up-to-date organizational chart specifying these departments, key personnel, and contact information.
 - b. Identification of the local administrative and legal procedures and ordinances available to mandate compliance with stormwater-related ordinances and therefore with the conditions of this permit.
 - c. A description of how stormwater related-ordinances are implemented and appealed.
 - d. A description of whether the municipality can issue administrative orders and injunctions, or whether it must go through the court system for enforcement actions.

Example Permit Requirement Rationale for the Fact Sheet

Adequate legal authority is required to implement and enforce most parts of the SWMP. (See 40 CFR 122.26(d)(2)(i) and 40 CFR 122.34(b)(3)(ii)(B), (b)(4)(ii)(A), and (b)(5)(ii)(B)). Without

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adequate legal authority the MS4 would be unable to perform many vital SWMP functions such as performing inspections and requiring installation of control measures. In addition, the permittee would not be able to penalize and/or attain remediation costs from violators.

Recommendations for the Permit Writer

A major difference between a traditional MS4 and a non-traditional MS4 (such as a DOT, military base, or university) is often the scope of legal authority available to the MS4. Non-traditional MS4 permittees often cannot pass "ordinances" nor do they have enforcement authority like a typical municipality, so legal authority may consist of policies, standards, or specific contract language. Non-traditional MS4 permittees also do not generally have the authority to impose a monetary penalty. Although these differences exist, just like traditional MS4s, non-traditional MS4s must have the legal authority to develop, implement, and enforce the program. Moreover, the scope of legal authority that may be exercised by MS4 operators that are municipalities may vary from state to state. Therefore, permit writers should tailor the legal authority section depending on the types of permittees covered and the scope of authority that may be exercised by the permittee. For example, non-traditional MS4 permittees often have authority over what their contracts require. Therefore, the permit could require that contracts for construction and maintenance activities include specific stormwater requirements that ensure the permittee's requirements are met. In addition, cooperative agreements could be maintained with those permittees that do possess the legal authorities to enforce stormwater measures within the permittee's MS4 boundary.

The discharge prohibitions listed in Part 1.2.2 are taken from the Phase II regulations and are the minimum requirements. Note that, unlike Phase II MS4s, Phase I MS4 permittees are required to address the sources of non-stormwater discharges in Part 1.2.2.b. when they are identified as sources of pollutants in stormwater discharges. (See 40 CFR 122.26(d)(2)(iv)(B)). The permit writer may choose to apply additional or more stringent prohibitions. For example, some states have chosen to prohibit discharges from street washing activities as they can be significant sources of pollutants such as oil and grease and heavy metals.

1.3 Enforcement Measures and Tracking

Example Permit Provision

1.3.1 The permittee must continue to implement, and revise within [*specify deadline for completion, e.g. 12 months of permit issuance*] if necessary, an enforcement response plan (ERP), which sets out the permittee's potential responses to violations and addresses repeat and continuing violations through progressively stricter responses as needed to achieve compliance. The ERP must describe how the permittee will use each of the following types of enforcement responses based on the type of violation:

- a. Verbal Warnings – Verbal warnings are primarily consultative in nature. At a minimum, verbal warnings must specify the nature of the violation and required corrective action.

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- b. **Written Notices** – Written notices of violation (NOVs) must stipulate the nature of the violation and the required corrective action, with deadlines for taking such action.
 - c. **Escalated Enforcement Measures** – The Permittee must have the legal ability to employ any combination of the enforcement actions below (or their functional equivalent), and to escalate enforcement responses where necessary to address persistent non-compliance, repeat or escalating violations, or incidents of major environmental harm:
 1. **Citations (with Fines)** – The ERP must indicate when the permittee will assess monetary fines, which may include civil and administrative penalties.
 2. **Stop Work Orders** – The permittee must have the authority to issue stop work orders that require construction activities to be halted, except for those activities directed at cleaning up, abating discharge, and installing appropriate control measures.
 3. **Withholding of Plan Approvals or Other Authorizations** – Where a facility is in non-compliance, the ERP must address how the permittee’s own approval process affecting the facility’s ability to discharge to the MS4 can be used to abate the violation.
 4. **Additional Measures** – The permittee may also use other escalated measures provided under local legal authorities. The permittee may perform work necessary to improve erosion control measures and collect the funds from the responsible party in an appropriate manner, such as collecting against the project’s bond or directly billing the responsible party to pay for work and materials.
- 1.3.2 Enforcement Tracking** – The Permittee must track instances of non-compliance either in hard-copy files or electronically. The enforcement case documentation must include, at a minimum, the following:
- a. Name of owner/operator of facility or site of violation
 - b. Location of stormwater source (i.e., construction project, industrial facility)
 - c. Description of violation
 - d. Required schedule for returning to compliance
 - e. Description of enforcement response used, including escalated responses if repeat violations occur or violations are not resolved in a timely manner
 - f. Accompanying documentation of enforcement response (e.g., notices of noncompliance, notices of violations)
 - g. Any referrals to different departments or agencies
 - h. Date violation was resolved.
- 1.3.3 Recidivism Reduction** – The permittee is required to identify chronic violators of any SWMP component and reduce the rate of noncompliance recidivism. The permittee

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must summarize inspection results by these chronic violators and include incentives, disincentives, or an increased inspection frequency at the operator's sites.²

Example Permit Requirement Rationale for the Fact Sheet

The permit requires permittees to have an established, escalating enforcement policy that clearly describes the action to be taken for common violations. The policy must describe the procedures to ensure compliance with local ordinances and standards, including the sanctions and enforcement mechanisms that will be used to ensure compliance. (See 40 CFR 122.26(d)(2)(i)). It is critical that the MS4 have the authority to initiate a range of enforcement actions to address the variability and severity of noncompliance. Enforcement responses to individual violations must consider criteria such as magnitude and duration of the violation, effect of the violation on the receiving water, compliance history of the operator, and good faith of the operator in compliance efforts. Particularly for construction sites, enforcement actions must be timely in order to be effective.

Recommendations for the Permit Writer

Typical enforcement mechanisms include verbal warnings, written NOVs, administrative fines and orders, stop work orders, and civil or criminal penalties. Some non-traditional MS4 permittees, such as DOTs and universities, may not have the authority to use the mechanisms described above. Therefore the enforcement requirements in the permit should take the permittee's enforcement limitations and abilities into consideration, allow for alternative mechanisms such as related contract obligations or right-of-way permits, and/or require entities that cannot enforce to coordinate with those entities that can. For example, if a DOT discovers an illicit discharge to the right-of-way, a mechanism should be in place for the DOT to communicate with the adjacent municipality to eliminate the discharge in a timely manner.

Some permit writers include specific language as to when permittees can refer violations of NPDES permits to the permitting authority. Because of the often similar control measures required in MS4 construction programs and NPDES CGP SWPPP requirements, permit writers want the permittee to make an honest effort at achieving compliance with their local requirements before referring a violator to the NPDES permitting authority. An example of permit language on NPDES referrals, which require the MS4 permittee to make a good faith effort at ensuring compliance by conducting at least two inspections and notices of violation, follows:

NPDES Permit Referrals—For those construction projects or industrial facilities subject to the *[insert name of applicable NPDES general construction/industrial permit]*, the permittee must:

² Adapted from 2009 San Francisco Bay Municipal Regional Stormwater Permit (Order No. R2-2009-0074; www.swrcb.ca.gov/sanfranciscobay/board_decisions/adopted_orders/2009/R2-2009-0074.pdf) and the Los Angeles MS4 Permit (Part 3; www.swrcb.ca.gov/rwqcb4/water_issues/programs/stormwater/municipal/ms4_permits/los_angeles/2001-2007/LA_MS4_Permit2001-2007.pdf)

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- a. Refer non-filers (i.e., those facilities that cannot demonstrate that they obtained permit coverage) to the [insert name of permitting authority] within [insert number of days, e.g. 30 days] of making that determination. In making such referrals, the permittee must include, at a minimum, the following documentation:
1. Construction project or industrial facility location.
 2. Name of owner or operator.
 3. Estimated construction project size or type of industrial activity (including SIC code if known).
 4. Records of communication with the owner or operator regarding filing requirements.
- b. Refer violations to the [insert name of permitting authority] provided that the permittee has made a good faith effort of progressive enforcement to achieve compliance with its own ordinances. At a minimum, the permittee's good faith effort must include documentation of two follow-up inspections and two warning letters or notices of violation. In making such referrals, the permittee must include, at a minimum, the following documentation:
1. Construction project or industrial facility location
 2. Name of owner or operator
 3. Estimated construction project size or type of industrial activity (including SIC code if known)
 4. Records of communication with the owner or operator regarding the violation, including at least two follow-up inspections, two warning letters or notices of violation, and any response from the owner or operator

It is important to note that a referral to the permitting authority does not relieve the MS4 from its enforcement obligations. The MS4 must continue to work with the permitting authority, using all available enforcement authority in order to gain compliance.

1.4 Requirement to Ensure Adequate Resources to Comply with MS4 Permit

Example Permit Provision

- 1.4.1 Secure Resources – The permittee must secure the resources necessary to meet all requirements of this permit.
- 1.4.2 Annual Fiscal Analysis – The permittee must conduct an annual analysis of the capital and operation and maintenance expenditures needed, allocated, and spent as well as the necessary staff resources needed and allocated to meet the requirements of this permit, including any development, implementation, and

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enforcement activities required. The analysis must include estimated expenditures for the reporting period, the preceding period, and the next reporting period and be submitted with the annual report.

- a. Each analysis must 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.
- b. Each analysis must include a narrative description of circumstances resulting in a [insert percentage, e.g. 25 percent or greater] annual change for any budget line items.
- c. Each analysis must include a description of the staff resources necessary to meet the requirements of this permit.

Example Permit Requirement Rationale for the Fact Sheet

The annual fiscal analysis will show the allocated resources, expenditures, and staff resources necessary to comply with the permit, and implement and enforce the permittee's SWMP. (See 40 CFR 122.26(d)(2)(vi)). The annual analysis is necessary to show that the permittee has adequate resources to meet all Permit Requirements. The analysis can also show year-to-year changes in funding for the stormwater program. A summary of the annual analysis must be reported in the annual report (see Section 8.4 and Appendix A). This report will help the Permitting Authority understand the resources that are dedicated to compliance with this permit, and to implementation and enforcement of the SWMP, and track how this changes over time.

Recommendations for the Permit Writer

Permit writers should be specific when requesting financial analysis information from the permittee. The Annual Report Template provided in this Guide includes basic questions that should be adequate for Phase II MS4s. However, more detailed information may be warranted from more established programs and larger Phase I MS4s.

Because stormwater is a component in many different program areas, it can often be difficult to get an accurate accounting of costs. For example, inspection staff may have multiple responsibilities in addition to stormwater inspections. Is it appropriate to count an entire inspector's time (i.e. full-time equivalent (FTE)) as a stormwater cost if the inspector is also doing building inspections? Also, some permittees count street sweeping as a stormwater compliance cost, while others consider their street sweeping costs as an aesthetic or air quality cost. Permittees should provide a detailed breakdown of costs, along with background or additional discussion so the permit writer knows what the costs include.

CHAPTER 2: PUBLIC EDUCATION AND OUTREACH/PUBLIC INVOLVEMENT

Introduction

The Phase II Regulations require MS4 permittees to develop programs to educate the public about the impact of stormwater discharges on local waterways and the steps that citizens, businesses, and other organizations can take to reduce the contamination of stormwater (40 CFR 122.34(b)(1),(2)). Phase I MS4 permittees were also required to describe their proposed public education programs as part of their initial permit application, but the regulations are not as specific as Phase II. (See 40 CFR 122.26(d)(2)(iv) (B), (D)(4) and (A)(6)).

Included Concepts

- ▶ Developing a comprehensive stormwater education/outreach program
- ▶ Involving the public in planning and implementing the SWMP

As the public gains a greater understanding of the benefits of stormwater management, an MS4 is likely to gain more support for the SWMP (including financial support) and increased compliance with the applicable regulatory requirements as the public understands how their actions impact water quality. Education and awareness programs help change human behavior with respect to reducing the amount of pollution generated from stormwater sources within the MS4 system. In addition to education, encouraging public participation in local stormwater programs can lead to program improvement as well as enabling people to identify and report a pollution-causing activity, such as spotting an illicit discharge.

2.1 Developing a Comprehensive Stormwater Education/Outreach Program

Example Permit Provision

2.1.1 The permittee must:

- a. Continue to implement, and revise if necessary within [*specify the time when the development of the program must be completed, e.g., within the first year after permit issuance*], a comprehensive stormwater education/outreach program.

The program must, at a minimum:

1. Define the goals and objectives of the program based on at least three high priority, community-wide issues (e.g. reduction of nitrogen in discharges from the MS4, promoting pervious techniques used in the MS4);
2. Identify and analyze the target audience(s);
3. Create an appropriate message(s) based on at least three targeted residential issues and three targeted industrial/commercial issues from the suggested list below (or three issues deemed more appropriate to the MS4):

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<u>Residential Community</u>	<u>Industrial/Commercial Community</u>
<ul style="list-style-type: none"> • Residential car washing and auto maintenance control measures • Off-pavement automobile parking • Home and garden care activities (pesticides, herbicides, and fertilizers) • Disposal of household hazardous waste (e.g. paints, cleaning products) • Snow removal activities • Using techniques that keep water onsite and/or reduce imperviousness (rain barrels, rain gardens, porous pavers, permeable concrete, porous asphalt, etc.) • Litter prevention • Importance of native vegetation for preventing soil erosion • Public reporting of water quality issues • Community activities (monitoring programs, environmental protection organization activities, etc.) • Pet and other animal wastes 	<ul style="list-style-type: none"> • Automobile repair and maintenance Control measures • Control measure installation and maintenance • Lawful disposal of vacuum truck and sweeping equipment waste • Pollution prevention and safe alternatives • Snow removal activities • Using techniques that keep water onsite and/or reduce imperviousness (rain barrels, rain gardens, porous pavers, permeable concrete, porous asphalt, etc.) • Equipment and vehicle maintenance and repair • Importance of good housekeeping (e.g. sweeping impervious surfaces instead of hosing) • Illicit discharge detection and elimination observations and follow-up during daily work activities • Water quality impacts associated with land development (including new construction and redevelopment) • Water quality impacts associated with road resurfacing and repaving
<ol style="list-style-type: none"> 4. Develop appropriate educational materials (e.g. the materials can utilize various media such as printed materials, billboard and mass transit advertisements, signage at select locations, radio advertisements, television advertisements, websites); 5. Determine methods and process of distribution; 6. Evaluate the effectiveness of the program; and 7. Utilize public input (e.g., the opportunity for public comment, or public meetings) in the development of the program. <p>b. During the term of the permit, the permittee must distribute the educational materials, using whichever methods and procedures determined appropriate by the permittee, in such a way that is designed to convey the program's message to <i>[insert percentage or other appropriate numeric threshold, e.g., 20%]</i> of the target audience each year.</p> <p>c. Within <i>[insert deadline, e.g., within the permit term]</i>, the permittee must assess changes in public awareness and behavior resulting from the implementation of the program such as using a statistically valid survey and modify the education/outreach program accordingly.</p>	

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- d. The permittee must assess its stormwater education/outreach program annually as specified in Part 8.3 of this permit. The permittee must adjust its educational materials and the delivery of such materials to address any shortcomings found as a result of this assessment.
- e. Written procedures for implementing this program must be incorporated into the SWMP document.

Example Permit Requirement Rationale for the Fact Sheet

Without a focused and comprehensive program, outreach and education efforts will likely be poorly coordinated and possibly ineffective. The permit the permittee to develop an education/outreach program that addresses the six steps listed and also found in EPA's *Getting In Step: A Guide to Effective Outreach in Your Watershed* (www.epa.gov/watertrain/gettinginstep/). This guide explains the steps in developing an outreach plan, presents information on creating outreach materials, and provides tips in working with the media. The permittee is encouraged to follow this guide in developing its outreach strategy.

The public education and outreach program must be tailored and targeted to specific water quality issues of concern in the relevant community. These community-wide and targeted issues must then guide the development of the comprehensive outreach program, including the creation of appropriate messages and educational materials. The permit includes a list of potential residential and commercial issues, but the permittee may also choose other issues that contribute significant pollutant loads to stormwater.

The permittee is encouraged to use existing public educational materials in its program. Examples of public educational materials for stormwater are available at EPA's *Nonpoint Source Outreach Toolbox* (www.epa.gov/nps/toolbox). The permittee is also encouraged to leverage resources with other agencies and municipalities with similar public education goals.

Finally, the underlying principle of any public education and outreach effort is to change behaviors. The permittee must develop a process to assess how well its public education and outreach programs is changing public awareness and behaviors and to determine what changes are necessary to make its public education program more effective. This assessment of public education programs is typically conducted via phone surveys, but other assessment methods that quantify results can be used. The permittee is encouraged to use a variety of assessment methods to evaluate the effectiveness of different public education activities. The permit requires that the first evaluation assessment be conducted before the final year of the permittee's coverage under this permit, before the next permit is issued. The allows the permittee to make changes as appropriate before the next permit application is due, EPA's *Getting In Step: A Guide to Effective Outreach in Your Watershed* (www.epa.gov/watertrain/gettinginstep/) can provide useful information on setting up and conducting the evaluations.

Recommendations for the Permit Writer

EPA recommends that the requirement to identify high priority community-wide issues and targeted issues be set at least 3 to 6 months before the stormwater education/outreach program is to be implemented, so the permitting authority can review the issues and provide any feedback before the plan is completed.

The permit can be a means for increasing public awareness and understanding of stormwater impacts on local watersheds, including high quality watersheds that need protecting. EPA recommends that the permit writer consider requiring permittees to identify and describe issues, such as specific pollutants, the sources of those pollutants, impacts on biology, and the physical attributes of stormwater runoff, in their education/outreach program, which affect local watershed(s). Where applicable, the education/outreach program should identify and describe high quality watersheds in need of protection and the issues that may threaten the quality of these waters.

The list in Part 2.1.1.a(3) is not all-inclusive. Therefore, EPA recommends that the permit be written to allow the permittee to identify priority issue(s) not listed that may contribute a significant pollutant load to stormwater. For Phase I, individual permits, it may be appropriate for the permit writer to specify the priority issues based on known issues, monitoring data, historical trends, etc. Phase II general permits will likely need to allow for more flexibility in selecting priority issues.

In addition, the permit writer will need to consider that DOTs and other "non-traditional" MS4s will likely have different priority concerns than the ones identified in the categories above. In fact, the categories (residential and commercial/industrial) may also need to be changed. In these instances, the permit writer may want to consider having the non-traditional permittees work together with any local government MS4s in their area to maximize the program and cost effectiveness of the outreach.

The permit writer may consider specifying the mechanism the permittee is required to use to measure the awareness of and behavior related to issues concerning stormwater runoff by the general public, or targeted audiences within the general public. Examples of evaluations could include:

- Direct Evaluations
- Surveys
- Tracking the number of attendees
- Interviews
- Review of media clippings
- Tracking the number of stormwater-related calls/emails/letters received

Permit writers should consider whether it is appropriate to require a baseline assessment of the public's awareness of stormwater issues, for example in the second year of the permit term, so that comparisons may be drawn in reference to the baseline. This would likely require the permittee to conduct two assessments in the first permit term that the assessment is required.

2.2 Involving the Public in Planning and Implementing the SWMP

Example Permit Provision

2.2.1 The permittee is required to involve the public in the planning and implementation of activities related to the development and implementation of the SWMP. At a minimum, the permittee must:

- a. Establish a citizen advisory group or utilize existing citizen organizations. The permittee may establish a stand-alone group or utilize an existing group or process. The advisory group must consist of a balanced representation of all affected parties, including residents, business owners, and environmental organizations in the MS4 area and/or affected watershed. The permittee must invite the citizen advisory group to participate in the development and implementation of all parts of the community's SWMP.
- b. Create opportunities for citizens to participate in the implementation of stormwater controls (e.g., stream clean-ups, storm drain stenciling, volunteer monitoring, and educational activities).
- c. Ensure the public can easily find information about the permittee's SWMP.

2.2.2 Written procedures for implementing this program must be incorporated into the SWMP document.

Example Permit Requirement Rationale for the Fact Sheet

Stormwater management programs can be greatly improved by involving the community throughout the entire process of developing and implementing the program. Involving the public benefits both the permittee itself as well as the community. By listening to the public's concerns and coming up with solutions together, the permittee will gain the public's support and the community will become invested in the program. The permittees will likewise gain even more insight into the most effective ways to communicate their messages.

This permit requires the involvement of the public, which includes a citizen advisory group or process to solicit feedback on the stormwater program, and opportunities for citizens to participate in implementation of the stormwater program. The citizen advisory group should meet with the local land use planners and provide input on land use code or ordinance updates so that land use requirements incorporate provisions for better management of stormwater runoff and watershed protection. Public participation in implementation of the stormwater program can include many different activities such as stream clean-ups, storm drain markings, and volunteer monitoring.

Permittees are encouraged to work together with other entities that have an impact on stormwater (for example, schools, homeowner associations, DOTs, other MS4 permittees). Permittees are also encouraged to use existing advisory groups or processes in order to implement these public involvement requirements.

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Recommendations for the Permit Writer

Especially for Phase I permittees, permit writers may consider requiring more specific information such as requiring at least one contact that the public can reach (including phone number and/or e-mail address) be clearly posted on the website. The contact may be a general contact or a specific person. The permitting authority may want the MS4 to have a mechanism for the public to comment year round, not just at public meetings. This could be facilitated by a webpage and email or a stormwater hotline.

Some Phase II permittees may find it more difficult to establish and maintain a formal citizen advisory group simply because they tend to have smaller populations. The permit writer may want to provide flexibility for the Phase II permittees to utilize the public involvement mechanism which best suits their individual community. For example, groups which are already involved with other aspects of municipal governance or established events where input could be solicited (i.e. farmers markets, festivals) may serve to meet the objective of this section.

CHAPTER 3: ILLICIT DISCHARGE DETECTION AND ELIMINATION

Introduction

Phase I (see 40 CFR 122.26 (d)(1)(v)(B) and (d)(1)(iv)(B)) and Phase II stormwater management programs (see 40 CFR 122.26(d)(2)(iv)(B)) are required to address illicit discharges into the MS4 system. An illicit discharge is defined as any discharge to a municipal separate storm sewer system that is not composed entirely of stormwater, except allowable discharges pursuant to an NPDES permit (40 CFR 122.26(b)(2)). In addition to requiring permittee to have the legal authority to prohibit non-stormwater discharges from entering storm sewers (CWA Section 402(p)(3)(B)) (see Chapter I), MS4 permits must also require the development of a comprehensive, proactive Illicit Discharge Detection Elimination (IDDE) program.

An effective IDDE program is more than just a program to respond to complaints about illicit discharges or spills. Permittees must proactively seek out illicit discharges, or activities that could result in discharges, such as illegal connections to the storm sewer system, improper disposal of wastes, or dumping of used motor oil or other chemicals.

In order to trace the origin of a suspected illicit discharge or connection, the permittee must have an updated map of the storm drain system and a formal plan of how to locate illicit discharges and how to respond to them once they are located or reported. The permittee must provide a mechanism for public reporting of illicit discharges and spills, as well as an effective way for staff to be alerted to such reports. Regular field screening of outfalls for non-stormwater discharges needs to occur in areas determined to have a higher likelihood for illicit discharges and illegal connections. Proper investigation and enforcement procedures must be in place to eliminate the sources of the discharges, as well. Finally, in order for the permittee to adequately detect and eliminate sources of illicit discharges, both field and office staff must be properly trained to recognize and report the discharges to the appropriate parties.

EPA recommends that permittees refer to the Center for Watershed Protection's guide on *Illicit Discharge Detection and Elimination (IDDE): A Guidance Manual for Program Development and Technical Assistance* (IDDE Manual, available at www.cwp.org) when developing an IDDE program.

3.1 IDDE Program Development

Example Permit Provision

- 3.1.1 The permittee must continue to implement a program to detect, investigate, and eliminate non-stormwater discharges (see Part 1.2.2), including illegal dumping, into its system. The IDDE program must include the following:

Included Concepts

- ▶ IDDE program development
- ▶ MS4 mapping
- ▶ Identification of priority areas
- ▶ Field screening
- ▶ IDDE source investigations and elimination
- ▶ Public reporting of non-stormwater discharges and spills
- ▶ Illicit discharge education and training

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- a. An up-to-date storm sewer system map (see Part 3.2).
- b. Procedures for identifying priority areas within the MS4 likely to have illicit discharges, and a list of all such areas identified in the system (see Part 3.3)
- c. Field screening to detect illicit discharges (see Part 3.4)
- d. Procedures for tracing the source of an illicit discharge (see Part 3.5)
- e. Procedures for removing the source of the discharge (see Part 3.5)
- f. Procedures for program evaluation and assessment (see Part 8.3)
- g. Procedures to prevent and correct any on-site sewage disposal systems that discharge into the MS4.³

3.1.2 In implementing the IDDE program, the permittee may conduct such investigations, contract for investigation, coordinate with storm drain investigation activities of others, or use any combination of these approaches.

3.1.3 For non-traditional MS4 permittees, if illicit connections or illicit discharges are observed related to another operator's municipal storm sewer system then the permittee must notify the other operator within *[insert applicable deadline, e.g., within 48 hours]* of discovery.

3.1.4 If another operator notifies the permittee of an illegal connection or illicit discharge to the municipal separate storm sewer system then the permittee must follow the requirements specified in Part 3.5.4.

3.1.5 Written procedures for implementing this program, including those components described in Parts 3.1 – 3.7 must be incorporated into the SWMP document.

Example Permit Requirement Rationale for the Fact Sheet

EPA stormwater regulations define "illicit discharge" as "any discharge to a municipal separate storm sewer that is not composed entirely of stormwater" except discharges resulting from fire fighting activities and discharges from NPDES permitted sources (see 122.26(b)(2)). The applicable regulations state that the following non-stormwater discharges may be allowed if they are not determined to be a significant source of pollutants to the MS4: water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20)), uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, and street wash water. If, however, these discharges are determined to be a significant source of pollution then they are prohibited.

Examples of common sources of illicit discharges in urban areas include apartments and homes, car washes, restaurants, airports, landfills, and gas stations. These so called "generating sites" discharge sanitary wastewater, septic system effluent, vehicle wash water, washdown from

³ Vermont Phase II General Permit (www.vtwaterquality.org/stormwater/htm/sw_ms4.htm)

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grease traps, motor oil, antifreeze, gasoline and fuel spills, among other substances. Although these illicit discharges can enter the storm drain system in various ways, they generally result from either direct connections (e.g., wastewater piping either mistakenly or deliberately connected to the storm drains) or indirect connections (e.g., infiltration into the storm drain system, spills, or "midnight dumping"). Illicit discharges can be further divided into those discharging continuously and those discharging intermittently.

One way of locating these dry weather discharges is to perform field screening of outfalls. If no rain has occurred prior to the screening then it is likely that any flow observed at an outfall is either groundwater or an illicit discharge. It is important to utilize resources effectively and to target field screening activities in priority areas that are the most common sources of illicit discharges. For example, municipalities with older neighborhoods should prioritize those areas for targeted investigation due to the likelihood of cross connections with the sanitary sewer. Older parts of the storm drain system may also be deteriorating and require repair or replacement.

In addition, it is important that permittees establish clear policies and procedures for tracing and eliminating illicit discharges to ensure that individual incidents are addressed consistently. These policies should include procedures to notify neighboring localities if a discharge is discovered either originating on or discharging to the neighboring storm sewer system.

Additional information is available in the Center for Watershed Protection's *IDDE Manual*.

Recommendations for the Permit Writer

In some instances the permit writer may choose to include more specific requirements. For example, if the priority areas are already known, then Part 3.1.1.a may be more specifically worded. In addition, regulations governing Phase I MS4 permits have somewhat different requirements including specific field screening procedures (40 CFR 122.26(d)(1)(iii)(D) and 122.26(d)(2)(iii)) and a program to detect and remove illicit discharges and improper disposal into the storm sewer (40 CFR 122.26(d)(2)(iv)(B)).

3.2 MS4 Mapping

Example Permit Provision

- 3.2.1 The permittee must maintain an up-to-date and accurate storm sewer system map.
- a. The storm sewer system map must show the following, at a minimum:
 1. The location of all MS4 outfalls and drainage areas contributing to those outfalls that are operated by the permittee, and that discharge within the permittee's jurisdiction to a receiving water
 2. The location (and name, where known to the permittee) of all waters receiving discharges from those outfall pipes. Each mapped outfall must be given an individual alphanumeric identifier, which must be noted on the map. When possible, the outfalls must be located using a geographic

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position system (GPS) and photographs should be taken to provide baseline information and track operation & maintenance needs over time.⁴

3. Priority areas identified under Part 3.3
 4. Field screening stations identified under Part 3.4.2.a
- b. A copy of the storm sewer system map must be available onsite for review by the permitting authority.

Example Permit Requirement Rationale for the Fact Sheet

In order to trace the origin of a suspected illicit discharge or connection, the permittee must have an up-to-date map of its storm drain system. This is critical in order to isolate the potential source of the non-stormwater discharges and the areas of potential impact. Ideally, the information would be available as a geographic information system (GIS) layer in a geo-locational database, however, paper maps are sufficient providing they have the necessary reference information.

The permit primarily requires the mapping of outfalls, drainage areas contributing to those outfalls, and receiving waters. The municipal facility inventory created to comply with the pollution prevention/good housekeeping requirements (see Part 6.1) must also be included either on this sewer system map or on a separate MS4 map.

Recommendations for the Permit Writer

Both Phase I and Phase II regulations require permittees to develop a map indicating outfalls and the waters that receive the MS4 discharges. This map is to be used to identify priority areas that have a reasonable potential for illicit discharges. The mapping requirements should be adjusted based on any existing mapping of the MS4 that has already been completed. For example, Phase I mapping should have been initiated during the initial permit application process. This map should not be static, however, since it would need to be updated as development patterns change and new collection and discharge components of the MS4 are added. The mapping requirement could be supplemented by adding a requirement to “modify existing maps to clearly identify all receiving waters.”

3.3 Identification of Priority Areas

Example Permit Provision

- 3.3.1 The permittee must continue to identify the following as priority areas [*insert areas that may be more applicable to the jurisdiction*]:
- a. Areas with older infrastructure that are more likely to have illicit connections;

⁴ New Jersey Phase II General Permit (www.state.nj.us/dep/dwg/pdf/Tier_A_final.pdf), with modifications

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- b. Industrial, commercial, or mixed use areas;
- c. Areas with a history of past illicit discharges;
- d. Areas with a history of illegal dumping;
- e. Areas with onsite sewage disposal systems;
- f. Areas with older sewer lines or with a history of sewer overflows or cross-connections; and
- g. Areas upstream of sensitive waterbodies.

3.3.2 The permittee must document the basis for its selection of each priority area and create a list of all priority areas identified in the system. This priority area list must be updated [*insert frequency, e.g., annually*] to reflect changing priorities and be available for review by the permitting authority.

Example Permit Requirement Rationale for the Fact Sheet

The permit requires an evaluation of the permittee's neighborhoods and land uses to identify areas that are more likely to have illicit discharges. These areas must be prioritized for more frequent screening and investigations. Each permittee will have a different set of priority areas: newer communities with modern infrastructure are less likely to have sewer cross-connections and illegal connections to the storm drain system, whereas towns with rural areas may place an emphasis on illegal dumping and onsite sewage disposal systems. Prioritization must be based not only on land use but also on prior history and frequency of problems.

The identification of priority areas must include "hotspots" or areas where dumping, spills, or other illicit discharges are a common occurrence. These hotspots will help identify potential field screening locations and may help target educational activities. For example, if evidence of motor oil dumping is found quite frequently and traced to the same apartment complex, information about motor oil disposal could be distributed to residents in response.

Recommendations for the Permit Writer

Phase I permittees should have been documenting information regarding high priority areas for several permit terms. In these instances the permit writer should require the permittee to continually evaluate and update the priority areas as development patterns change or new "hotspot" areas are found. If the permit writer has information regarding priority areas which are specific to the Phase I permittee (e.g. certain high priority watersheds or land use types which typically discharge a pollutant of concern) then those specific areas should be specified as high priority.

3.4 Field Screening

Example Permit Provision

- 3.4.1 The permittee must continue to implement and revise if necessary within *[specify deadline for completion]* a written dry weather field screening and analytical monitoring procedures to detect and eliminate illicit discharges to the MS4. These procedures must be included as part of the IDDE program, and incorporated into the permittee's SWMP document. Dry weather field screening and analytical monitoring consists of (1) field observations; (2) field screening monitoring; and (3) analytical monitoring at selected stations.
- 3.4.2 Conduct dry weather field screening and analytical monitoring. At a minimum, the permittee must:
- a. Identify a minimum of *[specify number]* stations within the priority areas it identified in Part 3.3.1 at which field screening and analytical monitoring will take place. In addition, if the permittee is made aware of non-stormwater discharges that occur during the permit term outside of the priority areas, the permittee must include field screening stations in those areas;
 - b. Conduct dry weather field screening and analytical monitoring at each station identified above at least once *[insert timeframe for dry part of year, or specify annually]*.
 - c. Sample runoff according to requirements outlined in (1) and (2) below if flow or ponded runoff is observed at a field screening station and there has been at least seventy-two (72) hours of dry weather. The permittee must also record general information such as time since last rain, quantity of last rain, site descriptions (e.g., conveyance type, dominant watershed land uses), flow estimation (e.g., width of water surface, approximate depth of water, approximate flow velocity, flow rate), and visual observations (e.g., odor, color, clarity, floatables, deposits/stains, vegetation condition, structural condition, and biology).
 1. Field screening requirements: The permittee is required to conduct a field screening analysis for the following constituents. Samples must be collected and analyzed consistent with the procedures required by 40 CFR Part 136.
[insert specific indicator pollutants that the permittee is required to monitor for.]
 2. Analytical monitoring requirements: In addition to field screening, the permittee is required to collect samples for analytical laboratory analysis of the following constituents for a minimum of *[insert percentage]* of the samples taken. Samples must be collected and analyzed consistent with the procedures required by 40 CFR Part 136.
[insert specific pollutants of concern that the permittee is required to monitor for]
 3. Develop benchmark concentration levels for dry weather field screening and analytical monitoring results whereby exceedance of the benchmark will

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require follow-up investigations to be conducted to identify and eliminate the source causing the exceedance of the benchmark.

- d. Conduct a follow-up investigation under Part 4.5 if the benchmarks associated with the constituents listed above in Part 3.4.2.c(1) and (2) are exceeded; and
- e. Make and record all applicable observations and select another station from the list of alternate stations for monitoring if, after two subsequent field screening tests have been completed, the field screening station is dry (i.e., no flowing or ponded runoff).

3.4.3 The permittee must assess its IDDE program every [*specify deadline for completion, e.g., once per permit term*] to determine if updates are needed. Where updates are found to be necessary, the permittee must make such changes [*insert deadline for finalizing changes*].

Example Permit Requirement Rationale for the Fact Sheet

The permit requires the development of a dry weather field screening and analytical monitoring program. The program must identify stations (e.g., outfalls) within the identified "priority areas" where the field screening will be conducted. At a frequency set by the permitting authority, the permittee must screen outfalls during dry weather and, if flow or ponded water is observed, collect a sample for field screening and analytical monitoring.

Visually screening outfalls during dry weather and conducting field tests, where flow is occurring, of selected chemical parameters as indicators of the discharge source will assist permittees in determining the source of illicit discharges. For example, the presence of surfactants is an indicator that sewage could be present in the discharge (e.g., soaps being discharged into sewer system as an indicator that wastewater is being discharged). Specific conductivity, fluoride and/or hardness concentration, ammonia and/or potassium concentration, surfactant and/or fluorescence concentration, chlorine concentration, pH, and other chemicals may similarly be indicative of industrial sources.

The permit requires the permittee to develop benchmarks for dry weather screening and analytical monitoring results. An exceedance of the benchmark concentration level indicates the need to conduct a follow-up investigation. The results will help the permittee narrow down the possible sources causing the benchmark to be exceeded so that they can then be eliminated. This is a common protocol to trigger additional monitoring and/or implementation of BMPs at stormwater discharges (e.g. MSGP has sector-specific benchmark monitoring requirements).

Recommendations for the Permit Writer

There are many options for field screening programs available to the permit writer that will meet the requirements of the regulations. Phase I regulations require that permittees conduct initial field screening of the entire MS4 during the permit application process as well as on-going field screening activities during the life of the permit. Based on this historical information and data, permit writers may want to specify in Phase I individual permits which priority areas must be screened. They may

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also want to specify how many outfalls or what percentage of the outfalls should be inspected during the permit term.

In addition, for new Phase II permittees, permit writers may want to require screening of all priority areas during the first permit term and then require on-going screening in the areas where illicit discharges were identified.

This permit language includes analytical monitoring at dry weather field screening locations. The monitoring required during field screening (Part 3.4.2.c.1.) should include appropriate indicator pollutants, i.e. pollutants that will indicate the presence of some sort of illicit discharge. For example, Phase II NPDES regulations suggest sampling for specific conductivity, ammonia, surfactant and/or fluorescence concentration, pH and other chemicals indicative of industrial sources.

Permit writers should select the additional pollutants to be monitored based upon specific pollutants of concern for the receiving water(s) and/or specific indicator pollutants which can assist the MS4 in the location of particular discharges of concern and the potential water quality impact of the discharge. For example, the Phase I San Diego MS4 Permit requires that permittees monitor the following parameters during field screening: total hardness, oil and grease, diazinon and chlorpyrifos, cadmium (dissolved), lead (dissolved), zinc (dissolved), copper (dissolved), Enterococcus bacteria, total coliform bacteria, and fecal coliform bacteria.

Permit writers should encourage or even require permittees to use the *CWP IDDE Manual* and/ or EPA's 2008 Multi-Sector General Permit (www.epa.gov/npdes/stormwater/msgp) to develop benchmarks for each parameter.

In the *IDDE Manual* it is strongly recommended that benchmarks be developed specifically for each area. As an example, the *IDDE Manual* lists the following benchmark concentrations (Table 3-1) to identify industrial discharges:

Indicator Parameter	Benchmark Concentration
Ammonia	>= 50 mg/L
Color	>= 500 units
Conductivity	>= 2,000 μ S/cm
Hardness	<= 10 mg/L as CaCO ₃ or >= 2,000 mg/L as CaCO ₃
pH	<= 5
Potassium	>= 20 mg/L
Turbidity	>= 1,000 NTU

For comparison purposes, the chemical fingerprint for different flow types in Alabama is presented in Table 3-2. The chemical fingerprint for each flow type can differ regionally, so permittees should develop their own "fingerprint" library by sampling each flow type.

Flow Type	Hardness (mg/L as CaCO ₃)	NH ₃ (mg/L)	Potassium (mg/L)	Conductivity (μ S/cm)	Fluoride (mg/L)	Detergents (mg/L)
Sewage	50 (0.26)	25 (0.53)	12 (0.21)	1215 (0.45)	0.7 (0.1)	9.7 (0.17)
Septage	57 (0.36)	87 (0.4)	19 (0.42)	502 (0.42)	0.93 (0.39)	3.3 (1.33)

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Table 3-2. Comparative "Fingerprint" (Mean Values) of Flow Types (from CWP IDDE Manual, Table 1)

Laundry Washwater	45 (0.33)	3.2 (0.89)	6.5 (0.78)	463.5 (0.88)	0.85 (0.4)	758 (0.27)
Car Washwater	71 (0.27)	0.9 (1.4)	3.6 (0.67)	274 (0.45)	1.2 (1.56)	140 (0.2)
Plating Bath (Liquid Industrial Waste)	14330 (0.32)	66 (0.66)	1009 (1.24)	10352 (0.45)	5.1 (0.47)	6.8 (0.68)
Radiator Flushing (Liquid Industrial Waste)	5.6 (1.88)	26 (0.89)	2801 (0.13)	3280 (0.21)	149 (0.16)	15 (0.11)
Tap Water	52 (0.27)	<0.06 (0.55)	1.3 (0.37)	140 (0.07)	0.94 (0.07)	0 (NA)
Groundwater	38 (0.19)	0.06 (1.35)	3.1 (0.55)	149 (0.24)	0.13 (0.93)	0 (NA)
Landscape Irrigation	53 (0.13)	1.3 (1.12)	5.6 (0.5)	180 (0.1)	0.61 (0.35)	0 (NA)

The number in parentheses after each concentration is the Coefficient of Variation.
 Source: Robert Pitt data from CWP IDDE Manual

The permit writer may also want to require the permittee to analyze a certain number of discharge samples to characterize the concentration of certain pollutants in the different drainage areas. This characterization sampling would be in addition to any characterization sampling completed for the Phase I permit application. This type of sampling would not necessarily aid in the elimination of the source of the discharge, however, the data would be useful in characterizing the discharge from the MS4.

For those areas that have ponding or flow during dry weather, permit writers may consider allowing permittees the flexibility to look for indicators of an illicit discharge before conducting water quality tests due to baseline flow (e.g. baseflow, groundwater flow, irrigation return flows) in certain areas. In these cases, permit writers could require that sensory indicators (i.e. odor, color, turbidity, and floatables) be evaluated.

For additional guidance on field screening, the *IDDE Manual* describes an outfall reconnaissance inventory (ORI) to assess outfalls and conduct indicator monitoring to help identify illicit discharges.

Regardless of the field screening scheme, it is also very important to emphasize in the permit conditions that monitoring must be done in compliance with 40 CFR 136.

3.5 IDDE Source Investigation and Elimination

Example Permit Provision

3.5.1 The permittee is required to develop written procedures for conducting investigations into the source of all identified illicit discharges, including approaches to requiring such discharges to be eliminated.

3.5.2 Minimum Investigation Requirements – At a minimum, the permittee is required to conduct an investigation(s) to identify and locate the source of any continuous or

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intermittent non-stormwater discharge within *[specify time period]* of becoming aware of the illicit discharge.

- a. Illicit discharges suspected of being sanitary sewage and/or significantly contaminated must be investigated first.
- b. Investigations of illicit discharges suspected of being cooling water, wash water, or natural flows may be delayed until after all suspected sanitary sewage and/or significantly contaminated discharges have been investigated, eliminated and/or resolved.
- c. The permittee must report immediately the occurrence of any dry weather flows believed to be an immediate threat to human health or the environment to *[insert state water quality emergency contact phone number]*.
- d. The permittee must track all investigations to document at a minimum the date(s) the illicit discharge was observed; the results of the investigation; any follow-up of the investigation; and the date the investigation was closed.

3.5.3 Determining the Source of the Illicit Discharge –The permittee is required to determine and document through its investigations, carried out in Part 3.5.1, the source of all illicit discharges. If the source of the illicit discharge is found to be a discharge authorized under *[insert NPDES discharge permit reference]* of an NPDES permit, no further action is required.

- a. If an illicit discharge is found, but within six (6) months of the beginning of the investigation neither the source nor the same non-stormwater discharge has been identified/observed, then the permittee must maintain written documentation for review by the permitting authority.
- b. If the observed discharge is intermittent, the permittee must document that a minimum of three (3) separate investigations were made to observe the discharge when it was flowing. If these attempts are unsuccessful, the Permittee must maintain written documentation for review by the permitting authority. However, since this is an ongoing program, the Permittee should periodically recheck these suspected intermittent discharges.⁵

3.5.4 Corrective Action to Eliminate Illicit Discharge – Once the source of the illicit discharge has been determined, the permittee must immediately notify the responsible party of the problem, and require the responsible party to conduct all necessary corrective actions to eliminate the non-stormwater discharge within *[specify deadline]*. Upon being notified that the discharge has been eliminated, the permittee must conduct a follow-up investigation and field screening, consistent with Part 3.4, to verify that the discharge has been eliminated. The permittee is required to document its follow-up investigation. The permittee may seek recovery and remediation costs from responsible parties consistent with Part 1.2, or require compensation for the cost of field screening and investigations. Resulting enforcement actions must follow the SWMP ERP.

⁵ New Jersey Phase II Permit (www.state.nj.us/dep/dwg/pdf/Tier_A_final.pdf)

Example Permit Requirement Rationale for the Fact Sheet

The Clean Water Act, section 402(p)(3)(B)(ii) requires MS4 permits to “effectively prohibit non-stormwater discharges into the storm sewers.” The permit implements this requirement, in part by requiring the development of procedures to investigate and eliminate illicit discharges. The permittee must develop a clear, step-by-step procedure for conducting the investigation of illicit discharges. The procedure must include an investigation protocol that clearly defines what constitutes an illicit discharge “case” and when a case is considered “closed.” In many circumstances, sources of intermittent, illicit discharges are very difficult to locate, and these cases may remain unresolved. The permit requires that each case be conducted in accordance with the SOPs developed to locate the source and conclude the investigation, after which the case may be considered closed. A standard operating procedure (SOP) document is required in order to provide investigators with guidance and any necessary forms to ensure that consistent investigations occur for every illicit discharge incident.

Physical observations and field testing can help narrow the identification of potential sources of a non-stormwater discharge; however it is unlikely that either will pinpoint the exact source. Therefore, the permittee will need to perform investigations “upstream” to identify illicit connections to systems with identified problem outfalls.

Once the source of the non-stormwater discharge is determined through investigation, corrective action is required to eliminate the problem source. Resulting enforcement actions must follow the SWMP ERP. The permittee may conduct remediation activities on its own, in which case the permittee must require compensation for any and all costs related to eliminating the non-stormwater discharge. Non-traditional MS4 permittees may be limited in their ability to seek recovery.

Recommendations for the Permit Writer

Both Phase I and Phase II regulations require permittees to develop a process to trace the source of illicit discharges and eliminate them. The regulations also state that appropriate enforcement procedures and actions must be included in this process.

3.6 Public Reporting of Non-Stormwater Discharges and Spills

Example Permit Provision

- 3.6.1 The permittee must promote, publicize, and facilitate public reporting of illicit discharges or water quality impacts associated with discharges into or from MS4s through a central contact point, including phone numbers for complaints and spill reporting, and publicize to both internal permittee staff and the public. If 911 is selected, the permittee must also create, maintain, and publicize a staffed, non-emergency phone number with voicemail, which is checked daily.
- 3.6.2 The permittee must develop a written spill/dumping response procedure, and a flow chart or phone tree, or similar list for internal use, that shows the procedures for responding to public notices of illicit discharges, the various responsible agencies

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and their contacts, and who would be involved in illicit discharge incidence response, even if it is a different entity other than the permittee.

3.6.3 The permittee must conduct reactive inspections in response to complaints and follow-up inspections as needed to ensure that corrective measures have been implemented by the responsible party to achieve and maintain compliance.⁶

Example Permit Requirement Rationale for the Fact Sheet

This provision serves to implement, in part, the statutory requirement that MS4 permits effectively prohibit non-stormwater discharges. Spills, leaks, sanitary sewer overflows, and illicit dumping or discharges can introduce a range of stormwater pollutants into the storm system. Prompt response to these occurrences is the best way to prevent or reduce negative impacts to waterbodies. The permittee must develop a spill response SOP that includes an investigation procedure similar to or in conjunction with the investigation SOP developed for illicit discharges in general (see Section 3.5). Often, a different entity might be responsible for spill response in a community (i.e. fire department), therefore, it is imperative that adequate communication exists between stormwater and spill response staff to ensure that spills are documented and investigated in a timely manner.

A stormwater hotline can be used to help permittees become aware of and mitigate spills or dumping incidents. Spills can include everything from an overturned gasoline tanker to sediment leaving a construction site to a sanitary sewer overflow entering into a storm drain. Permittees must set up a hotline consisting of any of the following (or combination thereof): a dedicated or non-dedicated phone line, E-mail address, or website.

Recommendations for the Permit Writer

Spills which occur due to municipal staff activities are considered illicit discharges, but, spill prevention could also be addressed in the municipal operations/good-housekeeping portion of the permit as in this Guide (Chapter 6).

Facilitating public reporting of illicit discharges is specifically required in the Phase I regulations and as a part of the plan to detect and address illicit discharge, EPA recommends that Phase II permittees also develop a venue to promote, publicize, and facilitate public reporting of these discharges.

It is also noteworthy that smaller Phase II MS4s may utilize outside agency resources for spill response and/or they may use a neighboring locality. In this case, permittees will need to coordinate with these agencies to ensure appropriate spill response occurs and the necessary documentation is completed.

⁶ San Francisco Municipal Regional Stormwater permit (www.swrcb.ca.gov/sanfranciscobay/board_decisions/adopted_orders/2009/R2-2009-0074.pdf), with modifications

3.7 Illicit Discharge Education & Training

Example Permit Requirement

- 3.7.1 The permittee must continue to implement a training program for all municipal field staff, who, as part of their normal job responsibilities, may come into contact with or otherwise observe an illicit discharge or illicit connection to the storm sewer system. Contact information, including the procedure for reporting an illicit discharge, must be included in the permittee's fleet vehicles that are used by field staff. Training program documents must be available for review by the permitting authority.
- 3.7.2 By no later than *[insert applicable deadline, e.g., 6 months after permit authorization]*, the permittee must train all staff identified in Section 3.7.1 above on the identification of an illicit discharge or connection, and on the proper procedures for reporting and responding to the illicit discharge or connection. Follow-up training must be provided as needed to address changes in procedures, techniques, or staffing. The permittee must document and maintain records of the training provided and the staff trained.⁷

Example Permit Requirement Rationale for the Fact Sheet

The permit requires the permittee to train field staff, who may come into contact or observe illicit discharges, on the identification and proper procedures for reporting illicit discharges. Field staff to be trained may include, but are not limited to, municipal maintenance staff, inspectors, and other staff whose job responsibilities regularly take them out of the office and into areas within the MS4 area. Permittee field staff are out in the community every day and are in the best position to locate and report spills, illicit discharges, and potentially polluting activities. With proper training and information on reporting illicit discharges easily accessible, these field staff can greatly expand the reach of the IDDE program.

Recommendations for the Permit Writer

Permit writers may wish to require training of office staff (or all permittee staff), as well as field staff, as they can act as additional "eyes and ears" since they typically live in the community. The training should consist of how to identify illicit discharges and dumping, as well as the appropriate people to contact based on the type of discharge that is occurring.

Existing permittees (Phase I and Phase II) may have been training staff for several permit terms. For this reason, the permit writer may want the permittee to focus on annual "refresher" trainings for existing staff and new employees within a certain time of their hire date.

⁷ Washington State Phase I Permit (www.ecy.wa.gov/programs/wq/stormwater/municipal/phaseIpermit/MODIFIEDpermitDOCS/PhaseIpermitSIGNED.pdf)

CHAPTER 4: CONSTRUCTION

Introduction

MS4 permits must address construction-related requirements (and often more specific state requirements) found in the following Federal regulations – Phase I MS4 Regulations 40 CFR 122.26(d)(2)(iv)(D) and Phase II MS4 Regulations 40 CFR 122.34(b)(4). Specific Permit Requirements should vary based on state requirements, rainfall amounts or other site-specific factors, but, in general, the requirements imposed on MS4 permittees for stormwater management of discharges associated with construction activities consist of several common requirements.

Permits must require that the permittee enact, to the extent allowed by State, Tribal or local law, an ordinance or other regulatory mechanism as part of the construction program that controls runoff from construction sites with a land disturbance of greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale. As part of the ordinance or other regulatory mechanism, the permittee should provide commonly understood and legally binding definitions. These terms should be defined consistently across other related guidance and regulatory documents. Note that EPA's recommended definitions addressing this requirement are included in Appendix B.

Permits must require that MS4 permittees ensure that construction site operators select and implement appropriate erosion and sediment control measures to reduce or eliminate the impacts to receiving waters. The permit can require that permittees develop their own standards and specifications, but often it is preferable to require the permittees to utilize existing guidance that is approved by the permitting authority.

The permit must require that the permittee establish review procedures for construction site plans to determine potential water quality impacts and ensure the proposed controls are adequate. These procedures must include the review of individual pre-construction site plans to ensure consistency with local sediment and erosion control requirements. In addition, the permit must include requirements for inspection and enforcement of erosion and sediment control measures once construction begins.

Finally, Phase I MS4 permits must require the development of educational materials and training for construction site operators, and EPA recommends that training on stormwater controls for construction site operators be mandated in Phase II MS4 permits as well. Training should address site requirements for control measures, local stormwater requirements, enforcement activities, and penalties for non-compliance.

Included Concepts

- ▶ Construction requirements and control measures
- ▶ Construction site inventory
- ▶ Construction plan review procedures
- ▶ Construction site inspections and enforcement
- ▶ MS4 staff training
- ▶ Construction site operator education and public involvement

4.1 Construction Requirements and Control Measures

Example Permit Provision

4.1.1 The permittee must continue to implement a program which requires operators of public or private "construction activities" to select, install, implement, and maintain stormwater control measures that comply with *[Insert reference to documents including any and all applicable erosion and sediment control, pollution prevention, and other stormwater requirements, including applicable CGP, State, and local requirements.]* "Construction activity" for this permit includes, at a minimum, all public and private construction sites that result in a total land disturbance of *[insert disturbance threshold – either one or more acres or that result in a total land disturbance of less than one acre if part of a larger common plan or development or sale, or an alternative threshold that includes disturbances of less than one acre]*. Written procedures for implementing this program, including the components described in Parts 4.2 – 4.6, must be incorporated into the SWMP document. The permittee's construction program must ensure the following minimum requirements are effectively implemented for all construction activity discharging to its MS4:

[Insert specific minimum requirements, such as:

- a. **Erosion and Sediment Controls.** Design, install and maintain effective erosion controls and sediment controls to minimize the discharge of pollutants. At a minimum, such controls must be designed, installed and maintained to:
 - (1) Control stormwater volume and velocity within the site to minimize soil erosion;
 - (2) Control stormwater discharges, including both peak flowrates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and streambank erosion;
 - (3) Minimize the amount of soil exposed during construction activity;
 - (4) Minimize the disturbance of steep slopes;
 - (5) Minimize sediment discharges from the site. The design, installation and maintenance of erosion and sediment controls must address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site;
 - (6) Provide and maintain natural buffers around surface waters, direct stormwater to vegetated areas to increase sediment removal and maximize stormwater infiltration, unless infeasible; and
 - (7) Minimize soil compaction and, unless infeasible, preserve topsoil.
- b. **Soil Stabilization.** Stabilization of disturbed areas must, at a minimum, be initiated immediately whenever any clearing, grading, excavating or other earth disturbing activities have permanently ceased on any portion of the site, or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days. Stabilization must be completed within a period of

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time determined by the permittee. In arid, semiarid, and drought-stricken areas where initiating vegetative stabilization measures immediately is infeasible, alternative stabilization measures must be employed as specified by the permittee.

- c. **Dewatering.** Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, are prohibited unless managed by appropriate controls.
- d. **Pollution Prevention Measures.** Design, install, implement, and maintain effective pollution prevention measures to minimize the discharge of pollutants. At a minimum, such measures must be designed, installed, implemented and maintained to:
 - (1) Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;
 - (2) Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials present on the site to precipitation and to stormwater; and
 - (3) Minimize the discharge of pollutants from spills and leaks and implement chemical spill and leak prevention and response procedures.
- e. **Prohibited Discharges.** The following discharges are prohibited:
 - (1) Wastewater from washout of concrete, unless managed by an appropriate control;
 - (2) Wastewater from washout and cleanout of stucco, paint, from release oils, curing compounds and other construction materials;
 - (3) Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance; and,
 - (4) Soaps or solvents used in vehicle and equipment washing.
- f. **Surface Outlets.** When discharging from basins and impoundments, utilize outlet structures that withdraw water from the surface, unless infeasible.

Example Permit Requirement Rationale for the Fact Sheet

Stormwater discharges from construction sites generally includes sediment and other pollutants such as phosphorus and nitrogen, turbidity, pesticides, petroleum derivatives, construction chemicals, and solid wastes that may become mobilized when land surfaces are disturbed. The permit requires MS4 permittees to require construction site operators at defined sites to meet certain minimum stormwater requirements relating to erosion and sediment control and pollution prevention, and to meet other restrictions imposed on them by the State, or local regulations. These minimum requirements clearly specify the expectations for addressing

erosion control, sediment control, and pollution prevention control measures at construction sites.

EPA's Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category (74 FR 62996, December 1, 2009) require construction site owners and operators to implement a range of erosion and sediment control measures and pollution prevention practices to control pollutants in discharges from construction sites. These standards will be required in state construction general permits as they are reissued. These standards are broadly applicable to all construction activity disturbing one or more acres. They provide an objective means of describing appropriate erosion and sediment control best management practices, pollution prevention controls on construction site waste and storage of building materials and other reasonable components of the permittee's program to reduce pollutants to the maximum extent practicable in stormwater from construction sites that discharge through the MS4.

Recommendations for the Permit Writer

The Phase II stormwater regulations require permittees to develop a construction site program addressing "land disturbance of greater than or equal to one acre." However, some states may have more stringent requirements that apply to some permittees, or the permit writer may have discretion to lower the one acre threshold if this threshold is too high for particular permittees. For example, smaller, built-out cities may have many small redevelopment projects that fall below the one acre threshold. In such cases, controlling construction site stormwater entering the MS4 to the maximum extent practicable may require stormwater controls at smaller sites. Permit writers should review available construction and planning data from the MS4 to determine an appropriate project size threshold.

The example permit provision's list of minimum requirements for erosion controls, sediment controls, and pollution prevention measures is intended to establish specific requirements to implement the broader requirements in the Phase II rule (40 CFR 122.24(b)(4)). The list of minimum requirements in the example permit provision are from EPA's Construction and Development Effluent Guidelines (published December 1, 2009) which will eventually be required in all NPDES stormwater permits issued to construction site operators. At a minimum, the permit should reference the applicable state standards and, where appropriate, any local standards as well. Permit writers may wish to modify these specific requirements based on current standards or guidance on construction site stormwater controls in the State.

4.2 Construction Site Inventory

Example Permit Provision

- 4.2.1 The permittee must continue to maintain an inventory of all active public and private construction sites that result in a total land disturbance of *[insert disturbance threshold from Part 4.1.1.]*. The inventory must be continuously updated as new projects are permitted and projects are completed. The inventory must contain

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relevant contact information for each project (e.g., name, address, phone, etc.), the size of the project and area of disturbance, whether the project has submitted for permit coverage under [insert name of applicable NPDES general construction permit], the date the permittee approved the [insert name of local erosion and sediment control/stormwater plan] in accordance with Part 4.3, and the permit tracking number issued by [insert name of permitting authority]. The permittee must make it available to the permitting authority upon request.

Example Permit Requirement Rationale for the Fact Sheet

To effectively conduct inspections, the permittee must know where construction activity is occurring. A construction site inventory tracks information such as project size, disturbed area, distance to any waterbody or flow channel, when the erosion and sediment control/stormwater plan was approved by the Permittee, and whether the project is covered by the permitting authority's construction general permit. This inventory will allow the permittee to track and target its inspections.

Recommendations for the Permit Writer

Because of state or local construction permitting requirements, many permittees have some system in place to track construction activity in their jurisdiction. If this is the first MS4 permit issued to the permittee, the permit writer should include a deadline for the development of the initial inventory.

Permit writers may want to request electronic copies of the inventory quarterly or yearly, if that information will be used by the State permitting or inspection staff.

4.3 Construction Plan Review Procedures

Example Permit Provision

4.3.1 The permittee must continue to require each operator of a construction activity to prepare and submit a [insert name of local erosion and sediment control/stormwater plan] prior to the disturbance of land for the permittee's review and written approval prior to issuance of a [insert appropriate permit, i.e. grading or construction]. The permittee must make it clear to operators of construction activity that they are prohibited from commencing construction activity until they receive receipt of written approval of the the plans. If the [insert name of local erosion and sediment control/stormwater plan] is revised, the permittee must review and approve those revisions.

4.3.2 The permittee must continue to implement site plan review procedures that meet the following minimum requirements:

- a. The permittee must not approve any [insert name of local erosion and sediment

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control/stormwater plan] unless it contains appropriate site-specific construction site control measures that meet the minimum requirements in Part 4.1.1 of this permit.

- b. The stormwater pollution prevention plan (SWPPP) developed pursuant to *[insert name of applicable NPDES general construction permit]* may substitute for the *[insert name of local erosion and sediment control/stormwater plan]* for projects where a SWPPP is developed. The permittee is responsible for reviewing those portions of the SWPPP that comply with the *[insert name of local erosion and sediment control/stormwater plan]*.
- c. The *[insert name of local erosion and sediment control/stormwater plan]* must include the rationale used for selecting control measures, including how the control measure protects a waterway or stormwater conveyance.
- d. The permittee must use qualified individuals, knowledgeable in the technical review of *[insert name of local erosion and sediment control/stormwater plan]* to conduct such reviews.
- e. The permittee must document its review of each *[insert name of local erosion and sediment control/stormwater plan]* using a checklist or similar process.⁸

Example Permit Requirement Rationale for the Fact Sheet

The permit requires the review and prior approval of all local erosion and sediment control plans/stormwater plans to ensure that construction activities adhere to the permittee's minimum stormwater control requirements. Adequate review of erosion and sediment control/stormwater plans is necessary to verify compliance with all applicable requirements in the permittee's ordinance or other regulatory mechanism, as well as compliance with control measure standards and specifications. A formalized review procedure ensures consistent review of plans by specifying the requirements for plans being submitted, the schedule for review, and general conditions for approval. The site plan review process also provides a way to track construction activities and enforce standards.

A good site plan review process provides the permittee with the opportunity to comment – early and often – on a project's proposed number, type, location, and sizing of stormwater control measures that will be in place prior to, during, and at the conclusion of active construction. It is important to keep in mind that a site plan is a "living document" that may change during the life of the project; however, it is critical that the site plan be adequately reviewed and initially based on established policy, guidelines, and standards. The plan is the framework for stormwater control implementation, as well as the basis of any enforcement action on a project site.

The permit requires the permittee to review plans before construction activity begins to ensure that the plans are consistent with the standards specified in Part 4.1.1. The permit language also includes some key requirements during the plan review process:

⁸ 2009 Ventura County, CA Phase I MS4 Permit

(www.swrcb.ca.gov/rwacb4/water_issues/programs/stormwater/municipal/ventura_ms4/09-0057/Transmittal%20Letter%20and%20MS4%20Permit%20Order%20No%2009%200057.pdf)

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- If a SWPPP is developed for the State construction general permit, that plan may substitute for the local plan if it also includes/addresses the local requirements.
- The plan must include the rationale used for selecting or rejecting control measures (for example, why a silt fence was selected or why a sediment trap was not included).
- Finally, plan reviewers must be trained and must document their review. For example, this can be done by using a checklist or similar process.

Recommendations for the Permit Writer

Some MS4 permits include a requirement that, prior to approval of local permits, the permittee must verify that the construction site operator has existing coverage under the State's Construction General Permit, if necessary. This requirement helps to reduce the number of non-filers for the State general permit by providing a check for NPDES CGP permit coverage at the local level.

4.4 Construction Site Inspections and Enforcement

Example Permit Provision

4.4.1 The permittee must continue to implement procedures for inspecting public and private construction projects in accordance with the frequency specified in Table 4-1 below:

Table 4-1: Inspection Frequencies

Site	Inspection Frequency
a. All sites [insert a size threshold that is considered large for the MS4 if large projects are common, e.g. 5 acres] or larger in size	Inspection must occur within [insert number of days/hours, e.g. 48 hours] of a [insert significant rain event size, e.g. ½ inch rain event] and no less than biweekly (every 2 weeks)]
b. All sites one (1) acre or larger that discharge to a tributary listed by the state/tribe as an impaired water for sediment or turbidity under the CWA section 303(d)	
c. Other sites one (1) acre or more determined by the permittee or permitting authority to be a significant threat to water quality*	
d. All other construction sites with one (1) acre or more of soil disturbance not meeting the criteria specified in (A),(B), or (C) above	Inspection must occur at least monthly
e. Construction sites less than one (1) acre in size.	Inspection must occur as needed based on the evaluation of the factors that are a threat to water quality*

*In evaluating the threat to water quality, the following factors must be considered: soil erosion potential; site slope; project size and type; sensitivity of receiving waterbodies; proximity to receiving waterbodies; non-stormwater discharges; past record of non-compliance by the operators of the construction site; and [insert other factors relevant to particular MS4].

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4.4.2 The permittee must adequately inspect all phases of construction.

- a. Prior to Land Disturbance: Prior to allowing an operator to commence land disturbance, the permittee must perform an inspection to ensure all necessary erosion and sediment controls are in place.
- b. During Active Construction: During active construction, the permittee is required to conduct inspections in accordance with the frequencies specified in Table 4-1 in Part 4.4.1.
- c. Following Active Construction: At the conclusion of the project, the Permittee must inspect all projects to ensure that all graded areas have reached final stabilization and that all temporary control measures are removed (e.g., silt fence).

4.4.3 The permittee must have trained and qualified inspectors (See Part 4.5). The permittee must also continue to follow, and revise as necessary, written procedures outlining the inspection and enforcement procedures. Inspections of construction sites must, at a minimum:

- a. Check for coverage under the *[insert name of applicable NPDES general construction permit]* by requesting a copy of any application or Notice of Intent (NOI) or other relevant application form during initial inspections.
- b. Review the applicable *[insert name of local erosion and sediment control/stormwater plan]* and conduct a thorough site inspection to determine if control measures have been selected, installed, implemented, and maintained according to the plan.
- c. Assess compliance with the permittee's ordinances and permits related to stormwater runoff, including the implementation and maintenance of designated minimum control measures.
- d. Assess the appropriateness of planned control measures and their effectiveness.
- e. Visually observe and record non-stormwater discharges, potential illicit connections, and potential discharge of pollutants in stormwater runoff.
- f. Provide education and outreach on stormwater pollution prevention, as needed.
- g. Provide a written or electronic inspection report generated from findings in the field

4.4.4 The permittee must track the number of inspections for the inventoried construction sites throughout the reporting period to verify that the sites are inspected at the minimum frequencies required. Inspection findings must be documented and maintained for review by the permitting authority.

4.4.5 Based on site inspection findings, the permittee must take all necessary follow-up actions (i.e., re-inspection, enforcement) to ensure compliance in accordance with the permittee's enforcement response plan required in Part 1.3. These follow-up and enforcement actions must be tracked and maintained for review by the permitting authority.⁹

⁹ 2007 San Diego Phase I MS4 Permit (www.swrcb.ca.gov/rwqcb9/water_issues/programs/stormwater/docs/sd_permit/r9_2007_0001/2007_0001final.pdf)

Example Permit Requirement Rationale for the Fact Sheet

The permit requires inspections of construction sites based on a prioritized ranking of sites (see 40 CFR 122.26(d)(2)(iv)(D)(3) and 122.34(b)(4)(ii)(F)). Larger construction sites and sites that discharge to a sediment impaired waterbody are inspected more frequently than small sites. In addition to inspections at a regular interval, inspections are required within a certain timeframe after a rain event.

Inspections are required before land disturbance to ensure erosion and sediment controls are in place and a plan has been developed, during active construction, and after the site has been stabilized. The permit language also contains specific requirements on what the inspection must include (such as a comparison of control measures in the approved plan to measures installed in the field).

Without adequate implementation and maintenance, stormwater controls will not function as designed. In order to ensure proper implementation and maintenance by site operators, a rigorous inspection protocol is necessary. This protocol must include a written SOP for site inspections and enforcement to ensure inspections and enforcement actions are conducted in a consistent manner. The SOP must include steps to identify priority sites for inspection and enforcement based on the nature and extent of the construction activity, slope of the site, proximity to receiving waters, the characteristics of soils, and the water quality status of the receiving water. This will allow inspection resources and staff time to be used most effectively. Documentation of inspections is critical to track noncompliance and enforcement. Regularly scheduled inspections, as well as post-storm event inspections, are necessary to be sure that regular maintenance occurs as well as repairs after storm events.

Recommendations for the Permit Writer

Selecting an appropriate inspection frequency is, by necessity, a case-by-case exercise. Inspection frequencies for one permittee will not necessarily be appropriate for other permittees. For example, appropriate inspection frequencies may vary among different permittees depending on such factors as topography and rainfall patterns, including whether the MS4 is located in a wet or arid region and/or has distinct wet and dry seasons. Appropriate inspection frequencies may also vary seasonally or geographically within a single MS4 based on seasonal variations in rainfall or snowfall, or differing topographical or geographic conditions in different parts of the MS4 area.

For individual MS4 permits, permit writers should consider seasonal rainfall patterns, the presence and location of impaired streams or sensitive habitats, soils, topography, and other MS4-specific factors. In addition, permit writers should review current inspection frequencies, as well as inspection and enforcement records.

The permit writer should also note that the permit language will need to be modified if the permittee was not previously required to develop written procedures for the inspection and enforcement conducted at construction sites.

4.5 MS4 Staff Training

Example Permit Provision

- 4.5.1 The permittee must ensure that all staff whose primary job duties are related to implementing the construction stormwater program, including permitting, plan review, construction site inspections, and enforcement, are trained to conduct these activities. The training can be conducted by the permittee or outside training can be attended, however, this training must include, at a minimum:
- a. Erosion and Sediment Control/Stormwater Inspectors:
 1. Initial training, held within the first permit year, regarding proper control measure selection, installation, implementation, and maintenance, as well as administrative requirements such as inspection reporting/tracking and use of the permittee's enforcement responses; and
 2. Annual refresher training for existing inspection staff to update them on preferred controls, regulation changes, permit updates, and policy or standards updates. Throughout the year, e-mails and/or memos must be sent out to update the inspectors as changes happen.
 - b. Other Construction Inspectors: Initial training must be held within the first permit year, on general stormwater issues, basic control measure implementation information, and procedures for notifying the appropriate personnel of noncompliance. Refresher training held at least once every two years.
 - c. Plan Reviewers:
 1. Initial training, held within the first permit year, regarding control measure selection, design standards, and review procedures; and
 2. Annual training regarding new control measures, innovative approaches, permit updates, regulation changes, and policy or standard updates.
 - d. Third-Party Inspectors and Plan Reviewers: If the permittee utilizes outside parties to conduct inspections and/or review plans, these outside staff must be trained per the requirements listed in Part 4.5.1.a (above).

Example Permit Requirement Rationale for the Fact Sheet

By setting up training for the permittee staff, the permittee can ensure that the erosion and sediment control requirements are understood and consistently applied since all staff will have been trained on the same information. The permit requires staff whose primary job duties are related to implementing the construction stormwater program to be trained. The training requirements vary by the type of staff. For example, erosion and sediment control inspectors must be trained annually on a range of topics, while other construction inspectors (such as building inspectors) will receive more general training.

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The permittee can conduct the training or the training can be provided by another entity (such as a State erosion and sediment control class). Ideally, the training should include classroom presentations, in-field training, and follow-up evaluations to determine whether the training was effective.

Also, the permittee should consider providing training to other in-field municipal staff so that problems associated with flooding and sedimentation from construction sites can be properly reported and addressed.

4.6 Construction Site Operator Education & Public Involvement

Example Permit Provision

4.6.1 Construction Operator Education. The permittee must develop and distribute educational materials to construction site operators as follows:

- a. Each year, the permittee must either provide information on existing training opportunities or develop new training for construction operators on control measure selection, installation, implementation, and maintenance as well as overall program compliance.
- b. The permittee must develop or utilize existing outreach tools (i.e. brochures, posters, website, plan notes, manuals etc.) aimed at educating construction operators on appropriate selection, installation, implementation, and maintenance of stormwater controls, as well as overall program compliance.
- c. The permittee must make available appropriate outreach materials to all construction operators who will be disturbing land within the MS4 boundary. The permittees' contact information and website must be included in these materials.
- d. The permittee must include information on appropriate selection, installation, implementation, and maintenance of controls, as well as overall program compliance, on the permittee's existing website.

4.6.2 Public Involvement.

- a. The permittee must adopt and implement procedures for receipt and consideration of information submitted by the public regarding construction projects. This includes, but is not limited to, the public reporting mechanisms described in Part 3.6.
- b. The permittee must hold public meetings for all public projects that have planned disturbance greater than or equal to an acre.¹⁰

¹⁰ Eastern Washington MS4 Phase II Permit (Part 2 only) (www.ecy.wa.gov/programs/wq/stormwater/municipal/phaseiiEwa/MODIFIEDpermitDOCS/EWpermitMODsigned.pdf)

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Example Permit Requirement Rationale for the Fact Sheet

Education of construction site operators regarding stormwater management and regulatory requirements is an essential part of controlling stormwater discharges from construction sites. Making brochures, guidance documents and trainings available will increase the knowledge of operators and compliance in the field and can help them choose the correct structural control and processes, correctly install the controls, and successfully implement control measures. The permit requires the permittee to provide appropriate outreach materials to construction site operators. These materials can be made available during the normal course of business (i.e. in BMP manuals, in plan notes, during meetings) or via brochures or websites. In addition, the permittee must either provide training or notify the operators of available training opportunities.

Public involvement requirements include the development of a hotline or other telephone number for the public to call regarding stormwater concerns at construction sites.

CHAPTER 5: POST-CONSTRUCTION OR PERMANENT/LONG-TERM STORMWATER CONTROL MEASURES

Introduction

Phase I MS4s are required to address new development and significant redevelopment in their SWMPs through controls to reduce pollutants in stormwater discharges after construction is completed. See 40 CFR 122.26(d)(2)(iv)(A)(2).

The Phase II regulations require regulated small MS4 operators to develop, implement, and enforce a program to address stormwater discharges from new development and redevelopment sites that disturb greater than or equal to one acre to the MS4 (including projects that disturb less than one acre that are part of a larger common plan of development or sale). The regulations also require that the MS4 ensure that control measures are installed and implemented that prevent or minimize water quality impacts. See 40 CFR 122.34(b)(5)(i)

As part of these Phase II requirements, the MS4 must:

- Develop and implement approaches to addressing post-construction stormwater discharges that include a combination of structural and/or non-structural controls;
- Adopt adequate legal authority to enable the MS4 to address post-construction stormwater discharges from new development and redeveloped sites; and
- Ensure adequate long-term operation and maintenance of applicable post-construction control measures. See 40 CFR 122.34(b)(5)(ii).

As of April 2010, most MS4 permits only require permittees to adopt a post-construction program with enforceable requirements designed to reduce stormwater impacts from new development and redevelopment, without specifying a performance standard. To meet this requirement many MS4s have adopted criteria in ordinances or other legally enforceable mechanisms based on already promulgated flood-control based standards (i.e., focused only on discharge rates). However, performance standards can be a very useful and meaningful mechanism in the post-construction toolbox to ensure that water quality objectives are met.

The example permit provisions that follow present the current thinking on how to strengthen the effectiveness of the permittee's stormwater program by preventing the harmful effects of increased stormwater flows and pollutant loads from new development and redeveloped sites on receiving waterbodies. EPA recognizes that there are a wide variety of approaches that some states have already

Included Concepts

- ▶ Post-construction stormwater management program
- ▶ Site performance standards
- ▶ Site plan review
- ▶ Long-term maintenance of post-construction stormwater control measures
- ▶ Watershed protection
- ▶ Tracking of post-construction stormwater control measures
- ▶ Inspections and enforcement
- ▶ Retrofit plan

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taken to control discharges from new development and redeveloped sites, some of which are more stringent than the permit language recommended below. The language below includes components that EPA believes would provide focus and enforceability, and would bring about significant improvements in stormwater controls on site. However, the “maximum extent practicable” may be greater than is reflected in the example permit language below for some MS4s, and EPA encourages states, where possible, to go beyond these example provisions and to achieve even better watershed planning and water quality outcomes. For these reasons, this chapter presents the minimum permit provisions EPA currently recommends to be included in permits in order for permittees to reduce their discharges to the maximum extent practicable as well as the optional, more stringent, requirements.

5.1 Post-Construction Stormwater Management Program

Example Permit Provision

- 5.1.1 The permittee must continue to implement a program to control stormwater discharges from new development and redeveloped sites that disturb at least one acre (including projects that disturb less than one acre that are part of a larger common plan of development or sale) that discharge into an MS4 [or insert smaller alternative size]. The program must apply to private and public development sites, including roads.
- 5.1.2 The program must require that controls are in place that will infiltrate, evapotranspire, or harvest and use stormwater from the site to meet the performance standards in Part 5.2 to protect water quality.
- 5.1.3 Written procedures for implementing this program, including the components described in Parts 5.2 – 5.8, must be incorporated into the SWMP document.

Example Permit Requirement Rationale for the Fact Sheet

The stormwater regulations require that an MS4 develop and implement a program to address post-construction discharges from new development and redeveloped sites, and ensure the long-term operation and maintenance of these controls (see Part 5.4 for the maintenance requirements). (See 40 CFR 122.34(b)(5)). The permit requires the use of specific stormwater controls, i.e., those that infiltrate, evapotranspire, or harvest and use stormwater, with the aim of maintaining or restoring the pre-development stormwater runoff conditions at the site.

Many traditional stormwater management practices, and the permit language that drives them, fail to address the hydrologic modifications that increase the quantity of stormwater discharges, and cause excessive erosion and stream channel degradation. Frequently the volume, duration, and velocity of stormwater discharges cause degradation to aquatic systems. Protecting and restoring the physical, chemical and biological integrity of receiving waters must be a central issue in stormwater permits. The recent report of the National Research Council (*Urban Stormwater Management in the United States*, National Academies Press, 2008, www.epa.gov/npdes/pubs/nrc_stormwaterreport.pdf) recommends that the NPDES stormwater

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program examine the impacts of stormwater flow, treat flow as a surrogate for other pollutants, and includes the necessary control requirements in stormwater permits. Specifically the report recommends that the volume retention practices of infiltration, evapotranspiration and rainwater harvesting be used as primary stormwater management mechanisms. For this reason, EPA recommends use of a permit condition that is based on maintaining or restoring predevelopment hydrology although other forms of this permit condition maybe appropriate as well.

Additional information on the development of a post-construction program for Phase II permittees can be found in the Center for Watershed Protection's *Managing Stormwater In Your Community: A Guide for Building an Effective Post-Construction Program* (available at www.cwp.org/postconstruction). Also, EPA's green infrastructure website includes information on post-construction controls and programs (see www.epa.gov/greeninfrastructure).

5.2 Site Performance Standards

Example Permit Provision

- 5.2.1 The permittee must establish, implement and enforce a requirement that owners or operators of new development and redeveloped sites discharging to the MS4, which disturb greater than or equal to one acre (including projects that disturb less than one acre that are part of a larger common plan of development or sale), design, install, implement, and maintain stormwater control measures that infiltrate, evapotranspire, harvest, and use stormwater discharges.
- 5.2.2 Within [*insert deadline, e.g., 12 months, 24 months, etc.*] the permittee must require that stormwater discharges from such new development and redevelopment sites be managed such that post-development hydrology does not exceed the pre-development hydrology at the site, in accordance with the performance standard set forth in this paragraph. The SWMP must describe the site design strategies, control measures, and other practices deemed necessary by the permittee to maintain or improve pre-development hydrology.¹¹ [*Insert a new development performance standard, such as one or a combination of the following:*

Basis for Performance Standard	Description	Performance Standard
Rainfall	Minimum storm volume to be retained on site.	Design, construct, and maintain stormwater management practices that manage rainfall on-site, and prevent the off-site discharge of the precipitation from [<i>insert standards, such as "the first one inch of rainfall from a 24-hour storm preceded by 48 hours of no measurable precipitation"</i>]. Discharge volume reduction can be achieved by canopy interception, soil amendments, evaporation, rainfall harvesting, engineered infiltration, extended filtration and/or evapotranspiration and any combination of the aforementioned practices. This first one inch of rainfall

¹¹ Big Darby Creek Watershed CGP, Part III.G.2.d.
 (web.epa.ohio.gov/dsw/permits/DarbyStormWater_Final_GP_sep06.pdf)

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		<i>must be 100% managed with no discharge to surface waters, except when the permittee chooses to implement the conditions in Part 5.2.5.d below.¹²</i>
<i>Rainfall</i>	<i>Minimum storm size to be retained on site.</i>	<i>Design, construct, and maintain stormwater management practices that manage rainfall on-site, and prevent the off-site discharge of the precipitation from all rainfall events less than or equal to [insert standards, such as "the 95th percentile rainfall event"]. This objective must be accomplished by the use of practices that infiltrate, evapotranspire and/or harvest and reuse rainwater. The 95th percentile rainfall event is the event whose precipitation total is greater than or equal to 95 percent of all storm events over a given period of record.¹³</i>
<i>Recharge/Runoff</i>	<i>Hydrologic analysis.</i>	<i>Design, construct, and maintain stormwater management practices that preserve the pre-development runoff conditions following construction. The post-construction rate, volume, duration and temperature of discharges must not exceed the pre-development rates and the pre-development hydrograph for 1, 2, 10, 25, 50 and 100 year storms must be replicated through site design and other appropriate practices. These goals must be accomplished through the use of infiltration, evapotranspiration, and/or rainwater harvesting and reuse practices. Defensible and consistent hydrological assessments and modeling methods must be used and documented.¹⁴</i>
<i>Recharge</i>	<i>Groundwater recharge requirement.</i>	<i>Any "major development" project, which is one that disturbs [insert standards, such as at least one (1) acre of land or creates at least 0.25 acres of new or additional impervious surface], must comply with one of the following two groundwater recharge requirements:</i> <ul style="list-style-type: none"> <i>• Demonstrate through hydrologic and hydraulic analysis that the site and its stormwater management measures maintain 100 percent of the average annual pre-construction groundwater recharge volume for the site; or</i> <i>• Demonstrate through hydrologic and hydraulic analysis that the increase of stormwater discharges volume from pre-construction to post-construction for the two-year storm is infiltrated.¹⁵</i>
<i>Impervious Cover</i>	<i>Limiting total impermeable surface (or effective impermeable surface)</i>	<i>Minimize total impervious cover resulting from new development and redevelopment to [insert standards, such as <10% of disturbed land cover and/or limit total amount of effective impervious surface to no more than 5% of the landscape].</i>

¹² West Virginia Small MS4 Permit (www.wvdep.org/Docs/17444_SW_WV%20MS4%20permit%202009.pdf)

¹³ Section 438, Energy Independence & Security Act (EISA) Guidance (www.epa.gov/owow/NPS/lid/section438/pdf/final_sec438_eisa.pdf)

¹⁴ Section 438, Energy Independence & Security Act (EISA) Guidance (www.epa.gov/owow/NPS/lid/section438/pdf/final_sec438_eisa.pdf)

¹⁵ New Jersey Stormwater Management Rules, N.J.A.C. 7:8 (www.nj.gov/dep/rules/adoptions/2004_0202_njpdcs.pdf)

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5.2.3 Incentives for Redeveloped Sites. When considered at the watershed scale, certain types of developed sites can either reduce existing impervious surfaces, or at least create less 'accessory' impervious surfaces. The Permittee may develop a program to allow adjustments to the performance standard for new development or redevelopment sites that qualify. A reduction of *[insert the amount of stormwater the Permittee can reduce for utilizing redevelopment principles, e.g. 0.2 inches from the one inch runoff reduction standard]* may be applied to any of the following types of development. Reductions are additive up to a maximum reduction of *[insert amount, such as 0.75 inches]* for a project that meets four or more criteria. The permittee may choose to be more restrictive and allow a reduction of less than *[insert amount, such as 0.75 inches]* if they choose. In no case will the reduction be greater than *[insert amount, such as 0.75 inches]*.

1. Redeveloped sites
2. Brownfield redeveloped site
3. High density (>7 units per acre)
4. Vertical Density, (Floor to Area Ratio (FAR) of 2 or >18 units per acre)
5. Mixed use and Transit Oriented Development (within ½ mile of transit)¹⁶

5.2.4 Additional Requirements and Exceptions: The permittee must implement the following additional requirements where applicable:

- a. A site that is a potential hot spot with the reasonable potential for contaminating underground sources of drinking water must provide treatment for associated pollutants (e.g., petroleum hydrocarbons at a vehicle fueling facility).
- b. A site that discharges or proposes to discharge to any surface water or ground water that is used as a source of drinking water must comply with all applicable requirements relating to source water protection and must not cause an exceedance of drinking water standards.¹⁷
- c. Sites may not infiltrate stormwater in areas of soil contamination.
- d. For projects that cannot meet 100% of the performance standard in Part 5.2.2 on site, two alternatives are available: off-site mitigation and payment in lieu. If these alternatives are chosen, then the permittee must develop and fairly apply criteria for determining the circumstances under which these alternatives will be available and establish reasonable schedules for mitigation and require payment in lieu of prior to project inception. A determination that standards cannot be met on site must include multiple criteria that would rule out fully meeting the performance standard in Part 5.2.2, such as: too small a lot outside of the building footprint to create the necessary infiltrative capacity even with amended soils; soil instability as documented by a thorough geotechnical

¹⁶ West Virginia Small MS4 Permit (Section C.b.5.a.ii.A.3)
 (www.wvdep.org/Docs/17444_SW_WV%20MS4%20permit%202009.pdf)

¹⁷ West Virginia Small MS4 Permit (Section C.b.5.a.ii.A.2)
 (www.wvdep.org/Docs/17444_SW_WV%20MS4%20permit%202009.pdf)

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analysis; a site use that is inconsistent with capture and reuse of stormwater; or too much shade or other physical conditions that preclude adequate use of plants. Sites must still maximize stormwater retention on-site, before applying the remaining stormwater to one of the alternatives. In instances where alternatives are chosen, technical justification as to the infeasibility of on site management is required to be documented.¹⁸

Example Permit Requirement Rationale for the Fact Sheet

Developed land changes the hydrology of sites, leading to higher stormwater discharge volumes and higher pollutant loads. The purpose of this standard is to maintain or restore stable hydrology in receiving waters thereby protecting water quality by having post-construction hydrology mimic the natural hydrology of the area.

A simpler, but reasonably approximate 'mimicking the natural hydrograph' approach can typically be accomplished by retaining (as opposed to detaining stormwater for later discharge) on a developed site the volume of water that was retained prior to development, through the mechanisms of infiltration, evapotranspiration, and capture and use. By significantly reducing the volume of stormwater discharges, these mechanisms significantly reduce the discharge of pollutants in stormwater, making discharge volumes the ideal all-around focus and metric for stormwater management. These provisions must be clear about the retention requirement, e.g., an underdrained rain garden likely functions more as a detention and filtration system than an infiltration system.

In Part 5.2.3, the five types of development which qualify for incentives are redevelopment, brownfield redevelopment, high density, vertical density, and mixed use with transit oriented development. Redeveloping already degraded sites can reduce regional land consumption and minimize new land disturbance. Minimizing land disturbance and impervious cover is critical to maintaining watershed health. In addition to water quality benefits, cleaning up and reinvesting in brownfield properties increases local tax bases, facilitates job growth, utilizes existing infrastructure, takes development pressures off of undeveloped, open land, and both improves and protects the environment. The effect of low-density urbanization on watersheds and the hydrologic cycle is substantial. High-density development, including vertical density, slows land consumption rates and accommodates more land uses on a smaller footprint. Finally, mixing land uses and promoting transit-oriented development can directly reduce runoff since mixed-use developments have the potential to use surface parking lots and transportation infrastructure more efficiently, requiring less pavement.¹⁹

In Part 5.2.4.d, the permittee must establish clear and stringent criteria for the conditions under which payment in lieu and off-site mitigation could be used. These criteria must be related to physical constraints such as a combination of soils which limit infiltration opportunities, space or light limited situations restricting the amount of vegetation that can be used, and a land use that is not conducive to capture and use of stormwater. Further, appropriate schedules for

¹⁸ *West Virginia Small MS4 Permit (Section C.b.5.a.ii.A.4)*
(www.wvdep.org/Docs/17444_SW_WV%20MS4%20permit%202009.pdf)

¹⁹ Adapted from the WV Phase II MS4 Fact Sheet
(www.dep.wv.gov/WWE/Programs/stormwater/MS4/permits/Pages/default.aspx)

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payment and implementation of mitigation measures must be established to ensure stormwater impacts are addressed in a timely manner.

Recommendations for Permit Writer

Many communities have adopted criteria based on already promulgated flood-control based standards (i.e., focused only on discharge rates). This example permit language instead promotes the concept that effective standards should be based on the objective of maintaining or restoring stable hydrology to protect the quality of receiving waters by having post-construction hydrology mimic the natural hydrology of the area. The permit language provides a number of example standards that can be used to achieve this objective.

Performance standards should take into account the wide variability in hydrologic conditions in different areas. Ideally, standards should reflect the local naturally-occurring hydrology with respect to runoff, infiltration, evapotranspiration, and storage – that is, the water balance that would be present in the absence of development. Key parameters, such as rainfall patterns, soil characteristics, and topography, can be used to establish likely 'natural' hydrology. Where maintaining or reestablishing such hydrologic conditions is infeasible, off-site mitigation, payment-in-lieu, or fee programs may be used. Based on current (2010) information, EPA recommends that permits allow for a combination of techniques that utilize infiltration, capture and use, and evapotranspiration as appropriate, rather than relying only on infiltration or some other technique alone to meet performance standards.

The permit writer could include a performance standard that stipulates that predevelopment hydrographs match post-development hydrographs. In order for this type of performance standard to be effective, the permit writer should make sure that the permit clearly spells out all variables of the hydrograph (volume, rate, duration, frequency) to be matched, and not just the discharge rate. Many current pre-post hydrology standards focus only on discharge rate, which is primarily a flood control approach. In addition, a pre-development condition should also be defined, and that condition should be one that is reasonably 'natural', rather than simply the conditions (perhaps already fairly impervious) that existed immediately prior to the current developed site. A calculator tool based on key hydrologic parameters (soil, rainfall, slope, and vegetation) or an on-site rainfall retention standard that is appropriate for that area can help the permittee determine what constitutes pre-development hydrology and the means by which it may be matched.

As contemplated in the example permit provisions, permit writers may want to consider the difference between new development and redevelopment sites, as well as differences among some types of developed sites, in establishing performance standards. From the standpoint of imperviousness at a watershed scale, redeveloped sites are usually more desirable than new development sites, which replace relatively naturally functioning green spaces with impervious surfaces such as roads, and parking lots. Certain types of development generate less impervious surfaces than others. For example, typically, there is little or no increase in net stormwater discharges when redeveloping underused properties such as vacant properties, brownfield sites, or greyfield sites, since new impervious cover replaces existing impervious cover. The net discharge increase from already developed properties would likely be zero since the site was already predominately impervious cover. In many cases, redeveloped sites break up or remove some portion of the impervious cover, converting it to pervious cover and allowing for some stormwater infiltration. Redevelopment sites can produce a net improvement in regional water quality by decreasing total impervious area and its

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associated stormwater discharges. Redeveloped sites can also reduce regional land consumption. By building on underused, already degraded land, the pressure to convert previously undeveloped land is reduced. Therefore differential standards for new development and redeveloped sites, as well as for different types of developed sites, may be reasonable. However, they should be crafted to minimize creation of imperviousness at the watershed scale, and still include some reasonable level of stormwater management at the site scale.

Redevelopment is the act of improving by renewing or restoring any developed property that results in the land disturbance of one acre or greater, and that has one of the following characteristics:

- Land that currently has an existing structure, such as buildings or houses, or
- Land that is currently covered with an impervious surface, such as a parking lot or roof, or
- Land that is currently degraded and is covered with sand, gravel, stones, or other non-vegetative covering.

Infiltration may not be appropriate in all cases. For example, a site that is a potential hot spot with the reasonable potential for significant pollutant loading(s) may not be appropriate for stormwater infiltration. Hot spots may include commercial, industrial, institutional, municipal, or transportation related operations that may produce higher levels of stormwater pollutants, and/or present a higher level or risk for spills, leaks, or illicit discharges such as: gas stations, petroleum wholesalers, vehicle maintenance and repair, auto recyclers, recycling centers and scrap yards, landfills, solid waste facilities, wastewater treatment plants, airports, railroad stations and associated maintenance facilities, and highway maintenance facilities.

In addition, the permit writer may want to consider what type of flexibility to afford sites where the owner/operator is not able to meet the performance standard on site. For instance, if a site is constrained by size or previous impervious surfaces, such that the use of control measures that infiltrate stormwater is severely limited, the permit could allow alternatives for meeting the performance standard in other ways such as payment in lieu and off-site mitigation within the same watershed.

Off-site mitigation and payment in lieu programs are options that can be used in these instances. Off-site mitigation generally means that control measures may be implemented at another location, in the same sewer/watershed as the original project, and as approved by the regulatory agency. Payment in lieu programs generally mean that the developer pays a fee to the permittee which will then be applied to a stormwater control project, in lieu of installing the required control measures.

If the permit writer chooses to include an off-site mitigation or payment in lieu program in the permit, the permit writer could specify that the programs meet several criteria, for example, those described in the 2009 West Virginia Phase II General Permit Fact Sheet (www.dep.wv.gov/WWE/Programs/stormwater/MS4/permits/Pages/default.aspx):

1. The permittee must establish clear and stringent criteria for the conditions under which these options are available that must be related to real physical constraints such as a combination of soils limiting infiltration opportunities, space or light limited situations restricting the amount of vegetation that can be used, and a land use that is not conducive to capture and use of

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stormwater. While one or two of these characteristics should not be adequate to qualify for the alternative, the combination of multiple constraints could;

2. A minimal requirement for at least [0.4 inch] of stormwater managed on-site;
3. A [1:1.5 ratio] of the amount of requisite stormwater not managed on-site to the amount of stormwater required to be mitigated at another site, or for which in-lieu payments must be made;
4. If demonstrated to the permittee that it is completely infeasible to manage the remainder [0.4 inches], then the ratio for this unmanaged portion is [1:2].
5. The necessary tracking systems for both types of programs, including the necessary inventory of public and retrofit projects for off-site mitigation; and,
6. The establishment of a credible valuation structure for payment in lieu, i.e., what is the actual cost for the permittee to provide retrofits for the necessary amount of stormwater, not just a token payment. The purpose of these provisions is to disincentivize the use of alternatives unless really needed, but also to provide a financial foundation for implementation of public stormwater management projects, including retrofits where those needs have been identified.

Additional justification for the development types which qualify for these incentives can be seen in the West Virginia Phase II MS4 Permit Fact Sheet

(www.dep.wv.gov/WWE/Programs/stormwater/MS4/permits/Pages/default.aspx).

5.3 Site Plan Review

Example Permit Provision

- 5.3.1 To ensure that all applicable new development and redeveloped sites conform to the performance standards required in Part 5.2, the permittee must continue to implement project review, approval, and enforcement procedures that include:
 - a. Procedures for the site plan review and approval process(es) that include inter-departmental consultations, as needed, and a required re-approval process when changes to an approved plan are desired; and
 - b. A requirement for submittal of 'as-built' certifications within 90 days of completion of a project.
- 5.3.2 The permittee must conduct site plan reviews, using the procedures described in Part 5.3.1, of all new development and redeveloped sites which will disturb greater than or equal to one acre [or a smaller threshold as set by the permitting authority] and discharge to the MS4 (including sites that disturb less than one acre that are part of a larger common plan of development or sale). The site plan review must specifically address how the project applicant meets the performance standards in Part 5.2 and how the project will ensure long-term maintenance as required in Part 5.4.

Example Permit Requirement Rationale for the Fact Sheet

Specific standards are a critical component of a stormwater management program. However, even the best requirements need to be supported by a review program to ensure that the standards are met. The example permit provision would require permittees to fully implement a comprehensive site plan review and approval program. To meet this requirement, the permittee must have the authority to withhold approvals when standards are not met.

Recommendations for the Permit Writer

The permit writer may want to consider adding a requirement for a pre-application concept plan meeting to occur (in addition to the requirement for the project applicant to submit a site plan for review). During this meeting the project land owner or developer, the project design engineer, and municipal planning staff could discuss the conceptual designs that would be used to ensure that they meet the performance standards. This meeting would ensure that stormwater and performance standards are addressed early in the development process. However, if this pre-application concept plan meeting is not consistent with local planning procedures, the permit writer could consider omitting this requirement.

5.4 Long-Term Maintenance of Post-Construction Stormwater Control Measures

Example Permit Provision

- 5.4-1 All structural stormwater control measures installed and implemented to meet the performance standards of Part 5.2 must be maintained in perpetuity. The permittee must ensure the long-term maintenance of structural stormwater control measures installed according to this Part through one, or both, of the following approaches:
- a. Maintenance performed by the Permittee. See part 6.4.
 - b. Maintenance performed by the owner or operator of a new development or redeveloped site under a maintenance agreement. The permittee must require the owner or operator of any new development or redeveloped site subject to the performance standards in Part 5.2 to develop and implement a maintenance agreement addressing maintenance requirements for any structural control measures installed on site to meet the performance standards. The agreement must allow the permittee, or its designee, to conduct inspections of the structural stormwater control measures and also account for transfer of responsibility in leases and/or deeds. The agreement must also allow the permittee, or its designee, to perform necessary maintenance or corrective actions neglected by the property owner/operator, and bill or recoup costs from the property owner/operator when the owner/operator has not performed the necessary maintenance within thirty (30) days of notification by the permittee or its designee.

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5.4.2 Verification of maintenance responsibilities. The permittee must require that property owners or operators of any new development or redeveloped site subject to the performance standards in Part 5.2 provide verification of maintenance for the approved structural stormwater control measures used to comply with the performance standards. Verification must include one or more of the following as applicable:

- a. The owner/operator's signed statement accepting responsibility for maintenance with a provision for transferring maintenance responsibility if the property is legally transferred to another party; and/or
- b. Written conditions in the sales or lease agreement that require the recipient to assume responsibility for maintenance; and/or
- c. Written conditions in project conditions, covenants and restrictions for residential properties assigning maintenance responsibilities to a home owner's association, or other appropriate group, for maintenance of structural and treatment control stormwater management practices; and/or
- d. Any other legally enforceable agreement that assigns permanent responsibility for maintenance of structural or treatment control stormwater management practices.

Example Permit Requirement Rationale for the Fact Sheet

Appropriate operation and maintenance are critical aspects to the function of any suite of controls. In many cases, controls may be located on private property, and it is necessary to establish some provision to assure responsibility and accountability for the operation and maintenance of these controls.

The permittee must ensure maintenance of all structural stormwater control measures. In this Guide, structural controls also include many green infrastructure practices such as rainwater harvesting, rain gardens, permeable pavement, and vegetated swales.

Recommendations for the Permit Writer

Most non-traditional MS4 permittees will probably not have the legal authority to recoup costs where the owner/operator has not completed necessary maintenance. Permit writers may want to be more specific in this requirement to include other options for non-traditional MS4 permittees.

5.5 Watershed Protection

Example Permit Provision

5.5.1 When the Permittee revises its General Plan (or equivalent) or other relevant plans (e.g. Transportation Master, or Community Plan) they must include effective water

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quality and watershed protection elements that require implementation of consistent water quality protection measures for new development and redeveloped sites within *[insert deadline]*. Examples of water quality and watershed protection elements to be considered include the following: *[insert principles and/or policies which are appropriate for the watershed such as,*

- Minimize the amount of impervious surfaces (roads, parking lots, roofs, etc.) within each watershed, by minimizing the creation, extension and widening of parking lots, roads and associated development.
- Preserve, protect, create and restore ecologically sensitive areas that provide water quality benefits and serve critical watershed functions. These areas may include, but are not limited to; riparian corridors, headwaters, floodplains and wetlands.
- Implement management practices that prevent or reduce thermal impacts to streams, including requiring vegetated buffers along waterways, and disconnecting discharges to surface waters from impervious surfaces such as parking lots.
- Prevent disturbances of natural waterbodies and natural drainage systems caused by development, including roads, highways, and bridges.
- Avoid development in areas that are particularly susceptible to erosion and sediment loss.
- Implement standards to protect trees, and other vegetation with important evapotranspirative qualities.
- Implement policies to protect native soils, prevent topsoil stripping, and prevent compaction of soils.
- Implement water conservation policies that will reduce both stormwater and non- stormwater discharges via storm sewer systems.²⁰
- Implement policies that encourage stormwater practices close to the source of the runoff rather than downstream and lower in the watershed.]

Example Permit Requirement Rationale for the Fact Sheet

Imperviousness has been shown to correlate with water quality impacts. In order to minimize water quality impacts, the permittee must examine their planning principles to manage the creation of impervious surfaces at the watershed level, such as reducing the footprint of streets and parking lots. Also, ecologically sensitive areas can protect water quality by acting both as filters that reduce pollutants in stormwater discharges and as sponges to reduce the impact on the ecosystem's hydrology. Thermal pollution is also a concern that can impact biota in waterways. Stormwater discharges from impervious surfaces are often characterized by higher temperatures than natural, pervious surfaces. Reducing the chances of further increasing this temperature by preserving, protecting, and restoring natural features that provide shading for the waterway can further help reduce thermal pollution. Whenever possible natural waterways

²⁰ West Virginia Small MS4 Permit (www.wvdep.org/Docs/17444_SW_WV%20MS4%20permit%202009.pdf)

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must be protected and not disturbed by stormwater from developed sites. For example, areas that have a high potential for erosion must be avoided for development when possible. Protecting vegetation, native soils, and conserving water can also help ensure the hydrologic qualities of the site remain intact.

Consideration of stormwater impacts from development is critical during the planning phases of development. This not only includes planning on the site-level, but also with respect to discharges from the MS4 on the watershed level. To the extent possible, stormwater management must be an integral part of higher level planning documents that determine where and how development that will result in stormwater discharges to the MS4 should occur since these decisions affect water quality. Using land efficiently can result in better stormwater management by putting development where it is most appropriate. For example, by directing and concentrating new development in areas targeted for growth, communities can reduce or remove development pressure on undeveloped parcels and protect sensitive natural lands and recharge areas. Another strategy is redeveloping already degraded sites such as abandoned shopping centers or underutilized parking lots. In this case, the net increase in discharges from developed sites would likely be zero, and it would likely decrease, depending on the on-site infiltration practices used. Also, by allowing or encouraging denser development, less land is converted overall, and less total impervious area created.

Recommendations for the Permit Writer

Examining stormwater on a watershed basis and including watershed principles is an important part of protecting waterways in a holistic manner. Climate change may increase the size and frequency of storms in some area of the nation. Including watershed-type assessments and considerations as Permit Requirements will help the permittee better focus their efforts to ensure the best water protection outcomes for existing conditions and those anticipated future conditions. Therefore, permit writers should consider including watershed protection principles. Newer programs may not be ready for permit writers to include the exact example permit provision provided. If possible, permit writers should be as specific as possible for the needs of the watershed where the MS4 permittee is located. Permittees should be careful when installing new stormwater BMPs to ensure that there are not any negative, unintended consequences.

5.6 Tracking of Post-Construction Stormwater Control Measures

Example Permit Provision

5.6.1 Inventory of Post-Construction Stormwater Control Measures. The permittee must continue to maintain an inventory of all post-construction structural stormwater control measures installed and implemented at new development and redeveloped sites, including both public and private sector sites located within the permit area. The inventory must be searchable by property location (either on paper or electronic). New entries to the inventory must be made during the site plan review and approval process in Part 5.3.1.

5.6.2 Tracking Information. Each entry to the inventory must include basic information on each project, such as project name, owner's name and contact information, location, start/end date, etc. In addition, inventory entries must include the following for each project:

- a. Short description of each stormwater control measure (type, number, design or performance specifications);
- b. Latitude and longitude coordinates of each stormwater control measure;
- c. Short description of maintenance requirements (frequency of required maintenance and inspections); and
- d. Inspection information (date, findings, follow up activities, prioritization of follow-up activities, compliance status).

Based on inspections conducted under Part 5.7, the permittee must update the inventory as appropriate where changes occur in property ownership or the specific control measures implemented at the site. This inventory must be maintained and available for review by the permitting authority.

Example Permit Requirement Rationale for the Fact Sheet

Creating an inventory of post-construction structural stormwater control measures, including tracking of specific information, will first enable permittees to know what control measures they are responsible for. Without this information the permittee will not be protecting water quality to their full potential since inspections, maintenance, and follow-up changes cannot be performed. Tracking information such as the latitude/longitude, maintenance and inspection requirements and follow-up will allow the permittee to be able to better allocate their resources for those activities that are immediately necessary. Although not required, including photographs will help the permittee assess how the control measure has changed since it was first created and will likely aid in determining proper maintenance and/or retrofitting opportunities if the measure is no longer providing the water quality benefits it was originally designed.

Recommendations for the Permit Writer

- Permit writers may wish to specifically define the types of structural controls that must be included in the inventory. For example, rain barrels may be considered a structural control, but the MS4 likely does not need latitude and longitude coordinates of the rain barrels.
-

5.7 Inspections and Enforcement

Example Permit Provision

- 5.7.1 Inspection Frequency. To ensure that all stormwater control measures are operating correctly and are being maintained as required consistent with its applicable maintenance agreement, the permittee must conduct inspections of each project site covered under Part 5.2 performance standards, *[insert inspection frequency, e.g., at least one time during the permit term, 20% of sites per year, etc.]*. The inspections must be in accordance with those specified in the *[insert State manual that describes the maintenance of control measures]*. A description of inspection procedures must be included in the SWMP document.
- 5.7.2 Post-Construction Inspection. Within *[insert deadline, e.g., 1 week, 2 weeks, etc.]* of completion of construction of any project required to meet the Section 5.2 performance standards, the permittee must conduct a post-construction inspection to verify that the permittee's performance standards have been met. The permittee must include in its SWMP a procedure for being notified by construction operators/owners of their completion of active construction so that the post-construction inspection may be conducted.
- 5.7.3 Inspection Reports. The permittee must document its inspection findings in an inspection report. Each inspection report must include:
- Inspection date;
 - Name and signature of inspector;
 - Project location (street address, latitude/longitude, etc.) and inventory reference number (from inventory established in Section 5.6.1)
 - Current ownership information (for example, name, address, phone number, fax, and email)
 - A description of the condition of the structural stormwater control measure including the quality of: vegetation and soils; inlet and outlet channels and structures; embankments, slopes, and safety benches; catch basins; spillways, weirs, and other control structures; and sediment and debris accumulation in storage and forebay areas as well as in and around inlet and outlet structures;
 - Photographic documentation of all critical structural stormwater control measure components; and

- g. Specific maintenance issues or violations found that need to be corrected by the property owner or operator along with deadlines and reinspection dates.

The permittee must document and maintain records of inspection findings and enforcement actions and make them available for review by the permitting authority.

Example Permit Requirement Rationale for the Fact Sheet

Inspection of post-construction control measures is key to ensuring the protection of water quality. If control measures are not inspected and maintained they could become sources of pollution rather than reducing pollution. By including detailed information in the inspection report, the permittee can better determine if maintenance is required and the permittee can have a snapshot of sorts to know the status of their control measures to prioritize funding.

Recommendations for the Permit Writer

Permit writers should clearly specify the requirements for inspections. Inspecting and properly maintaining structural stormwater controls to ensure they are working as designed is just as important as installing them in the first place. By having specific requirements, permittees will be reminded that they must allocate resources to ensure control measures are properly maintained and functioning. The permit writer may also want to add a prioritization scheme to the requirement to help the permittee determine what maintenance activities are priorities for protecting water quality and which ones are minor changes.

5.8 Retrofit Plan

Example Permit Provision

5.8.1 The permittee must develop a plan to retrofit existing developed sites that are impacting water quality. The retrofit plan must be developed within [*insert deadline, such as within two years of permit issuance*] and must emphasize controls that infiltrate, evapotranspire, or harvest and use stormwater discharges. The plan must include²¹:

- a. An inventory of potential retrofit locations, which considers, at a minimum:
- Locations that contribute pollutants of concern to an impaired waterbody
 - Locations that contribute to receiving waters that are significantly eroded
 - Locations that are tributary to a sensitive ecosystem or protected area
 - Locations that are tributary to areas prone to flooding

²¹ Orange County Municipal Stormwater Permit (Section F.3.d)
(www.waterboards.ca.gov/sandiego/water_issues/programs/stormwater/oc_stormwater.shtml)

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- b. An evaluation and ranking of the inventoried locations to prioritize retrofitting which includes, at a minimum:
- Feasibility
 - Cost effectiveness
 - Pollutant removal effectiveness
 - Impervious area potentially treated
 - Maintenance requirements
 - Landowner cooperation
 - Neighborhood acceptance
 - Aesthetic qualities, and
 - Efficacy at addressing concern.

Example Permit Requirement Rationale for the Fact Sheet

It is clear that we cannot protect the nation's waters without also addressing degradation caused by stormwater discharges from existing developed sites. For that reason stormwater programs must include substantive retrofit provisions.

It is possible and reasonable to significantly improve water quality in many urban receiving waters. This requires more than just a new development and redeveloped sites program, however, which at best can only hold the line. To actually improve the quality of receiving waters it is necessary to mitigate discharges from existing developed sites, which generally means implementation of measures to bring about the retrofit the stormwater control measures at existing sites to retain most stormwater on site.

In addition, research indicates that most streambank restoration projects that actively stabilize eroding channels should not be implemented until after hydrologic retrofits have been completed that restore the hydrologic regime not concurrently with the implementation of the retrofits.

Municipal projects, such as traffic calming sites could also include stormwater retrofit components, such as curb bump outs that include bioretention features, rain gardens, and curb cuts.

Information on retrofit options and the development of a retrofit plan can be found in the Center for Watershed Protection's guidance on Urban Stormwater Retrofit Practices (available at www.cwp.org as Manual No. 3 under the Urban Subwatershed Restoration Manual Series).

Recommendations for the Permit Writer

Permittees may need a permit term or two to adequately develop and implement a retrofit plan. Some permittees may not be ready to have retrofit plans as part of their requirements. It is up to the permit writer to make this determination based on the specific information they have available on current programs. A retrofit plan should assess the areas where retrofitting is appropriate and will result in increased water quality protection and restoration. The permit writer should determine

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the appropriate timeframe and language for a retrofit plan. For example, if the permittee was already required to develop a retrofit plan in a previous permit term the permit may specify a schedule for implementation rather than development.

CHAPTER 6: POLLUTION PREVENTION/GOOD HOUSEKEEPING

Introduction

Federal stormwater regulations (see 40 CFR 122.34(b)(6) and 40 CFR 122.26(d)(2)(iv)(A)) require the operator of a regulated MS4 community to develop a program to:

- Prevent or reduce the amount of stormwater pollution generated by municipal operations and conveyed into receiving waters.
- Train employees on how to incorporate pollution prevention/good housekeeping techniques into municipal operations.
- Identify appropriate control measures and measurable goals for preventing or reducing the amount of stormwater pollution generated by municipal operations.

The first step for the permittee is to evaluate and assess the areas and municipal facilities that it controls in order to determine which activities may currently have a negative impact on water quality and to find solutions for these activities. The simplest solution is to limit the number of activities that are conducted outside and exposed to stormwater.

Storm sewer systems need maintenance to ensure that structures within the storm sewer that are meant to reduce pollutants do not become sources of pollution. Regularly maintaining catch basins and cleaning storm sewer pipes prevent the accumulation of pollutants that are later released during rain events as well as blockages, backups, and flooding. Most permittees have an existing program to maintain the storm sewer infrastructure. EPA notes, however, that some of these programs have tended to focus on flood avoidance and complaint response rather than reducing water quality impacts from stormwater discharges.

The MS4 permit must require that the system be maintained to prevent the discharge of pollutants into receiving waters. System mapping and a schedule of regular maintenance are key to a successful pollution prevention program. EPA recommends establishing a tiered maintenance schedule for the entire storm sewer system area, with the highest priority areas being maintained at the greatest frequency. Priorities should be driven by water quality concerns and can be based on the land use within the MS4 area, the condition of the receiving water, the amount and type of material that typically accumulates in an area, or other location-specific factors. It is also advisable to use spill and illicit discharge data to track areas that may require immediate sewer infrastructure maintenance. It is also important for material that is collected to be disposed of in a responsible manner.

Included Concepts

- ▶ Municipal facility and control inventory
- ▶ Facility assessment
- ▶ Development of facility-specific stormwater management SOPs and Implementation of facility stormwater controls
- ▶ Storm sewer system maintenance activities
- ▶ Flood management
- ▶ Pesticide, herbicide, and fertilizer application and management
- ▶ Training and education
- ▶ Contractor requirements and oversight

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The procedures for storm sewer system operation and maintenance must be documented in the permittee's SOPs or similar type of documents, which are part of the permittee's SWMP. Employee training to carry out these pollution prevention measures is a required component of the program. The pollution prevention/good housekeeping/maintenance activities should be documented and, where possible, quantified (e.g., number and location of inspections and clean-outs, type and quantity of materials removed). Having permittees characterize the quantity, location, and composition of pollutants removed from catch basins can provide useful data that can later be used to assess the program's overall effectiveness, identify illicit discharges, and help the permittee better prioritize implementation activities in the future.

Specific pollution prevention requirements related to pollutant-generating activities such as landscaping techniques (including the application of pesticides, herbicides, and fertilizer) and operating and maintaining public streets, should also be included in the permit where applicable. For example, typical pollutants associated with street repair and maintenance include heavy metals, chlorides, hydrocarbons (e.g., benzene, toluene, ethylbenzene, xylene), concrete dust, sand, deicers, sediment, and trash. The permitting authority should consider requiring alternative landscaping practices such as integrated pest management (IPM), xeriscaping, or mechanical (non-chemical) removal of unwanted plants. Other landscaping controls, such as mulch management, chemical storage, reduction of soil compaction, and erosion control, should also be considered. Training and educating municipal and contracted staff is also important to ensure that everyone is knowledgeable and proficient in the newest and most effective approaches to minimizing pollutant discharges from municipal facilities and activities.

Additionally, permits should require that water quality be considered when designing flood management projects, and that existing structural flood control devices are evaluated to determine if retrofitting the device to remove/reduce pollutants from stormwater is necessary and practicable.

6.1 Municipal Facility and Control Inventory

Example Permit Provision

6.1.1 Development of a Municipal Facility and Stormwater Control Inventory – The permittee must continue to update and maintain an inventory of municipally-owned or operated facilities and stormwater controls, including but not limited to the following:

- Composting facilities
- Equipment storage and maintenance facilities
- Fuel farms
- Hazardous waste disposal facilities
- Hazardous waste handling and transfer facilities
- Incinerators
- Landfills
- Landscape maintenance on municipal property
- Materials storage yards

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- Pesticide storage facilities
- Public buildings, including schools, libraries, police stations, fire stations, municipal buildings, and similar buildings
- Public parking lots
- Public golf courses
- Public swimming pools
- Public works yards
- Recycling facilities
- Salt storage facilities
- Solid waste handling and transfer facilities
- Street repair and maintenance sites
- Vehicle storage and maintenance yards
- Municipally-owned and/or maintained structural stormwater controls

6.1.2 Documentation— The list of municipally-owned or operated facilities and stormwater controls must be maintained and available for review by the permitting authority.

6.1.3 Mapping – On a map of the area covered by the MS4 permit, the permittee must identify where the municipally-owned or operated facilities and stormwater controls are located. The map must identify the stormwater outfalls corresponding to each of the facilities as well as the receiving waters to which these facilities discharge. The permittee must also identify the manager of each facility and their contact information. The map must be maintained and updated regularly and be available for review by the permitting authority.

Example Permit Requirement Rationale for the Fact Sheet

Municipally-owned or operated facilities serve as hubs of activity for a variety of municipal staff from many different departments. Some municipalities will have one property at which all activities take place (e.g., the municipal maintenance yard), whereas others will have several specialized facilities such as those listed above. A comprehensive list and map of such facilities will help staff responsible for stormwater compliance build a better awareness of their locations within the MS4 service area and their potential to contribute stormwater pollutants. The facility inventory will also serve as a basis for setting up periodic facility assessments (see Part 6.2) and developing, where necessary, facility stormwater pollution prevention plans (see Part 6.3).

Recommendations for the Permit Writer

Permit writers should tailor the facilities listed in the assessment as best they can to include the facilities most likely to be owned or operated by the permittee. It is highly likely that some of the facilities listed in the Permit Requirement would not apply to most non-traditional and/or non-municipal MS4s.

6.2 Facility Assessment

Permit Requirement

6.2.1 Municipally-owned or operated facility assessment:

- a. Comprehensive Assessment of Pollutant Discharge Potential –The permittee must review, reassess, and update the comprehensive assessment of all municipally-owned or operated facilities identified in Part 6.1 [*insert frequency, e.g., annually*] for their potential to discharge in stormwater the following typical urban pollutants: sediment, nutrients, metals, hydrocarbons (e.g., benzene, toluene, ethylbenzene and xylene), pesticides, chlorides, and trash. Other pollutants may be associated with, but not generated directly from, the municipally-owned or operated facilities, such as bacteria, chlorine, organic matter, etc. Therefore, the permittee must determine additional pollutants associated with its facilities that could be found in stormwater discharges. A description of the assessment process must be included in the SWMP document.
- b. Identification of “High Priority” Facilities – Based on the Part 6.2.1.a comprehensive assessment, the permittee must identify as “high-priority” those facilities that have a high potential to generate stormwater pollutants. Among the factors that must be considered in giving a facility a high priority ranking is the amount of urban pollutants stored at the site, the identification of improperly stored materials, activities that must not be performed outside (e.g., changing automotive fluids, vehicle washing), proximity to waterbodies, poor housekeeping practices, and discharge of pollutant(s) of concern to impaired water(s). High priority facilities must include the permittee’s maintenance yards, hazardous waste facilities, fuel storage locations, and any other facilities at which chemicals or other materials have a high potential to be discharged in stormwater.
- c. Documentation of Comprehensive Assessment Results – The permittee must document the results of the assessments and maintain copies of all site evaluation checklists used to conduct the comprehensive assessment. The documentation must include the results of the permittee’s initial assessment, any identified deficiencies and corrective actions taken, and a list of the “high priority” facilities identified per Part 6.2.1.b.

Example Permit Requirement Rationale for the Fact Sheet

The initial (“first time”) comprehensive assessment is necessary to identify which of the municipality’s facilities are most likely to contribute stormwater pollutants and which are in need of stormwater controls. The assessments will involve a detailed site inspection that can identify improperly stored materials, activities that should not be performed outside (e.g., changing automotive fluids, vehicle washing), and poor housekeeping practices.

Recommendations for the Permit Writer

If the permitting authority has an established site inspection protocol to be used in the comprehensive assessment, it should be included and referenced here. The list of pollutants in this section should be modified or expanded based on pollutants of concern in the permitting authority's jurisdiction.

6.3 Development of Facility-Specific Stormwater Management SOPs and Implementation of Facility Stormwater Controls

Example Permit Provision

6.3.1 Facility-specific Stormwater Management SOPs for "High Priority" Facilities:

- a. For each "high priority" facility or operation identified in Part 6.2, the permittee must develop a site-specific SOP that identifies stormwater controls (i.e., structural and non-structural controls, and operational improvements) to be installed, implemented, and maintained to minimize the discharge of pollutants in stormwater. At a minimum, the facility-specific SOP must include the stormwater control measures described below in Part 6.3.2, as well as inspection and visual monitoring procedures and schedules described in Part 6.3.3.
- b. A copy of the facility-specific stormwater management SOP must be maintained and be available for review by the permitting authority. The SOP must be kept on-site at each of the municipally-owned or operated facilities' offices for which it was completed. The SOP must be updated as necessary.
- c. The permittee must install, implement, and maintain all stormwater controls required per Part 6.3.2 of this permit and included in the facility's site-specific SOP.

6.3.2 Stormwater Controls for "High Priority" Facilities – The following stormwater controls must be implemented at all "high priority" municipally-owned or operated facilities identified in Part 6.2. A description of any controls included in this part and any standard operating procedures developed to comply with this part must be included as part of the of each facility's SOP:

- a. General good housekeeping – The following good housekeeping practices must be implemented for all facilities identified as "high priority":
 1. The permittee must keep all municipally-owned or operated facilities neat and orderly, minimizing pollutant sources through good housekeeping procedures and proper storage of materials.
 2. Materials exposed to stormwater must be covered where feasible (without creating additional impervious surfaces, if possible).
- b. De-icing material storage – The permittee must store salt and other de-icing materials in a permanent storage structure, unless stormwater runoff from the storage piles is not discharged, or if discharges from the piles are authorized under another stormwater permit. If a permanent storage structure is required but does not exist, one must be built within *[insert timeframe]*, and seasonal

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tarping must be used as an interim control measure until the permanent structure is completed. If a permanent storage facility is not feasible, the permittee must provide a rationale to the permitting authority as to why and what alternate BMPs will be utilized instead.

Where a permanent storage structure is present, the permittee must perform regular maintenance and inspections of the permanent storage structure.

- c. Fueling operations – The permittee must continue to implement standard operating procedures for vehicle fueling and receiving of bulk fuel deliveries at municipally-owned or operated facilities with the goal of reducing the likelihood of spills, and providing spill controls in the event that accidental spills do occur.
- d. Vehicle maintenance – The permittee must continue to implement a standard operating procedure for vehicle maintenance and repair activities that occur at municipally-owned or operated facilities with the goal of reducing the likelihood of spills or releases and providing controls in the event that accidental spills do occur. The standard operating procedures must include regular inspections of all maintenance areas and activities.
- e. Equipment and vehicle washing – The discharge of equipment and vehicle wash wastewater to the MS4 or directly to receiving waters from municipal facilities is prohibited. The permittee may meet this requirement by either installing a vehicle wash reclaim system, capturing and hauling the wastewater for proper disposal, connecting to sanitary sewer (where applicable and approved by local authorities), ceasing the activity, and/or applying for and obtaining a separate stormwater permit.²²

6.3.3 Inspections and Visual Monitoring:

- a. Weekly visual inspections – The permittee must perform weekly visual inspections to ensure materials and equipment are clean and orderly, and to minimize the potential for pollutant discharge. The permittee must look for evidence of spills and immediately clean them up to prevent contact with precipitation or runoff. The weekly inspections must be tracked in a log for every facility, and records kept with the SWMP document. The inspection report must also include any identified deficiencies and the corrective actions taken to fix the deficiencies.
- b. Quarterly comprehensive inspections – At least once per quarter, a comprehensive inspection of “high priority” facilities, including all stormwater controls, must be performed, with specific attention paid to waste storage areas, dumpsters, vehicle and equipment maintenance/fueling areas, material handling areas, and similar potential pollutant-generating areas. The quarterly inspection results must be documented and records kept with the SOP document. This inspection must be done in accordance with the developed SOPs. The inspection report must also include any identified deficiencies and the corrective actions taken to fix the deficiencies.

²² New Jersey Tier A Phase II MS4 Permit (NJ0141852) (www.state.nj.us/dep/dwg/pdf/Tier_A_final.pdf)

- c. Quarterly visual observation of stormwater discharges – At least once per quarter, the permittee must visually observe the quality of the stormwater discharges from the “high priority” facilities (unless climate conditions preclude doing so, in which case the permittee must attempt to evaluate the discharges four times during the wet season). Any observed problems (e.g., color, foam, sheen, turbidity) that can be associated with pollutant sources or controls must be remedied within three days or before the next storm event, whichever is sooner. Visual observations must be documented, and records kept with the SOP document. This inspection must be done in accordance with the developed SOPs. The inspection report must also include any identified deficiencies and the corrective actions taken to fix the deficiencies.

Example Permit Requirement Rationale for the Fact Sheet

Each municipal facility will require a different set of control measures depending on the nature of activities that occur there and the types of materials that are stored and used. Developing and maintaining a site-specific SOP for each facility will help to ensure that employees responsible for facility operation are aware of the stormwater controls required for the site.

There are a number of storage areas and activities that are common at municipal facilities that have a high potential for polluting stormwater:

- Deicing materials, particularly road salt, are easily liberated and transported by rainfall, and constituents such as chloride are not removed by most stormwater controls.
- Fueling and vehicle maintenance and storage areas are prone to spills and drips of various automotive fluids.
- Equipment and vehicle washing areas are designed to mix water with dirt and hydrocarbons, requiring special treatment of the wastewater (including pretreatment and diversion to the sanitary sewer, if allowed) and protection of wash areas from rainfall and runoff.

The best way to avoid pollutant discharges from these sources is to keep precipitation and runoff from coming into contact with stored chemicals and activity areas that use chemicals and materials, which can become sources of stormwater pollutants. For example, the permittee must cover stockpiles, create dedicated structures for stored materials, build berms around areas of pavement to prevent clean runoff from contacting contaminated areas, and maintain a minimum distance between stockpiles and stormwater infrastructure and receiving waters. These are just a few of the ways in which these potential pollutant sources can be protected from precipitation and runoff.

The permit requires that comprehensive site inspections be conducted quarterly, which is an appropriate frequency to ensure that material stockpiles that might be moved or utilized on a seasonal basis are protected from precipitation and runoff. Also, quarterly inspections will allow inspectors to observe different types of operations that occur at different times of the year (e.g., landscape maintenance crews are less active in the winter). Quarterly visual observations are required so that inspectors can see in real time the qualitative nature of the

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stormwater discharge and so that corrective action can be taken where necessary to improve on-site stormwater controls.

The permit also specifies that inspection procedures, results, and controls for each facility be documented to ensure that the site inspections are consistent and that maintenance of stormwater controls remains part of the municipality's standard operating procedures. The requirement for an inspection log will allow the permitting authority to verify that periodic site inspections have been performed.

Recommendations for the Permit Writer

Neither Phase I nor Phase II regulations specifically require that MS4 permittees develop facility-specific stormwater management SOPs. However, both Phase I and Phase II require that permittees prevent or reduce pollutant discharge in stormwater from municipal facilities and activities. Requiring permittees to assess high priority facilities and develop appropriate controls for each is an effective way of requiring permittees to address potential sources of pollutants at facilities.

When setting frequency for facility inspections (see Part 6.3.3), the permit writer should consider the number of facilities and the size/complexity of the sites to ensure that enough time is available to complete the assessments.

The list of specific stormwater controls for municipal facilities will vary from place to place based on local and watershed priorities and climate considerations. The permit writer should specify stormwater controls that are appropriate for the local conditions. For example, if a permittee uses satellite locations for temporary storage of deicing materials during snow events, the permit writer may want to consider options other than the permanent storage requirement if the permittee uses the piles within a certain time frame and the piles are covered by temporary tarping or a similar control.

6.4 Storm Sewer System Maintenance Activities

Example Permit Provision

6.4.1 MS4 catch basin maintenance

- a. Assessment/prioritization of catch basins – The permittee must assign a priority to each of its catch basin inlets within its jurisdiction as one of the following:
 - Priority A – Catch basins that are designated as consistently generating the highest volumes of trash and/or debris
 - Priority B – Catch basins that are designated as consistently generating moderate volumes of trash and/or debris
 - Priority C – Catch basins that are designated as generating low volumes of trash and/or debris

The permittee must use information compiled from citizen complaints/reports to help in the determination of the appropriate priority level. A description of

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the prioritization scheme must be included in the SWMP.

- b. Catch basin inspection and cleaning
 1. Based on the priorities assigned in Part 6.4.1.a., the permittee must inspect and clean catch basins in accordance with the following schedule:
 - Priority A – [*Insert cleanout frequency, e.g., 3 times per year*]
 - Priority B – [*Insert cleanout frequency, e.g., 2 times per year*]
 - Priority C – [*Insert cleanout frequency, e.g., 1 time per year*]The permittee must develop a catch basin cleaning schedule based on the frequency specified in this permit, along with a list of each of its catch basins and the priority assigned to them per Part 6.4.1.a.
 2. In addition to catch basin cleanings performed above, the permittee must ensure that any catch basin that is inspected and found to be between one third and one half full of trash and/or debris must be cleaned within [*Insert cleanout frequency e.g., 1 week of discovery*].²³ The permittee must maintain a log of all maintenance performed.
 3. The permittee must document that it has performed all required catch basin cleanings in a log that is to be made available for review by the permitting authority upon request.
- c. Catch basin labeling – The permittee must ensure that each catch basin includes a legible stormwater awareness message (e.g., a label, stencil, marker, or pre-cast message such as “drains to the creek” or “only rain in the drain”). Catch basins with illegible or missing labels must be recorded and re-labeled within [*insert number of days*] of inspection.
- d. Maintenance of surface drainage structures – The permittee must visually monitor permittee-owned open channels and other drainage structures for debris at least [*specify frequency, e.g., once per year*] and identify and prioritize problem areas, such as those with recurrent illegal dumping, for inspection at least [*specify frequency, e.g., three times per year*]. Removal of trash and debris from open channels and other drainage structures must occur [*insert frequency of open channel/drainage structure cleaning, e.g., annually*]. The permittee must document its drainage structure maintenance in a log that is to be made available for review by the permitting authority upon request.
- e. Disposal of waste materials – The permittee must develop a procedure to dewater and dispose of materials extracted from catch basins. This procedure must ensure that water removed during the catch basin cleaning process and waste material will not reenter the MS4.

6.4.2 Municipal activities and operations

- a. Assessment of municipal activities and operations

²³ EPA's Office of Research and Development documented a threshold sump level of ½ as a break point where solids retainage was either erratic or negative (Catchbasin Technology Overview and Assessment #EPA-600/2-77-051 1977).

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1. The permittee must maintain and revise as necessary the operation and maintenance (O&M) activity assessment. The following municipal O&M activities must be included in the assessment for their potential to discharge pollutants in stormwater:

- Road and parking lot maintenance, including pothole repair, pavement marking, sealing, and re-paving
- Bridge maintenance, including re-chipping, grinding, and saw cutting
- Cold weather operations, including plowing, sanding, and application of deicing compounds and maintenance of snow disposal areas
- Right-of-way maintenance, including mowing, herbicide and pesticide application, and planting vegetation
- Municipally-sponsored events such as large outdoor festivals, parades, or street fairs

2. The permittee must identify all materials that could be discharged from each of these O&M activities. Typical pollutants associated with these activities include metals, chlorides, hydrocarbons (e.g. benzene, toluene, ethylbenzene, xylene), sediment, and trash.

3. The permittee must develop a set of pollution prevention measures that, when applied during municipal O&M activities, will reduce the discharge of pollutants in stormwater. These pollution prevention measures must include, at a minimum:

- Replacing materials/chemicals with more environmentally benign materials or methods (e.g., use mechanical methods vs. herbicides, or use water-based paints or thermoplastics rather than solvent-based paints for stripping)
- Changing operations to minimize the exposure or mobilization of pollutants (e.g., mulch, compost or landfill grass clippings) to prevent them from entering surface waters
- Placing barriers around or conducting runoff away from deicing chemical storage areas to prevent discharge into surface waters), consistent with Part 6.3.2.b

[If available in your particular State or the municipality, insert relevant section of SWMP, or other relevant document, that includes specific stormwater controls that must be used.]

4. The permittee must develop and implement a schedule for instituting the pollution prevention measures. At a minimum, with respect to all roads, highways, and parking lots with more than 5,000 square feet of pollutant-generating impervious surface area that are owned, operated, or maintained, the permittee must implement all pollution prevention measures by *[insert deadline]*.

5. The results of the assessments and pollution prevention measures, including schedules for implementation, must be documented and made available for review by the permitting authority upon request.

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- b. Inspection of pollution prevention measures – All pollution prevention measures implemented at municipal facilities must be visually inspected [*insert frequency, e.g., monthly or quarterly*] to ensure they are working properly; a log of inspections must be maintained and made available for review by the permitting authority upon request.

6.4.3 Street Sweeping and Cleaning

- a. The permittee must continue to evaluate and rate all municipally-owned streets, roads, and public parking lots within their jurisdiction. The permittee must include in the evaluation the sweeping frequency, timing, and efficiency of existing street sweeping programs. The street sweeping frequency must be based on land use, trash and stormwater pollutant levels generated. At a minimum, the following areas must be regarded as “high priority,” for sweeping activities while the “medium priority” and “low priority” areas are recommended:
- High priority – Streets, road segments, and public parking lots designated as high priority include, but are not limited to, high traffic zones, commercial and industrial districts, shopping malls, large schools, high-density residential dwellings, sport and event venues, and plazas. This designation must include areas that consistently accumulate high volumes of trash, debris, and other stormwater pollutants.
 - Medium priority – Streets, road segments and public parking lots designated as medium priority include, but are not limited to, medium traffic zones; warehouse districts; and light, small-scale commercial and industrial areas.
 - Low priority – Streets and road segments designated as low priority include, but are not limited to, light traffic zones and residential zones.
- b. The permittee must show on a map of its service area how the streets, roads, and public parking lots have been rated in accordance with Part 6.4.3.a.
- c. Implementing sweeping schedules – The permittee must sweep streets/roads/public parking lots in accordance with the following frequency:
- High priority – average of at least [*insert frequency, e.g., twice per month*]
 - Medium priority – average of at least [*insert frequency, e.g., once per month*]
 - Low priority – [*insert frequency, e.g., twice per year*]
- If a permittee’s existing overall street sweeping effort provides equivalent or greater street sweeping frequency relative to the requirements above, the permittee may continue to implement its existing street sweeping program.
- d. For areas where street sweeping is technically infeasible (e.g., streets without curbs), the permittee must increase implementation of other trash/litter control procedures to minimize pollutant discharges to storm drains and creeks. The permittee must show on its Part 6.4.3.b map the location of these areas.
- e. Sweeping equipment selection and operation
1. When replacing existing sweeping equipment, the permittee must select and operate high-performing sweepers that are efficient in removing pollutants,

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including fine particulates, from impervious surfaces.

2. The permittee must follow equipment design performance specifications to ensure that street sweeping equipment is operated at the proper equipment design speed with appropriate verification, and that it is properly maintained.
3. The permittee must operate sweepers to optimize pollutant removal by permitting sweepers access to the curb through the use of parking restrictions that clear the curb or through effective public outreach to inform citizens of sweeping days and times so that voluntary curb clearing can occur.
- f. Sweeper Waste Material Disposal – The permittee must develop a procedure to dewater and dispose of street sweeper waste material. This procedure must ensure that water and material will not reenter the MS4.
- g. Operator training – Street sweeper operators must be trained to enhance operations for water quality benefit.
- h. The permittee must include the following in the SWMP and update as changes are made:
 1. A description of the street sweeping frequency and any significant changes in the sweeping frequency map, along with the basis for those changes
 2. The types of sweepers used
 3. A summary of the proper sweeping operation verification results and street sweeping methods, including the way in which the permittee specifies and confirms the rate or speed at which street miles are covered by sweeper operators
 4. The use of additional resources in sweeping seasonal leaves or pick-up of other material
 5. A description of the methods for addressing areas identified in Part 6.4.3, considered infeasible for street sweeping

6.4.4 Maintenance of municipally-owned and/or maintained structural stormwater controls

- a. The permittee must inspect at least [*insert frequency, e.g., yearly*], and maintain if necessary, all municipally-owned or maintained structural stormwater controls. The permittee must also maintain all green infrastructure practices through regularly scheduled maintenance activities.

Example Permit Requirement Rationale for the Fact Sheet

MS4 Maintenance

Traditional municipal storm drain systems were designed to quickly collect and convey runoff to receiving waters. The purpose of catch basin, inlet, and storm drain cleanouts is to prevent blockages, flooding, and reduce pollution.

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Fine particles and pollutants from run-on, atmospheric deposition, vehicle emissions, breakup of street surface materials, littering, and sanding can accumulate along the curbs of roads in between rainfall events. This results in the accumulation of pollutants such as sediment, nutrients, metals, hydrocarbons, bacteria, pesticides, trash and other toxic chemicals. Storm drain maintenance is often the last opportunity to remove pollutants before they enter the storm-drain-system. Because they effectively trap solids, they need to be cleaned out periodically to prevent those materials from being transported by high stormwater flows. By doing so the MS4 will prevent trash and litter from ultimately becoming sources of marine debris, which is any man-made, solid material that enters waterways either directly or indirectly.

The permit includes a priority ranking approach for catch basins so that municipal resources are directed to the areas and structures that generate the most pollutants. A priority ranking system is required because some catch basins will accumulate pollutants faster than others based on the nature of the drainage area and whether controls are present upstream of the catch basin. Catch basins with the highest accumulations will need to be cleaned more often than those with low accumulations. The permit language also includes a requirement that triggers catch basin cleaning when a catch basin is one-third full.

Proper storm drain system cleanout includes vacuuming or manually removing debris from catch basins; vacuuming or flushing pipes to increase capacity and remove clogs; removing sediment, debris, and overgrown vegetation from open channels; and repairing structures to ensure the integrity of the drainage system. It is important to conduct regular inspections of all storm sewer infrastructure and perform maintenance as necessary. Though these activities are intended to ensure that the sewer system is properly maintained and that any accumulated pollutants are removed prior to discharge, if not properly executed, cleanout activities can result in pollutant discharges. In selecting maintenance practices, the permittee must carefully evaluate each with an eye towards stormwater pollution potential to minimize unintended pollutant discharges, such as the use of flushing storm drain pipes to remove debris without recapturing the debris further down the pipe.

The materials removed from catch basins may not reenter the MS4. The material must be dewatered in a contained area and the water treated with an appropriate and approved control measure or discharged to the sanitary sewer. The solid material will need to be stored and disposed of properly to avoid discharge during a storm event. Some materials removed from storm drains and open channels may require special handling and disposal, and may not be authorized to be disposed of in a landfill.

Street Sweeping and Cleaning

Street and parking lot sweeping is a practice that most municipalities initially conducted for aesthetic purposes. However, the water quality benefits are now widely recognized. Street sweeping also prevents particulate matter associated with road dust from accumulating on public streets and washing into storm drains.

The permit language addresses a number of important factors that impact the effectiveness of a street sweeping program. The first factor is the type of equipment used; the permit language stipulates that when equipment needs to be replaced, high-performance sweepers are purchased preferentially. Street sweeping has traditionally been more effective at removing large-sized particles, but new equipment has been developed to remove smaller, fine-grained particles. Mechanical sweepers (broom-type) are usually the least expensive and are better suited to pick up

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large-grained sediment. Vacuum and regenerative air sweepers are better at removing fine-grained sediment particles, but they are more expensive. Removal efficiency can be improved through tandem sweeping (i.e., two sweepers sweeping the same route, with one following the other to pick up missed material), or if the street sweeper makes multiple passes on a street.

The second factor influencing street sweeping effectiveness is the way in which the equipment is operated; the permit specifies that equipment be operated according to the manufacturers' operating instructions by operators who have been trained to sweep in accordance with the Permit Requirements in order to protect water quality.

The third determining factor is the degree to which parked cars block sweeper access to the curb; one of the best ways to ensure access to the curb is to establish parking restrictions based on sweeping schedules and to inform residents of the schedule so they can voluntarily move their cars. The permit requires that the permittee institute parking restrictions and/or a public outreach campaign requesting that cars be parked elsewhere to accommodate sweeping schedules.

Because not all streets are suitable for sweeping (e.g., those that don't have a curb and gutter), source controls can be used in place of sweeping in those areas.

The permittee is required to maintain documentation of sweeping events and characterize the quantity and composition of pollutants removed from roadways. Street sweeping data are relatively easy to track and maintain, so the permit includes requirements for reporting and assessment of the effectiveness of the sweeping activities based on equipment used, miles swept, and the amount of materials collected.

The street sweeping material may not reenter the MS4. The material must be dewatered in a contained area and the water treated with an appropriate and approved control measure or discharged to the sanitary sewer. The solid material will need to be stored and disposed of properly to avoid discharge during a storm event. Some materials may require special handling and disposal, and may not be authorized to be disposed of in a landfill.

Recommendations for the Permit Writer

MS4 Maintenance

MS4s should have a specific schedule to clean out their storm drains since it will ensure that the debris that is trapped in the system will not move into waterbodies and ultimately become marine debris in the ocean. For additional information to include on marine debris go to the EPA's Marine Debris website (www.epa.gov/owow/oceans/debris).

The frequency and timing of visual assessments and cleaning of storm drains and open channels can be tailored to local climate conditions. For example, one approach would be to require that visual observations and cleanings be conducted before the start of the wet season or before spring snowmelt.

The permitting authority should review and approve dewatering and disposal methods for materials removed from catch basins.

Catch basin labeling is believed to be an effective mechanism for educating residents since it involves a direct reminder that that water or other materials which flow into storm drains is not

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treated in any way, but instead drains directly to nearby waterways. There are many methods for labeling catch basins and the permit writer should work with the permittee to determine the most feasible and cost effective method of delivering the “drains to stream” message.

Street Sweeping and Cleaning

Street-sweeping frequency and timing can be based on climate conditions and seasonal variation in pollution loading. For example, in cold climates where sand is used for winter road maintenance, the permit language could specify increased sweeping during the winter and prior to the spring snowmelt. In areas with a rainy season, sweeping might be timed to occur before the rainy season starts.

In the fall, sweepers can be used to pick up leaves, as they can contribute 25 percent of nutrient loadings in catch basins. If more substantial piles of leaves are found in the community during the fall, street sweeping activities should be coordinated with leaf pick-up. Equally important is an early spring sweeping before rains begin to pick up sand, de-icing material, and winter debris. More frequent sweeping may reduce the need for catch basin cleaning.

The prioritization of sweeping activities (high, medium, low) should be based on standard categories that are based on traffic frequencies and used to determine service levels for the roadways. The example provided in the permit language is based on specific information for the location.

The permitting authority should review and approve dewatering and disposal methods for street sweeping material.

6.5 Flood Management

Example Permit Provision

6.5.1 Flood Management Projects – Within *[insert deadline, such as two years]* of permit issuance, the permittee must develop and implement a process to assess the water quality impacts in the design of all new flood management projects that are associated with the permittee or that discharge to the MS4. This process must include consideration of controls that can be used to minimize the impacts to site water quality and hydrology while still meeting the project objectives. Beginning *[insert deadline, such as three years]* from date of permit issuance, the permittee must assess at least *[insert number of projects to be evaluated, such as two]* existing flood management projects per year to determine whether changes or additions should be made to improve water quality.²⁴ A description of this process must be included in the SWMP document.

²⁴ Eastern Washington Phase II MS4 Permit (www.ecy.wa.gov/programs/wq/stormwater/municipal/phaseiiEwa/MODIFIEDpermitDOCS/EWpermitMODsigned.pdf)

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Example Permit Requirement Rationale for the Fact Sheet

This permit requires that existing flood management projects be prioritized and a set number be evaluated to identify opportunities for water quality retrofits. This is because the focus of stormwater management in the past had been to control flooding and mitigate property damage, with less emphasis on water quality protection. These structures may handle a significant amount of stormwater and therefore offer an opportunity to modify their design to include water quality features for less than the cost of building new controls. This requirement applies not only to new flood control projects, but also to existing structures.

6.6 Pesticide, Herbicide, and Fertilizer Application and Management

Example Permit Provision

6.6.1 Landscape maintenance

- a. The permittee must evaluate the materials used and activities performed on public spaces such as parks, schools, golf courses, easements, public rights of way, and other open spaces for pollution prevention opportunities. Maintenance activities for the turf landscaped portions of these can include mowing, fertilization, pesticide application, irrigation, etc. Typical pollutants include sediment, nutrients, hydrocarbons, pesticides, herbicides and organic debris.
- b. The permittee must implement the following practices to minimize landscaping-related pollutant generation:
 1. Educational activities, permits, certifications, and other measures for municipal applicators and distributors.
 2. Integrated pest management measures that rely on non-chemical solutions, including
 - Use of native plants, xeriscaping in arid/semi-arid regions (reduces water usage and fertilization)
 - Keeping clippings and leaves away from waterways and out of the street using mulching, composting, or landfilling
 - Limiting application of pesticides and fertilizers if precipitation is forecasted within 24 hours or as specified in label instructions
 - Limiting or replacing pesticide use (e.g., manual weed and insect removal)
 - Limiting or eliminating the use of fertilizers, or, if necessary, prohibiting application within 5 feet of pavement, 25 feet of a storm drain inlet, or 50 feet of a waterbody
 - Reducing mowing of grass to allow for greater pollutant removal, but not jeopardizing motorist safety
 3. Schedules for chemical application that minimize the discharge of such constituents due to irrigation and expected precipitation.

4. The collection and proper disposal of unused pesticides, herbicides, and fertilizers.²⁵

Example Permit Requirement Rationale for the Fact Sheet

The permit focuses on requiring source controls to reduce the amount of chemicals used. The permit specifies the use of integrated pest management, selection of native vegetation that is naturally adapted to local conditions and therefore requires fewer chemical and water inputs, reducing exposure of the chemicals to water by scheduling application according to weather forecasts and plant needs, and ensuring that municipal employees who are responsible for storing and handling these materials are educated about their use, disposal, and possible impacts.

Recommendations for the Permit Writer

EPA is currently developing a general permit to control discharges from the application of pesticides to or over, including near, waters of the U.S. EPA is working closely with state NPDES and pesticide control authorities, the regulated community, and environmental organizations to develop its permit that will be required for such discharges beginning in April 2011. It is important to note that some of the permit language in this section may need to be altered to be consistent with the pesticide permit once it is finalized. For up-to-date information, go to EPA's website (www.epa.gov/npdes/agriculture).

6.7 Training and Education

Example Permit Provision

6.7.1 Employee Training Requirements – Permittees must develop an annual employee training program for appropriate employees involved in implementing pollution prevention and good housekeeping practices in the preceding Parts. All new hires must receive training within the first year of their hire date. This annual training must include a general stormwater education component, any new technologies, operations, or responsibilities that arise during the year, and the Permit Requirements that apply to the staff being trained. A description of the program must be maintained for review by the permitting authority. The permittee must also identify and track all personnel requiring training and records must be maintained. Training must begin [*insert deadline*] from the effective date of permit authorization.

²⁵ San Diego Phase I MS4 Permit (CAS0108758) (www.swrcb.ca.gov/rwqcb9/water_issues/programs/stormwater/docs/oc_permit/updates_8_13_09/R9-2009-0002_12Aug09.pdf)

Example Permit Requirement Rationale for the Fact Sheet

The regulations found at 40 CFR 122.34(b)(6) specifically requires that the permittee develop a "training component" that trains employees "to prevent and reduce stormwater pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and storm water system maintenance." This permit requires employee training for existing and new employees who are involved in performing pollution prevention and good housekeeping practices. All training must include a general stormwater educational component, including an overview of the requirements with which the municipality needs to comply. The permittee is responsible for identifying which staff must attend trainings based on the applicability of the topics listed, and they are required to conduct refresher training on an annual basis.

Recommendations for the Permit Writer

The topics included in the trainings should take into consideration the types of activities in which the municipality engages and the extent to which such activities are performed in-house or contracted.

6.8 Contractor Requirements and Oversight

Example Permit Provision

6.8.1 Requirements for Contractors:

- a. Any contractors hired by the permittee to perform municipal maintenance activities must be contractually required to comply with all of the stormwater control measures, good housekeeping practices, and facility-specific stormwater management SOPs described above.
- b. The permittee must provide oversight of contractor activities to ensure that contractors are using appropriate control measures and SOPs. Oversight procedures must be described in the SWMP document.

Example Permit Requirement Rationale for the Fact Sheet

Many municipalities use third-party contractors to conduct municipal maintenance activities in lieu of using municipal employees. Contractors performing activities that can affect stormwater quality must be held to the same standards as the permittee. Not only must these expectations be defined in contracts between the permittee and its contractors, but the permittee is responsible for ensuring, through contractually-required documentation or periodic site visits, that contractors are using stormwater controls and following standard operating procedures.

CHAPTER 7: INDUSTRIAL STORMWATER SOURCES

Introduction

Phase I MS4 permittees are required to develop and implement an inspection and oversight program to monitor and control pollutants in stormwater discharges to the MS4 from industrial facilities. Regulations addressing industrial stormwater management in Phase I MS4 permits is found at 40 CFR 122.26(d)(2)(i)(B, C, E, and F) and 40 CFR 122.26(d)(2)(iv). Requirements to regulate the stormwater discharges from commercial facilities are found at 40 CFR 122.26(d)(2)(iv)(A).

This program component typically applies only to Phase I MS4 permittees as Phase II federal regulations (40 CFR 122.34(b)) do not specifically address stormwater discharges from industrial facilities and commercial businesses (other than as part of the education and outreach program). However, EPA recommends that permit writers consider including requirements pertaining to stormwater discharges to the MS4 from industrial sources in Phase II permits to further reduce stormwater pollutants from the MS4.

Phase I MS4 regulations specify that several key elements be included in Phase I MS4 stormwater management programs. These elements include: adequate legal authority to require compliance and inspect sites, inspection of priority industrial and commercial facilities, establishing control measure requirements for facilities that may pose a threat to water quality, and enforcing stormwater requirements. In order to implement these requirements, MS4 permits require the development of an inventory of facilities and prioritization protocol and adequate staff training to ensure proper inspection and enforcement of requirements.

Included Concepts

- ▶ Facility inventory
- ▶ Industrial facility stormwater control measures
- ▶ Industrial and commercial facility inspections
- ▶ Staff training

7.1 Facility Inventory

Example Permit Provision

7.1.1 Source Identification

- a. The permittee must continue to maintain an inventory of all industrial and commercial sites/sources within its jurisdiction (regardless of ownership) that could discharge pollutants in stormwater to the MS4. The inventory must be updated [*insert frequency, e.g. annually*] and available for review by the permitting authority upon request.
- b. The inventory must include the following minimum information for each industrial and commercial site/source:
 1. Name

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2. Address
3. Physical location of storm drain receiving discharge
4. Name of receiving water
5. Pollutants potentially generated by the site/source
6. Identification of whether the site/source is (1) tributary to an impaired water body segment (i.e., whether it is listed under Section 303(d) of the Clean Water Act) and (2) whether it generates pollutants for which the water body segment is impaired
7. A narrative description including standard industrial classification (SIC) codes, which best reflects the principal products or services provided by each facility.

The use of a geolocational database system is highly recommended.

- c. At a minimum, the following sites/sources must be included in the inventory:

1. Commercial Sites/Sources:

[insert commercial sources that are a priority such as

- Airplane repair, maintenance, fueling, or cleaning
- Animal facilities
- Automobile and other vehicle body repair or painting
- Automobile (or other vehicle) parking lots and storage facilities
- Automobile repair, maintenance, fueling, or cleaning
- Boat repair, maintenance, fueling, or cleaning
- Building material retailers and storage
- Cement mixing or cutting
- Eating or drinking establishments (e.g., restaurants), including food markets
- Equipment repair, maintenance, fueling, or cleaning
- Golf courses, parks and other recreational areas/facilities
- Landscaping
- Marinas
- Masonry
- Mobile automobile or other vehicle washing
- Mobile carpet, drape or furniture cleaning
- Nurseries and greenhouses
- Painting and coating
- Pest control services
- Pool and fountain cleaning
- Portable sanitary services

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- Power washing services
 - Retail or wholesale fueling]
2. Industrial Sites/Sources:
 - Industrial Facilities, as defined at 40 CFR § 122.26(b)(14), including those subject to the Multi Sector General Permit or individual NPDES permit
 - Facilities subject to Title III of the Superfund Amendments and Reauthorization Act (SARA)
 - Hazardous waste treatment, disposal, storage and recovery facilities
 3. All other commercial or industrial sites/sources tributary to an impaired water body segment, where the site/source generates pollutants for which the water body segment is impaired
 4. All other commercial or industrial sites/sources that the permittee determines may contribute a significant pollutant load to the MS4²⁶

Example Permit Requirement Rationale for the Fact Sheet

The permit requires the permittee to develop an inventory of all potential commercial and industrial sites/sources that could contribute pollutants to the MS4. A list of specific commercial and industrial sites/sources is included in the permit, and additional sites/sources can be added if they are likely to discharge a pollutant of concern to an impaired waterbody or they are contributing a significant pollutant load to the MS4.

The inventory information will provide the permittee with information on potential pollutant sources that contribute to its MS4 system, and at what locations in the system into which they discharge. This information will also allow the permittee to prioritize inspections and tailor education and outreach efforts, which will best assist the facility in implementing appropriate pollution prevention practices or other on-site stormwater controls. In addition, the inventory data will allow the permittee to determine whether the facilities may discharge pollutants of concern into impaired waters. Finally, the information contained in the inventory will enable permittees to characterize these facilities and prioritize them based on their potential impact on stormwater quality. By prioritizing facilities in such a manner, the permittee may then establish a targeted approach towards conducting inspections (see Part 7.3 for a discussion of inspection frequency).

In addition, data from NPDES pretreatment programs within the MS4 boundary on significant industrial users (SIUs) could also be used to identify and prioritize the industrial sites in the stormwater program.

²⁶San Diego MS4 Permit (www.swrcb.ca.gov/rwqcb9/water_issues/programs/stormwater/docs/sd_permit/r9_2007_0001/2007_0001final.pdf), with modifications.

Recommendations for the Permit Writer

The example permit provision lists specific commercial and industrial sources to be included in the inventory, but permit writers should customize this list to meet specific issues in their area. For example, some permittees may have large industrial areas with few commercial businesses, while others may have a large number of restaurants and retail businesses but no industrial facilities at all. Other permittees may have had past water quality problems at certain types of commercial or industrial sites, in which case such facilities should be included in their inventories.

7.2 Industrial Facility Stormwater Control Measures

Example Permit Provision

7.2.1 The permittee must require industrial and commercial facilities included in the Part 7.1 inventory to select, install, implement, and maintain stormwater control measures. At a minimum, these control measures must:

- a. Minimize Exposure – Industrial/commercial facilities must minimize the exposure of manufacturing, processing, and material storage areas (including loading and unloading, storage, disposal, cleaning, maintenance, and fueling operations) to rain, snow, snowmelt, and runoff by either locating these industrial materials and activities inside or protecting them with storm resistant coverings (although significant enlargement of impervious surface area is not recommended). The facilities must consider, where appropriate:
 1. Using grading, berming, or curbing to prevent runoff of contaminated flows and divert run-on away from these areas
 2. Locating materials, equipment, and activities so that leaks are contained in existing containment and diversion systems (confine the storage of leaky or leak-prone vehicles and equipment awaiting maintenance to protected areas)
 3. Cleaning up spills and leaks promptly using dry methods (e.g., absorbents) to prevent the discharge of pollutants
 4. Using drip pans and absorbents under or around leaky vehicles and equipment or store indoors where feasible
 5. Using spill/overflow protection equipment
 6. Draining fluids from equipment and vehicles prior to on-site storage or disposal
 7. Performing all cleaning operations indoors, under cover, or in bermed areas that prevent runoff and run-on and also that capture any overspray
 8. Ensuring that all wash water drains to a proper collection system (i.e., not the stormwater drainage system)
- b. Follow Good Housekeeping Practices – Industrial/commercial facilities must keep clean all exposed areas that are potential sources of pollutants, using such

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- measures as sweeping at regular intervals, keeping materials orderly and labeled, and storing materials in appropriate containers.
- c. Conduct Maintenance – Industrial/commercial facilities must regularly inspect, test, maintain, and repair all industrial equipment and systems to avoid situations that may result in leaks, spills, and other releases of pollutants in stormwater discharged to receiving waters.
 - d. Implement Spill Prevention and Response Procedures – Industrial/commercial facilities must minimize the potential for leaks, spills and other releases that may be exposed to stormwater and develop plans for effective response to such spills if or when they occur. At a minimum, the facilities must implement:
 1. Procedures for plainly labeling containers (e.g., “Used Oil,” “Spent Solvents,” “Fertilizers and Pesticides,”) that could be susceptible to spillage or leakage to encourage proper handling and facilitate rapid response if spills or leaks occur
 2. Preventative measures such as barriers between material storage and traffic areas, secondary containment provisions, and procedures for material storage and handling
 3. Procedures for expeditiously stopping, containing, and cleaning up leaks, spills, and other releases. Employees who may cause, detect, or respond to a spill or leak must be trained in these procedures and have necessary spill response equipment available.
 4. Procedures for notification of appropriate facility personnel, emergency response agencies, and regulatory agencies [*Insert appropriate contacts for reporting*]
 - e. Implement Erosion and Sediment Controls – Industrial/commercial facilities must stabilize exposed areas and contain runoff using structural and/or non-structural control measures to minimize onsite erosion and sedimentation, and the resulting discharge of pollutants.
 - f. Manage Runoff – Industrial/commercial facilities must divert, infiltrate, reuse, contain, or otherwise reduce stormwater runoff, to minimize pollutants in discharges.
 - g. Address Salt Storage Piles or Piles Containing Salt – Industrial/commercial facilities must enclose or cover storage piles of salt, or piles containing salt, used for deicing or other commercial or industrial purposes, including maintenance of paved surfaces. If a permanent storage structure is required but does not exist, one must be built within [*insert timeframe*], and seasonal tarping must be used as an interim control until the permanent structure is completed. Facilities must implement appropriate measures (e.g., good housekeeping, diversions, containment) to minimize exposure resulting from adding to or removing materials from the pile. Piles do not need to be enclosed or covered if stormwater runoff from the piles is not discharged or if discharges from the piles are authorized under another NPDES permit.
 - h. Conduct Employee Training – All facility employees who work in areas where industrial materials or activities are exposed to stormwater, or who are

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responsible for implementing activities necessary to manage stormwater must be trained. Training must be conducted [*insert frequency, e.g. at least annually*].

- i. Address Non-Stormwater Discharges – Industrial/commercial facilities must eliminate non-stormwater discharges not authorized by an applicable NPDES permit.
- j. Control Waste, Garbage and Floatable Debris – Facilities must ensure that waste, garbage, and floatable debris are not discharged to receiving waters by keeping exposed areas free of such materials or by intercepting them before they are discharged.
- k. Control Dust Generation and Vehicle Tracking of Industrial Materials – Industrial/commercial facilities must minimize generation of dust and off-site tracking of raw, final, or waste materials.²⁷

7.2.2 Within the [*insert deadline, e.g. first two years of permit term*], the permittee must notify the owner/operator of each industrial and commercial site/source of the stormwater requirements for control measures in Part 7.2.1.

7.2.3 As necessary to minimize any pollutants causing the applicable receiving waterbody to be listed as impaired, the permittee must require implementation of additional controls for industrial and commercial sites/sources that are tributary to the impaired water body segments and that are likely to generate such impairment pollutants.²⁸

Example Permit Requirement Rationale for the Fact Sheet

The permittee is required to ensure that the minimum control measures are implemented, as applicable, at every industrial/commercial facility included in its inventory. The minimum measures outlined, when properly selected, designed and implemented, promote prevention and source control, before treatment.

The control measures in this permit are consistent with the control measure requirements found in EPA's 2008 Multi-Sector General Permit (MSGP) for stormwater discharges from industrial activities. The permit writer should ensure that these requirements are consistent with the State's industrial stormwater permit. The control measures in this permit describe specific activities that the permittee must require industrial facilities and commercial sites to implement to minimize stormwater pollution. Another control measure is simply preventing pollutants from coming into contact with precipitation in the first place since this will ensure they are not carried into nearby waterways. General good housekeeping and maintenance procedures are also required. Additional control measures address spill prevention and response, erosion and sediment controls, managing runoff, and controlling discharges from salt storage piles.

²⁷ 2008 MSGP (Section 2) (www.epa.gov/npdes/pubs/msgp2008_finalpermit.pdf), with modifications

²⁸ San Diego MS4 Permit (www.swrcb.ca.gov/rwqcb9/water_issues/programs/stormwater/docs/sd_permit/r9_2007_0001/2007_0001final.pdf), with modifications

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The control measures must also include employee training, controlling non-stormwater discharges, addressing waste, garbage and floatable debris, and addressing dust generation and vehicle tracking.²⁹

The permittee is required to notify industrial and commercial sites of the control measure requirements and their responsibility to implement and comply with the requirements.

Facilities that discharge into impaired waterbodies may be required to implement additional controls as necessary to prevent the discharge of the associated pollutants of concern.

7.3 Industrial and Commercial Facility Inspections

Example Permit Provision

7.3.1 Industrial and Commercial Site Inspection Program

- a. The permittee must continue to implement a program to inspect all commercial and industrial facilities included in its Part 7.1(a) inventory. The permittee must describe how this will occur in the SWMP.
- b. The inspection program must:
 1. Prioritize all facilities into high, medium, and low categories on the basis of the potential for water quality impact using criteria such as pollutant sources on site, pollutants of concern, proximity to a water body, and violation history of the facility. The different priority categories will be assigned different inspection frequencies, with the highest priority facilities receiving more frequent inspections. Describe 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 must be listed in the Inspection Plan.
 3. Explain how the priority assigned to any one facility may be modified based on the site inspection findings and the facility's potential to discharge pollutants.

7.3.2 Minimum Inspection Requirements

- a. Inspection Frequency – The permittee is required to conduct inspections at the following frequencies, at a minimum:
 1. Facilities with high potential for water quality impact must be inspected [*insert frequency, e.g. annually*].
 2. Facilities with medium potential for water quality impact must be inspected at least [*insert frequency, e.g. once every three years*].
 3. Facilities with low potential for water quality impact must be inspected at least [*insert frequency, e.g. once every 5 years*].

²⁹ 2008 MSGP Fact Sheet (www.epa.gov/npdcs/pubs/msgp2008_finalfs.pdf), with modifications

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4. Facilities with either a *[insert violation type]* written violation occurring in the previous year must be inspected at least *[insert frequency, e.g. annually]* until compliance is achieved.
 5. For facilities with no exposure of commercial or industrial activities to stormwater, no inspections are required. However, the permittee must continue to track these facilities for significant change in the exposure of their operations to stormwater.
- b. Scope of Inspection – Inspections must at a minimum:
1. Evaluate the facility's compliance with the Part 7.2 requirement to select, design, install, and implement stormwater control measures.
 2. Conduct a visual observation for evidence of unauthorized discharges, illicit connections, and potential discharge of pollutants to stormwater.
 3. Verify whether the facility is required to be authorized under the *[insert applicable NPDES general industrial stormwater permit]*, and whether the facility has in fact obtained such permit coverage.³⁰
 4. Evaluate the facility's compliance with any other relevant local stormwater requirements.
- c. Documentation Requirements – At a minimum, the permittee must document the following for each inspection:
- The inspection date and time;
- The name(s) and signature(s) of the inspector(s);
1. Weather information and a description of any discharges occurring at the time of the inspection;
 2. Any previously unidentified discharges of pollutants from the site;
 3. Any control measures needing maintenance or repairs;
 4. Any failed control measures that need replacement;
 5. Any incidents of noncompliance observed; and
 6. Any additional control measures needed to comply with the Permit Requirements.
- d. Track Inspections – Inspection findings must be tracked to ensure inspections are conducted at the frequency specified in Part 7.3.2.b., highlight and document the recidivism of noncompliant facilities, and aid follow up and enforcement activities.

7.3.3 Enforcement – The permittee must ensure that all necessary follow up and enforcement activities are conducted as necessary to require necessary implementation and maintenance of the control measures described in Part 7.2. The permittee is required to utilize the approved ERP for all enforcement actions.

³⁰ San Francisco Bay Region Municipal Regional Stormwater NPDES Permit (www.swrcb.ca.gov/sanfranciscobay/board_decisions/adopted_orders/2009/R2-2009-0074.pdf), with modifications

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Example Permit Requirement Rationale for the Fact Sheet

The permittee must design an inspection program that facilitates more frequent inspections of the highest priority facilities. (See 40 CFR 122.26(d)(iv)(C)(1)). This will help maximize use of the permittee's existing inspection resources and ensure that the permittee inspectors are the most visible and the most familiar with the facilities with the highest potential for water quality impact.

The permittee must develop a process for prioritizing inspections and designating all facilities in the industrial and commercial inventory as either a high, medium or low priority. The designation could occur by individual facility or by facility type. The prioritization for individual facilities may be adjusted after the first, or any subsequent, inspection (for example, if a facility is a high priority facility and the inspection reveals it has little potential for stormwater pollution, then the facility could be reprioritized as a low priority facility).

It is important that inspections be conducted in a thorough and consistent manner in accordance with a formal protocol for conducting an inspection. This protocol should be the basis for inspector training as well. Inspections should include a thorough walk-through of the facility.

The documentation of inspections is very important, not only when tracking noncompliance, but also to facilitate effective enforcement action when needed. A timeline of noncompliance and subsequent enforcement action is critical when escalating measures to gain compliance. Typically, the use of inspection forms facilitates complete and consistent documentation among inspectors and over time.

Recommendations for the Permit Writer

The permit writer may choose to define what criteria the permittee will use to determine the priority of each facility on its inventory. For example, the Phase I Los Angeles County MS4 permit specifies which facilities are Tier 1 and Tier 2 and provides the required inspection frequency for each. The permit writer could also automatically designate certain sets of industries to a certain priority category (e.g., all facilities subject to the State's Industrial General Permit could be designated as high priority facilities in the permit). If the permit does not define what criteria are to be used when prioritizing facilities, the permittee should be required to develop this protocol and submit it to the permitting authority for review.

The permit writer should review available industrial and commercial inventories to determine if more specific inspection frequencies should be set. For example, an MS4 with only 10 facilities in the inventory could probably inspect those facilities annually. However, an MS4 with over 2,000 facilities in the inventory may need to set the inspection frequency at a less frequent interval.

7.4 Staff Training

Example Permit Provision

7.4.1 The permittee must ensure that all staff whose primary job duties are implementing the industrial stormwater program is trained to conduct facility inspections. The training must cover what is required under this permit in terms of stormwater control measures, the requirements of other applicable Industrial Stormwater general permits or other related local requirements, the permittee's site inspection and documentation protocols, and enforcement procedures. Follow-up training must be provided every other year to address changes in procedures, techniques, or staffing. Permittees must document and maintain records of the training provided and the staff trained.³¹

Example Permit Requirement Rationale for the Fact Sheet

Inspectors responsible for conducting inspections at industrial/commercial facilities must be trained on the applicable stormwater requirements for the different types of facilities (i.e., industrial, commercial, other). Training must include a summary of federal, state, and local stormwater regulations that may apply to industrial/commercial facilities. Inspectors must be familiar with various types of stormwater control measures commonly used at the types of facilities typically found in the MS4 area and must be able to educate facility operators about such stormwater control measures. In addition, inspectors must understand and use the permittee's established enforcement response plan (see Chapter 1 of this Guide) to gain compliance as necessary. The inspection staff must be proficient in the enforcement escalation procedure and must properly document all enforcement actions accordingly per the ERP.

³¹ Western Washington Phase I MS4 Permit (www.ecy.wa.gov/programs/wq/stormwater/municipal/phaseIpermit/MODIFIEDpermitDOCS/PhaseIpermitSIGNED.pdf), with modifications

CHAPTER 8: MONITORING, EVALUATION, AND REPORTING

Introduction

Phase I MS4s are required to conduct discharge characterization, field screening and develop a monitoring program. Phase I MS4s are also required to conduct an assessment of controls. See 40 CFR 122.26(d)(1)(iii), (d)(2)(iii), and (d)(2)(v).

Phase II MS4 regulations allow, but do not specifically require, monitoring. Phase II MS4s are required to evaluate program compliance, the appropriateness of identified control measures, and progress toward achieving identified measurable goals. See 40 CFR 122.34(g).

There are many components involved in monitoring and evaluating the effectiveness of a municipal stormwater program. Any comprehensive monitoring program should have clear monitoring objectives to help determine compliance and water quality impacts.

Each monitoring program is unique and should be customized to the specific waterbodies, impairments, and pollutant sources of the MS4.

Evaluating the overall effectiveness of the municipal stormwater program should be done using information from the monitoring program, progress toward meeting measurable goals, and other indicators. Without assessing the effectiveness of the stormwater management program the permittee will not know which parts of the program need to be modified to protect and/or improve water quality and instead will essentially be operating blindly. Establishing a comprehensive monitoring and assessment program will enable the permittee to track progress in complying with permit provisions and implementing a program to protect water quality.

Included Concepts

- ▶ Consolidated information tracking system
- ▶ Development of a comprehensive monitoring and assessment program
- ▶ Evaluation of overall program effectiveness
- ▶ Requirements for annual reporting of MS4 activities

8.1 Consolidated Information Tracking System

Example Permit Provision

- 8.1.1 Within the first *[insert time frame which corresponds to the development of the monitoring program e.g. first two years of permit]*, the permittee must develop a tracking system to track the information required in the permit as well as the information required to be reported in the annual report (see Part 8.4).

Example Permit Requirement Rationale for the Fact Sheet

An important part of any municipal stormwater program is to document and track information on activities the permittee undertakes to comply with the Permit Requirements. Tracking should be integrated into each of the minimum measures. For example, tracking the location of illicit discharges may indicate that a specific area has a high incidence of motor oil being dumped into storm drains. Investigations may reveal that homeowners are changing the motor oil in their cars, but not properly disposing it. Therefore, the permittee will need to educate the homeowners in that area regarding proper disposal.

The permittee must develop a tracking system to monitor implementation of its various programs in order to document the permittee's compliance with its Permit Requirements, such as the number of construction sites and industrial facilities inspected. In addition, the tracking system will allow the permittee to monitor the compliance status of those entities within its jurisdiction, such as construction sites and industrial facilities, and to ensure compliance of municipally-owned and operated facilities.

Any tracking system should be coordinated with the monitoring and evaluation programs developed by the permittee. Ideally, a monitoring and evaluation program will link the "actions" (e.g., the inspections, maintenance, education and other activities the permittee implements) with the "results" (e.g., water quality monitoring data, improvements in environmental indicators) of the monitoring program.

In addition, adequate tracking is necessary to generate and provide reports of program progress not only to the permitting authority, but to a permittee's internal management for planning and funding purposes. Ideally, a MS4 permittee will have at least one person in charge of overall coordination, including tracking. While many departments or agencies might implement various stormwater program components, it is helpful for a single person or department to gather and analyze applicable data. This can be accomplished in a number of ways and will vary based on existing data tracking mechanisms used by a permittee, the data being captured and the reporting requirements the permittee must comply with. Ideally, the program would have a database accessible by all parties which specifies the required data. Lacking this, the permittee will need to coordinate all responsible parties. The permittee will need to ensure that responsible parties "mine" all data necessary to adequately represent the program and permit compliance, and specify adequate internal reporting deadlines to guarantee that the data is available in a timely manner for program planning, effectiveness assessments and permit reporting. Some permittees create reporting forms for program component managers to complete and submit by internal deadlines. Regardless of how the permittee coordinates the effort internally, without adequate tracking of data the permittees will not be able to submit annual reports to the permitting authority that provide the necessary information to determine permit compliance.

Recommendations for the Permit Writer

To assist the permittee in ensuring appropriate data is gathered and analyzed, the permitting authority should be very clear regarding annual reporting requirements. In addition, the text for this section should be tailored depending on the permittee. For example, some permittees may be able to develop a GIS-based system complete with the option to upload pictures and inspection reports versus a spreadsheet. In the text provided either system would meet the requirements, but more detailed information can be obtained with the GIS-based system.

8.2 Development of a Comprehensive Monitoring & Assessment Program

Example Permit Provision

8.2.1 The permittee must continue to implement, and revise as necessary, a comprehensive monitoring and assessment program. A description of this program must be included in the SWMP document. The monitoring and assessment program must be designed to meet the following objectives:

- a. Assess compliance with this permit;
- b. Measure the effectiveness of the permittee's stormwater management program;
- c. Assess the chemical, physical, and biological impacts to receiving waters resulting from stormwater discharges;
- d. Characterize stormwater discharges;
- e. Identify sources of specific pollutants;
- f. Detect and eliminate illicit discharges and illegal connections to the MS4; and
- g. Assess the overall health and evaluate long-term trends in receiving water quality.

NOTE: Because monitoring programs and requirements are very specific to the MS4 and local water quality impairments, permit writers are directed to the "Recommendations to the Permit Writer" section below for examples of comprehensive monitoring program Permit Requirements.

Example Permit Requirement Rationale for the Fact Sheet

Without clear monitoring objectives and a detailed monitoring plan, it will be difficult for permittees and permitting authorities to evaluate the effectiveness of the municipal stormwater program.

There are numerous factors that should be examined while setting up the water quality monitoring portion of the comprehensive program. Understanding and considering climatic conditions such as precipitation patterns, temperature, and seasonal variations will ensure the study design will collect data that are representative of typical storms in the area and that sampling occurs during times of the year when it is most logical to do so. Acknowledging the different types of land uses within the area will also help the permittee to prioritize monitoring efforts based on the areas most likely to be impacted by stormwater. The type of waterbody monitored must also be considered when selecting sampling locations since pollutants behave differently depending on the environment thereby impacting sampling protocols. For example, sampling in a freshwater lake involves different protocols than monitoring in a tidally influenced river or a first order stream. Waterbody type can also influence the data results and conclusions (e.g. freshwater wetlands typically have high denitrification rates that will likely impact the results of nitrate sampling).

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Selection of specific sampling locations is also very important. If particular sites are of concern, then monitoring both above and below the sites to figure out their contributions to the overall water quality issues may make sense. Also, the actual location in the waterbody is important to specify for consistency. For example, should samples be taken close to the stream bank or in the center of the waterbody, in riffles or pools? The answers to these questions, of course, depend on the goals of the monitoring and the constituents (biological, chemical, hydrological) being examined.

In addition, the number and frequency of samples collected and stream assessments performed will determine how robust the data will be (see page 287 in *National Research Council's Report Urban Stormwater Management in the United States (2009)* available at www.epa.gov/npdes/pubs/nrc_stormwaterreport.pdf). Monitoring may or may not be tied to specific wet weather events (i.e. within 72 hours after a rainfall event). A combination of specific wet weather samples and dry weather samples may be appropriate.

Establishing objectives with associated indicators (environmental or administrative) for each minimum measure can help put each component into perspective when considering the overall program. Indicators are one way to evaluate the success of the program from the overall program level. Developing standard environmental indicators is a critical step to evaluate the SWMP. Permittees need practical tools, such as these indicators, in order to determine if their stormwater programs are working, and that help elucidate where additional efforts may be most critical. Environmental indicators should be selected based on the type (estuarine/freshwater/brackish) and condition (impaired/non-impaired) of the waterbody to which stormwater is discharged as well as the intended use of the area where the stormwater is discharged (source water protection area, etc.).

In addition, permittees should document certain administrative efforts associated with developing and implementing their SWMPs. In this context 'administrative' is considered quite broad, including such things as control measures, inspection programs, policies and rules, MS4 system scope and condition, educational efforts and any other variable or outcome that could reflect on the quality of a stormwater program other than the actual environmental quality outcomes, which are covered under 'Environmental Indicators'.

Good administrative indicators are numerous, and good suites of indicators will vary from one community to another. More information can be obtained on each of the environmental and administrative indicators listed by going to the Stormwater Manager's Resource Center (www.stormwatercenter.net) and selecting "Monitor/Assess" on the left navigation bar.

Several protocols have been developed to assess the effectiveness of stormwater control measures:

- Guidance for Evaluating Emerging Stormwater Treatment Technologies, Technology Assessment Protocol - Ecology (TAPE) www.ecy.wa.gov/biblio/0210037.html. This guidance document's primary purpose is to establish a testing protocol and process for evaluating and reporting on the performance and appropriate uses of emerging stormwater treatment technologies.
- Technology Acceptance Reciprocity Partnership (TARP) Protocol for Stormwater Best Management Practice Demonstrations www.dep.state.pa.us/dep/deputate/pollprev/techservices/tarp/pdf/Tier2protocol.pdf. The purpose of the TARP

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Protocol is to provide a uniform method for demonstrating stormwater technologies and developing test quality assurance (QA) plans for certification or verification of performance claims.

- **BMP Performance Verification Checklist.** This is a tool that helps permittees provide a consistent set of questions for applicants proposing to use manufactured and proprietary BMP. It is available as Tool # 8 of the Center for Watershed Protection's *Managing Stormwater in Your Community*. The checklist is accompanied by an explanation and instructions for using the checklist, technical appendices, and a matrix that compares existing verification protocols, such as TARP and TAPE.

Additional monitoring resources include:

- CWP, 2008, *Monitoring to Demonstrate Environmental Results: Guidance to Develop Local Stormwater Monitoring Studies Using Six Example Study Designs* (www.cwp.org)
- Geosyntec Consultants and Wright Water Engineers, 2009, *Urban Stormwater BMP Performance Monitoring*, (bmpdatabase.org/MonitoringEval.htm)
- CASQA, 2007, *Municipal Stormwater Program Effectiveness Assessment Guidance* (www.casqa.org)

Recommendations for the Permit Writer

Because of the site-specific nature and variability of these monitoring programs between permittees, the detailed requirements should be provided by each permit writer. For example, the Phase I regulations included specific monitoring requirements while the Phase II regulations allow, but do not specifically require monitoring. To assist permit writers, several examples of monitoring requirements from existing MS4 permits are listed below:

- Baltimore County, MD Phase I MS4 permit (issued 2005); see the watershed assessment and planning requirements (Part II.F) and assessment of controls (Part II.H)
www.mde.state.md.us/assets/document/sedimentStormwater/MSSPermit/BA%20final%20permit.pdf
- Southern California Regional Bioassessment Monitoring Program (this is a regional monitoring program involving coastal counties in Southern California)
www.socalsmc.org/Docs/SMC-DesignofBioassessmentRegionalMonitoringProgram.pdf
- San Diego, CA Phase I MS4 Permit (issued 2007); see Receiving Waters and Urban Runoff Monitoring and Reporting Program.
www.waterboards.ca.gov/sandiego/water_issues/programs/stormwater/docs/sd_permit_r9_2007_0001/2007_0001final.pdf

The permit writer could consider the role of partnerships among the MS4s in establishing and implementing the monitoring programs so that any data collected is robust, useful, and meaningful. In addition, communities may benefit more by working with local organizations and/or neighboring communities who are already collecting similar data. By doing so resources may be used more efficiently and results of testing may be more robust.

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The permit writer should also require the permittee to assess the effectiveness of the SWMP in meeting applicable Permit Requirements. The sampling protocols developed must support the goals of the monitoring program. The monitoring and assessment program must include water quality monitoring as well as an assessment of environmental and administrative indicators. Along these lines, the permit writer could also add requirements such as the ones provided below:

Water Quality Monitoring

a. The Permittee must develop a water quality monitoring program that includes [insert specific monitoring programs and requirements, such as:

- Ambient receiving water monitoring,
- Biological monitoring,
- Control measure performance monitoring, or
- Discharge (wet weather) monitoring

Because the detailed monitoring program requirements are very unique to each MS4, the permitting authority should insert here the specific details of the relevant monitoring program, such as monitoring type, frequency, location, etc.]

- b. When determining water quality monitoring components, the permittee must examine and consider a variety of factors, including, but not limited to:
- Climatic conditions, including precipitation patterns, temperature, and seasonal variations
 - Land uses in the MS4
 - Waterbody type
- c. The permittee must consider and address specific sampling quality assurance/quality control protocols, including, but not limited to:
- Specific chemical constituents (pollutants), biological stream indicators, and physical stream indicators that will be monitored to best achieve the purpose of the monitoring
 - Sampling locations
 - Number and frequency of sample collection and assessments
 - Timing of sample collection
- d. The permittee must determine if any similar monitoring is occurring within the MS4 and if it is logical to link efforts.

Environmental Indicators

As part of the comprehensive monitoring and assessment program, the permittee must identify and track at least [insert number of indicators to be tracked] environmental

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indicators from each category listed below (physical and hydrologic indicators; biological indicators; water quality indicators). The indicators must be appropriate to assess if the SWMP is meeting goals and objectives:

Physical and hydrological indicators	Biological indicators	Water quality indicators
<ul style="list-style-type: none"> • Stream widening/downcutting • Physical habitat quality • Impacted dry weather flows • Increased flooding frequency • Stream temperature monitoring 	<ul style="list-style-type: none"> • Fish assemblage analysis • Macro-invertebrate assemblage • Single species indicator • Composite indicators • Other biological indicators 	<ul style="list-style-type: none"> • Water quality-pollutant constituent monitoring • Toxicity testing • Non-point source loadings • Exceedance frequencies of water quality standards • Sediment contamination • Human health criteria

Administrative indicators

As part of the comprehensive monitoring and assessment program, the permittee must identify and track at least [insert number of indicators to be tracked] administrative indicator from each category listed below (social indicators; programmatic indicators; site indicators). The indicators must be appropriate to assess if the SWMP is meeting goals and objectives:

Social indicators	Programmatic indicators	Site indicators
<ul style="list-style-type: none"> • Public attitude surveys • Industrial/commercial pollution prevention • Public involvement and monitoring • User perception 	<ul style="list-style-type: none"> • Number of illicit connections identified and corrected • Number of control measures installed, inspected, and maintained • Permitting and compliance • Growth and development 	<ul style="list-style-type: none"> • Control measure performance monitoring • Industrial site compliance monitoring

Performance Monitoring of Stormwater Controls

When monitoring the performance of stormwater controls, EPA recommends that percent removal efficiencies are not calculated and compared since results can be misleading because the percentages may be based on differing levels of the influent concentration (see cfpub.epa.gov/npdes/stormwater/urbanbmp/bmptopic.cfm#percentremoval for further discussion; also see *National Research Council's Report Urban Stormwater Management in the United States (2009)* available at www.epa.gov/npdes/pubs/nrc_stormwaterreport.pdf).

Modeling can also be a useful tool to quantify the impacts of municipal stormwater management. The following resources provide summaries and reviews of different types of models available to

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determine existing loading from an MS4 as well as the effects expected from various stormwater controls.

1. USEPA Handbook for Developing Watershed Plans to Restore and Protect Our Waters
www.epa.gov/nps/watershed_handbook/

Chapter 8 of this document focuses on methods for estimating pollutant loads, including the use of watershed models. This chapter provides assistance in selecting and applying watershed models to estimate pollutant loads from existing conditions.

2. USEPA TMDL Model Evaluation and Research Needs
www.epa.gov/nrmrl/pubs/600r05149/600r05149.htm

This report documents the review of more than 60 available watershed and receiving water models. It discusses model selection on the basis of model capabilities and provides a series of tables rating the capabilities or applicability the models using the categories of TMDL endpoints, general land and water features, special land processes, special water processes, and application considerations including the selection of appropriate best management practices and their water quality impacts. The document also provides individual fact sheets for each reviewed model.

8.3 Evaluation of Overall Program Effectiveness

Example Permit Provision

8.3.1 *Annual Effectiveness Assessment* – The annual effectiveness assessment must:

- a. Use the monitoring and assessment data described in Part 8.2 to specifically assess the effectiveness of each of the following:
 1. Each significant activity/control measures or type of activity/control measure implemented;
 2. Implementation of each major component of the Stormwater Management Program (Public Education/Involvement, Illicit Discharges, Construction, Post-Construction, Good Housekeeping); and
 3. Implementation of the Stormwater Management Program as a whole.
- b. Identify and use measurable goals, assessment indicators, and assessment methods for each of the items listed in Part 8.3.1.a above.
- c. Document the permittee's compliance with permit conditions.

8.3.2 Based on the results of the effectiveness assessment, the permittee must annually review its activities or control measures to identify modifications and improvements needed to maximize SWMP effectiveness, as necessary to achieve compliance with this permit. The permittee must develop and implement a plan and schedule to address the identified modifications and improvements. Municipal activities/control

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measures that are ineffective or less effective than other comparable municipal activities/control measures must be replaced or improved upon by implementation of more effective municipal activities/control measures.

8.3.3 As part of its Annual Reports, the permittee must report on its SWMP effectiveness assessment as implemented under Part 8.3.1 above.

Example Permit Requirement Rationale for the Fact Sheet

A key requirement in the stormwater Phase II rule is a report (40 CFR 122.34(g)(3)) that includes "the status of compliance with permit conditions, an assessment of the appropriateness of identified [control measures] and progress towards achieving identified measurable goals for each of the minimum control measures." This assessment is critical to the stormwater program framework which uses the iterative approach of implementing controls, conducting assessments, and designating refocused controls leading toward attainment of water quality standards.

Building on the monitoring and assessment program developed in Part 8.2, the permittee must conduct an annual effectiveness assessment to assess the effectiveness of significant control measures, SWMP components, and the SWMP as a whole. The California Stormwater Quality Association's (CASQA) *Municipal Stormwater Program Effectiveness Guidance* describes strategies and methods for assessing effectiveness, including examples of effectiveness assessment for each SWMP program component. The CASQA Effectiveness Guidance is available at www.casqa.org for purchase. A two-hour EPA webcast focusing on the CASQA Guide is also available (available at www.epa.gov/npdes/training under "Assessing the Effectiveness of Your Municipal Stormwater Program"). A resources document from the webcast includes a 10 page summary of the Guide and example pages from the municipal chapter (www.epa.gov/npdes/outreach_files/webcast/jun0408/110961/municipal_resources.pdf).

The *Municipal Stormwater Program Effectiveness Assessment Guidance* synthesizes information on designing and conducting program effectiveness assessments. The document also explains how to select certain methods based on programmatic outcomes and goals. The reader is led through a series of questions and case studies to demonstrate how proper assessments are selected. Techniques are related to different level of outcomes: level one – documenting activities, level two – raising awareness, level 3 – changing behavior, level 4 – reducing loads from sources, level 5 – improving runoff quality, and level 6 – protecting receiving water quality. The Guide includes fact sheets for all six NPDES program elements, outlining methods and techniques for assessing effectiveness of each program.

Recommendations for the Permit Writer

Adaptive management is the appropriate process for assessing new opportunities for improving program effectiveness in controlling stormwater pollution. The permit writer should require the permittee to use adaptive management throughout the permit term to assess options for improving controls on stormwater discharges as compared with measurable goals and demonstrated by monitoring and assessment protocols. The permit writer should have the permittee monitor and

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assess the data and analyses required under the permit as well as applicable information from other sources in the adaptive management process.

In addition, the permit writer should have the permittee assess and modify, as necessary, any or all existing SWMP components and adopt new or revised SWMP components to optimize reductions in stormwater pollutants through an iterative process. This iterative process should include routine assessment of the need to further improve water quality and protect beneficial uses, review of available technologies and practices to accomplish the needed improvement, and evaluate resources available to implement the technologies and practices.

8.4 Requirements for Annual Reporting of MS4 Activities

Example Permit Provision

8.4.1 Summary Annual Report - The Permittee must submit annual reports on or before *[specify deadline, e.g., the anniversary date of this permit]* for the reporting period *[specify the reporting period, e.g., July 1-June 30]*. The Permittee must use the Summary MS4 Annual Report template in Appendix A to document a summary of the past year activities. All of the information required on this form must be completed.

8.4.2 Detailed Annual Report - The Permittee must also submit a detailed annual report that addresses, for the activities described in the SWMP document required in Part 1.1, the following:

- A summary of past year activities, including where available, specific quantities achieved and summaries of enforcement actions. See Part 8.4.3 for required information specific to certain SWMP areas.
- A description of the effectiveness of each SWMP program component or activity (see Part 8.3); and
- Planned activities and changes for the next reporting period, for each SWMP program component or activity.
- Detailed fiscal analysis described in Part 1.4.2.

8.4.3 *[Specify any additional information and/or data pertaining to implementation of priority activities the Permitting Authority would like to see in Annual Reports, e.g. a list of green roofs (with square footage) installed in the MS4, a summary of water quality monitoring data collected for a specific waterbody, etc.]*

The Annual Report must clearly refer to the Permit Requirements, and describe in quantifiable terms, the status of activities undertaken to comply with each requirement.

Example Permit Requirement Rationale for the Fact Sheet

In general, an annual report must document and summarize implementation of the SWMP during the previous year and evaluate program results and describe planned changes towards continuous improvement. The annual report also can serve as a "state of the SWMP" report for the general public or other stakeholders in the community. While records are to be kept and made available to the public, the annual report is an excellent summary document to provide as well.

Recommendations for the Permit Writer

EPA recommends using its Summary Annual Report Template (see Appendix A) in this guidance in order to obtain summary information about the status of MS4 programs. In addition to the summary annual report template, permittees must also submit a more detailed annual report.

The permit writer may determine that additional, more detailed, information is needed to determine compliance with the Permit Requirements. Even if these reporting details are not required within the permit, the permitting authority and enforcement officials can still request them at any time or during a program audit.

MS4 permits should require permittees to summarize and analyze data concerning the effectiveness of the SWMP and submit the analysis to the permitting authority. For example, the permittees should address such questions as:

- For illicit discharge data, what are the most prevalent sources and pollutants in the illicit discharge data, and where are these illicit discharges occurring? How many illicit discharges have been identified, and how many of those have been resolved? How many outfalls or screening points were visually screened, how many had dry weather discharges or flows, at how many were field analyses completed and for what parameters, and at how many were samples collected and analyzed? Does the MS4 need to conduct more inspections in these areas, or develop more specific outreach targeting these sources and pollutants?
- For the construction data, what are the most common construction violations, and are there any trends in the data (e.g., construction operators who receive more violations than others, areas of the MS4 with more violations, need to refine guidance or standards to more clearly address common violations). How has the permittee responded to these trends? Over the last year, how many construction site plan reviews were completed and approved? How many inspections were conducted, how many noncompliant sites were identified, and how many enforcement actions (and of what type) were taken?

At a minimum, the permit should require that the annual report clearly illustrate three key items for each SWMP area:

- **Summary of the Year's Activities.** The summary should describe and quantify program activities for each SWMP component. Responsible persons, agencies, departments or co-permittees should be included. Each activity should be described in relation to achievement of established goals or performance standards.

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- **Description of SWMP Effectiveness.** An annual report should not only describe the previous year's activities, but should also highlight the SMWP's effectiveness (see Part 8.3) using the indicators required in Part 8.2.
- **Planned Activities and Changes.** The annual report should describe activities planned for the next year highlighting any changes made to improve control measures or program effectiveness.

Also, although the stormwater Phase II rule requires reports, after the first permit term, to be submitted in only years two and four of the permit term, EPA strongly encourages annual reports for all permittees.

APPENDIX A: SUMMARY ANNUAL REPORT TEMPLATE



**National Pollutant Discharge Elimination System Stormwater Program
 Small MS4 Report Form**



The purpose of this report is to contribute information to an evaluation of the NPDES small municipal separate storm sewer system (MS4) permit program. Consistent with 40 CFR §122.37 the U.S. Environmental Protection Agency is assessing the status of the program nation-wide. A "no" answer to a question does not necessarily mean noncompliance with your permit or with the federal regulations. In order to establish the range of variability in the program it is necessary to ask questions along a fairly broad performance continuum. Your permitting authority may use some of this information as one component of a compliance evaluation.

1. MS4 Information

Name of MS4 _____

Name of Contact Person (First) _____ (Last) _____ (Title) _____

Telephone (including area code) _____ Email _____

Mailing Address _____

City _____ State _____ ZIP code _____

What size population does your MS4 serve? _____ NPDES number _____

What is the reporting period for this report? (mm/dd/yyyy) From _____ to _____

2. Water Quality Priorities

A. Does your MS4 discharge to waters listed as impaired on a state 303(d) list? Yes No

B. If yes, identify each impaired water, the impairment, whether a TMDL has been approved by EPA for each, and whether the TMDL assigns a wasteload allocation to your MS4. Use a new line for each impairment, and attach additional pages as necessary.

Impaired Water	Impairment	Approved TMDL		TMDL assigns WLA to MS4	
		<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____	_____	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____	_____	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____	_____	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____	_____	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____	_____	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____	_____	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____	_____	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____	_____	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No

C. What specific sources contributing to the impairment(s) are you targeting in your stormwater program?

D. Do you discharge to any high-quality waters (e.g., Tier 2, Tier 3, outstanding natural resource waters, or other state or federal designation)? Yes No

E. Are you implementing additional specific provisions to ensure their continued integrity? Yes No

Small MS4 Annual Report Form (cont)

3. Public Education and Public Participation

- A. Is your public education program targeting specific pollutants and sources of those pollutants? Yes No
- B. If yes, what are the specific sources and/or pollutants addressed by your public education program?

- C. Note specific successful outcome(s) (e.g., quantified reduction in fertilizer use; NOT tasks, events, publications) fully or partially attributable to your public education program during this reporting period.

- D. Do you have an advisory committee or other body comprised of the public and other stakeholders that provides regular input on your stormwater program? Yes No

4. Construction

- A. Do you have an ordinance or other regulatory mechanism stipulating:
- | | | |
|--|------------------------------|-----------------------------|
| Erosion and sediment control requirements? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Other construction waste control requirements? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Requirement to submit construction plans for review? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| MS4 enforcement authority? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
- B. Do you have written procedures for:
- | | | |
|-------------------------------|------------------------------|-----------------------------|
| Reviewing construction plans? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Performing inspections? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Responding to violations? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
- C. Identify the number of active construction sites ≥ 1 acre in operation in your jurisdiction at any time during the reporting period. _____
- D. How many of the sites identified in 4.C did you inspect during this reporting period? _____
- E. Describe, on average, the frequency with which your program conducts construction site inspections.

- F. Do you prioritize certain construction sites for more frequent inspections? Yes No
If Yes, based on what criteria? _____
- G. Identify which of the following types of enforcement actions you used during the reporting period for construction activities, indicate the number of actions, or note those for which you do not have authority:
- | | | | |
|------------------------------|-----------------------|---------|---------------------------------------|
| <input type="checkbox"/> Yes | Notice of violation | # _____ | No Authority <input type="checkbox"/> |
| <input type="checkbox"/> Yes | Administrative fines | # _____ | No Authority <input type="checkbox"/> |
| <input type="checkbox"/> Yes | Stop Work Orders | # _____ | No Authority <input type="checkbox"/> |
| <input type="checkbox"/> Yes | Civil penalties | # _____ | No Authority <input type="checkbox"/> |
| <input type="checkbox"/> Yes | Criminal actions | # _____ | No Authority <input type="checkbox"/> |
| <input type="checkbox"/> Yes | Administrative orders | # _____ | No Authority <input type="checkbox"/> |
| <input type="checkbox"/> Yes | Other _____ | # _____ | |
- H. Do you use an electronic tool (e.g., GIS, data base, spreadsheet) to track the locations, inspection results, and enforcement actions of active construction sites in your jurisdiction? Yes No
- I. What are the 3 most common types of violations documented during this reporting period?

- J. How often do municipal employees receive training on the construction program? _____

Small MS4 Annual Report Form (cont)

5. Illicit Discharge Elimination

- A. Have you completed a map of all outfalls and receiving waters of your storm sewer system? Yes No
- B. Have you completed a map of all storm drain pipes and other conveyances in the storm sewer system? Yes No
- C. Identify the number of outfalls in your storm sewer system. _____
- D. Do you have documented procedures, including frequency, for screening outfalls? Yes No
- E. Of the outfalls identified in 5.C, how many were screened for dry weather discharges during this reporting period?

- F. Of the outfalls identified in 5.C, how many have been screened for dry weather discharges at any time since you obtained MS4 permit coverage? _____
- G. What is your frequency for screening outfalls for illicit discharges? Describe any variation based on size/type.

- H. Do you have an ordinance or other regulatory mechanism that effectively prohibits illicit discharges? Yes No
- I. Do you have an ordinance or other regulatory mechanism that provides authority for you to take enforcement action and/or recover costs for addressing illicit discharges? Yes No
- J. During this reporting period, how many illicit discharges/illegal connections have you discovered? _____
- K. Of those illicit discharges/illegal connections that have been discovered or reported, how many have been eliminated?

- L. How often do municipal employees receive training on the illicit discharge program? _____

6. Stormwater Management for Municipal Operations

- A. Have stormwater pollution prevention plans (or an equivalent plan) been developed for:
 - All public parks, ball fields, other recreational facilities and other open spaces Yes No
 - All municipal construction activities, including those disturbing less than 1 acre Yes No
 - All municipal turf grass/landscape management activities Yes No
 - All municipal vehicle fueling, operation and maintenance activities Yes No
 - All municipal maintenance yards Yes No
 - All municipal waste handling and disposal areas Yes No
 - Other _____
- B. Are stormwater inspections conducted at these facilities? Yes No
- C. If Yes, at what frequency are inspections conducted? _____
- D. List activities for which operating procedures or management practices specific to stormwater management have been developed (e.g., road repairs, catch basin cleaning).

- E. Do you prioritize certain municipal activities and/or facilities for more frequent inspection? Yes No
- F. If Yes, which activities and/or facilities receive most frequent inspections? _____
- G. Do all municipal employees and contractors overseeing planning and implementation of stormwater-related activities receive comprehensive training on stormwater management? Yes No
- H. If yes, do you also provide regular updates and refreshers? Yes No
- I. If so, how frequently and/or under what circumstances? _____

Small MS4 Annual Report Form (cont)

7. Long-term (Post-Construction) Stormwater Measures

- A. Do you have an ordinance or other regulatory mechanism to require:
- Site plan reviews for stormwater/water quality of all new and re-development projects? Yes No
 - Long-term operation and maintenance of stormwater management controls? Yes No
 - Retrofitting to incorporate long-term stormwater management controls? Yes No
- B. If you have retrofit requirements, what are the circumstances/criteria?

C. What are your criteria for determining which new/re-development stormwater plans you will review (e.g., all projects, projects disturbing greater than one acre, etc.) _____

D. Do you require water quality or quantity design standards or performance standards, either directly or by reference to a state or other standard, be met for new development and re-development? Yes No

E. Do these performance or design standards require that pre-development hydrology be met for:

- Flow volumes Yes No
- Peak discharge rates Yes No
- Discharge frequency Yes No
- Flow duration Yes No

F. Please provide the URL/reference where all post-construction stormwater management standards can be found.

G. How many development and redevelopment project plans were reviewed during the reporting period to assess impacts to water quality and receiving stream protection? _____

H. How many of the plans identified in 7.G were approved? _____

I. How many privately owned permanent stormwater management practices/facilities were inspected during the reporting period? _____

J. How many of the practices/facilities identified in I were found to have inadequate maintenance? _____

K. How long do you give operators to remedy any operation and maintenance deficiencies identified during inspections?

L. Do you have authority to take enforcement action for failure to properly operate and maintain stormwater practices/facilities? Yes No

M. How many formal enforcement actions (i.e., more than a verbal or written warning) were taken for failure to adequately operate and/or maintain stormwater management practices? _____

N. Do you use an electronic tool (e.g., GIS, database, spreadsheet) to track post-construction BMPs, inspections and maintenance? Yes No

O. Do all municipal departments and/or staff (as relevant) have access to this tracking system? Yes No

P. How often do municipal employees receive training on the post-construction program? _____

8. Program Resources

A. What was the annual expenditure to implement MS4 permit requirements this reporting period? _____

B. What is next year's budget for implementing the requirements of your MS4 NPDES permit? _____

Small MS4 Annual Report Form (cont)

C. This year what is/are your source(s) of funding for the stormwater program, and annual revenue (amount or percentage) derived from each?

Source: _____ Amount \$ _____ OR % _____
 Source: _____ Amount \$ _____ OR % _____
 Source: _____ Amount \$ _____ OR % _____

D. How many FTEs does your municipality devote to the stormwater program (specifically for implementing the stormwater program; not municipal employees with other primary responsibilities)? _____

E. Do you share program implementation responsibilities with any other entities? Yes No

Entity	Activity/Task/Responsibility	Your Oversight/Accountability Mechanism
_____	_____	_____
_____	_____	_____
_____	_____	_____

9. Evaluating/Measuring Progress

A. What indicators do you use to evaluate the overall effectiveness of your stormwater management program, how long have you been tracking them, and at what frequency? These are not measurable goals for individual management practices or tasks, but large-scale or long-term metrics for the overall program, such as macroinvertebrate community indices, measures of effective impervious cover in the watershed, indicators of in-stream hydrologic stability, etc.

Indicator	Began Tracking (year)	Frequency	Number of Locations
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

B. What environmental quality trends have you documented over the duration of your stormwater program? Reports or summaries can be attached electronically, or provide the URL to where they may be found on the Web.

Small MS4 Annual Report Form (cont)

10. Additional Information

In the space below, please include any additional information on the performance of your MS4 program. If providing clarification to any of the questions on this form, please provide the question number (e.g., 2C) in your response.

Certification Statement and Signature

I certify that all information provided in this report is, to the best of my knowledge and belief, true, accurate and complete. Yes

Federal regulations require this application to be signed as follows: **For a municipal, State, Federal, or other public facility:** by either a principal executive or ranking elected official.

Name of Certifying Official, Title

Date (mm/dd/yyyy)

Submit

APPENDIX B: DEFINITIONS

Commencement of Construction – the initial disturbance of soils associated with clearing, grading, or excavating activities or other construction-related activities (e.g., stockpiling of fill material). (Source: 2008 CGP)

Control Measure – any best management practice (BMP) or other method used to prevent or reduce the discharge of pollutants to waters of the United States. (Source: 2008 CGP)

Discharge – when used without qualification means the “discharge of a pollutant.” (Source: 2008 CGP)

Discharge of Stormwater Associated with Construction Activity – as used in this permit, refers to a discharge of pollutants in stormwater from areas where soil disturbing activities (e.g., clearing, grading, or excavation), construction materials or equipment storage or maintenance (e.g., fill piles, borrow area, concrete truck chute washdown, fueling), or other industrial stormwater directly related to the construction process (e.g., concrete or asphalt batch plants) are located. (Source: 2008 CGP)

Illicit Discharge - 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. (Source: 40 CFR 122.26)

Large Construction Activity – is defined at 40 CFR §122.26(b)(14)(x) and incorporated here by reference. A large construction activity includes clearing, grading, and excavating resulting in a land disturbance that will disturb equal to or greater than five acres of land or will disturb less than five acres of total land area but is part of a larger common plan of development or sale that will ultimately disturb equal to or greater than five acres. Large construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the site. (Source: 2008 CGP)

Non-Structural Controls – preventative actions that involve management and source controls. Refer also to 40 CFR 122.34(b)(5)(c)(iii). (Source: 40 CFR 122.26)

Qualified Personnel – A person knowledgeable in the principles and practice of erosion and sediment controls who possesses the skills to assess conditions at the construction site that could impact stormwater quality and to assess the effectiveness of any sediment and erosion control measures selected to control the quality of stormwater discharges from the construction activity. (Source: EPA's 2008 Construction General Permit)

Receiving Water – the “Water of the United States” as defined in 40 CFR §122.2 into which the regulated stormwater discharges. (Source: 2008 CGP)

Small Construction Activity – includes clearing, grading, and excavating resulting in a land disturbance that will disturb equal to or greater than one (1) acre and less than five (5) acres of land or will disturb

less than one (1) acre of total land area but is part of a larger common plan of development or sale that will ultimately disturb equal to or greater than one (1) acre and less than five (5) acres. Small construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the site. (Source: 2008 CGP)

Stormwater control measure – see control measure.

Structural Control - physically designed, installed, and maintained practices used to prevent or reduce the discharge of pollutants in stormwater, to minimize erosion, and/or to minimize the impacts of stormwater on waterbodies.

Wasteload Allocation – the portion of a receiving water's loading capacity that is allocated to one of its existing or future point sources of pollution. Wasteload allocations constitute a type of water quality-based effluent limitation. (40 CFR 130.2)

ATTACHMENT 44

Program Evaluation Report

Riverside Area Stormwater Program: Cities of Corona, Moreno Valley and Riverside (NPDES Permit No. CAS 618033)

Executive Summary

Tetra Tech, Inc., with assistance from the California Regional Water Quality Control Board, Santa Ana Region (Regional Board), conducted a program evaluation of 3 of the 14 co-permittees implementing the Riverside Area Stormwater Program in May 2004. The purpose of the program evaluation was to determine the co-permittees' compliance with the National Pollutant Discharge Elimination System (NPDES) permit (CAS 618033 and Board Order R8-2002-0011) and to evaluate the current implementation status of the co-permittees' Urban Runoff Program (Program). The program evaluation included an in-field verification of program implementation. The three co-permittees evaluated were the cities of Corona, Moreno Valley, and Riverside.

This program evaluation report identifies potential permit violations, program deficiencies, and positive attributes. This report is not a formal finding of violation. Potential permit violations are areas of concern that the Regional Board staff should review to determine whether a violation has occurred. Program deficiencies are areas of concern for successful program implementation. Positive attributes indicate overall progress in implementing the Program.

The following potential permit violations are considered the most significant:

- The cities are not taking adequate steps to comprehensively evaluate program effectiveness.
- It is unclear whether the co-permittees are fully implementing the requirements in the New Development Guidelines (Supplement A to the DAMP).
- The co-permittees lack adequate guidance for reviewing new development project plans to assist with implementation of Supplement A and Water Quality Management Plans (WQMPs).
- The City of Corona does not adequately prioritize construction sites.
- The City of Corona lacks documentation on how it prioritizes industrial and commercial facilities.
- The City of Moreno Valley lacks criteria for designating priority levels for industrial and commercial facilities.

- The City of Moreno Valley needs to develop a septic system program to prevent system failures and to replace systems that have already failed.
- The City of Riverside's construction inspectors lack adequate inspection forms, inspection procedures, and training.
- The City of Riverside does not adequately identify and prioritize construction sites.
- The City of Riverside's corporation yard lacks adequate practices to prevent stormwater contamination.
- The City of Riverside's corporation yard lacks a site-specific Urban Runoff Pollution Prevention Plan.
- The City of Riverside does not have written standards, guidance, or training for the maintenance and inspection of structural stormwater controls.

The following program deficiency is considered significant for improvement of the program:

- The cities have not developed city-specific local stormwater management plans.

Several elements of the co-permittees' programs were particularly notable:

- The City of Corona requires a cash deposit for erosion control best management practices (BMPs).
- The City of Moreno Valley has implemented an annual maintenance charge for the City to maintain post-construction water quality BMPs.
- The City of Riverside has developed a GIS database that tracks routine inspections and other activities conducted by the Industrial Waste Division.

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1.0 Introduction

1.1 Program Evaluation Purpose

The purpose of the program evaluation was to determine the co-permittees' compliance with their National Pollutant Discharge Elimination System (NPDES) permit (CAS 618033 and Board Order R8-2002-0011) and to evaluate the current implementation status of the co-permittees' Urban Runoff Program (Program) with respect to EPA's stormwater regulations. Secondary goals included the following:

- Review the overall effectiveness of the Program.
- Identify and document positive elements of the Program that could benefit other Phase I and Phase II municipalities.
- Acquire data to assist in reissuance of the permit.

40 CFR 122.41(i) provides the authority to conduct the program evaluation.

1.2 Permit History

The NPDES stormwater permit was issued on October 25, 2002, and is scheduled to expire on October 26, 2007. The current permit, the third issued to the co-permittees, requires each co-permittee to implement an Urban Runoff Program, including the best management practices (BMPs) identified in the area-wide Drainage Area Management Plan (DAMP).

1.3 Logistics and Program Evaluation Preparation

Before initiating the on-site program evaluation, Tetra Tech, Inc., reviewed the following Program materials:

- NPDES Permit No. CAS 618033
- Santa Ana Region DAMP
- Santa Ana Region Enforcement/Compliance Strategy (December 20, 2001)
- Santa Ana Region Municipal Facilities Strategy (June 1997)
- Appendix C, Supplement A (New Development Guidelines), of the DAMP
- Draft Water Quality Management Plan (WQMP) (April 30, 2004)
- 2002 annual report of each co-permittee
- Regional Board correspondence with each co-permittee
- Co-permittees' Web sites

On May 11–13, 2004, Tetra Tech, Inc., with assistance from the Regional Board, conducted the program evaluation. The evaluation schedule was as follows:

Tuesday, May 11	Wednesday, May 12	Thursday, May 13
<ul style="list-style-type: none"> • Program evaluation kickoff meeting • Program Management • Municipal Facilities and Activities (field and office) • Construction and New Development (office) 	<ul style="list-style-type: none"> • Construction (field) • Industrial and Commercial (office) • Illicit Discharge (office) 	<ul style="list-style-type: none"> • Industrial and Commercial (field) • Education and Outreach • Program Effectiveness • Reporting • Program evaluation outbrief meeting

Upon completion of the evaluation, an outbrief was held to discuss the preliminary findings. During the outbrief, the attendees were informed that the findings were to be considered preliminary pending further review by EPA and the Regional Board.

1.4 Program Areas Evaluated

The following program areas were evaluated:

- Program Management, including the co-permittees' assessment of program effectiveness
- Municipal Facilities and Activities
- Industrial and Commercial Inspections
- Construction
- New Development
- Illicit Connection and Illegal Discharges
- Education and Outreach
- Reporting

1.5 Program Areas Not Evaluated

The following areas were not evaluated in detail as part of the program evaluation:

- Wet-weather monitoring program and monitoring program details (e.g., sampling location, types, frequency, parameters).
- Other NPDES permits issued to the co-permittees (e.g., industrial or construction NPDES stormwater permits).
- Inspection reports; plan review reports, and other relevant files. The program evaluation team did not conduct a detailed file review to verify that all elements of the Program were being implemented as described. Instead, observations by the evaluation team and statements from the co-permittees' representatives were used to assess overall compliance with permit requirements. A detailed file review of specific program areas could be included in a subsequent evaluation.

1.6 Program Areas Recommended for Evaluation

The evaluation team recommends the following additional assessments:

- A review of the new development planning program implemented by the co-permittees, including implementation of Supplement A and Water Quality Management Plans (WQMPs) after adoption.
- An evaluation of the co-permittees implementing programs developed in compliance with Board Order R8-2002-0011 that were not included in this round of evaluations.

2.0 Program Evaluation Results

This program evaluation report identifies potential violations, program deficiencies, and positive attributes. This report is not a formal finding of violation. Potential violations are areas of concern that Regional Board staff should review to determine whether a violation has occurred. Program deficiencies are areas of concern for successful program implementation. Positive attributes indicate a co-permittee's overall progress in implementing the Program. The evaluation team identified only positive attributes that were innovative and exceptional (beyond minimum requirements). Some areas were found to be simply adequate; that is, not particularly deficient or innovative.

The evaluation team did not evaluate all components of each co-permittee's Program. Therefore, the co-permittees should not consider the enclosed list of program deficiencies a comprehensive evaluation of individual program elements.

The most significant program deficiencies and positive attributes identified during the evaluation are noted in the Executive Summary and are identified with text boxes in the following subsections.

2.1 Findings Common to All Three Cities

2.1.1 Evaluation of Program Management and Effectiveness

Potential Permit Violation:

- *The cities are not taking adequate steps to comprehensively evaluate program effectiveness.*

The cities are not taking adequate steps to evaluate program effectiveness more comprehensively and go beyond the collection of water quality monitoring data. The current annual reports summarize past activities but do not provide detailed analysis to evaluate those activities. The cities should use the annual report to analyze not only *what happened* but also *why* it happened and *what needs to change* in the future to improve the Program. Ultimately, this evaluation will help the cities to improve implementation of the Program and help document water quality improvements.

For additional information on program evaluations, the cities should review the presentations from the November 14, 2003, meeting of the California Storm Water

Quality Association. That meeting focused on MS4 program effectiveness and how MS4s can document such effectiveness. The presentation materials are available at <http://www.casqa.org/swqtf/presentations.htm>. An additional resource is *A Framework for Assessing the Effectiveness of Jurisdictional Urban Runoff Management Programs* developed by the San Diego Municipal Storm Water co-permittees. A copy of the report is available at http://www.projectcleanwater.org/pdf/CoPermittees/assessment_framework_final.pdf

Deficiency Noted:

- *The cities have not developed city-specific local stormwater management plans.*

Although the co-permittees have developed the regional DAMP, they have not developed individual stormwater implementation plans to provide each city with specific direction on the implementation of the Program. Review of the DAMP demonstrated that it is general in nature, providing guidance for the co-permittees but not specific details regarding local implementation. The co-permittees should develop individual stormwater management plans, based on the DAMP's overall guidance and program objectives that describe specifically how the Program will be implemented in each municipality. The cities would benefit from developing individual plans that identify the specific city organization(s) responsible for each activity. The local stormwater management plans should not only identify activities specific to the city but also provide the detailed direction and guidance needed to implement these activities.

As an example, the cities can review the stormwater local implementation plan (LIP) developed by the City of San Clemente for the San Diego Regional Water Quality Control Board at <http://ci.san-clemente.ca.us/Org/Dept/Engineering/WaterQ/wq.htm>. The LIP is the City's local plan for complying with stormwater permit requirements, and it is based on the regional DAMP developed by all permittees in the County. The cities in Riverside County should adopt a similar approach to implementing their stormwater program.

2.1.2 Evaluation of New Development and Redevelopment Program

Potential Permit Violations:

- *It is unclear whether the co-permittees are fully implementing the requirements in the New Development Guidelines (Supplement A to the DAMP).*

Permit provision VIII.A.2 requires each city to implement the BMPs identified in the New Development Guidelines, Supplement A to the DAMP. Supplement A describes "standard practice" BMPs for specific development types. For example, new retail/office center developments are required to implement specific nonstructural and structural BMPs identified in Tables 1 and 2 of Supplement A. One of these BMPs, control of impervious runoff (S1), describes how direct drainage from impervious areas to the street or a storm drain is discouraged and should be avoided. It was not clear from the evaluation that the cities are consistently requiring the BMPs in Supplement A for the development types specified in Tables 1 and 2.

- *The co-permittees lack adequate guidance for reviewing new development project plans to assist with implementation of Supplement A and Water Quality Management Plans (WQMPs).*

The co-permittees have not developed city-specific guidance and procedures for implementing Supplement A and, after adoption, the WQMP requirements. This guidance would include information on who will review project-specific WQMPs and details of each city's review process for project-specific WQMPs. The review of project-specific WQMPs is a complicated and detailed process. A checklist or similar review guidance would help ensure that plan review staff cover all the required elements in the WQMP. The Principal Permittee could develop model program guidance, and individual co-permittees could then customize the guidance for their unique programs and activities.

Two examples of local manuals developed to address post-construction stormwater requirements are available from San Diego County (http://www.sdcounty.ca.gov/dpw/watersheds/land_dev/susmp.html) and the City of Los Angeles (<http://www.lastormwater.org/Pages/partb.htm>).

2.1.3 Evaluation of Public Education and Outreach Program

Deficiency Noted:

- *The cities should develop a more statistically valid survey of public awareness.* Permit provision X.E requires the Public Education Committee to "propose a survey for measuring changes in awareness of Urban Runoff quality as a result of the education program." The co-permittees currently meet this requirement by asking attendees at public events to complete survey forms. The co-permittees should develop a more statistically valid survey using established public survey techniques. An example of a report on a telephone survey of stormwater awareness conducted in San Diego County is available at http://www.projectcleanwater.org/pdf/Carlsbad/public_awareness_03_car_slr.pdf

2.2 City of Corona

2.2.1 Evaluation of Program Management and Effectiveness

See common findings in section 2.1.1.

2.2.2 Evaluation of New Development and Redevelopment Program

See common findings in section 2.1.2.

Deficiency Noted:

- *The City lacks a system to track maintenance of post-construction BMPs.* The City should develop a system to track structural source control and treatment BMPs identified in project plans complying with Supplement A and project-specific WQMPs. Information such as location, type of BMP, responsible party, and operation and maintenance (O&M) inspection and maintenance frequency should be collected to assist the City in ensuring that post-construction BMPs are adequately maintained.

2.2.3 Evaluation of Construction Program

Positive Attribute:

- *The City requires a cash deposit for erosion control BMPs.*

Before issuing a grading permit, the City requires project proponents to post security with the City (Corona Municipal Code 15.36.120). The security must be 100 percent of the estimated costs of erosion control, and at least 25 percent of the required security must be in cash. The remainder of the erosion control security may be a letter of credit, bond, or certificate of deposit. This approach allows the City to quickly correct erosion control problems using the developer's security deposit if the developer does not respond to violations found during inspections.

Potential Permit Violation:

- *The City does not adequately prioritize construction sites.*

Permit provision IX.A.2 requires the City to prioritize construction sites within its jurisdiction as a high, medium, or low threat to receiving water quality. The permit sets a minimum threshold for high priority as any site that disturbs an area greater than 50 acres. The permit also designates minimum inspection frequencies for high-, medium-, and low-priority sites—once every 2 weeks, once a month, and once during the wet season, respectively.

The City has very few construction projects that fall under the high-priority threshold required in the permit. The permit does not specifically define medium- or low-priority construction sites, so the City has defined all construction that is not high-priority as low-priority (that is, no sites are defined as medium-priority sites). The City inspects all construction sites at the medium inspection frequency or greater. The permit, however, requires prioritization of construction sites to be based on factors such as "soil erosion potential, project sites, proximity and sensitivity of receiving waters, history of compliance, and other relevant factors." The City should revise its construction site prioritization scheme so it reflects the construction projects in the City and is a useful tool to help City inspectors prioritize their inspections. For example, the City could tabulate the frequency at which each site is currently evaluated for adequacy of compliance with stormwater requirements. This data would allow the City to better assign priority based on current inspection frequency.

Deficiencies Noted:

- *The City should develop more specific guidance for reviewing erosion and sediment control plans.*

To assist plan review staff in reviewing erosion control plans, the City should develop more specific guidance, such as a checklist or written review criteria. Such guidance would ensure that all staff review plans consistently. The guidance should include good housekeeping BMPs covering concrete washouts, vehicle and equipment fueling, cleaning and repair, sanitary waste, and solid waste management practices,

which are not currently included in erosion control plans. The guidance should also include sediment control during the clearing, grubbing, and rough grading stages, such as the use of sediment traps and sediment basins, erosion and sediment control during active construction (such as the use of straw rolls and sediment traps) and, in general, an effective combination of erosion and sediment controls at all stages of construction.

- *The City should more actively involve building inspectors and public works inspectors in inspections for stormwater compliance.*
Building inspectors and public works inspectors should be more actively involved in conducting inspections for compliance with stormwater requirements. Building inspectors, at a minimum, can correct minor stormwater violations with a verbal warning while on-site, referring serious violations or repeat offenders to the City's primary inspector for stormwater. For public works projects, the City places primary responsibility for stormwater compliance with the contractor. However, the City should also inspect public works projects to ensure compliance with the State's General Construction Permit.

2.2.4 Evaluation of Municipal Facilities and Activities Program

Positive Attributes:

- *The City is developing a sophisticated municipal maintenance work order tracking and reporting system.*
The City is developing a detailed municipal maintenance work order tracking and reporting system called *Crossbow*. This system will eventually allow the City to more accurately track and respond to implementation of the Program. The City is encouraged to integrate stormwater program elements into this system.
- *The City's new corporation yard includes numerous BMPs to address stormwater concerns.*
The City's corporation yard, which the City built approximately 18 months ago, was designed with most activities conducted and materials stored inside the buildings or under cover. The vehicle wash rack is covered and enclosed, and spill kits and mats to cover the storm drain are available near the fueling island.

Deficiencies Noted:

- *The City should increase its storm drain inlet stenciling efforts.*
Although the City has stenciled approximately 500 storm drain inlets, some of them have faded and have not been re-stenciled. The Public Works Department plans to apply more permanent stencils to storm drains. The City is encouraged to stencil all inlets with appropriate stormwater messages and should set a schedule for accomplishing this goal.

- *The City should develop site-specific urban runoff pollution prevention plans for municipal facilities and activities.*

The City has developed an Urban Runoff Plan with BMPs for its facilities, but the BMPs lack specificity for the major municipal facilities and activities. The City should develop site-specific plans similar to industrial stormwater pollution prevention plans for the corporation yard and other municipal facilities with a significant potential to contaminate stormwater runoff. For example, this plan should include a site map showing potential pollutant sources, BMPs, storm drain inlets, and direction of flow. The plan should also identify staff responsible for implementing the BMPs, schedules for inspection and maintenance of the facility and BMPs, and records of maintenance.

2.2.5 Evaluation of Industrial and Commercial Inspection Program

Potential Permit Violation:

- *The City lacks documentation on how it prioritizes industrial and commercial facilities.*

Permit provisions IX.B.2 and IX.C.4 require the City to prioritize industrial and commercial facilities. The permit allows the City some discretion in setting priorities, defining high priorities generally as facilities with “a high potential for or history of unauthorized, non-stormwater discharges.” The City has not documented how it prioritizes industrial and commercial facilities, and it should develop written criteria to be used to classify facilities as having high, medium, or low priority. The criteria should be objective, where possible, with the potential for facilities to be reclassified after an inspection.

Positive Attribute:

- *The City has inspected most of its industrial and commercial facilities and has developed a database to track inspections.*

The City has inspected the majority of its industrial facilities and has started to inspect the commercial facilities. In addition, the City has developed a database to inventory industrial and commercial facilities and track inspections.

2.2.6 Evaluation of Public Education and Outreach Program

See common finding in section 2.1.3.

2.2.7 Evaluation of Illicit Connection and Illegal Discharge Program

Adequate.

2.3 City of Moreno Valley

2.3.1 Evaluation of Program Management and Effectiveness

See common findings in section 2.1.1.

Deficiency Noted:

- *The City would benefit from regular meetings of City department heads to coordinate stormwater efforts.*

The Public Works and Facilities managers do not require the incorporation of stormwater BMPs into the daily routines of their crews. This practice might be due in part to a lack of communication between departments. Regular meetings would reinforce the need to implement stormwater BMPs and would educate department heads about new stormwater concerns and new technologies that might be implemented.

2.3.2 Evaluation of New Development and Redevelopment Program

See common findings in section 2.1.2 above.

Positive Attribute:

- *The City has implemented an annual maintenance charge for the City to maintain post-construction water quality BMPs.*

The City requires that new developments be equipped with water quality ponds and other post-construction stormwater management practices. To ensure that these systems are maintained adequately, the City has developed a legal process by which it assumes maintenance responsibility for these systems. The property owner or homeowner association is legally responsible for maintenance during the initial establishment stage (120 days after installation) and is required to submit as-built planting, irrigation, grading, and drainage plans. After that period, the City performs maintenance on the system and levies an annual NPDES regulatory fee for the service. To track post-construction BMPs, the City developed a spreadsheet and a geographic information system (GIS) of the facilities for which it is responsible, including information such as location, type of practice, property owner, projected maintenance schedule, and actual maintenance costs.

Deficiency Noted:

- *The City lacks a formal, documented plan review process.*

The plan review process is not formalized and is largely the responsibility of a single person. If the rate of development increases or staff turnover occurs, a more formalized process will be needed. Therefore, the City should document its plan review process by developing a review checklist or similar review guidance. This checklist could be provided to developers, as well as City staff, to improve the transparency of the review process and serve as an educational tool.

2.3.3 Evaluation of Construction Program

Positive Attributes:

- *The City has developed and begun to implement the Permits Plus database to schedule inspections based on priority level and results of previous inspections.*
The City has cataloged all construction sites in its jurisdiction and entered them into a tracking database called *Permits Plus*, which is also being used for other applications in the City. The database automatically prioritizes sites based on size (other criteria for prioritizing sites, such as direct discharge to an impaired waterbody, are not automated), and the system schedules inspections based on this priority level. (High-priority sites are inspected biweekly, medium-priority sites monthly, and low-priority sites once during the wet season.) The database also stores information from the inspection form and automatically schedules follow-up inspections based on inspection results (i.e., if a violation is reported). At the time of the program evaluation, this system had just been implemented and had not yet been fully utilized.
- *The City requires the developer or contractor to pay \$250 per construction inspection.*
The City implemented a fee for conducting inspections of construction sites to meet the requirements of the NPDES permit (City Resolution 2003-34). This fee is charged per inspection and generates revenue to support the Program.

Deficiencies Noted:

- *Erosion and sediment control plan review protocols for new development and redevelopment are not formalized.*
Although basic erosion and sediment control practices are required on site plans, a standardized procedure has not been developed for their review and approval. In addition, there is no approved checklist or other guidance to educate developers about the plan requirements for erosion and sediment control and post-construction stormwater management. Coordination among planners, the City's engineers, and inspectors has not been formalized to ensure that adequate plans are developed, approved, and used in the field to maximize the removal of pollutants during construction.
- *Capital improvement projects should use the same criteria as private projects.*
The City's capital improvement projects (CIPs) are inspected using a checklist that differs greatly from the one used for private development projects. A side-by-side comparison of inspection reports by two inspectors at the same site revealed inconsistencies. Most notably, problems with erosion and sediment controls were not adequately detailed on the CIP inspector's forms, and follow-up activities were not noted. In addition, the CIP inspector, who was hired within the past year, had not undergone formal training in erosion and sediment control.

The City should ensure that the training requirement is met and should apply the same standards and inspection checklist to both CIPs and private construction sites. One way to improve consistency would be for the new inspector to receive on-the-job

training by the more experienced construction inspector at both private development and CIP sites.

- *The City should continue with revisions to the enforcement escalation process for construction sites.*

The City's enforcement escalation process, although clearly defined on the construction inspection form, has not resulted in improved compliance at problem sites. The City recently adopted a revised stormwater ordinance that provides the legal authority to impose civil penalties on parties that violate the provisions set forth in the ordinance, the Municipal NPDES Permit, and the NPDES Permit for Industrial/Commercial and Construction Activity. With this expanded authority, the City should be sure to follow through with programmatic changes to improve compliance, such as increasing the frequency of inspections, revising the enforcement escalation process, increasing penalties, and granting code enforcement capabilities to the construction inspector rather than requiring the inspector to refer incidental violations to other city officials.

2.3.4 Evaluation of Municipal Facilities and Activities Program

Deficiencies Noted:

- *The City should include stormwater management-related procedures and standards as contract specifications for all City contractors.*

Contractors hired by the City, for both construction and maintenance activities, should be required to meet the same standards for stormwater control that City crews must meet. One of the most effective means to achieve this end is the contract language. An outline of the standards that need to be met and BMPs that need to be implemented for each project should be included in the contract. This would provide guidance to the contractors as well as an enforceable mechanism for ensuring that acceptable practices are being used. It is also the City's responsibility to audit contractors periodically to verify that they are meeting the requirements set forth in these contracts.

- *The City should develop a standardized employee-training program and provide guidance materials on BMPs for City maintenance crews.*

It was clear that Public Works and Facilities Management staff were not well versed in stormwater management concepts and BMP implementation. In addition to conducting formal training for these employees on stormwater impacts, a manual or other written guidance material that workers can refer to while working in the field should be developed. Such guidance materials could include fact sheets or posters detailing the proper storage and handling of hazardous chemicals, methods for protecting storm drain inlets during minor road work, and ways to identify and report spills or illicit discharges. Materials should be directly relevant to the tasks being performed by each department, which might necessitate developing more than one set of information, each tailored to a different type of task.

- *The City should develop urban runoff management plans for the corporation yard, animal shelter, and fire stations.*

The City manages several facilities that have the potential to adversely affect stormwater quality. Facility-specific plans similar to industrial stormwater pollution prevention plans should be developed. The plans should identify pollutants likely to be generated at each site and specify the BMPs that will be implemented to reduce impacts on the municipal separate storm sewer system (MS4) and receiving waters. Employees at these facilities should be taught periodically about pollution prevention and stormwater management.

The City's corporation yard would benefit from better housekeeping and dust control. There were several instances where fertilizers, small amounts of gasoline, and bags of concrete mix were stored outside in nondesignated areas; these materials should be stored indoors. Also, chemically treated logs, although covered by a tarp, were stored directly on the ground, which could contaminate runoff flowing through the storage area. These logs should be stored indoors (there was a large roofed area that could accommodate these materials) or on pallets so they will not come into contact with stormwater. The large lot was mostly unpaved and could be a source of excessive dust. In addition, stockpiles of sand and other loose materials were stored on-site and should be monitored for erosion due to rainfall or wind.

2.3.5 Evaluation of Industrial and Commercial Inspection Programs

Positive Attribute:

- *The City has linked the Permits Plus database of industrial and commercial facilities to the Business License database, which is updated daily.*

The City has undertaken an effort to automate many of its services, such as tracking business licenses. The Storm Water Program plans to use the *Business License* database to identify new industrial and commercial facilities that require inspections. Many jurisdictions update their industrial and commercial inventories only annually, but the *Permits Plus* system allows for daily updates. The system is also capable of automatically scheduling initial and follow-up inspections.

Potential Permit Violation:

- *The City lacks criteria for designating priority levels for industrial and commercial facilities.*

The City recently assumed responsibility from the County for industrial and commercial stormwater inspections and has hired a consultant to carry out these tasks. Procedures for prioritizing and conducting inspections to ensure compliance with the permit requirements have not yet been formalized. The City must clearly define criteria for assigning priority levels to industrial and commercial facilities and ensure that inspections are scheduled as specified in Part IX.B.3 of the permit.

2.3.6 Evaluation of Public Education and Outreach Program

See common finding in section 2.1.3.

2.3.7 Evaluation of Illicit Connection and Illegal Discharge Program

Potential Permit Violation:

- *The City needs to develop a septic system program to prevent system failures and to replace systems that have already failed.*

The permit (Part VII.B.) requires that septic systems be inventoried and a procedure be established to control septic system failures that could affect water quality. This task has not yet been initiated. The City should work with local sewer agencies to identify properties that are not connected to the sanitary sewer as a means to develop an inventory. Once this inventory is established, the City can work with other agencies to determine the most appropriate way to assess the impact of septic systems on urban runoff and local waterbodies.

Deficiency Noted:

- *The City should improve coordination with spill responders to ensure that spill information is tracked and reported to state agencies and to assess whether the MS4 or receiving waters have been adversely affected.*

As required in Part VI.B of the permit, City staff must notify the state Office of Emergency Services of a spill or illegal discharge. At the time of the program evaluation, no procedure was in place for spill responders (the Fire Department or HAZMAT team) to notify the Storm Water Program of spills that might affect the MS4 or receiving waters. It is important for the Storm Water Program to be able to assess the impacts of spills on the MS4 both for tracking purposes and for mitigation, if needed. The City should work with spill responders to develop an official procedure for notifying the Storm Water Program of spills. The City should also consider providing education on stormwater and NPDES permit requirements to managers and staff responsible for spill response.

2.4 City of Riverside

2.4.1 Evaluation of Program Management and Effectiveness

See common findings in section 1.2.1 above.

Deficiency Noted:

- *The City should consider using activity and BMP specific language in contract specifications.*

The City contracts out some municipal activities (landscaping and park maintenance). The current contract specifications include general language discussing state standards requiring water quality protection. The City is encouraged to revise or augment the current contract language to include specific stormwater BMPs required by the City to protect water quality.

2.4.2 Evaluation of New Development and Redevelopment Program

See common findings in section 1.2.2.

Positive Attribute:

- *The Industrial Waste Division of the Public Works Department is included in the plan review process to address industrial and commercial wastewater issues.*
In-office interviews with the Industrial Waste Division staff revealed that they are included in the new development plan review process. The Industrial Waste Division is responsible for addressing industrial and commercial wastewater issues associated with the plans (inflow and infiltration, drainage, post-construction BMPs associated with industrial and commercial facilities) and must sign off prior to plan approval.

Deficiency Noted:

- *The City lacks a formal mechanism to assign responsibility and track the maintenance of post-construction BMPs.*
The City has no mechanism to assign responsibility for maintaining post-construction BMPs. The development of a formal maintenance agreement would facilitate the assignment of responsibility for routine maintenance of post-construction BMPs. The City also lacks a mechanism to track post-construction BMPs. Tracking the locations, maintenance schedules, and responsible organizations would help the City to establish a routine maintenance schedule and inspection program for such BMPs.

2.4.3 Evaluation of Construction Program

Potential Permit Violations:

- *The City's construction inspectors lack adequate inspection forms, inspection procedures, and training.*

The City's construction inspectors do not have an adequate construction inspection checklist identifying the site-specific BMPs the City requires. The checklist used on-site lacks specific information to assist in determining compliance, including the evaluation of on-site erosion and sediment control BMPs and BMPs to address construction waste, equipment and material storage, and maintenance. In addition, the daily inspection checklist should note necessary maintenance or changes to BMPs, whether any enforcement action has been taken, and whether the site is covered under the Statewide General Construction Permit. The evaluation team visited three construction sites (Colombia Street, Van Buren Avenue, and Riviera Street) and determined that the construction inspectors lacked consistency from site to site. The City is encouraged to provide additional training opportunities for field staff to make sure that they have the tools and education necessary to ensure that construction sites employ proper stormwater controls. Along with the training, the City should develop formalized written procedures for conducting consistent inspections. The development of formalized inspection procedures would provide inspectors with consistent guidance on adequate BMP installation and maintenance, record-keeping, and enforcement procedures.

- *The City does not adequately identify and prioritize construction sites.*

Permit provision IX.A.2 requires the City to “prioritize construction sites within the jurisdiction as a high, medium, low threat to Receiving Water quality (consistent with the criteria contained in Section IX.A.3).” The City does not have a process for continually updating a construction site list as new projects are added or old projects are completed. Although the City is in the process of using the *Permits Plus* database to track construction sites, the City needs to use the database to develop a dynamic list that is periodically updated to reflect prioritization on active construction in the City. The City should also document the criteria used to prioritize sites as high-, medium- or low-priority sites.

2.4.4 Evaluation of Municipal Facilities and Activities Program

Positive Attribute:

- *The City is developing a GIS database system to track municipal maintenance activities in Riverside.*

During in-office evaluations, City staff explained that they are developing a GIS-based Work Order Management System (WOMS) database. The database will track the current municipal maintenance activities by using City work orders. Items that will be tracked include catch basin cleaning, street sweeping, litter removal, and other activities. The database will be suitable for data collection and, ultimately, annual reporting.

Potential Permit Violations:

- *The City's corporation yard lacked adequate practices to prevent stormwater contamination.*

The evaluation team conducted a site visit to the City's corporation yard at 8095 Lincoln Avenue. The corporation yard lacked basic stormwater practices to ensure control of contaminated runoff. Evaluation of the yard revealed the following stormwater issues:

- Vehicles and equipment stored outside the fleet maintenance shop showed obvious signs of leaks. Drip pans or other controls were not provided for stored vehicles.
- Large spills of oil and miscellaneous fluids were also found in the vehicle parking area. Although some of the spills had been covered with absorbent materials, the materials had not been cleaned up.
- On-site spill kits were not plentiful, visible, or accessible to staff. The corporation yard staff were encouraged to increase the number of spill kits on-site. In addition, the spill kits should be located in areas with a high potential for spills, such as the transformer storage area and fueling area. The spill kits should also be labeled and highly visible to staff.
- Vehicle wash water discharge was identified near one of the corporation yard wash racks. The wash water contained miscellaneous trash and evidence of an

oily sheen. The City staff is encouraged to restrict washing activities to the designated wash racks on-site. Control of non-stormwater discharges should be addressed in the facility's Urban Runoff Pollution Prevention Plan as required in Section XI.N of the municipal permit.

- Approximately fifteen 5-gallon paint containers were found exposed. The City staff was encouraged to properly clean up, cover, and dispose of the containers on a regular basis. Also, trash containers throughout the yard were left open; they should be closed when not in use.
- Stockpiles of street sweeping debris, aggregate, and other miscellaneous materials had not been covered. These stockpiles, as well as the surrounding exposed soil, should have controls to reduce or eliminate dust migration, sediment transport, and erosion. As a recommendation, the City could cover the temporary stockpiles with plastic sheeting and use erosion control blankets for the long-term stockpiles. The city is encouraged to conduct dust-suppression practices on a routine basis through watering or the use of a chemical soil binder.

During the site visit the evaluation team discovered two stormwater facilities, a storm drain inlet, and a concrete-lined trapezoidal channel that showed signs of excessive sedimentation. According to City staff, these stormwater facilities are under the jurisdiction of the Riverside County Flood Control District. The storm drain inlet was at the end of a cul-de-sac within the boundary of the corporation yard. Although the inlet had a sediment filtration system, the inlet had not been cleaned or maintained. Thus the filtration system was inundated with sediment, rendering the system ineffective. The City had recently cleaned out the trapezoidal channel, but the channel lacked controls to prevent sediment from entering. The City staff was encouraged to establish an agreement with the County Flood Control District or other agencies to properly maintain these stormwater facilities on a regular basis.

- *The City's corporation yard lacked a site-specific Urban Runoff Pollution Prevention Plan.*

Section XI.N of the municipal permit requires the City to maintain an updated site-specific Urban Runoff Pollution Prevention Plan. During in-office evaluations, members of the municipal maintenance staff explained that they had not yet developed a site-specific Urban Runoff Plan for the corporation yard. The yard could benefit from a plan similar to an industrial stormwater pollution prevention plan that describes the activities, potential pollutant sources, associated BMPs, training, and responsibilities for the yard. In addition, the plan should specifically incorporate BMPs for the deficiencies identified in the finding above.

- *The City does not have written standards, guidance, or training for the maintenance and inspection of structural stormwater controls.*

The City has not developed standards for the maintenance of stormwater facilities, such as storm drain inlets and stormwater basins. The Public Works Department stated that the Street Division conducts inspections of all the municipal storm drain inlets prior to the wet season. The Street Division is responsible for maintaining the City's jurisdictional storm drain inlets. There is no formal set of procedures on how to

conduct routine inspections and maintenance. The City also lacks a training program to teach its staff appropriate procedures for storm drain inlet maintenance. Training would benefit the City's effort to maintain its municipal storm sewer system consistently and adequately.

2.4.5 Evaluation of Industrial and Commercial Inspection Programs

Positive Attributes:

- *The City has developed a GIS database that tracks routine inspections and other activities conducted by the Industrial Waste Division.*

The Industrial Waste Division of the Public Works Department has developed and uses a GIS database that tracks inspections. The database tracks the history of stormwater inspections, violations, and enforcement at industrial and commercial facilities. The industrial inspectors print out the pertinent history and inspection record before any inspection of facilities for that day. The inspection forms, once completed, are entered into the database. New industrial facilities are entered into the database as they obtain new discharge permits. The locations of the new facilities are placed on a GIS map that shows history, location, and contact information when selected in the GIS database.

- *The City has developed requirements that mobile washers and detailers must meet prior to conducting activities in the City.*

The Industrial Waste Division has developed an authorization program for mobile washers and detailers. According to City staff, mobile washers and detailers are not allowed to conduct washing activities until the City has approved them. The City has developed a formal set of requirements that a mobile washer or detailer must meet to operate within the City's jurisdiction. These 10 requirements include, for example, using equipment and procedures to prevent the discharge of wastewater to the storm drain, conducting cleaning activities that comply with the City's ordinance, and using recovery equipment in accordance with the manufacturer's recommendations. The companies must also demonstrate their activities to obtain final approval. The Industrial Waste Division documents the demonstrations and activities. Once a company is authorized to conduct washing activities within the city's jurisdiction, the City adds the company to the vendor list developed by the City. Currently there are 11 such authorized companies; all non-authorized mobile washers and detailers found conducting washing or detailing activities are subject to enforcement per the City ordinance.

- *The City has developed a comprehensive, very detailed, multiphase training program for industrial inspectors.*

The Industrial Waste Division of the Public Works Department has developed a nine-phase training program for industrial inspectors, which the California Water Environment Association has approved. Each phase of the program must be passed with a 90 percent or better score to move on to the next phase. Although the training program focuses on industrial and commercial wastewater discharges, one of the phases concentrates primarily on stormwater aspects such as erosion and sediment

control, nonpoint source discharges, discharges associated with residential areas, and other stormwater issues.

2.4.6 Evaluation of Public Education and Outreach Program

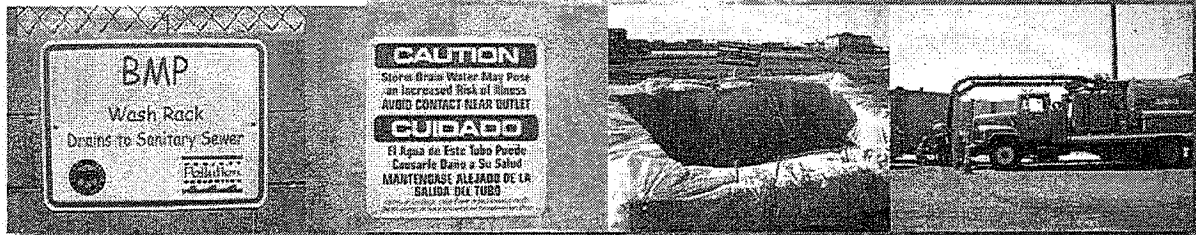
See common finding in section 1.2.3.

2.4.7 Evaluation of Illicit Connection and Illegal Discharge Program

Adequate.

ATTACHMENT 45

Assessment Report on Tetra Tech's Support of California's MS4 Stormwater Program



Produced for:
U.S. EPA Region IX

California State and
Regional Water
Quality Control
Boards

Produced by:
Tetra Tech, Inc.
www.ttwater.com

July 12, 2006



Assessment Report on Tetra Tech's Support of California's MS4 Stormwater Program

Acknowledgments

This report was prepared under US EPA contract number EP-C-05-046, Work Assignment 0-22 and provides an assessment of support Tetra Tech provided to U.S. EPA Region IX and the State of California from July 2001 to July 2006 under several different contracts. The lead author of this report was John Kosco with support from Martina Keefe and Christy Williams.

For questions about this assessment report, please contact John Kosco, Tetra Tech, at John.Kosco@tetratech-ffx.com.

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1.0 Introduction

Tetra Tech, Inc. (Tetra Tech) has supported the California State and Regional Water Quality Control Boards with implementation of the MS4 stormwater program since July 2001 under and EPA Region 9 contract. This support has largely consisted of on-site audits of municipal separate storm sewer system (MS4) programs, along with training and special projects. Tetra Tech has completed 36 MS4 audits in the state that addressed 122 permittees. Special projects have included an evaluation of post-construction development standards, review of a series of stormwater Phase II stormwater management plans (SWMPs), MS4 permit development, and evaluations of stormwater monitoring programs.

Information and data collected during these activities were compiled and disseminated to EPA Region 9, the State Board, and the Regional Water Quality Control Boards through audit reports, progress reports, and presentations to the California Stormwater Quality Association, and telephone conversations with regulatory staff. Prior to this report, Tetra Tech had not performed a holistic analysis of information collected during MS4 audits to identify broader trends, lessons learned, and opportunities for advancing these regulatory programs. This report is intended to do the following:

- Describe MS4 audit procedures
- Discuss special projects completed
- Present an analysis of the MS4 audit findings

The focus of this report is on summarizing the work that Tetra Tech has performed to assist EPA Region 9 and California in assessing the compliance status and quality of MS4 stormwater programs throughout the state. The report also includes a discussion of lessons learned from conducting the MS4 audits and provides some brief recommendations for improvements to California's MS4 stormwater program.

EPA Region 9 has placed copies of the MS4 audit reports on their web site at <http://www.epa.gov/region9/water/npdes/ms4audits.html>. This web site also includes a link to a series of stormwater case studies that describes how MS4s have implemented specific aspects of the stormwater program.

1.1 Purpose and Goals of an MS4 Audit

MS4 audits are conducted to address several goals. These goals, discussed further below, include determination of compliance status, providing assistance with permit issuance or renewal, developing Phase II stormwater management programs (SWMPs), and assessing pollutants of concern and assigning wasteload allocations.

Determining Compliance Status

The principal goal of an audit is usually to assess the compliance status of a permittee with respect to its NPDES MS4 permit and SWMP. Where



NPDES permits and SWMPs are specific (e.g., inspect construction sites monthly), then determining compliance status is straightforward. When NPDES permits and SWMPs are written more generally (e.g., retrofit flood control BMPs where applicable), then compliance can be more subjective. If previous audits found permittees to be noncompliant, follow-up reviews might be performed to determine whether issues resulting in permit violations areas for program improvement were addressed adequately.

Assisting with Permit Issuance or Renewal

Tetra Tech has performed audits of municipalities in advance of permit renewals to identify areas of the permit that might require further clarification, detail, or refinement. The audits are especially helpful in opening a dialog between permittees and the Regional Water Quality Control Board (Water Board) about the meaning of specific permit language or the intended goal of an individual requirement, for example. On-site program audits also can be helpful after the issuance or renewal of a permit to address implementation questions and clear up potential misunderstandings about the nature and intent of the permit requirements.

Assisting with Phase II SWMP Development

Tetra Tech has performed audits of Phase II MS4 stormwater programs in part as a compliance assistance tool to correct deficiencies in permittees' SWMPs at an early stage of the program. Phase II municipalities are relatively new to the stormwater permitting world and can benefit from the combined knowledge and experience of the auditors, EPA, and Water Board staff, as well as from *lessons learned* from Phase I municipalities who have been implementing the program for more than a decade.

Assessing Pollutants of Concern and Assigning Wasteload Allocations

Where waterbodies have been determined to be impaired for pollutants that are commonly found in urban stormwater, TMDLs are developed and wasteload allocations assigned to dischargers of those pollutants, including MS4 stormwater programs. Therefore, it is helpful to identify and assess the effectiveness of the activities and best management practices (BMPs) of each MS4 stormwater program in the watershed. This assessment can assist the Water Board in assigning wasteload allocations that are appropriate for each stormwater discharger.

1.2 Benefits of an MS4 Audit

In addition to the goals listed above, numerous ancillary benefits are achieved through the audit process, both for the permittee and the Water Board. These include the following benefits:

- Three days discussing the details of the stormwater program foster stronger coordination and improved working relationships between the Water Board and permittees
- In-depth examinations of permit requirements and program elements yield greater understanding by the permittees of expectations and permit requirements
- Audits provide an opportunity to clarify any misunderstandings in the permit requirements or SWMP
- Direct contact with permittee staff yields improved Water Board knowledge of permittees' operations, priorities, constraints, and challenges faced when implementing a municipal stormwater program

1.3 Roles of Tetra Tech, the Water Board, and EPA

For the past 5 years, Tetra Tech has been assisting the state of California and EPA Region 9 with MS4 stormwater audits. These audits have included large cities, small towns, counties, port authorities, and a California Department of Transportation (Caltrans) district program. Audits covered both Phase I programs and a few Phase II programs, as well as new Phase II programs throughout eight of the Water Board regions. Tetra Tech has enjoyed a strong, effective relationship with Water Board, State Water Quality Control Board, and EPA Region 9 staff.

Typically, Water Board staff members select the programs to be audited; however, Tetra Tech has assisted in making this determination when requested. Once the programs are selected, Water Board staff work with Tetra Tech to determine what type of audit is needed and if any program component focus is necessary. Audit logistics are coordinated with MS4 staff by both Water Board staff and Tetra Tech. Often Water Board staff members participate in the audits as well.

Tetra Tech staff generate audit reports. These reports are subject to rigorous internal Tetra Tech quality assurance protocols before being sent to the Water Board and EPA Region 9 for review and comment. Any requested changes are made, and the reports are then submitted to the Water Board for distribution to the MS4s audited.

2.0 Tetra Tech MS4 Stormwater Audit Approach

2.1 MS4 Audit Preparation

Selecting Permittees

Tetra Tech staff work with Water Board contacts to maximize the value to be gained from each audit. For example, auditing one-fourth to one-half of the permittees covered under a single permit can be very useful in determining the *big picture* of the MS4 program. Of course, an audit of a specific MS4 is sometimes necessary to determine individual compliance with a permit.

Determining Audit Focus

Once the Water Board determines which programs are to be audited, the type of audit must be determined. A component-specific audit focuses on a specific stormwater program area, such as construction activities or new and significant redevelopment. This type of audit is especially helpful if the Water Board has specific concerns about implementation of a particular component (i.e., National Pollution Discharge Elimination System [NPDES] inspections of construction sites

Advance Preparation

- Select permittees
- Identify audit focus
- Organize logistics
- Review documentation
- Hold conference call

To prepare in advance of an audit, Tetra Tech works with RWQCB staff to identify which permittees will be audited and which topics will be covered. Then Tetra Tech organizes logistics with the permittee contacts and obtains and reviews permits, annual reports, SWMPs, and other relevant documents. Tetra Tech then holds a conference call to brief all parties about the purpose and details of the audit and to answer questions about the audit and logistics.

within the MS4 revealed a high degree of noncompliance with the MS4's construction requirements).

In contrast, a comprehensive audit addresses all the generally accepted primary stormwater program areas (i.e., program management, municipal activities, construction, post-construction, industrial/commercial, illicit discharge detection and elimination, and public education/participation). The intent of a comprehensive audit is to assess the MS4's entire program and possibly identify specific areas or issues that might require a more detailed, component-specific audit in the future.

A third type of audit, which Tetra Tech has not yet performed, is a program compliance screening. This type of audit is composed of a basic interview with the MS4 SWMP coordinator or main contact with the program. A program compliance screening could be an efficient and cost-effective method for getting a basic impression regarding the compliance status of the program. This type of review might be the precursor to an in-depth compliance audit at a later date.

MS4 Audit Logistics

The number of permittees and the type of audit determines the logistics necessary to conduct the audit. Tetra Tech staff typically work with Water Board staff and primary MS4 contacts in setting up the audit dates, developing the schedule, identifying meeting places, and creating the audit teams. Depending on the type of audit and size of the program, one to two auditors are necessary for each permittee being audited. Tetra Tech typically organizes a pre-audit conference call 1 to 2 weeks before the audit and includes the audit teams and all interested contacts at the MS4s. Tetra Tech and the Water Board review the schedule, the audit process is explained, and any questions are answered.

Materials to Review before the Audit

Tetra Tech typically reviews the following information before conducting an on-site audit:

- MS4 permit
- Stormwater Management Plan document
- Latest annual report
- Water Board correspondence with the permittee
- Water Board inspections within the MS4
- Permittee Web sites
- Legal authority (i.e., ordinances, memorandums of understanding)

Conducting the Audit

- Kickoff meeting
- Staff interviews
- Inspector evaluations
- Maintenance yard inspection
- Outbrief

On the first day of the audit, Tetra Tech leads a kickoff meeting, providing an overview of the agenda and facilitating introductions. Tetra Tech then interviews staff regarding specific SWMP activities, accompanies inspectors in the field, and inspects the permittee's primary maintenance yard.

Once the interviews and site visits are complete, Tetra Tech provides a brief overview of the positive program elements and program deficiencies seen during the audit. This allows the permittees to provide feedback and clarification directly and in a timely manner. When multiple permittees are audited during the same week, Tetra Tech holds a joint outbrief so the permittees, Regional Board staff, and EPA staff can hear what the other permittees are doing.

If this information is not available prior to the audit, Tetra Tech staff members obtain it during the audit for consideration and review using the audit process.

MS4 Program Audit Guidance

For the State Board's Water Training Academy, Tetra Tech developed a 2-day course and training manual on *Conducting Audits of Municipal Storm Water Programs*, June 2004. Tetra Tech uses this manual to prepare for and conduct audits in California. The manual was developed to assist state and EPA NPDES permitting authority staff in assessing the compliance and effectiveness of Phase I and Phase II MS4 programs.

2.2 Conducting the MS4 Audit

Depending on the size of the MS4 area, the scope of the SWMP, and the type of audit to be conducted, Tetra Tech requires a maximum of 3 days for a comprehensive, in-depth office and in-field program audit.

Kickoff Meeting and Audit Overview

Tetra Tech auditors prefer to organize a *kickoff* meeting at the start of the audit. The kickoff is typically held separately with each permittee. An audit overview is given and any remaining questions are asked and answered by all parties. The logistics are reviewed and the audit teams are introduced.

Audit Process

Approximately 2 to 4 hours are necessary for an adequate in-depth office audit of each program component. The office audit consists of interviews with essential staff and a review of applicable documents. For example, when auditing the construction component of an MS4 program, Tetra Tech staff reviews ordinances, plan review checklists, any relevant guidance or BMP specifications used, and 3–5 approved and pending erosion and sediment control site plans.

In addition, 4 hours per component (e.g., construction, industrial/commercial) is necessary to audit inspection staff in the field. Tetra Tech staff accompany MS4 inspectors to determine their understanding of the MS4 permit, ordinances, and required stormwater BMPs.

Outbrief

Tetra Tech staff perform an outbrief at the conclusion of each audit to present a tentative summary of findings from the audit. Tetra Tech staff are careful to caveat all findings as preliminary at that time subject to change on the basis of further review of audit materials, permit or SWMP and consideration by Water Board staff.

2.3 MS4 Audit Reporting

Documenting MS4 Audit Findings

After the audit is completed, Tetra Tech staff review all notes and supporting information then write a report summarizing all findings. The findings are divided into three categories: (1) permit violations, (2) deficiencies, and (3) positive or commendable program elements. Permit violations are areas where the audit found the permittee not in compliance with a specific permit requirement or SWMP commitment. Use of the qualifier *potential* is used depending on the severity of the violation.

After an MS4 audit report is developed, the Water Board typically distributes the report to the permittee(s) audited with a cover letter summarizing the findings of the audit and any enforcement action being taken or corrections required.

Using Photographs

Tetra Tech staff sometimes use photos to highlight issues on-site that could lend credence to an issue described in the MS4 audit report or to help recall conditions at the sites visited. For example, stormwater problems at a municipal maintenance yard should be documented with photos to provide additional documentation of problems.

After the Audit

- Prepare the report
- Follow up if needed
- Review and comments
- Distribute final report

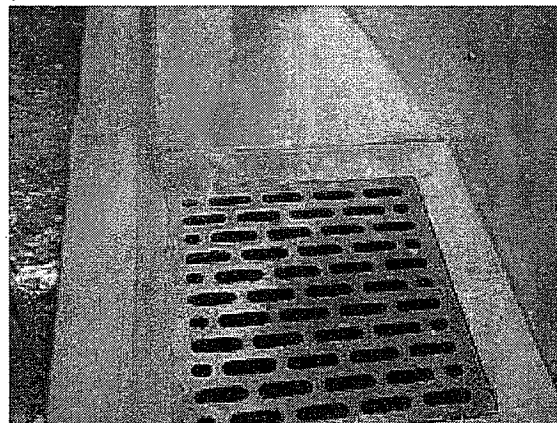
Once back in the office, Tetra Tech prepares the report, summarizing key findings and providing examples of model programs where appropriate. If needed, Tetra Tech contacts permittee staff to clarify any ambiguities. The report is then submitted to the RWQCB and EPA for review and comment. A final version is then sent via the RWQCB to the permittees.

3.0 Special Projects

Tetra Tech has conducted a number of special projects for the Water Boards that do not fit in with a typical MS4 audit. A summary of these projects is provided below.

3.1 Los Angeles Construction Inspections

For the Los Angeles Water Board, Tetra Tech conducted a series of 31 NPDES compliance inspections at construction sites primarily in Santa Clarita and Simi Valley. Over half the construction sites were residential development projects, with the average site size approximately 10 acres. Tetra Tech inspectors reviewed the stormwater pollution prevention plans (SWPPPs), inspected BMPs on-site, and documented their inspection findings in an inspection report and photo log.



3.2 Review of Post-Construction Development Standards Implementation

To assist the associated Water Board, Tetra Tech conducted audits to determine the implementation of post-construction development standards in three different permit geographic areas—Los Angeles Region (CAS004001, Board Order No. 01-182), Ventura County Region (CAS004002, Board Order No. 00-108), and the San Diego Region (CAS0108758). The primary goal of each audit was to determine the status of each permittee's implementation of the post-construction controls permit requirements. Secondary goals included collecting program implementation information that could be used by the Water Board to compile a model or *recommended* post-construction program and verifying the plan review process itself, collecting information for permit reissuance, and providing assistance to the permittees in implementation of the post-construction requirements. Each permittee was assessed regarding overall success in meeting post-construction conditions and requirements contained within each permit, with a focus on how each permittee reviewed, approved, and implemented the requirements for individual development projects.

The Los Angeles report summarized the findings from the four permittees audited, described the type of development planning program (or post-construction program) recommended by the Water Board, and described recommendations for conducting future SUSMP program reviews. The Water Board used this report to describe to the other 80+ MS4 permittees in the Los Angeles program not audited what type of development planning program they should implement.

3.3 Review of Phase II SWMPs

In June 2005 Tetra Tech audited two Phase II MS4 SWMPs—the cities of Napa and Petaluma. Each SWMP was audited for compliance with permit conditions and implementation of the six minimum measures:

- Public Education and Outreach
- Public Participation/Involvement
- Illicit Discharge Detection and Elimination
- Construction Site Runoff Control
- Post-Construction Runoff Control
- Pollution Prevention/Good Housekeeping

The goals of the audit were to review the overall effectiveness of the program, identify and document positive elements of the program that could benefit other Phase I and Phase II municipalities, and identify program areas for further review by the Water Board.

Each audit took approximately 2 days and resulted in a report of findings that was divided into program deficiencies with recommendations and positive attributes.

Tetra Tech also reviewed approximately 14 city/county stormwater Phase II SWMPs, and over 50 school district stormwater Phase II SWMPs.

3.4 City of Salinas Phase I MS4 Permit Development

In September of 2003 Tetra Tech developed a draft permit and fact sheet for the city of Salinas to regulate stormwater discharges from the MS4. The draft permit package was written in conjunction with the Central Coast Water Board. The permit and fact sheet included the following 10 components:

- Development of a stormwater management plan
- Development of an annual work plan
- Determination of legal authority
- Construction site management
- Development standards
- Commercial/Industrial facilities
- Municipal maintenance
- Illicit discharge detection and elimination
- Public education and participation
- Assessment of program effectiveness

To facilitate developing the permit and fact sheet, Tetra Tech performed an audit of the city of Salinas to identify program areas that required more detailed requirements and direction.

3.5 Stormwater Monitoring Program Evaluations

Tetra Tech has evaluated the monitoring programs of two MS4 programs in California—the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) and San Diego County. Tetra Tech supported the California Water Boards (San Francisco and San Diego) in their assessment of permit-required monitoring activities, reporting, and continuity in the long-term monitoring plan for these two MS4 programs:

The SCVURPPP assessment and evaluation included detailed review of monitoring plans and reports for consistency and compliance with permit requirements and continuing initiatives, as well as for responsiveness to specific requests and requirements of the Water Board. The purposes of this evaluation were to evaluate the overall monitoring program components and their respective contributions toward satisfying the requirements of the permit (CAS029718 and Board Order No. 01-024 and 01-119) and to evaluate the current implementation status of the multiyear monitoring plan with respect to the overall purposes of the monitoring program: to characterize drainage areas and stormwater discharges; assess existing or potential adverse impacts on beneficial uses; identify potential pollutant sources; and collect data that will assist in the evaluation of the effectiveness of the overall stormwater pollution prevention program. Other goals of this evaluation included reviewing the overall effectiveness of the monitoring program relative to the permit goals and requirements, identifying strengths of the program that could benefit other Phase I and Phase II municipalities, and identifying weaknesses in the program that might prevent satisfaction of permit requirements.

The San Diego monitoring program evaluation was conducted differently in that the following two specific requests were presented to the evaluation audit team:

1. Review the existing monitoring program and proposed changes for comparison with the recommendations included in the Model Monitoring Program for Municipal Separate Storm Sewer Systems in Southern California (Model Monitoring Program, or MMP)
2. If appropriate, identify a suite of recommendations that could improve the proposed monitoring program but were not specifically included in the proposed changes

A report was generated to address these requests and was organized into four sections: (1) brief overview of the MMP, (2) brief overview of the current monitoring program and proposed changes, (3) broad recommendations for the San Diego monitoring program, and (4) detailed analysis of current and proposed monitoring program adherence to the MMP.

3.6 Stormwater Training

Tetra Tech developed three 2-day stormwater training courses for state water quality staff as part of the State Water Training Academy. The courses were intended to instruct the staff on all aspects related to managing, reviewing, auditing and issuing municipal stormwater permits. These courses were developed and taught in the first half of 2004 and covered the following topics:

- Reviewing Stormwater Management Plans
- Conducting Audits of Municipal Stormwater Programs
- Municipal Stormwater Permit Writer's Course

Each course was presented by two Tetra Tech stormwater experts, and consisted of a series of modules covering specific program topics, examples, and photographs. Exercises were also included, and ample discussion time was allotted for attendees. In addition to development of the course materials, Tetra Tech also developed an *MS4 Audit Guide* as a reference for the municipal audit course.

4.0 MS4 Audit Analysis

Tetra Tech has audited 84 different MS4 permittees during the past 5 years. These permittees are covered by 23 different permits from eight of the nine Regional Water Boards and one statewide permit issue by the State Board. Most audits were program-wide audits, but some assessed only certain program components. Tetra Tech performed stormwater audits of small municipalities (e.g., Walnut Grove) and of very large urban areas such as Orange County. Several nontraditional MS4s have also been audited such as Caltrans District 5 and the Sonoma County Water Agency.

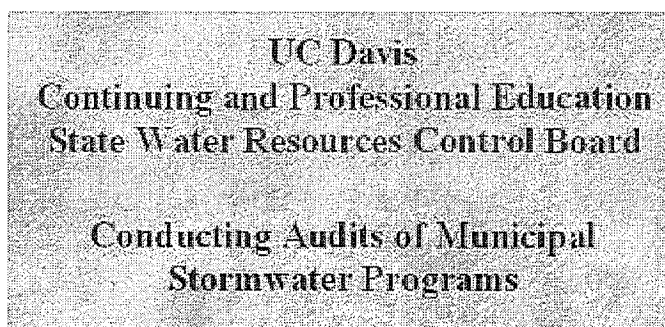


Table 1: Summary of Phase I MS4 audits performed by Tetra Tech

Permit no.	Permit name or sole permittee	Water Board	Co-permittees	Co-permittees audited ¹	Program components audited						
					Program management	Municipal activities	Construction	Post-construction	IDDE	Public education participation	Industrial/commercial
CAS004003	Long Beach	Los Angeles	1	1	•		•	•	•	•	
CAS0029831	Alameda Countywide	San Francisco	17	5	•				•		•
CAS004002	Ventura Countywide	Los Angeles	12	5	•	•	•	•	•	•	•
CA0025038	Santa Rosa	North Coast	3	3	▣	•	•	•	•	•	•
CAS0082597	Sacramento Area	Central Valley	4	4	▣	•	•	•	•	•	•
CAS108758	San Diego Area (County)	San Diego	20	19	•	•	•	•	•	•	•
CAG616001	Lake Tahoe Hydrologic Unit	Lahontan	3	3		•	•	•	•	•	•
CAS0029921	San Mateo Area	San Francisco	21	6	•	•	•	•	•	•	•
Order No. 99-06-DWQ	Caltrans, District 5	Central Coast	1	1	•	•	•			•	
CAS0108758	City of San Diego	San Diego	20	1	•	•	•	•	•	•	•
CA00883399	Bakersfield/Kern County	Central Valley	2	2	•	•	•	•	•	•	•
CAS083470	City of Stockton/Joaquin County	Central Valley	2	2	•	•	•	•	•	•	•
CA0029912	Contra Costa Clean Water Program	San Francisco	18	7	▣	†	†	†	†		†
CAS0108740	Orange County	San Diego	13	8	•	•	•	•	•	•	•
CA0049981	City of Salinas	Central Coast	1	1	•	•	•	•	•	•	•
CAS029718	Santa Clara	San Francisco	15	2	•	•	•		•		•
CAS083526	City of Modesto	Central Valley	1	1	▣	•	•	•	•		•
CAS6188033	Riverside Area	Santa Ana	14	3	•	•	•	•	•	•	•
CAS618036	San Bernardino	Santa Ana	16	3	•	•	•	•	•	•	•
CA0083313	Contra Costa Clean Water Program	Central Valley	5	3	•	•	•	•	†	†	
CA0083800	Fresno Metropolitan	Central Valley	5	3	•	•	•	•	•	•	•
CAS082597	City of Elk Grove	Central Valley	1	1	•	•	•	•			•

▣ Includes an evaluation of the water quality monitoring program

† Components not audited for each co-permittee

¹ Includes all co-permittees audited by Tetra Tech to date, possibly during multiple audits

4.1 Summary of Positive Findings

In summary, many permittees have found unique and notable ways to implement aspects of their stormwater programs. Even small programs have invested creativity, staff time, and capital into building strong procedures and practices. Some of the key positive elements to highlight include

- Effectively using technology to organize data and schedule day-to-day activities
- Involving multiple stakeholders in stormwater decision making (e.g., interdepartmental, elected officials, members of the public) using stormwater committees
- Developing concise, transparent, enforcement escalation procedures to address stormwater-related violations
- Focusing BMPs and activities to address pollutants of concern that are specific to local water quality problems
- Allocating staff efficiently, either by training staff from other departments to address stormwater concerns as part of their work or by dedicating one or more positions solely to stormwater compliance
- Actively tracking and assessing progress using measurable goals and performance standards

The following are 10 positive findings that have recurred in multiple audit reports. They are not ranked because they had nearly the same frequency of incidence.

Using GIS to track the location of projects, priority facilities, inspections, and illicit discharges

Many permittees are using a geographic information system to geo-locate potential and actual sources of illicit discharges, which allows staff to target resources and educational efforts most effectively.

Using well-organized (often electronic) methods to track and document inspection and enforcement activities

Effective tracking and documentation is not only crucial to developing the annual reports, but is absolutely necessary to effectively follow up on noncompliance activities. Reinspections must be conducted in a timely manner, and enforcement actions must be issued according to an established timeline. These activities are best tracked using a database or time management software. Some MS4s are able to effectively track these activities using hard copy files, but an electronic system typically works best to remind staff of important deadlines. In addition, very effective tracking systems allow staff to geo-locate noncompliant sites using addresses or GIS.

Performing routine dry-weather inspections of outfalls

All permits issued in California do not require that permittees conduct dry-weather inspections; however, the Tetra Tech audit teams feel that they are a valuable illicit discharge detection tool. The appropriate location and necessary frequency of the inspections vary among permittees on the basis of land uses, size of the MS4, *hotspots* for illicit dischargers, or other factors.

Implementing exemplary public education programs

Permittees are required to educate the general public about stormwater issues; however, several MS4s that were audited had implemented exceptional educational efforts. The audit teams

especially recognize those that are based on pollutants of concern, behaviors of concern, are assessed regularly for effectiveness, and carefully consider the method of delivery according to the desired audience.

Using enforcement response plans to respond to illicit discharge reports

Permittees are typically required to *eliminate illicit discharges*, however, few develop an approved enforcement response plan (ERP) to consistently deal with discharge cases. It is critical that permittees have a documented protocol for the receipt of reports, investigation and follow up, and the issuance of enforcement actions. Some MS4s modify existing ERPs, such as those developed for pretreatment violations or code enforcement.

Using stormwater committees to manage various aspects of the stormwater program

This finding describes committees that are composed of representatives from each of the co-permittees or of staff members from various applicable departments within the same MS4. Regardless of whether the permit covers multiple permittees, managing an MS4 stormwater program generally requires the cooperation of many different departments or agencies. Even in small MS4s, the stormwater coordinator will typically communicate with other departments or contractors to implement various programs. A central committee or task force helps to encourage ownership in the program by various departments, facilitate the necessary reporting, assist in the education of the necessary staff people, and establish a responsible party or contact person from each affected department or agency.

Dedicating staff members solely to inspect construction sites or industrial facilities for stormwater compliance

While it is often impossible for some MS4s to dedicate an inspector to stormwater issues, some MS4s have budgeted for this level of staffing. Typically, having staff dedicated to stormwater issues increases the frequency of project and facility inspections, improves the level of follow up for noncompliance, and improves facility compliance because of the heightened level of technical assistance and oversight provided by the inspector.

Targeting stormwater resources and activities to address pollutants of concern

Most MS4s have limited resources to dedicate to stormwater programs; therefore it is critical that funding and staff time are targeted appropriately. The audit team commends MS4 stormwater managers for proactively implementing programs that address specific pollutants of concern (i.e., 303(d) listed pollutants) and the associated behaviors of concern such as how the public handles pet waste. While general stormwater awareness is important (i.e., stormwater is not treated), to make real progress toward measurable stormwater goals, it is important to focus resources on the most important water quality issues.

Using measurable goals or other performance standards to assess the effectiveness of the program and compliance with the permit

All Phase I MS4 programs are required to assess the effectiveness of the SWMP components; however, many permits in California do not specify that official measurable goals be developed and assessed as is required of Phase II MS4s. Some permittees audited, however, have established stormwater management plans with appropriate goals or standards and regularly assess progress toward meeting those goals. These types of goals are essential in assessing the effectiveness of individual program components and the program in general. Being able to

quantify progress is important not only to the permitting authority, but to the permittee itself to justify budget requests, staffing requirements, and the like.

Using inspectors from other departments to monitor compliance with construction and industrial/commercial stormwater requirements

Often, inspectors from various departments or agencies within an MS4 will visit a construction site or industrial/commercial facility for different reasons. For example, a restaurant will be regularly inspected by the health department for food-related requirements and a pretreatment inspector will inspect the grease trap in the kitchen to determine compliance with source control regulations designed to protect the wastewater treatment plant. It is important that these inspectors be educated about stormwater issues to act as additional *eyes and ears* for the stormwater program during their regular inspections. Or if the MS4 does not have dedicated stormwater inspectors, these existing staff could be used to monitor stormwater compliance at the industrial/commercial facilities they regulate or at additional facilities as necessary. The same concept applies to the various inspectors that visit a site during active construction. Some MS4 programs train grading, right-of-way, electrical, plumbing, or other inspectors in basic erosion and sediment control principals to ensure that stormwater issues are being monitored during all phases of construction.

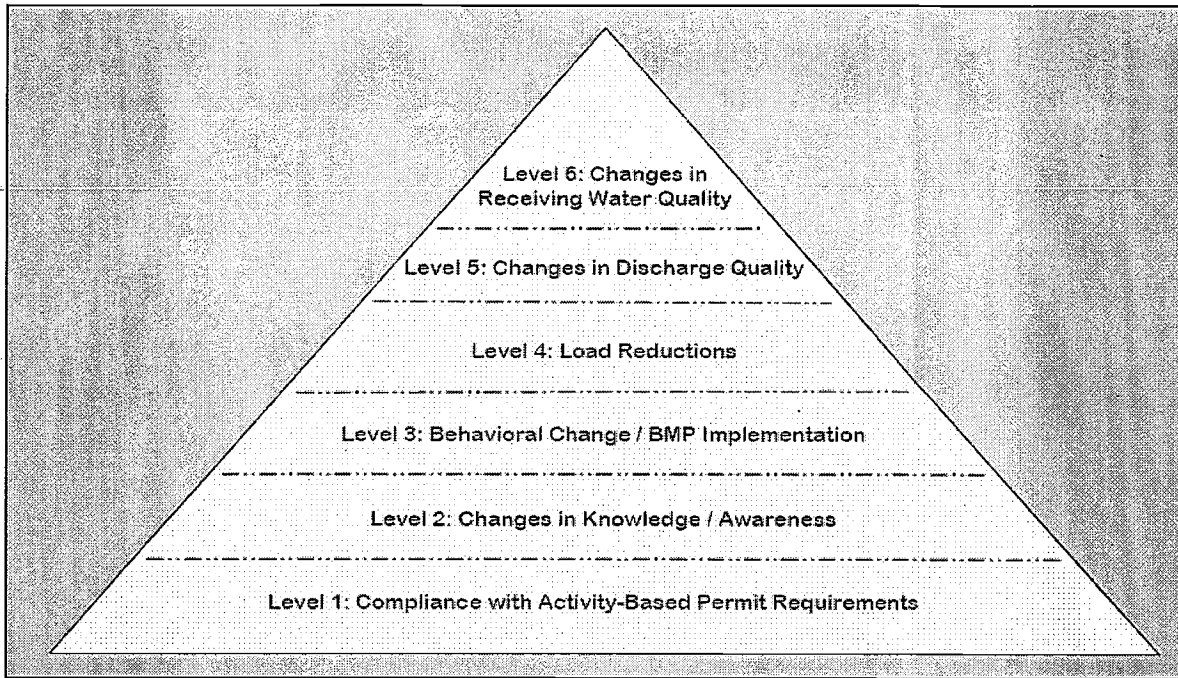
4.2 Innovative Approaches

Tetra Tech has observed a number of MS4 programs using new or innovative approaches to stormwater management. A few of these innovative approaches are summarized below.

Measuring the Effectiveness of Stormwater Programs

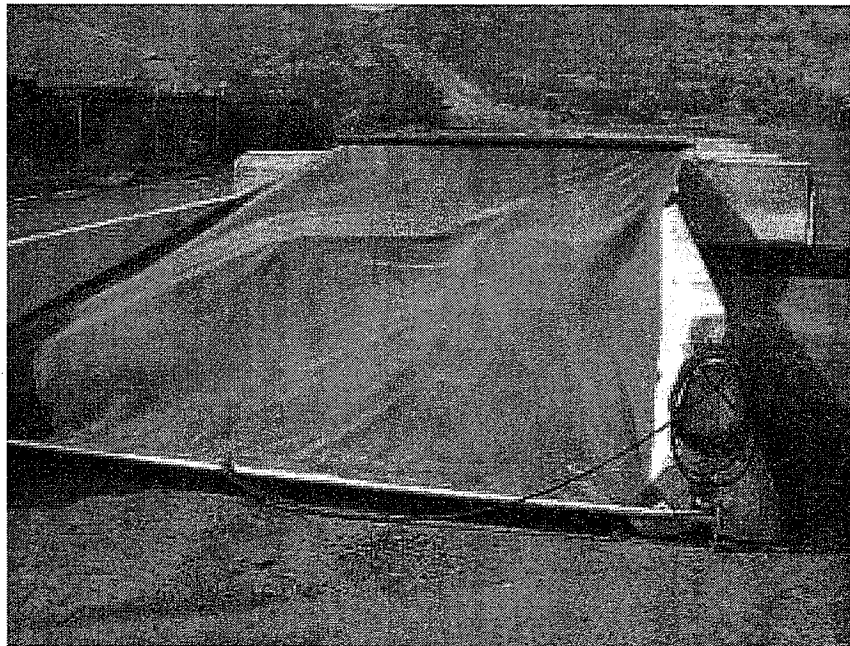
Many stormwater Phase I permittees analyze water quality samples and report the data, but are unable to determine whether their stormwater program is effective in protecting and improving water quality. In order to address the question of how effective MS4 programs are, the San Diego co-permittees formed a program effectiveness assessment workgroup to develop a regional approach to assessing the long-term effectiveness of municipal stormwater programs in San Diego County. The workgroup developed a *Framework for Assessing the Effectiveness of Jurisdictional Urban Runoff Management Programs* (the *Framework*), and a *Baseline Long-Term Effectiveness Assessment*. Both of these documents are available at http://www.projectcleanwater.org/html/wg_assessment.html. The workgroup is also coordinating closely with the California Stormwater Quality Association (CASQA) as it addresses effectiveness assessment on a statewide level.

The *Framework* describes six levels of targeted outcomes that municipalities can use to measure their efforts (illustrated below). The higher levels provide a more direct link to water quality improvements, but are much harder to measure. Municipalities must develop a plan that takes into account all levels of targeted outcomes in order to measure and quantify progress. San Diego's effectiveness assessment reports are a large step forward as municipal stormwater programs attempt to demonstrate how their activities protect water quality.



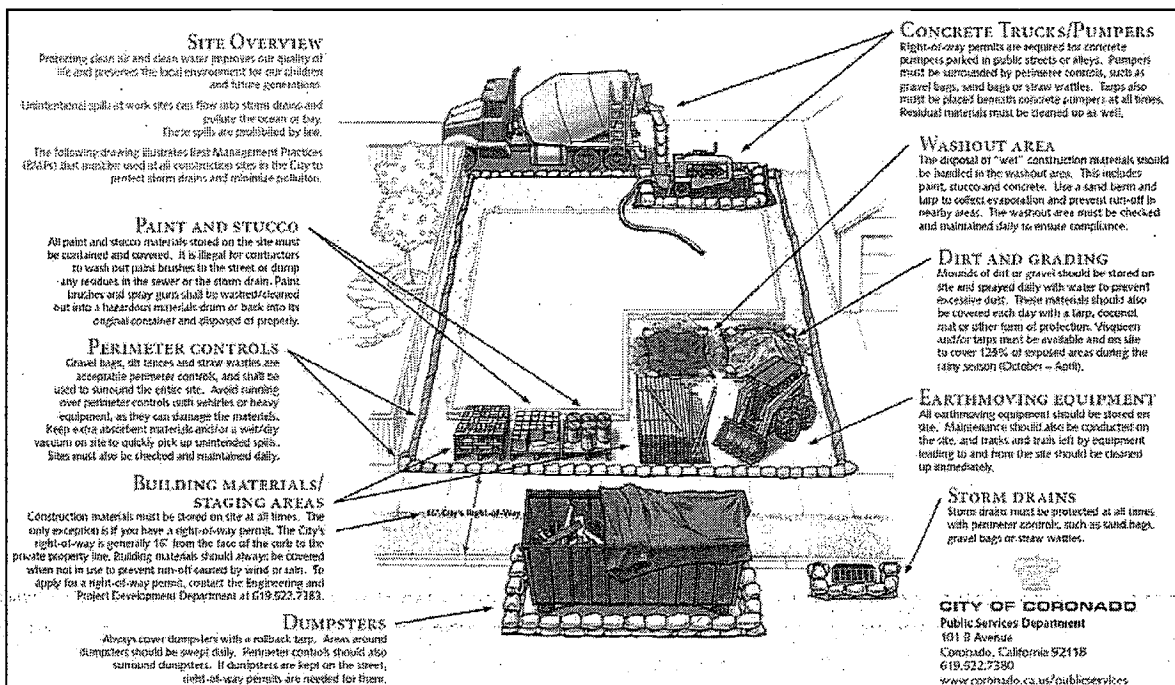
Corporation Yard BMPs

Not every innovation needs to be complicated or expensive. A county in southern California needed to cover a stockpile at their maintenance yard. They found that maintenance staff were not replacing the tarp used to cover the stockpile, so a maintenance supervisor came up with a solution to use a roll-on cover that is typically used on large trucks. Now, maintenance staff can quickly and easily access the stockpile and replace the cover.



Education/Outreach for Construction Operators

Providing clear outreach to construction operators is necessary to ensure they are aware of the local stormwater requirements and what the MS4 expects of them. The City of Coronado developed a simple and graphic brochure was developed for construction site operator. The brochure illustrates the typical construction project within the city and shows what type of BMPs should be installed and where. This gives the operator a clear idea of what the City expects to see at the site in an easy to use format.



4.3 Summary of Program Deficiencies

For the purposes of this report, program deficiencies, potential permit violations, and permit violations all are considered *deficiencies*. Each Regional Water Board determines which, if any, audit finding constitutes a permit violation; therefore, it is too subjective a term to be categorized in this document. The deficiencies noted have been summarized and ranked according to incidence in the reports reviewed, as summarized in Figure 1.

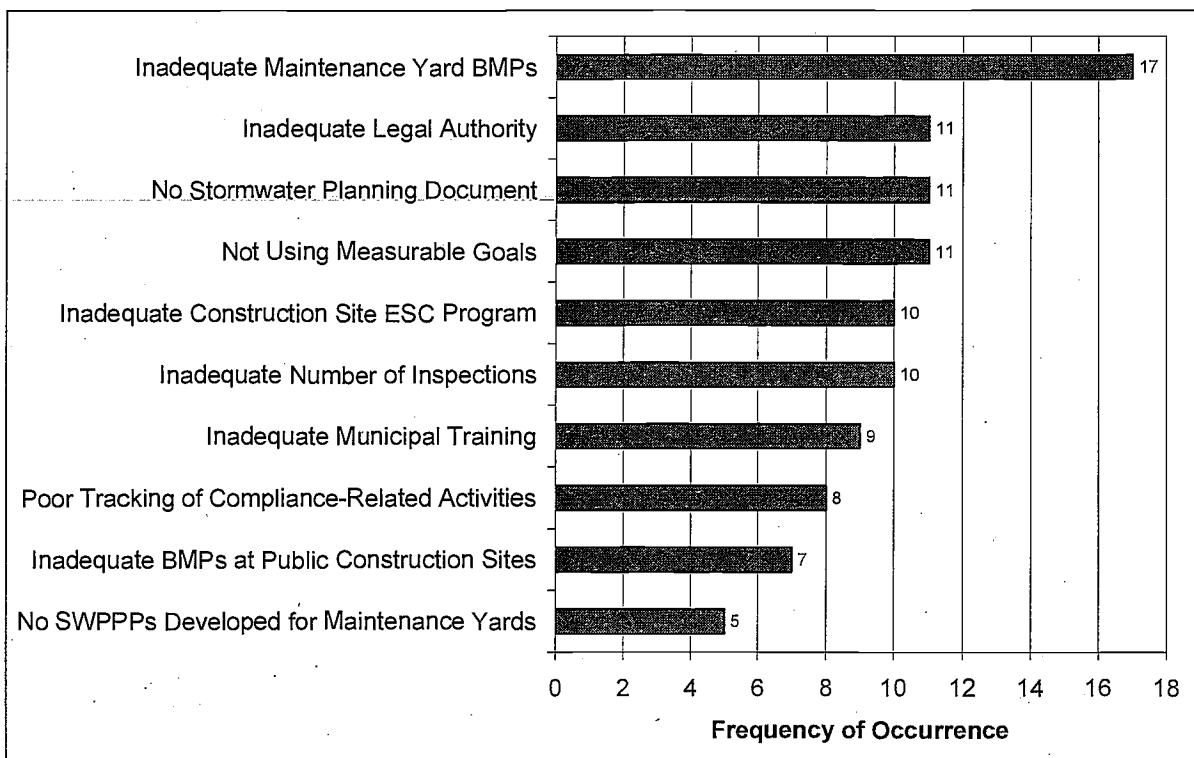


Figure 1. Summary of commonly cited program deficiencies.

Inadequate maintenance yard BMPs

By far the most prevalent program deficiency noted during the audits (17 instances) was the lack of appropriate BMPs at municipally owned and operated facilities, such as corporation or transportation yards. Problems included unprotected storm drains, lack of containment for potentially polluting materials, lack of spill-control measures, and generally poor housekeeping. Often evidence was found of spills that had entered storm drains.



No SWPPPs developed for maintenance yards

Many of the audited permittees had not developed SWPPPs for their corporation yards (5 instances). Typically, these facilities include auto maintenance shops, chemical storage areas, truck-washing facilities, refueling stations, and other facilities and activities that can pose a threat to water quality. Therefore, a plan should be in place that identifies potentially polluting locations and activities, specifies BMPs for each, and outlines spill control and response measures. The SWPPP or similar document should be in place even if the facility is not required to have permit coverage under the industrial stormwater general permit.

No stormwater planning document

Tetra Tech found that several permittees (11 instances) had not developed a stormwater management plan (SWMP) or other document that describes the different activities of the program and includes standard operating procedures and other details. Without a master planning document that lays out current program activities and future goals, it will be difficult for permittees to progress the program in a focused manner. This document also provides a detailed description of the program that state regulators can use to assess compliance, especially if the SWMP is a *living document* that is updated with new program elements and procedures.

Not using measurable goals

One important element that is commonly described in the SWMP but was often lacking in programs audited in California was a clear method for evaluating program effectiveness (11 instances). In many cases, permittees implement their programs and individual BMPs without developing measurable goals, monitoring programs, or other methods to track progress over time. One of the ways in which permittees can show progress is to demonstrate effectiveness, for example, that increased frequency of inspection yielded fewer violations or that field screening results showed fewer *hits* for bacteria the year after a focused effort to eliminate improper connections to the storm drain. Without these measures, permittees cannot know whether their activities are having a positive effect on stormwater quality, nor can they gauge which activities provide the most benefit.

Permittees can also measure program progress by comparing a current year's activities to past years' activities. Tracking and evaluating program data can provide insights into where improvements have been and still need to be made. For example, if after 5 years of program implementation there has been no change in the number or type of violations found at construction sites, a new approach might be needed that focuses on education or that includes increased penalties for noncompliance. If, on the other hand, repeated inspections at a sector of commercial businesses never or rarely yield a violation, the permittee might consider using those resources to target a different business type that is more likely to contribute to stormwater pollution.

Inadequate legal authority

Another common finding (11 instances) is that permittees lack adequate legal authority to implement one or more elements of their program. This could have resulted from a number of factors, including

- Lack of political support from elected officials
- Inability of inspectors to obtain code enforcement capabilities
- Lack of an ordinance that prohibits nonstormwater discharges to the MS4
- The permittee is a nontraditional institution that does not have enforcement authority

Because there are several different causes for this lack of legal authority, each instance would need to be addressed on a case-by-case basis in the context of the permittee's municipal structure, organization, and unique constraints.

Inadequate number of inspections

Many permittees were lax in performing inspections and enforcing their stormwater ordinance (10 instances). These permittees had no or few inspectors dedicated to addressing stormwater concerns, and they did not train inspectors in other departments, such as pretreatment, fire safety, or health department inspectors, to look for stormwater violations.

Inadequate construction site erosion and sediment control program

In some cases (10 instances), inspectors were performing inspections inadequately, using *drive by* inspection techniques that would not identify problems with individual BMPs, whether they be design flaws or poor maintenance. As a result, sites can be *in compliance* even though water quality is not being protected adequately. Better training and more careful oversight of inspectors can help to remedy this quality control situation. It is also important that permittees with multiple inspectors foster consistency in terms of inspection protocols, level of stringency, and types of BMPs that are acceptable. Permittees can team inspectors together from time to time to share knowledge and advice, develop a standardized checklist for all inspectors to use, or develop a BMP standards manual that clearly outlines a permittee's expectations for its inspectors and construction sites.



In addition, several programs had inspectors who were knowledgeable and thorough in their inspection technique but were unable to bring facilities into compliance because they lacked adequate authority to levy fines and other sanctions (see "Inadequate Legal Authority" above).

Inadequate BMPs at public construction sites

Many permittees had separate approval and oversight procedures for private construction projects when compared to procedures for public capital improvement projects. In several cases, this division has led to lax implementation of BMPs at publicly owned construction sites (7 instances). Permittees should hold their own project proponents and contractors to the same standards as private construction operators and developers, not only to maintain compliance with the permit and avoid illicit discharges from public construction sites, but also to set a good example for the regulated community.

Inadequate municipal training

Lack of training for municipal personnel was another common finding (9 instances). Many times when street or parks maintenance crews were observed working in the field, BMPs were either inadequate or absent, and storm drains were unprotected. Permittees either do not offer training to field crews or only provide minimal training that is not reinforced regularly. Stormwater-related training should be offered to all staff involved with spill response, those handling materials that could enter storm drains, and street crews who can spot spills or illicit discharges while they go about their daily routine in the permit area.

Poor tracking of compliance-related activities

Some permittees fail to track their compliance-related activities (8 instances) and, therefore, are unable to demonstrate that such activities were performed, nor can they document the compliance status of industrial facilities or construction sites. Paperwork might be lacking because it is not part of the permittee's protocols, individual inspectors are lax in filling out paperwork or only partially fill it out, or forms are not filed or entered into a database in such a way as to facilitate data retrieval.

A related problem is that the universe of construction sites or industrial and commercial facilities to be inspected is not updated regularly or systematically. Whether permittees track construction activities on the basis of grading permits issued or requests for engineering inspections or other methods, a list of active sites should be maintained at all times. The same is true for industrial and commercial facilities to be inspected—business licenses can be tracked, windshield surveys of commercial areas can be performed, and so on. Having these site and facility inventories allow inspectors to know where to go and how to schedule inspections and budget their time. It also allows permittees to track progress toward achieving one or more measurable goals in terms of the number or percentage of total sites inspected each year.

5.0 Lessons Learned

Over the past 5 years, a number of patterns have emerged from discussions with both state regulators and municipal stormwater permittees. The following is a set of *lessons learned* that can offer opportunities to streamline and improve both NPDES permits and local stormwater management programs.

5.1 MS4 Permit Language Greatly Affects SWMP Development and Compliance

Tetra Tech has found that programs with more specific permit requirements generally result in more comprehensive and progressive stormwater management programs. For example, the more specific permit requirements in the Los Angeles or San Diego MS4 permits require permittees to be more specific in how they implement their stormwater program. Programs with more general stormwater permit requirements, where the emphasis is on implementation of a stormwater management plan, generally did not have as comprehensive a stormwater program.

5.2 Need for Clear Guidance and Direction from the Water Boards

Beyond the NPDES permit requirements, many MS4s do not have clear guidance or direction from the Water Boards on how they should implement specific aspects of their stormwater program. Some municipal programs have developed guidance for specific topics, such as the C.3 new development requirements in Contra Costa County, or the SUSMP requirements in Los Angeles.

One example of where the Water Boards provided more specific direction on an MS4 program area is the November 2003 Development Planning Program Review Report for Los Angeles developed by Tetra Tech and the LA Water Board. The report included a section on a "development planning program recommended by the Water Board." MS4s were told to consider the recommended program as they implement their new development and SUSMP programs.

Providing this additional guidance is particularly effective in areas such as the LA Board where there are too many permittees for the Water Board to audit on a regular basis.

5.3 Communication Provides Many Benefits

Tetra Tech audit staff believe that almost all municipal stormwater programs want to be in compliance and implement effective programs. However, some municipalities stated they did not receive frequent communication and feedback from their Water Board contacts. The MS4 audits conducted with Water Board participation provide an opportunity for permittees and Water Board staff to spend three days together. This often leads to a better understanding of the challenges each face in implementing a stormwater management program and regulating MS4 permit programs.

As an unbiased third party, Tetra Tech can interview staff to clarify program details, while at the same time establish a forum for discussion between the state regulators and permittees. This has been beneficial to the State and to the permittees. Many communities have expressed their appreciation of the feedback that Tetra Tech provides with respect to how their activities measure up to the state's expectations. One city engineer wrote,

I really appreciate the time you spent with us and the feedback and suggestions you were able to provide. As I am sure you can imagine, from a local program standpoint the term "audit" naturally sparks apprehension and curiosity. I believe we all take this program seriously, but having an objective review for the first time gives us an opportunity to benchmark ourselves against the expectations of the RWQCB and outside experts. I can honestly say that your style and approach to the whole process made it a very enjoyable and enlightening experience. As an auditor it would be easy to be critical and judgmental, but instead you use your experience and insight to be helpful and constructive. I can't tell you how welcome that is from our end.

5.4 A Well-Written SWMP Plan is Critical for Compliance

MS4s without a document or plan describing stormwater management program components, implementation mechanisms and responsible parties are more apt to be disjointed, disorganized, and vulnerable to noncompliance, especially if staff turnover is high. Permits should include a requirement that a single planning document or a series of component-specific documents be developed that describe implementation procedures, BMPs, schedules, responsibilities, and goals. This SWMP Plan would also allow state regulators to assess a permittee's procedures through document review in lieu of, or in addition to, site visits.

5.5 Measurable Goals Should Be Outcome-Based

Permittees should be required to develop measurable goals based on the desired outcomes of the stormwater program. These goals should be developed on the basis of the pollutant of concern, sources of the pollutant, behaviors associated with the sources, and the indicator most appropriate to demonstrate a change in those behaviors. For example

Pollutant of concern	Sediment
Source	Erosion from construction sites

Behavior	Construction site operators install and maintain BMPs poorly
Goal	Increase the number of operators who are aware of, understand, and comply with the erosion control regulations and plans
Indicators	(1) percent of contractors in the city who have attended a training (to increase as the program progresses); (2) percent of operators who repeatedly violate regulations (to decrease as the program progresses)

5.6 Annual Reports are not Effective Indicators of Program Compliance

Largely due to the lack of specificity in annual reporting requirements, Tetra Tech has found that the annual reports submitted by Phase I MS4s are not always effective indicators of program compliance. Although annual reports are useful to review before an MS4 audit and should be used to spot compliance “red flags,” they are usually inadequate determine compliance by themselves. This is because, without specific reporting requirements, municipalities are reluctant to voluntarily report non-compliance.

6.0 Recommendations for Improvements to California’s MS4 Stormwater Program

The following brief recommendations, based on Tetra Tech’s past experience in the state, are made to help improve the effectiveness of California’s MS4 stormwater program:

6.1 Continue MS4 Audits and Conduct Targeted MS4 Audits of Specific Program Components

Some MS4s have not been audited yet. These MS4s could be prioritized for audits, along with MS4s for which the Water Boards will soon be reissuing their NPDES MS4 permit. In cases where the Water Board staff is familiar with the program, the audit could be brief and cover only what has changed since the last permit issuance.

Additionally, the Water Boards could conduct targeted MS4 audits of specific program areas. Tetra Tech has already conducted targeted MS4 audits of the new development, or SUSMP, programs in Los Angeles, Ventura, and San Diego Counties. Additional targeted MS4 audits could be conducted focusing on the illicit discharge, municipal maintenance, or construction components of a permittee’s SWMP. Water Boards could select the MS4s and program components to audit based on watershed specific issues, pollutants of concern, TMDLs, or other factors. In addition to determining compliance, the findings from these targeted MS4 audits can also be used to develop guidance from the Water Board on these program components.

6.2 Develop Compliance Tools for Regulators and MS4s

A number of compliance tools should be developed to help MS4s implement the program and help Water Board staff ensure compliance. For example, Tetra Tech has developed an *MS4 Audit Guide* for the state and is currently expanding and revising this guide for U.S. EPA. The *MS4 Audit Guide* will help Water Board staff in conducting MS4 audits, but it also helps MS4 programs conduct a self-assessment to ensure they are complying with their permit requirements.

Additional tools could include a BMP selection guide MS4s would need to use to ensure they were in compliance with the MEP standard. The guide would also be used by Water Board staff to evaluate the adequacy and effectiveness of BMP programs and determine compliance with permit requirements. The guide could include:

- Minimum requirements for BMP siting, sizing and design standards, and operation and maintenance specifications,
- Assessment tools, methods to measure effectiveness, an surveillance and monitoring requirements for each BMP that must be implemented by the permittee to demonstrate compliance, and
- Minimum recording and reporting requirements.

6.3 Develop a Consistent Format for MS4 Permit Language

Presently, the State develops permits on a regional basis, and the level of specificity and individual requirements vary widely. Some permits detail individual BMPs that should be implemented for each program area and include guidance on how and to what extent they should be implemented. This specificity can assist the permittees in knowing how best to meet permit requirements and reduces ambiguity. However, this can result in municipalities implementing substantially similar programs but with significantly different details and requirements.

One factor for the state to consider when writing permit language is to be clear enough to set appropriate standards and establish required outcomes, but still allow permittees to be creative and innovate solutions to stormwater management that are appropriate for their situations. The audits of the past 5 years have shown that each permittee approaches implementation from its own unique perspective and with unique attributes and constraints that sometimes facilitate and other times confound implementation. The *one size fits all* mantra does not apply to MS4 stormwater programs because the ways in which they are implemented depend on each permittee's organizational structure, staff availability, and budget, along with legal constraints and more- or less-favorable political climates. Each MS4 may develop and work toward different measurable goals, but still be able to achieve the required outcome.

However, a consistent format to the MS4 permit and the basic requirements in the permit will provide some statewide consistency to the stormwater program and allow programs to share resources more easily. This consistent format will also require MS4s to be on more of a level playing field as they implement their programs.

6.4 Provide Guidance on Annual Reporting

Often annual reports are the only official communication from year to year between the permittee and the state, so it is important that the report be informative and relevant. Many times

permittees tend to send too much information, and, as a result, state regulators receive huge binders full of hard copy forms and outreach materials that do not provide useful information to assess compliance. Because of the time involved in preparing such large documents, less time could be spent preparing summary information and compiling data that would be useful to assess compliance.

To remedy this, the state could develop a set of guidelines that clearly describe the information they would like included in the report. For example, the following program information is necessary when assessing construction inspection programs:

- Number of active construction sites a permittee needs to inspect
- Number of staff are performing inspections
- Frequency of inspections
- Total number of inspections performed
- Number of violations found and follow-up actions performed

This information allows state regulators to determine if staffing levels are adequate, if inspections are being performed, and if enforcement activities are occurring. Other information, such as a list of “bad actor” operators with violation frequency and other summarized tracking data maintained by the permittee, could be helpful to provide a clearer picture of the permittee’s procedures. Submission of materials such as individual forms or notices of violation would be burdensome for both the permittee and the reviewer and should be discouraged in the guidelines. The information included in the annual report should clearly demonstrate progress towards reaching measurable goals, and therefore may vary by permittee.

6.5 Provide Guidance on Developing Measurable Goals

The state should include guidance on how permittees can develop measurable goals and performance standards so they can track their own progress and share this information as part of the annual report. Permittees will need to tailor their measurable goals to their specific pollutant sources, behaviors, activities, and protocols; therefore, the state should provide examples of the types of quantifiable goals they would consider acceptable in different kinds of situations. For example, the state might want to know how effectively the permittee has been advertising household hazardous waste collection events. The permittee could track attendance at the event from year to year and, if their methods are effective, expect to see a steady increase in first-time attendees (10 percent, for example) over time. Permittees have in the past described measurable goals in non-numeric terms, such as “track the number of first-time attendees at events,” but it is important that there be a numeric target or rate of change incorporated into each goal. This is particularly important for Phase II MS4s under the general permit.

EPA has issued guidance on developing measurable goals that could be referenced by the Water Boards or serve as the starting point for a new guidance (see <http://cfpub.epa.gov/npdes/stormwater/measurablegoals/index.cfm>).

Appendix A. MS4 Audits Conducted by Tetra Tech in California, July 2001 – July 2006

Location	MS4 Audited	Date of Audit
Alameda	Cities of Dublin, Fremont, Hayward, Livermore, and Oakland	November, 2001
American Canyon	City of American Canyon	June, 2005
Bakersfield	City of Bakersfield and Kern County	November, 2002
Caltrans	District 5	July, 2002
Contra Costa	Cities of Antioch, Brentwood, and Oakley	March, 2005
Contra Costa	Cities of Concord, Pinole, Pittsburg, Richmond, and San Pablo	September, 2004
Contra Costa	Cities of Hercules and Pittsburg, Walnut Creek, and Concord, Contra Costa County, and Contra Costa Clean Water Program	May, 2003
Elk Grove	City of Elk Grove	April, 2005
Fresno	Cities of Fresno and Clovis, and the Fresno Metropolitan Flood Control District	January, 2005
Lake Tahoe	City of South Lake Tahoe, El Dorado County and Placer County	June, 2002
Long Beach	City of Long Beach	August, 2001
Los Angeles	LA County and Cities of Glendale, Los Angeles, and Santa Monica. Review of Standard Urban Stormwater Mitigation Plan (SUSMP) requirements.	March, 2003
Los Angeles	Cities of Calabasas, Carson, Glendora, Pomona and Santa Clarita. Review of city's construction program	June, 2004
Modesto	City of Modesto	February, 2004
Napa	City of Napa	June, 2005
Orange County	Cities of Laguna Beach, Laguna Hills, Lake Forest, Rancho Santa Margarita	May, 2005
Orange County	Orange County and Cities of Mission Viejo, San Clemente, and San Juan Capistrano	June, 2003
Petaluma	City of Petaluma	June, 2005
Riverside	Cities of Corona, Moreno Valley and Riverside	May, 2004
Sacramento	County of Sacramento and the Cities of Folsom, Galt, and Sacramento	March, 2002
Salinas	City of Salinas	July, 2003
San Bernardino	Cities of Fontana and Redlands and San Bernardino County	October, 2004
Santa Clara	Cities of Milpitas, Palo Alto, Santa Clara, and Santa Clara County	April, 2005

Location	MS4 Audited	Date of Audit
Santa Clara	City of San Jose and County of Santa Clara	December, 2003
San Diego	Cities of Carlsbad, Chula Vista, and El Cajon	May, 2002
San Diego	Cities of Encinitas, Lemon Grove, Poway, and Santee	April, 2004
San Diego	Cities of Escondido, National City, Oceanside	February, 2003
San Diego	Cities of Imperial Beach, La Mesa, San Marcos, and Vista	October, 2003
San Diego	City of San Diego, County of San Diego	October, 2002
San Diego SUSMP	Cities of San Diego, Carlsbad, Lemon Grove, Chula Vista, Oceanside, National City, Poway, El Cajon, Escondido and San Diego County. Review of Standard Urban Stormwater Management Plans (SUSMPs)	March, 2005
San Diego	Cities of Solana Beach, Coronado, and Del Mar and Port of San Diego	November, 2004
San Mateo	County of San Mateo and Cities of South San Francisco, Foster City, Pacifica, Redwood City, and San Mateo	August, 2002
Santa Rosa	City of Santa Rosa, Sonoma County, and the Sonoma County Water Agency	March, 2002
Stockton	City of Stockton and San Joaquin County	December, 2002
Ventura	Ventura County Flood Control District and the Cities of Ojai, Oxnard, Santa Paula, and Simi Valley	October, 2001
Ventura SQUIMP	Cities of Fillmore, Moorpark, Port Hueneme, Ojai, Oxnard, Santa Paula, Simi Valley, the County of Ventura, and the Ventura County Watershed Protection District. Review of Stormwater Quality Urban Impact Mitigation Plan (SQUIMP) requirements	August, 2004

ATTACHMENT 46



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street
San Francisco, CA 94105-3901

APR 10 2008

Ms. Tam M. Doduc, Chair
Ms. Dorothy R. Rice, Executive Director
State Water Resources Control Board
1001 I Street
Sacramento, CA 95814

Dear Ms. Doduc and Ms. Rice:

I understand that certain specific provisions of the 2001 Municipal Separate Storm Sewer System ("MS4") permit for the County of Los Angeles have been called into question as going beyond what is required under section 402(p) of the CWA. (Commission on State Mandates, File Nos. 03-TC-04, 03-TC-19, 03-TC-20, and 03-TC-21.) The permit conditions at issue are: 1) the requirements for conducting inspections at industrial and commercial facilities including restaurants and automobile servicing, [Parts 4.C.2.a. and b.] and, 2) the requirement for permittees not subject to the Trash TMDL to locate and maintain trash receptacles at transit stops [Part 4.F.5.c.3.]. California RWQCB, Los Angeles Region, Order No. 01-182, NPDES No. CAS004001 (Dec. 13, 2001). This letter discusses these permit conditions in the context of EPA's expectations for MS4 permits.

Section 402(p) of the Clean Water Act, 33 U.S.C. 1342(p), requires EPA (or authorized states) to issue National Pollutant Discharge Elimination System ("NPDES") permits to regulate the discharge of stormwater from MS4s. Typically, these MS4s are owned and operated by cities and counties. Pursuant to the Clean Water Act, these permits must require the MS4 to: 1) "effectively prohibit" non-stormwater discharges, and 2) "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)(ii) and (iii).

The NPDES regulations require medium and large MS4s to develop stormwater management programs that the permitting authority will consider when developing permit conditions to reduce pollutants in discharges to the maximum extent practicable. Stormwater permitting has generally relied on the use of best management practices ("BMPs"), including both structural and non-structural controls, for achieving compliance with these requirements. The EPA also expects stormwater permits to follow an iterative process whereby each successive permit becomes more refined, detailed, and expanded as needed, based on experience under the previous permit. See, 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."); 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"). See also, "Evaluating the Effectiveness of Municipal Stormwater Programs" (January 2008)

(http://www.epa.gov/npdes/pubs/region3_factsheet_swmp.pdf). While the standard of "maximum extent practicable" (MEP) allows for flexibility, that flexibility is not boundless and requires some level of vigor. EPA has created a national menu of stormwater BMPs to provide additional guidance concerning appropriate BMPs for stormwater management plans. Other factors to consider in ensuring appropriate controls include "technical feasibility, cost, public acceptance, regulatory compliance, and effectiveness." Building Indus. Ass'n v. State Water Res. Control Bd., 124 Cal. App. 4th 866, 889 (2004). See also "In re-Cities of Bellflower, et al.," SWRCB 2000-11.

At the outset, I note the Los Angeles MS4 permit is a third generation Phase I MS4 permit that should be building upon the experiences from previous permits. Both of the provisions at issue here seem well within a reasonable expectation of controls that reduce pollutants to the "maximum extent practicable." EPA regulations at 40 C.F.R. §122.26(d)(2)(iv) set forth the basic elements to be included in a Phase I MS4's stormwater management program. Subparagraph (A) requires a description of "source control measures to reduce pollutants from runoff from commercial and residential areas that are discharged from the [MS4] that are to be implemented during the life of the permit." Subparagraph (B) requires a program for detection and removal of illicit discharges and improper disposal into the storm sewer, including a program for inspections and enforcement. A program for commercial and industrial facility inspection and enforcement that includes restaurants and automobile facilities, would appear to be both practicable and effective. Such an inspection program ensures that stormwater discharges from such facilities are reducing their contribution of pollutants and that there are no non-stormwater discharges or illicit connections. Thus these programs are founded in both 402(p)(3)(B)(ii) and (iii) and are well within the scope of 40 C.F.R. §122.26(d)(2)(iv)(A) and (B).¹

Similarly, maintaining trash receptacles at all public transit stops is well within the scope of these regulations. Among the minimum controls required to reduce pollutants from runoff from commercial and residential areas are practices for "operating and maintaining public streets, roads, and highways . . ." §122.26(d)(2)(iv)(A)(3). I believe these requirements are also practical and effective.² Moreover, this permit provision is consistent with EPA's national menu

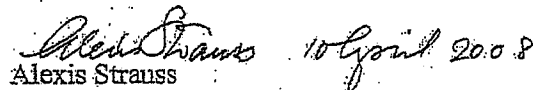
¹EPA's "MS4 Program Evaluation Guidance" (January 2007) envisions that an MS4 permit would include a requirement for an inspection program for common industrial/commercial businesses, such as restaurants and gas stations, within the jurisdiction of the MS4. *Id.* at 76 - 77, 81. The inspection requirements of the LA MS4 permit are consistent with the recommended activities in the Guide.

²The provision applicable to the TMDL permittees is also clearly consistent with EPA's 2002 guidance on TMDLs and storm water permitting. "Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLA's) for Storm Water Sources and NPDES Permit

of BMPs for stormwater management programs, which recommends a number of BMPs to reduce trash discharges. See <http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=browse&Rbutton=detail&bmp=5>. Among the recommendations is "improved infrastructure" for trash management when necessary, which includes the placement of trash receptacles at appropriate locations based on expected need. The requirements of the Los Angeles County MS4 permit are consistent with this recommendation. See also, "MS4 Program Evaluation Guidance" (January 2007) at pp. 50, 79. EPA's expectations of the programs to reduce pollutants to the maximum extent practicable specifically refer to control of litter and trash, regardless of whether the particular receiving water is already impaired for trash.

I hope that this explanation helps clarify EPA's expectations for MS4 permit requirements under the Clean Water Act. I look forward to continuing to work with the State on our shared goal of ensuring consistency and effectiveness in storm water permitting as a vital tool in protecting the quality of our waters. Should you have further questions about these issues, please have your staff contact Douglas Eberhardt of my staff at (415) 972-3420 or have your counsel's office contact Laurie Kermish of the Office of Regional Counsel at (415) 972-3917.

Sincerely,


Alexis Strauss
Director, Water Division

cc: Mr. Michael Lauffer, Chief Counsel
State Water Resources Control Board

Ms. Paula Higashi, Executive Director
Commission on State Mandates

Requirements Based on Those WLAs" (November 22, 2002) which is available at:
http://cfpub.epa.gov/npdes/pubs.cfm?program_id=6

ATTACHMENT 47

**Proposed 2007 MS4 Permit
Track Changes from 2002 MS4 Permit**

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SANTA ANA REGION

ORDER NO. R8-2002-00112007-XXXX
NPDES NO. CAS 618033

WASTE DISCHARGE REQUIREMENTS

FOR
THE RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT, THE
COUNTY OF RIVERSIDE, AND THE INCORPORATED CITIES OF RIVERSIDE COUNTY
WITHIN THE SANTA ANA REGION
AREAWIDE URBAN RUNOFF

The California Regional Water Quality Control Board, Santa Ana Region (hereinafter the "Regional Board") finds that:

1. On ~~April 27~~^{August 30}, 2007~~0~~, the Riverside County Flood Control and Water Conservation District (hereinafter referred to as "RCFC&WCD" or "Principal Permittee", as context indicates), in cooperation with the County of Riverside, (the "County") and the incorporated cities of Beaumont, Calimesa, Canyon Lake, Corona, Hemet, Lake Elsinore, Moreno Valley, Murrieta, Norco, Perris, Riverside, and San Jacinto (hereinafter with the County, collectively referred to as the "Co-Permittees", and collectively with the Principal Permittee, the "Permittees"), jointly submitted a National Pollutant Discharge Elimination System (NPDES) Application No. CAS 618033, a Report of Waste Discharge (the "ROWD"), to renew the municipal separate storm sewer system ("MS4" and as defined in Appendix 4, Glossary) NPDES permit (the "Order") for the Santa Ana River ~~W~~watershed (the "Region") within Riverside County (the "Order") dealing with urban storm water runoff (hereinafter as defined and qualified in Findings 123 and 143, below, "Urban Runoff") in the "Permit Area" (as defined in Appendix 4, Glossary) that includes the "Urban Area" as shown in Appendix 1 and those portions of "Agriculture" and "Open Space" as shown on Appendix 1 that convert to industrial, commercial or residential use during the term of this Order. To more effectively carry out the requirements of this Order, the Permittees have agreed that the RCFC&WCD will continue as the Principal Permittee and the County and the incorporated cities will continue as the Co-Permittees.
2. On February 16, 1999, the City of Murrieta annexed 1,124 acres, increasing the land area of the City to 18,273 acres. Of the acreage annexed, approximately 375 acres (or 2% of the City's land area) was in the unincorporated area of Riverside County within the Region. The Regional Board's construction database shows that approximately 247 acres out of 375 acres are proposed for development based on Notice of Intent ("NOI") submittals. The City of Murrieta has expressed its intent to be a Co Permittee in this Order and for the purposes of this Order shall be considered as such.
2. On July 13, 1990, the Regional Board adopted the original Riverside County regional MS4 permit, Order No. 90-104 (NPDES No. CA 8000192), for Urban Runoff from areas in Riverside County within the Permit Area. On March 8, 1996, the Regional Board renewed Order No. 90-104 by adopting the second regional MS4 permit, Order No. 96-30, (NPDES No. CAS618033). On October 25, 2002, the Regional Board renewed Order No. 96-30 by adopting the third regional MS4 permit, Order No. R8-2002-0011. ~~expired on March 1, 2001, and on March 2, 2001; Order No. 96 30 was administratively extended in accordance with 40CFR Part 122.6 and Title 23, Division 3, Chapter 9, Section 2235.4 of the California Code of Regulations.~~

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3. This Order renews Order No. ~~R8-2002-0011 96-30~~ (NPDES No. CAS618033), and regulates discharges of Urban Runoff from the MS4s within Riverside County ~~under the jurisdiction of and/or maintenance responsibility of the Permittees.~~ This Order is intended to regulate the discharge of "pPollutants" (as defined in Appendix 4, Glossary) in Urban Runoff from anthropogenic (generated from non-agricultural human activities) sources under the jurisdiction of and/or maintenance responsibility control of the Permittees and is not intended to address background or naturally occurring pPollutants or flows.
4. The Permittees submitted a revised Drainage Area Management Plan ("DAMP" and defined in Appendix 4, Glossary) as contained in Appendix B of the ROWD, dated April 27, 2007. This DAMP is a dynamic document that defines MEP for Permittee activities and is incorporated by reference and an enforceable extension of this MS4 Permit. Future Permittee modifications of the DAMP, once approved by the Regional Board Executive Officer, are also enforceable extensions of this MS4 Permit.
5. The federal Clean Water Act (the "CWA") established a national policy designed to help maintain and restore the physical, chemical and "biological integrity" (as defined in Appendix 4, Glossary) of the nation's waters. In 1972, the CWA established the NPDES permit program to regulate the discharge of pPollutants from "point sources" (as defined in Appendix 4, Glossary) to waters of the nation (the "Waters of the U.-S." and as defined in Appendix 4, Glossary). From 1972 to 1987, the main focus of the NPDES program was to regulate conventional pPollutant sources such as sewage treatment plants and industrial facilities. As a result, on a nationwide basis, "non-point sources" (as defined in Appendix 4, Glossary), including agricultural runoff and Urban Runoff, now contribute a larger portion of many kinds of pPollutants than the more thoroughly regulated sewage treatment plants and industrial facilities.
6. Studies conducted by the United States Environmental Protection Agency (the "USEPA"), the states, counties, cities, flood control districts and other political entities dealing with urban "storm water" (as defined in Appendix 4, Glossary) runoff indicate the following major sources of Urban Runoff "pPollution" (as defined in Appendix 4, Glossary) nationwide:
 - a. Industrial sites where appropriate pPollution ~~Prevention~~ control and best management practices ("BMPs" and as defined in Appendix 4, Glossary)¹ are not implemented;
 - b. Construction sites where erosion and siltation controls and BMPs are not implemented; and,
 - c. Runoff from urbanized areas.
7. The 1987 amendments to the CWA added Section 402(p) that required the USEPA to develop permitting regulations for storm water discharges from MS4s and from industrial facilities, including construction sites. The USEPA promulgated the final Phase I storm water regulations on November 16, 1990. Neither the 1987 amendments to the CWA nor the Phase I storm water regulations (40 CFR Part 122) have been amended since their effective dates.

¹ Best Management Practices (BMPs) are water quality management practices that are maximized in efficiency for the control of storm water runoff pollution.

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8. Section 402 (p) of the CWA establishes two different performance standards for storm water discharges. NPDES MS4 permits require controls to reduce the discharge of pollutants to the Maximum Extent Practicable- (the "MEP") [See discussion of this term in the Glossary, Appendix 4]. ~~NPDES permits issued for industrial storm water discharges (including construction activities) must meet Best Available Technology ("BAT") (as defined in Appendix 4, Glossary) and Best Conventional Pollutant Control Technology ("BCT") (as defined in Appendix 4, Glossary) standards.~~ The CWA and the USEPA regulations promulgated pursuant thereto allow each state the flexibility to decide what constitutes the MEP.

9. Prior to the USEPA's promulgation of the final storm water regulations, three counties (Orange, Riverside, and San Bernardino) and their incorporated cities located within the Regional Board's jurisdiction requested area-wide NPDES MS4 permits. These area-wide MS4 NPDES permits are:
 - a. Orange County, NPDES No. CAS 618030.
 - b. Riverside County, NPDES No. CAS 618033
 - c. San Bernardino County, NPDES No. CAS 618036

10. Consistent with the CWA and the USEPA regulations promulgated pursuant thereto, the State Water Resources Control Board (the "State Board") and the Regional Board have adopted a number of permits to address pollution from the sources identified in Finding 6, above. Industrial activities (as defined in 40 CFR 122.26(b)(14)) and construction sites of one five acres or more are to be covered under one of the following permits and those individuals or entities that engage in such activities are required to secure permission to engage in such identified activities pursuant to the provisions of one of the following permits:
 - a. State Board Order No. 97-03-DWQ, for storm water runoff from industrial activities (NPDES No. CAS000001), (the "General Permit-Industrial Activities Storm Water Permit")
 - b. State Board Order No. 99-08-DWQ, for storm water runoff from construction activities (NPDES No. CAS000002), (the "General Permit-Construction Activity Storm Water Permit"). Order No. 99-08-DWQ was amended by State Board Resolution No. 2001-046 on April 26, 2001, to incorporate monitoring provisions as directed by the Superior Court, County of Sacramento.
 - c. State Board Order No. 99-06-DWQ (NPDES No. CAS000003) for storm water runoff from facilities (including freeways and highways) owned and/or operated by the California Department of Transportation ("Caltrans").
 - d. State Board Order No. 2003-0007-DWQ, for discharges of stormwater runoff associated with small linear underground/overhead construction projects (NPDES No. CAS000005), (the "General Permit-Small Linear Underground Projects).
 - d. ~~Regional Board Order No. 01-34, adopted on January 19, 2001, for storm water discharges associated with new development (construction) to surface waters in the San Jacinto sub-watershed ("San Jacinto Watershed Construction Activities Permit").~~

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- e. The Regional Board also issues individual storm water permits for certain industrial facilities within the Santa Ana River Watershed. Currently there is one industrial storm water NPDES permit that has been issued by the Regional Board for a facility (March Air Reserve Base) located within the Permit Area. Additionally, the Regional Board has issued NPDES permits for a number of facilities that discharge process wastewater and storm water; storm water discharge requirements are included in such a facility's NPDES permit.

~~The San Bernardino County Flood Control District and RCFC&WCD, in cooperation with local affected municipalities, are coordinating an effort to construct flood control facilities in the Chino-Corona Agricultural Preserve area (the "Preserve Area") located on the border of San Bernardino and Riverside Counties. The Preserve Area has the highest concentration of dairy animals in the nation. The ground and surface water quality in the Preserve Area have been adversely impacted by these dairy operations. The dairies within the Permit Area are regulated under the Regional Board's "General Dairy Permit" (Order No. 99-11, NPDES No. CAG018001). The General Dairy Permit allows discharge of storm water from dairies only for storms exceeding a 24 hour, 25-year frequency. The portion of the Preserve Area within San Bernardino County lacks appropriate flood control facilities, and runoff from upstream urbanized areas within San Bernardino County often inundates some of the dairies in the Preserve Area, even during light or moderate storm and runoff events. This causes dairy waste containment facilities to fail and overflow into surface drainage facilities. This overflow causes nutrient, total dissolved solids (TDS), total suspended solids (TSS), and microbial problems in the "receiving waters" (as defined in Appendix 4, Glossary). However, there are only small areas of urbanized development in Riverside County upstream of the dairies subject to flooding. The RCFC&WCD is the lead agency responsible for engineering, design, contract administration, environmental review, and overall project management of the County Line Channel whose construction is intended to address this problem.~~

11. Section 13225 of the California Water Code (the "Water Code") identifies the Regional Board as being the enforcement authority for NPDES permits, including the General Permit-Industrial Activities Storm Water Permit (referenced in Finding 10.a., above), the General Permit and the Construction Activity Storm Water Permits (referenced in Finding 10.b.), and the General Permit-Small Linear Underground Projects (referenced in Finding 10.d., above), which are (collectively referred to as, the "General Storm Water Permits") "Storm Water General Permits." However, in many areas, the industrial and construction sites discharge directly into MS4 facilities owned and operated by the Permittees. These industrial and construction sites are also regulated under local ordinances and regulations. The Co-Permittees review plans for developments in accordance with the "Subdivision Map Act" (Section 66400 et seq. of the California Government Code), the California Environmental Quality Act ("CEQA") (Section 21000 et seq. of the California Public Resources Code), and local general plans and implementing ordinances and regulations to assure that "new developments" (as defined in Appendix 4, Glossary) proceed in an orderly, and safe manner, consistent with each Co-Permittee's general plan. This Order establishes a responsibility of the Permittees to manage Urban Runoff. A coordinated effort between the Permittees and the Regional Board staff is critical to avoid duplicative and overlapping efforts when overseeing the compliance of dischargers covered under the General Storm Water General Permits. As part of this coordination, the Permittees ~~have been notifying~~ Regional Board staff when they observe, during their routine activities, conditions that result in a threat or potential threat to Receiving wWater quality, or when a required industrial facility or construction activity fails to obtain coverage under the appropriate General Storm Water General Permit. To more effectively

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coordinate these activities, the Regional Board staff intends to post their inspection activities related to administration of the General Storm Water General Permits on the Regional Board website.

12. Urban Runoff includes those discharges from residential, commercial, industrial, and construction areas within the Permit Area and excludes discharges from feedlots, dairies, farms, and open space (also see Finding 134, below). Urban Runoff discharges consist of Storm Water and "non-storm water" (as defined in Appendix 4, Glossary) surface runoff from drainage sub-areas with various, often mixed, land uses within all of the hydrologic drainage areas that discharge into the Waters of the U.-S. In addition to Urban Runoff, the MS4s regulated by this Order receives flows from agricultural activities, open space, state and federal properties and other non-urban land uses not under the control of the Permittees. The quality of the discharges from the MS4s varies considerably and is affected by, among other things, past and present land use activities, basin hydrology, geography and geology, season, the frequency and duration of storm events, and the presence of past or present Illegal Discharges (as defined in Appendix 4, Glossary) and allowed discharges² and Illicit Connections (as defined in Appendix 4, Glossary)³.
13. The Permittees lack legal jurisdiction over Storm Water and other discharges into their respective MS4 facilities from agricultural activities, California and federal facilities, utilities and special districts, Native American tribal lands, non-Permittee wastewater management agencies and other Point and Non-point Source discharges otherwise permitted by or under the jurisdiction of the Regional Board. The Regional Board recognizes that the Permittees should not be held responsible for such facilities and/or discharges. Similarly, certain activities that generate Pollutants present in Urban Runoff are beyond the ability of the Permittees to eliminate. Examples of these include operation of internal combustion engines, atmospheric deposition, brake pad wear, tire wear, residues from lawful application of pesticides, nutrient runoff from agricultural activities, bacteria from wildlife (including birds and feral dogs and cats) and leaching of naturally occurring minerals from local geography.
14. Urban Runoff may contain elevated levels of pathogens (bacteria, protozoa, viruses), "sediment" (as defined in Appendix 4, Glossary), trash, fertilizers (nutrients, compounds of nitrogen and phosphorus), pesticides (DDT, Chlordane, Diazinon, Chlorpyrifos), heavy metals (cadmium, chromium, copper, lead, zinc), and petroleum products (oil, grease, petroleum hydrocarbons, polycyclic aromatic hydrocarbons). Urban Runoff can carry these Pollutants to rivers, streams, and lakes within the Permit Area (collectively the "Receiving Waters"). In addition, although infrequently, Urban Runoff from the Permit Area can carry these Pollutants to other receiving waters such as the Pacific Ocean. These Pollutants can then impact the "Beneficial Uses" (as defined in Appendix 4, Glossary) of the Receiving Waters and can cause or threaten to cause a condition of Pollution or "Nuisance" (as defined in Appendix 4).

² Illegal discharge means any disposal, either intentionally or unintentionally, of material or waste to land or MS4s that can pollute storm water or create a nuisance. The term illegal discharge includes any discharge to the MS4 that is not composed entirely of storm water, except discharges pursuant to an NPDES permit, discharges that are identified in Section II. C. of this Order, and discharges authorized by the Executive Officer.

³ Illicit Connection means any connection to the MS4 storm drain system that is prohibited under local, state, or federal statutes, ordinances, codes, or regulations. The term illicit connection includes all non storm-water discharges and connections except discharges pursuant to an NPDES permit, discharges that are identified in Section II, Discharge Limitations/Prohibitions, of this Order, and discharges authorized by the Executive Officer.

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15. Pathogens (from sanitary sewer overflows, septic system leaks, and spills and leaks from portable toilets, pets, wildlife, and human activities) can impact water contact recreation and non-contact water recreation. "Floatables" (from trash) are an aesthetic nuisance and can be a substrate for algae and insect vectors. Oil and grease can coat birds and aquatic organisms, adversely affecting respiration and/or thermoregulation. Other petroleum hydrocarbon components may cause "toxicity" (as defined in Appendix 4, Glossary) to aquatic organisms and may impact human health. Suspended and settleable solids (from sediment, trash, and industrial activities) may be deleterious to benthic organisms and may cause anaerobic conditions to form. Sediments and other suspended particulates may cause turbidity, clog fish gills and interfere with respiration in aquatic fauna. They may also screen out light, hindering photosynthesis and normal aquatic plant growth and development. However, it is recognized that storm flows from non-urbanized areas such as "National Forest," "State Park," "Wilderness," and "Agriculture", as shown on Appendix 1, naturally exhibit high levels of suspended solids due to climate, hydrology, geology and geography.⁴ Toxic substances (from pesticides, petroleum products, metals, and industrial "wastes" (as defined in Appendix 4, Glossary)) can cause acute and/or chronic toxicity, and can bioaccumulate in organisms to levels that may be harmful to human health. Nutrients (from fertilizer use, fire fighting chemicals, decaying plants, confined animal facilities, pets, and wildlife) may cause excessive algal blooms. These blooms may lead to problems with taste, odor, color and increased turbidity, and may depress the dissolved oxygen content, leading to fish kills.
16. The water quality assessment conducted by Regional Board staff has identified a number of beneficial use impairments due, in part, to agricultural and Urban Runoff. Section 303(b) of the CWA requires the USEPA and each state that has been delegated NPDES permitting authority each of California's Regional Water Quality Control Boards to routinely monitor and assess the quality of waters of their respective regions. If this assessment indicates that beneficial uses are not met, then that waterbody must be listed under Section 303(d) of the CWA as an impaired waterbody ("Impaired Waterbody") (as defined in Appendix 4, Glossary). The 2006-1998 water quality assessment listed a number of water bodies within the Permit Area as impaired pursuant to Section 303(d). In the Permit Area, these include: Canyon Lake (for nutrients and pathogens); Lake Elsinore (for nutrients, organic enrichment/low D.O., PCBs and unknown toxicity and sedimentation); Lake Fulmor (for pathogens); Santa Ana River, Reach 3 (for nutrients, pathogens, salinity, TDS, and chlorides); and Santa Ana River, Reach 4 (for pathogens). However, the Regional Board now recognizes that Reach 3 of the Santa Ana River is meeting the standards for nutrients, salinity, TDS and chlorides and has requested that this Reach be de-listed for these constituents in the 2002 CWA 303(d) list.
17. Federal regulations require that a total maximum daily load ("TMDL" as defined in Appendix 4, Glossary) be established for each 303(d) listed waterbody for each of the pollutants causing impairment. The TMDL is the total amount of the problem pollutant that can be discharged and still attain "Water Quality Standards" (as defined in Appendix 4, Glossary) in the receiving water, i.e., Receiving Water Quality Objectives (as defined in Appendix 4, Glossary) are met and the beneficial uses are protected. The TMDL is the sum of the

⁴ Riverside County Flood Control and Water Conservation District's "Hydrology Manual," dated April 1978 and page II-4 of "Santa Ana River, Design Memorandum No. 1, Phase II GDM on the Santa Ana River Mainstem, including Santiago Creek, Volume 2, Prado Dam." dated August 1988 and D.I. Inman & S.A. Jenkins "Climate Change and the Episodicity of Sediment Flux in Small California Rivers," Journal of Geology, Volume 107, pp. 251-270, 1999.

individual Waste Load Allocations (“WLA”) as defined in Appendix 4, Glossary) for pPoint sSource inputs, Load Allocations (“LA”) as defined in Appendix 4, Glossary) for nNon-point sSource inputs and natural background, with a margin of safety. The TMDLs are one of the bases for limitations established in waste discharge requirements (“Waste Discharge Requirements” and defined in Appendix 4, Glossary). TMDLs are being developed for sediment, pathogens, and nutrients for Lake Elsinore and Canyon Lake.

18. The 2006 CWA 303(d) List of Water Quality Limited Segments identifies the following waterbodies in the Region as potentially impaired waterbodies:

<u>Waterbody</u>	<u>Pollutant</u>	<u>Potential Sources</u>	<u>Proposed TMDL Completion</u>
<u>Canyon Lake</u>	<u>Pathogens</u>	<u>Non-point Source</u>	<u>2006 (pending)</u>
<u>Lake Elsinore</u>	<u>PCBs</u> <u>Unknown Toxicity</u>	<u>Unknown</u> <u>Unknown Non-point Source</u>	<u>2019</u> <u>2007</u>
<u>Lake Fulmor</u>	<u>Pathogens</u>	<u>Unknown Non-point Source</u>	<u>2019</u>
<u>Santa Ana River, Reach 4</u>	<u>Pathogens</u>	<u>Non-point Source</u>	<u>2019</u>

19. TMDLs for Canyon Lake and Lake Elsinore (Board Order R8-2004-0037) and the Middle Santa Ana River (Board Order R8-2005-0001) have been adopted by the Regional Board and approved by USEPA per the requirements of the CWA. These TMDLs include Urban WLAs that are now incorporated in Chapter 5 of the Water Quality Control Plan (the “Basin Plan” and as defined in Appendix 4, Glossary). The appropriate Permittees shall comply with the Urban WLA described in Chapter 5 of the Basin Plan. Those Urban WLAs are incorporated into this Order by reference.

20. USEPA’s Interim Permitting Approach for Water Quality Based Effluent Limitations in Storm Water Permits, 60 FR 43761 (Aug 26, 1996) recognizes the need for an iterative approach to control Pollutants in storm water discharges. In addition, the TMDLs described in Finding 19 were based on preliminary and incomplete data and were intended to be revised upon collection and analysis of a more comprehensive data set. Therefore, the variability in the system and the minimal data generally available make it difficult to determine with precision or certainty actual and projected loadings for individual dischargers or groups of dischargers. It is therefore the intention of the Regional Board that these TMDL WLA be implemented through a phased and iterative BMP process. To assist with this process, the Regional Board staff developed TMDL Implementation Plans for each TMDL. In summary, the Implementation Plans assign responsibilities to specific MS4 dischargers to identify sources of impairment, to propose BMPs to address those sources, and to monitor, evaluate and revise BMPs based on the effectiveness of the BMP implementation program. Specific Implementation Plan tasks are described in Chapter 5 of the Basin Plan and are assigned to one or more of the Permittees. Requirements of the TMDL Implementation Plan tasks are incorporated into this MS4 Permit and the DAMP. Additional details regarding specific Implementation Plan task requirements are available in Chapter 5 of the Basin Plan. Several of these Implementation Plan tasks are

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also jointly assigned to non-Permittee stakeholders. The Permittees have established TMDL Task Forces to jointly implement and coordinate those Implementation Plan tasks.

21. It is the Regional Board's intention that this iterative and phased BMP evaluation process be conducted simultaneously with the Permit renewal process. To that end, the Permittees have proposed BMP programs consistent with the aforementioned TMDL Implementation Plan tasks as part of Section 13 of the DAMP submitted with the ROWD. The Regional Board finds these programs to be consistent with the requirements of the TMDL and their respective Implementation Plans. These BMP programs shall be implemented and monitored during the course of the Permit. As part of the Permittees next ROWD, the Permittees shall evaluate the effectiveness of the BMP programs and propose BMP program modifications as necessary to achieve compliance with the TMDL WLA by the dates specified in Chapter 5 of the Basin Plan.
22. The Permittees are providing assistance and cooperating with Regional Board staff in the TMDL efforts. The Permittees shall revise their Drainage Area Management Plan ("DAMP," and defined in Appendix 4, Glossary), at the direction of the Regional Board Executive Officer (the "Executive Officer"), to incorporate program implementation amendments so as to comply with Regional, "watershed" (as defined in Appendix 4, Glossary) specific requirements, and/or WLAs developed and approved pursuant to the process for the designation and implementation of any newly approved TMDLs for Impaired Waterbodies adopted during the course of the MS4 Permit.
23. The area shown on Appendix 1 Region contains 1,396,293 square miles (or 19.147.7% of the 7,300 square miles within Riverside County) and includes 12 of the 24 municipalities within Riverside County. The California Department of Finance estimates that as of January 1, 2006, the population of Riverside County is 1,953,330,644,344 of which 864,542,759,877 persons reside within the 142 municipalities and an additional 368,437,338,630 persons reside in the unincorporated area that is within the area shown on Appendix 1 of the Region (or a total of 1,232,979,098,507 persons or 63.166.8% of Riverside County's population). ThreeFive of the municipalities (Beaumont, Calimesa, and Canyon Lake, Norco, and San Jacinto) have populations of 25,000 or less; five three municipalities (Hemet, Lake Elsinore, Norco, and Perris and San Jacinto) have populations between 25,001 and 70,000; Corona has a population of 144,661,433,966, Moreno Valley's population is 174,565,146,435 and Riverside has 287,820,269,402 residents. [Population figures for the eCity of Murrieta have been omitted because only 375 acres (2%) of the City's Land land Area area is within the Permit aArea, shown on Appendix 1. (See Finding No. 2.)] Of the total territory within the area shown on Appendix 1 Region, approximately 190,346.7 square miles are within the 124 incorporated areas and 1,206,944.6 square miles are unincorporated. General land uses within the 1,396,293.3 square miles comprising the area shown on Appendix 1 Region are identified in Appendix 1, based on Riverside County Assessor's Roll for February 2006 Fiscal Year 2004-2002, as follows: 46,109.3 square miles are used or zoned for commercial/industrial purposes (3.38.5%), 110,164,98.7 square miles for residential purposes (7.945.4%), 15.3 square miles for parks and recreational facilities (1.1%), 18,437,0.4 square miles are utilized for streets and roads improved roadways (including roadways owned by Caltrans) (1.35.4%), 709,347,53.9 square miles are vacant or utilized for preserves or open space (50.858.3%), 109.58 square miles are used for rural residential (7.9%) and 75,984,61.3 square miles are used for agricultural purposes (5.412.5%). There are 311.04 square miles of federal, state, tribal and non-County jurisdictional lands government owns 310.7 square miles (24%) of the territory within the area shown on Appendix 1 Region.

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24. Some portions of Riverside County within the Permit Area have been developed or zoned for residential, commercial and industrial uses. Urban development generally increases the area of impervious surfaces and ~~sStorm wWater runoff~~ volume and velocity; and decreases the area of previously vegetated surfaces available for infiltration of ~~sStorm wWater~~, depending on soils, topography, climate, precipitation volume and patterns, and other factors. However, Bbased on the procedures in Section D of the RCFC&WCD Hydrology Manual of RCFC&WCD, dated April 1978, it is feasible that, in semi-arid regions such as this Permit Area, development may result in the creation of a net increase in absorption. —Increases in runoff volume and velocity may cause scour, erosion (sheet, rill and/or gully), aggradation (raising of a streambed from ~~sSediment~~ deposition), changes in fluvial geomorphology, hydrology, and changes in aquatic ecosystem (collectively, “Conditions of Concern” and as defined in Appendix 4, Glossary). The Permittees are the owners and operators of the MS4s and have authority (except as qualified in Finding 134, above) to control most of the discharges of Urban Runoff to the MS4s systems. The Permittees have established appropriate legal authority to address their respective MS4 facilities’ exposure to ~~pPollutant~~ loads from discharges of Urban Runoff and have enhanced the design requirements for MS4 facilities to address ~~these~~ potential discharges from aNew dDevelopment and Significant Redevelopment. Co-Permittees have adopted grading and/or erosion control ordinances, guidelines and BMPs for municipal, commercial, and industrial activities, and, along with RCFC&WCD, have approved and are begun ~~implementing~~ implementation of the DAMP. The Permittees ~~have implemented most of the programs and policies that they developed~~. They must continue to implement an effective combination of these programs, policies, and legal authority, modify and enhance such programs and policies, and other additional requirements as identified herein, to ensure that ~~pPollutant~~ loads resulting from Urban Runoff are properly controlled and managed to the MEP.”
25. The Permittees own and/or operate the MS4s through which Urban Runoff is discharged into the Waters of the U.-S. The Permittees have identified major outfalls (with a pipe diameter of 36 inches or greater or drainage areas draining 50 acres or more) and have submitted maps of existing MS4 facilities. The Co-Permittees reported having approximately 153.3 miles of underground storm drains, and 21.3 miles of channels. The RCFC&WCD reported having 135 miles in underground storm drains and 133 miles of channels.
26. The MS4s generally ~~convey~~ convey ~~stain~~ stain ~~aNon-sStorm wWater~~ flows that may include runoff from agriculture and landscape irrigation, residential car washing, ~~miscellaneous washing and cleaning operations~~, and other ~~miscellaneous nuisance~~ flows. In addition, these facilities are used to convey water produced from the Arlington Desalter and deliveries of other water for water conservation. During normal dry weather conditions, very little Urban Runoff reaches Receiving Waters⁵. Non-storm ~~wWater~~ discharges into the MS4s and to the Waters of the U. S. containing ~~pPollutants~~ are prohibited, unless they are regulated under a separate NPDES permit; certain types of ~~aNon-storm wWater~~ containing insignificant amount of ~~pPollutants~~ are exempt as indicated in Discharge Limitations/Prohibitions, Section II.-C. of this Order.
27. Order Nos. 90-104, ~~and Order No. 96-30 and 02-11~~ required the Permittees to: (1) develop and implement the DAMP and Urban Runoff and Receiving Water monitoring and reporting

⁵ Based upon a field investigation report of the Storm Drain Outlets into the Santa Ana River conducted by the RCFC&WCD and dated May 28, 2002.

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programs; (2) eliminate illegal discharges and illicit connections ("IC/IDs") to the MS4s; and (3) enact the necessary legal authority to effectively prohibit such IC/IDs illegal discharges and illicit connections. The overall goal of these requirements was to reduce pollutant loading to surface waters from Urban Runoff to the MEP. The DAMP outlines the major programs and policies for controlling pollutants in Urban Runoff and the DAMP was approved by the Executive Officer on January 18, 1994. Since then, the Urban Runoff monitoring program has been expanded and the DAMP continues to be a dynamic document. This Order requires the Permittees to continue to implement the BMPs listed in the DAMP, and update or modify the DAMP, when appropriate, consistent with the MEP and other applicable standards; and to continue to effectively prohibit IC/IDs illegal discharges and illicit connections to their respective MS4s.

28. A revised Water Quality Control Plan (the "Basin Plan") was adopted by the Regional Board and became effective on January 24, 1995. The Basin Plan defines the numeric and narrative Water Quality Objectives and Beneficial Uses of the Receiving Waters in the Region. These Beneficial Uses include municipal and domestic supply, agricultural supply, industrial service supply, groundwater recharge, hydropower generation, water contact recreation, non-contact water recreation and sportfishing, warm freshwater habitat, cold freshwater habitat, preservation of biological habitats of special significance, wildlife habitat and preservation of rare, threatened, or endangered species. The Basin Plan also incorporates by reference all State Board water quality control plans and policies.
29. The ultimate goal of this Order MS4 permit is to protect these Beneficial Uses of the Receiving Waters by ensuring that the flows from the MS4s does not cause or contribute to an exceedance of "Water Quality Objectives" (as defined in Appendix 4, Glossary) for the Receiving Waters. The DAMP identifies programs and policies, including BMPs, to achieve this goal. These BMPs are organized into two components: BMPs for existing facilities and BMPs for New Development. Both components include regulatory activities, public education programs, solid waste management, and operations and maintenance activities.
30. There are pollutants in Urban Runoff from privately owned and operated facilities such as residences, businesses and commercial establishments and public and private institutions. A successful NPDES MS4 permit program should include the participation and cooperation of public entities, private businesses, and public and private institutions. Therefore, public education is a critical element of the DAMP. As the population increases in the Permit Area, it will be even more important to continue to educate the public regarding the impact of human activities on the quality of Urban Runoff.
31. The Co-Permittees have developed conditions of approval for projects requiring coverage under the General Permit-Construction Activity Permits for maps or permits requiring discretionary approval that are to be satisfied prior to issuing a grading or building permit for construction sites of one five acres or more. After March 10, 2003, these conditions of approval will be extended to construction sites on one (1) acre or more, consistent with the acreage criteria of the current Construction Activity Permits.
32. This Order requires the Permittees to continue to implement the BMPs listed in the approved DAMP and to continue to effectively prohibit IC/IDs illegal discharges and illicit connections to their respective MS4s. One of the major elements of the DAMP is a Storm Water/Urban Runoff Management and Discharge Control Ordinance, and Each of the Co-Permittees has

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adopted such an ordinance and ordinances addressing grading and erosion control (collectively, the "Storm Water Ordinance" and as defined in Appendix 4, Glossary). The purpose of each Storm Water Ordinance is to prohibit ~~p~~Pollutant discharges via IC/IDs to ~~in~~ the Permittees respective MS4s and to regulate illicit connections and non-storm water discharges to said MS4s.

33. The California Constitution and Government Code create in the Co-Permittees planning police powers that mandate that the Co-Permittees review and condition ~~a~~New ~~d~~Development consistent with the Subdivision Map Act, CEQA, and their respective general plans, ordinances, and resolutions to ensure the general public's health and safety. If these constitutional and statutory mandates are not properly implemented and local ordinances and resolutions are not properly enforced, there is a creditable potential that ~~a~~New ~~d~~Development could result in the discharge of ~~p~~Pollutants via Urban Runoff to the Receiving Waters ~~within~~ the Permit Area from Urban Runoff.
34. This Order requires the Permittees to examine the source of ~~p~~Pollutants in Urban Runoff from those activities that the Permittees conduct, approve, regulate and/or for which they issue a license or permit. This Order also requires the implementation of control measures to protect ~~b~~Beneficial ~~u~~Uses and attain "Receiving Water Quality Objectives", as defined in the Basin Plan.
35. Each Co-Permittee conducts inspections of those construction sites for which it has issued either a grading or building permit to determine compliance with its ordinances, regulations, and codes, including its Storm Water Ordinance. Each Co-Permittee, consistent with its ordinances, rules and regulations, inspect each site for which a grading or building permit has been issued for compliance with the conditions of approval governing the permit. These inspections have been expanded by ~~several of the~~ Co-Permittees to ~~survey and address~~ issues related to prevention of Urban Runoff and to determine that a site has secured coverage under the General ~~Permit-Construction-Activity Storm Water Permit~~. Once a certificate of occupancy has been issued, the Co-Permittees have limited jurisdiction to inspect ~~non-commercial/industrial~~ the sites on an ongoing basis.
36. The ~~DAMP~~Permittees have established the "Enforcement/Compliance Strategy," dated December 20, 2001 (the "E/CS") that addresses compliance strategies with regard to industrial, and commercial facilities and construction sites. In addition, as part of their Urban Runoff management activities, the Principal Permittee and the County entered into an agreement, dated August 10, 1999 by which they have developed and funded, in cooperation with the Riverside County Environmental Health Department, the "Compliance Assistance Program" (the "CAP") which includes a storm water survey component as part of existing inspections of "hazardous material" (as defined in Appendix 4, Glossary) handlers and retail food service activities. The initial phase of the CAP consisted primarily of educational outreach to the inspected facilities. The CAP has entered a second phase, which involves ~~and~~ a detailed storm water compliance surveys for each facility that must secure a "hazardous materials" (as defined in Appendix 4, Glossary) permit for either storing, handling or generating such materials (there are approximately 5,500 facilities of which approximately 2,300 are inspected annually, and all facilities are inspected at least once during a two year cycle) and retail food facilities (there are approximately 6,750 facilities, all of which are inspected 1 to 3 times annually). The type of industrial/commercial establishment that is inspected includes, but is not limited to, automobile mechanical repair, maintenance, fueling, or cleaning operation,

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automobile or other vehicle body repair or painting operations, and painting or coating operations. ~~Any e~~Completed surveys that indicate non-compliance are forwarded to the appropriate jurisdiction's ~~code~~ enforcement division for follow up action. In addition, the cities of Corona and Riverside, which operate publicly owned treatment works ("POTW"), in combination conduct annually on average, approximately 4,400 wastewater pre-treatment inspections, on a variety of industrial and commercial establishments within their respective jurisdictions, including, but not limited to, retail food establishments, car washes, and carpet, drape & furniture cleaning establishments. The Permittees ~~have agreed to~~ notify Regional Board staff when conditions are observed during such inspections that appear to be in violation of either the ~~General~~ Storm Water General Permits or a permit issued by the Regional Board.

37. The Permittees own/operate facilities where industrial or related activities take place that may have an impact on Urban Runoff quality. Some of the Permittees ~~also enter into~~ contracts with outside parties to carry out activities that may also have an impact on Urban Runoff quality. These facilities and related activities include, but are not limited to, street sweeping, catch basin cleaning, maintenance yards, vehicle and equipment maintenance areas, waste transfer stations, corporation and storage yards, parks and recreational facilities, landscape and swimming pool maintenance activities, MS4 maintenance activities and the application of herbicides, algaecides and pesticides. As part of Order 96-30, the Permittees were required to ~~assess public agency activities and facilities for potential impact to Urban Runoff quality and develop their agency specific "Municipal Facility Strategy"~~. This Order requires the Permittees ~~to continued~~ to implementation of BMPs that are ~~reducing~~ reducing pollutant discharges from those Permittee activities/facilities that are found to be significant sources of pollutants in Urban Runoff. This Order prohibits ~~a~~ Non-storm water discharges from facilities owned or operated on behalf of the Permittees unless the discharges are exempt under the Discharge Limitations/Prohibitions Section II.-C. of this Order or are permitted by the Regional Board under an individual NPDES permit.

38. An effective monitoring program characterizes Urban Runoff discharges, identifies problem areas, and determines the impact of Urban Runoff on Receiving Waters and the effectiveness of BMPs. The Principal Permittee administers the Consolidated Program for Water Quality Monitoring⁶ (the "CMP") for the Permittees. The CMP includes wet and dry weather monitoring of MS4 outfalls and Receiving Waters throughout Riverside County. The DAMP (at page 2-4, 1993) ~~indicates that lead, copper, manganese, zinc, BOD, hardness, and nitrates for some of the dry weather samples analyzed exceeded the water quality objectives in samples collected prior to the DAMP. These and other water quality indicators are tabulated on page 2-6 of the DAMP.~~

39. The Permittee's 2006~~0~~ Annual Report (the "Annual Report" and as defined in Appendix 4, Glossary) Pursuant to each NPDES MS4 permit issued by the Regional Board to the Permittees, there is a requirement that an annual report (the "Annual Report") be filed with the Regional Board ~~on or before each November 30th~~ summarized wet weather monitoring data collected between July 1990 and July 2006~~0~~. This summary shows that the average concentration values for a wide array of pollutants do not exceed the Receiving Water Quality Objectives. However, for numerous constituents, the summary contains several maximum

⁶ Consolidated Program for Water Quality Monitoring, Riverside County Flood Control and Water Conservation District, March 1994.

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~~recorded concentrations that exceed these Receiving Water Quality Objectives. The 2005-2006 Annual Report indicates that Fecal Coliform and pH are regularly measured in excess of applicable Water Quality Objectives. Nutrients including total phosphorus and total nitrogen have also been measured at monitoring stations in the San Jacinto watershed in excess of numeric targets established for the Canyon Lake and Lake Elsinore TMDL. Other detected parameters that have been identified in Annual Reports include heavy metals, nutrients, petroleum products, sediment, and litter. The summary also includes data from the period prior to implementation of the DAMP approved by the Executive Officer in January 1994.~~

40. In general, due to the complexity of hydrologic systems, the data as presented in the 2000 2005-2006 Annual Report are inconclusive in regard to identification of the pPollutant trends and compliance or non-compliance with "Receiving Water Limitations" (as defined in Appendix 4, Glossary)⁷ in various drainage areas represented by the monitoring stations. Consequently, ~~¶~~This Order requires the Permittees, in consultation with Regional Board staff, to re-evaluate ~~prior~~ continue analyzing monitoring data to identify the areas with elevated pPollutant concentrations to focus their source reduction efforts. Also, this Order requires the Permittees to revise the CMP to provide more effective data to support Urban Runoff management. The Permittees will continue their current monitoring efforts on those priority areas pending development and approval of the revised CMP.
41. This Order requires the Permittees to make all necessary revisions to an agreement entitled "NPDES Stormwater Discharge Permit – Implementation Agreement" ~~dated November 12, 1996~~ (the "Implementation Agreement" and as defined in Appendix 4, Glossary). The Implementation Agreement establishes the responsibilities of each Permittee party and a funding procedure for the shared costs.
38. ~~By January 1, 2003, the State Board is required by Water Code Section 13383.5 (Stats. 2001, c. 492 (S.B. 72)) to develop a statewide municipal storm water (Urban Runoff) monitoring and reporting program. Once this statewide program has been developed, the Permittees will be required to develop a revised monitoring and reporting program as specified in this Order and consistent with new requirements developed by the State Board.~~
42. In addition to the Regional Board, a number of other stakeholders are involved in the management of the water resources of the Region. These include, but are not limited to, the incorporated cities in the Region, POTWs, the three counties, and the Santa Ana Watershed Project Authority and its member agencies. The entities listed in Appendix 2 are considered as potential dischargers of Urban Runoff in the Permit Area. It is expected that these entities will also work cooperatively with the Permittees to manage Urban Runoff. The Regional Board, pursuant to 40 CFR 122.26(a), has the discretion and authority to require non-cooperating entities to participate in this Order or to issue individual storm water permits.
43. Cooperation and coordination among the stakeholders (regulators, Permittees, the public, and other entities) are critical to optimize the use of finite/limited public resources and ensure economical management of the water quality in the Region watershed. Recognizing this fact, this Order focuses on watershed management and seeks to integrate the programs of the stakeholders, especially the holders of the three MS4 permits within the Region.

⁷ Receiving Water Limitations are requirements included in this Order issued by the Board to assure that the regulated discharge does not violate ~~w~~Water ~~q~~Quality ~~s~~Standards established in the Basin Plan at the point of discharge to ~~w~~Waters of the State.

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44. The Regional Board recognizes that a watershed management program should integrate related programs, including the Urban Runoff program and TMDL processes.
45. ~~Illegal discharges to the MS4s can contribute to "contamination" (as defined in Appendix 4, Glossary) of Urban Runoff and other surface waters. The RCFC&WCD was required by Order No. 90-104 to conduct an inspection of underground storm drains and only one illicit connection could be identified. Open channels and other aboveground elements of the MS4 facilities are inspected for evidence of illegal discharges as an element of routine maintenance by the Permittees. The Permittees also developed a program to prohibit IC/IDs illegal discharges and illicit connections to their MS4 facilities. Continued surveillance and enforcement of these programs are required to eliminate IC/IDs illicit connections and illegal discharges. The Permittees have a number of procedures in place to eliminate illicit connections and illegal discharges to the MS4s, including construction, commercial, and industrial facility inspections, MS4 drainage facility inspections, water quality monitoring and reporting programs, and public education.~~
46. The Permittees have the authority to control pollutants in Urban Runoff discharges, to prohibit ~~IC/IDs illicit connections and illegal discharges~~, to control spills, and to require compliance and carry out inspections of the MS4 facilities within their respective jurisdictions. The Co-Permittees have been extended necessary legal authority through California statutes and local charters. Consistent with this statutory authority, each of the Co-Permittees have adopted their respective Storm Water Ordinances. ~~The Co-Permittees are required by this Order to review their respective Storm Water Ordinances and other ordinances, regulations, and codes adopted by them to determine whether the language of said ordinances, regulations, and codes needs to be modified or expanded to allow for enforcement actions, including civil and/or criminal penalties, to be brought by each Co-Permittee consistent with the provisions of this Order.~~
47. "Pollution prevention" (as defined in Appendix 4, Glossary) techniques implemented to the MEP, appropriate planning review procedures, early identification of potential Urban Runoff impacts and mitigation measures may reduce pollution associated with Urban Runoff. The Co-Permittees consider these impacts and appropriate mitigation measures in their respective, land use approval processes and CEQA review processes for development projects to insure consistency with their respective general plans. ~~This Order requires the Co-Permittees to review their respective CEQA review processes, general plans, zoning ordinances, and related regulations and codes to determine the need for any revisions.~~
48. The legislative history and the preamble to the federal storm water regulations indicate that Congress and the USEPA were aware of the difficulties in regulating Urban Runoff solely through traditional end-of-pipe treatment. However, it is the Regional Board's intent that this Order requires the implementation of BMPs to reduce, to the MEP, the discharge of pollutants in Urban Runoff from the MS4s in order to support attainment of Water Quality Standards. This Order, therefore, includes Receiving Water Limitations based upon Water Quality Objectives, prohibiting the creation of nuisances and requiring the reduction of water quality impairment in the Receiving Waters. In accordance with Section 402 (p) of the CWA, this Order requires the Permittees to implement control measures that will reduce pollutants in Urban Runoff discharges to the MEP. The Receiving Water Limitations similarly require the implementation of control measures to protect beneficial uses and attain Water Quality Objectives of the Receiving Waters.

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49. The Regional Board finds that the unique aspects of the regulation of Urban Runoff discharges through the MS4s, including, but not limited to, the intermittent nature of discharges, difficulties in monitoring and limited physical control over the discharge, will require adequate time to implement and evaluate the effectiveness of BMPs. Therefore, this Order includes a procedure for determining whether Urban Runoff discharges are causing or contributing to exceedances of Receiving Water Limitations and for evaluating whether the DAMP must be revised in order to comply with this aspect of this Order. This Order establishes an iterative process to achieve compliance with the Receiving Water Limitations.

50. Less than one fifth (1/5) of the entire acreage within Riverside County drains into water bodies within the Permit Area. Sixty-three percent of Riverside County's population resides within the Permit Area. The San Diego and the Colorado River Basin Regional Water Quality Control Boards regulate Urban Runoff from those portions of Riverside County outside of the Permit Area.

51. The Santa Ana River watershed is one of the major watersheds within Southern California. This watershed is divided into three sub-watersheds: the "Lower Santa Ana," the "Upper Santa Ana", and the "San Jacinto". The Lower Santa Ana sub-watershed (downstream from Prado Basin) includes the north half of Orange County and the Upper Santa Ana sub-watershed includes the southwestern corner of San Bernardino County and the northwestern corner of Riverside County. The San Jacinto sub-watershed includes the northwest corner of Riverside County south of the Upper Santa Ana sub-watershed.

52. The Santa Ana River is the major Receiving Water in the Permit Area. During non-storm periods the flow in the River is dominated by effluent from POTWs. POTW discharges are regulated under NPDES permits issued by the Regional Board. In addition, the quality of the Santa Ana River within the Upper Santa Ana sub-watershed is greatly influenced by agricultural activities. Urban Runoff from the Permit Area constitutes a minor component of the dry weather flow in the Upper Santa Ana and San Jacinto sub-watersheds of the Santa Ana River.

53. Generally, the portion of the Upper Santa Ana sub-watershed located within San Bernardino County drains to the portion of the Upper Santa Ana sub-watershed within Riverside County and the portion of the Upper Santa Ana sub-watershed located within Riverside County and the San Jacinto sub-watershed drain to Orange County through the Prado Basin and Dam. Prado Dam detains the flows of the Upper Santa Ana and San Jacinto sub-watersheds, specifically Reaches 3 and 4 of the Santa Ana River, and supports an extensive man-made wetlands system, that provides treatment of the detained water. Most of the flow in the Santa Ana River is released from Prado Dam and recharged into the ground-water basin in Orange County. However, as a result of infrequent heavy storm events, flows leaving Prado Dam may continue to coastal waters of the Pacific Ocean.

54. Water from rainfall, snow melt runoff, and surfacing ground water from various areas within the Permit Area either discharge directly to the Santa Ana River or to watercourses tributary to the Santa Ana River. Other major rivers within the Permit Area include the San Jacinto River and Temescal Creek. The San Jacinto Mountain areas drain into the San Jacinto River, which discharges into Canyon Lake and rarely hence into Lake Elsinore. Any overflow from Lake Elsinore is tributary to Temescal Creek, which flows into the Santa Ana River at the Prado Basin. Overflow from Lake Elsinore occurs infrequently, only once every 12 to 15 years.

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55. The requirements contained in this Order are necessary to implement the Basin Plan. This Order does not contain "numeric effluent limitations" (as defined in Appendix 4, Glossary) for any constituent because the impact of the Urban Runoff discharges on the water quality of the Receiving Waters has not yet been fully determined and because the State Board and the USEPA have determined that numeric effluent limits are not required in the MS4 permits. Continuation of water quality/biota monitoring and analysis of the data are essential to make that determination. In June 2006, the Storm Water Panel recommended to the State that "It is not feasible at this time to set enforceable numeric effluent criteria for municipal BMPs and in particular urban discharges."⁸ The Basin Plan or amendments thereto, may be grounds for the Permittees to revise the DAMP.
56. The Permittees will be required to comply with future ~~w~~Water ~~e~~Quality ~~s~~Standards or discharge requirements, which may be imposed by the USEPA or State of California prior to the expiration of this Order. This Order may be reopened to include ~~W~~LAs or ~~L~~As to address ~~p~~Pollutants in Urban Runoff causing or contributing to the impairments in Receiving Waters and/or other requirements developed and adopted by the Regional Board.
57. The Permittees may petition the Regional Board to issue a separate NPDES permit to any discharger of ~~n~~Non-storm ~~w~~Water into MS4 facilities that they own or operate.
58. The Permittees have implemented programs to control litter, trash, and other anthropogenic materials in Urban Runoff. ~~In addition to the municipal ordinances prohibiting litter, the Permittees should continue to participate in or organize a number of other programs such as solid waste collection programs, household hazardous waste collections, hazardous material spill response, catch basin cleaning, additional street sweeping, and recycling programs to reduce litter and illegal d~~Discharges. These programs ~~should effectively address urban sources of these materials. This Order includes requirements for continued implementation of these programs for litter, trash, and anthropogenic debris control.~~
59. The Regional Board recognizes the importance of watershed management initiatives and regional planning and coordination in the development and implementation of programs and policies related to Receiving Water quality protection. A number of such efforts are underway in which the Permittees are active participants. This Order encourages continued participation in such programs and policies. The Regional Board also recognizes that in certain cases, diversion of funds targeted for certain monitoring and reporting programs to regional monitoring programs may be necessary. The Executive Officer is authorized to approve, after proper public notification and consideration of comments received, the watershed management initiatives and regional planning and coordination programs and regional monitoring programs. The Permittees are required to submit all documents, where appropriate, in an electronic format acceptable to the Executive Officer. These documents will be posted at the Regional Board's website and interested parties will be notified. In addition, the website will include the administrative and civil procedures to appeal any decision made by the Executive Officer.

⁸ "State Water Panel Recommendations to the California State Water Resources Control Board - The Feasibility of Numeric Effluent Limits Applicable to Discharges of Storm Water Associated with Municipal, Industrial and Construction Activities." June 19, 2006, p. 8.

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60. The federal storm water regulations require public participation in the development and implementation of the Urban Runoff management program. As such, the Permittees are required to solicit and consider all comments received from the public and submit copies of the comments to the Executive Officer with the Annual Reports due each ~~November 30~~ December 15th. In response to public comments, the Permittees may modify reports, plans, or schedules prior to submittal to the Executive Officer.
61. In accordance with Water Code Section 13389, the issuance of Waste Discharge Requirements for this discharge is exempt from those provisions of CEQA contained in Chapter 3 (commencing with Section 21100), Division 13 of the California Public Resources Code.
62. The Regional Board has considered anti-degradation requirements, pursuant to 40 CFR 131.12 and State Board Resolution No. 68-16, for this discharge. The Regional Board finds that the Urban Runoff discharges regulated under this Order are consistent with the federal and state anti-degradation requirements and a complete anti-degradation analysis is not necessary. This Order requires the continued implementation of programs and policies to reduce the discharge of ~~p~~Pollutants in Urban Runoff. This Order includes additional requirements to control the discharge of ~~p~~Pollutants in Urban Runoff from "Significant Redevelopment," as defined in Section VIII.B.1.a., and "New Development," as defined in Section VIII.B.1.b.
63. The Regional Board has notified the Permittees and interested parties of its intent to issue Waste Discharge Requirements for Urban Runoff and has provided them with an opportunity to submit their written views and recommendations.
64. The Regional Board, in a public hearing, heard and considered all comments pertaining to the discharge of Urban Runoff and to the tentative requirements.

IT IS HEREBY ORDERED that the Riverside County Flood Control and Water Conservation District, the County of Riverside, and the incorporated cities of Beaumont, Calimesa, Canyon Lake, Corona, Hemet, Lake Elsinore, Moreno Valley, Murrieta, Norco, Perris, Riverside, and San Jacinto, in order to meet the provisions contained in Division 7 of the Water Code and regulations adopted thereunder, and the provisions of the CWA, as amended, and the regulations and guidelines adopted there under, shall comply with the following:

I. RESPONSIBILITIES:

A. Responsibilities of the Principal Permittee:

1. The Principal Permittee shall be responsible for managing the overall Urban Runoff program and shall:
 - a. Coordinate revisions to the DAMP.
 - b. Implement management programs, monitoring and reporting programs, and related plans as required by this Order.

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- c. ~~Coordinate~~ conduct chemical and biological water quality monitoring and hydrographic monitoring as required by the Executive Officer.
 - d. Conduct inspections and maintain the MS4 facilities over which it has jurisdiction.
 - e. Within 12 months of adoption of this Order, the Principal Permittee shall develop and maintain a Local Implementation Plan (LIP) that specifies how each applicable program element of the DAMP shall be implemented within its facilities. The Principal Permittee's LIP shall identify and describe the basis for those program elements that are not applicable to its facilities and activities. The LIP shall describe the plans, policies, procedures, and tools (e.g., checklists, forms, educational materials, etc.) used to execute the DAMP and comply with this Order. As the District is not a general purpose government, it does not have the authority to adopt ordinances. The LIP shall identify the organizational units responsible for implementation of each program element, shall establish internal reporting requirements to ensure and promote accountability, and shall describe an adaptive method of evaluation and assessment of program effectiveness for the purpose of identifying program improvements.
 - f. Review and revise, if necessary, those agreements to which it is a party and those regulations and policies it deems necessary to provide adequate legal authority to maintain the MS4 facilities for which it has jurisdiction and to take those actions required of it by this Order and the Federal Storm Water Regulations (see Section V—"Legal Authority/Enforcement", below);
 - g. To cause appropriate enforcement actions against ~~illegal~~ Discharges to the MS4 facilities for which it has jurisdiction be taken and pursued as necessary to ensure compliance with ~~Urban Runoff~~ storm water management programs, implementation plans, and regulations and policies, including physical elimination of ~~undocumented connections and IC/ID~~ illegal discharges (see Section VI—"Legal Authority/Enforcement", below);
 - h. Continue to Respond or cause the appropriate entity or agency to respond to ~~"Emergency Situations"~~ "Emergency Situations" (as defined in Appendix 4, Glossary) such as accidental spills, leaks, and ~~IC/ID~~ illegal discharges/illicit connections to prevent or reduce the discharge of ~~pollutants~~ Pollutants to its MS4 facilities and to the Waters of the U.-S.
 - i. Prepare, coordinate the preparation of, and submit to the Executive Officer, those reports and programs necessary to comply with this Order.
2. The activities of the Principal Permittee should also include, but not be limited to, the following:
- a. Provide staff support to the Establish a Management Steering Committee (the "Management Steering Committee" and as defined in Appendix 4, Glossary) as described in the ROWD to address Urban Runoff management policies for the

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Permit Area and coordinate the review, and necessary revisions to the DAMP and Implementation Agreement. The Management Steering Committee will continue to meet at least quarterly or more frequently as determined by the chairperson.

- b. Coordinate and conduct Technical Committee (the "Technical Committee" and as defined in Appendix 4, Glossary) meetings, at least ten times per year. The Technical Committee shall continue to direct the development of the DAMP, and coordinate the implementation of the overall Urban Runoff program, ~~as described in the ROWD. The Technical Committee will consist of one or more representatives from each Permittee.~~
- c. Will take the lead role in initiating and developing area-wide programs and activities necessary to comply with this Order.
- d. Coordinate activities and participate in committees/subcommittees formed to comply with this Order.
- e. Coordinate the implementation of this Order with the Regional Board and Co-Permittees ~~the implementation of this Order~~, including the submittal of all reports, plans, and programs as required under this Order.
- f. Provide technical and administrative support to the Co-Permittees, including informing them of the status of known pertinent municipal programs, pilot projects, and research studies.
- g. Coordinate with the Co-Permittees the implementation of Urban Runoff quality management programs, monitoring and reporting programs, implementation plans, public education, other ~~p~~Pollution ~~p~~Prevention measures, household hazardous waste collection, and ~~all~~BMPs outlined in the DAMP and take other actions as may be necessary to meet the MEP.
- h. Gather and disseminate information on the status of statewide Urban Runoff programs and evaluate the information for potential use in the execution of this Order. Hold workshops focused on Urban Runoff regulatory requirements, BMPs, and other related topics.
- i. Compile information provided by the Co-Permittees and determine their effectiveness in attaining Receiving Water qQuality sStandards. This determination shall include a comparative analysis of monitoring data to the applicable ~~w~~Water qQuality eObjectives for Receiving Waters as specified in Chapter 4 of the Basin Plan. A ~~p~~Pollutant source investigation and control plan shall be performed when elevated ~~p~~Pollutant levels are identified.
- j. Solicit and coordinate public input for major changes to the Urban Runoff management programs and the implementation thereof.
- k. Coordinate the development and implementation of procedures, and performance standards, to assist in the consistent implementation of BMPs to

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the MEP, as well as Urban Runoff management programs, among the Co-Permittees.

Participate in watershed management programs and regional and/or statewide monitoring and reporting programs.

B. Responsibilities of the Co-Permittees:

1. Each Co-Permittee shall be responsible for managing the Urban Runoff program within its jurisdiction and shall:

- ~~4.a.~~ Continue to maintain adequate legal authority to control the contribution of ~~p~~Pollutants to their MS4s and enforce those authorities.
- b. Conduct inspections of and maintain its MS4 facilities in accordance with the criteria developed pursuant to Section XII, CD, below.
- c. Continue to implement management programs, monitoring and reporting programs, ~~all appropriate~~ BMPs listed in the DAMP, and related plans as required by this Order and take such other actions as may be necessary to meet the MEP standard.
- d. Continue to seek sufficient funding for the area-wide Urban Runoff management plan, local Urban Runoff program management, Urban Runoff enforcement, public outreach and education activities and other Urban Runoff-related program implementation.
- e. Continue to coordinate among their internal departments and agencies, as appropriate, to facilitate the implementation of this Order and the DAMP.
- f. Continue to pursue enforcement actions as necessary within its jurisdiction for violations of Storm Water Ordinances, and other elements of its Urban Runoff management program.
- g. Respond to or arrange for the appropriate entity or agency to respond to ~~e~~Emergency ~~s~~Situations such as accidental spills, leaks, IC/IDs ~~illegal discharges/illicit connections~~, etc. to prevent or reduce the discharge of ~~p~~Pollutants to their MS4 facilities and the Waters of the U.S.
- h. Within 12 months of adoption of this Order, the Co-Permittee shall each develop and maintain a LIP that specifies how each program element of the DAMP shall be implemented within its jurisdiction. The LIP shall describe the ordinances, plans, policies, procedures, and tools (e.g., checklists, forms, educational materials, etc.) used to execute the DAMP and comply with this Order. The LIP shall identify the organizational units responsible for implementation of each program element, establish internal reporting requirements to ensure and promote accountability, and describe an adaptive method of evaluation and assessment of program effectiveness for the purpose of identifying program improvements.

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2. The Co-Permittees' activities should include, but not be limited to, the following:

- a. Participate in the Management Steering Committee and the Technical Committee in accordance with Section XV.C.III.D. of this Order.
- b. Conduct and coordinate with the Principal Permittee surveys and monitoring needed to identify pollutant sources and drainage area characteristics.
- c. Prepare and submit reports to the Principal Permittee and/or the Regional Board in a timely manner.
- d. Review, comment, approve, and implement plans, strategies, management programs, monitoring and reporting programs, as developed by the Principal Permittee, Technical Committee, or the Management Steering Committee to comply with this Order.
- e. Participate in subcommittees formed by the Principal Permittee, Technical Committee, or the Management Steering Committee to comply with this Order.
- f. Submit up-to-date MS4 facility maps to the Principal Permittee. If necessary, these maps should be revised on an annual basis and the revised maps should be submitted to the Principal Permittee with the information required for preparation of the Annual Report.
- g. Prepare and submit to the Principal Permittee in a timely manner specific reports/information, related to the Co-Permittees' Urban Runoff program, necessary to develop an Annual Report for submittal to the Executive Officer.

II. DISCHARGE LIMITATIONS/PROHIBITIONS:

- A. In accordance with the requirements of 40 CFR 122.26(d)(2)(i)(B) and 40 CFR 122.26(d)(2)(i)(F), the Permittees shall continue to prohibit IC/ID ~~illicit connections and illegal discharges~~ (n~~on~~-storm w~~ater~~) from entering their respective MS4s.
- B. The discharge of Urban Runoff from each Permittee's MS4 facilities to the Waters of the U.-S. containing pollutants that have not been reduced to the MEP is prohibited.
- C. The Permittees shall continue to effectively prohibit the discharge of n~~on~~-storm w~~ater~~, including those from public agency Permittee activities, into the their respective MS4s and to the Waters of the U.-S. unless such discharge is authorized by a separate NPDES permit or specifically allowed by the following provisions. Section XIII of this Order authorizes Permittee Non-storm Water discharges under following:
 1. Order No. R8-2003-0061, General Waste Discharge Requirements for Discharges to Surface Waters That Pose an Insignificant (De Minimus) Threat to Water Quality (General Permit-De Minimus Discharges) as amended by Order Nos. R8-2005-0041 and R8-2006-0004, and

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2. Order No. 2006-0008-DWQ (NPDES No. CAG990002), General NPDES Permit for Discharges from Utility Vaults and Underground Structures to Surface Waters (General Permit-Utility Vaults).

D. The Permittees need not prohibit the discharges identified below. ~~If, h~~However, if any of the following discharges are identified by either a Permittee or the Executive Officer as a significant source of ~~p~~Pollutants, coverage under an NPDES permit or ~~w~~Waste ~~e~~Discharge ~~r~~Requirements may be required.

1. Discharges covered by a NPDES permit, Waste Discharge Requirements, or waivers issued by the Regional or State Board. Unless a Permittee is the discharger, the Permittees shall not be responsible for any exceedances of Receiving Water Limitations associated with such discharges;
2. Discharges from potable water line flushing and other potable water sources;
3. Emergency water flows (i.e., flows necessary for the protection of life and property) do not require BMPs and need not be prohibited. However, appropriate BMPs shall be considered where practicable when not interfering with emergency public health and safety issues;
4. Discharges from landscape irrigation, lawn/garden watering and other irrigation waters;
5. Air conditioning condensate;
6. Diverted stream flows;
7. Rising ground waters and natural springs;
8. Groundwater infiltration (as defined in 40 CFR 35.2005(20)) and "uncontaminated pumped groundwater" (as defined in Appendix 4, Glossary);
9. Passive foundation drains;
10. Passive footing drains;
11. Water from crawl space pumps;
12. Non-commercial vehicle washing, (e.g. residential car washing (excluding engine degreasing) and car washing fundraisers by non-profit organization);
13. Flows from riparian habitats and wetlands;
14. Dechlorinated swimming pool discharges;
15. Waters not otherwise containing Wastes as defined in Water Code Section 13050 (d); and

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16. Other types of discharges identified and recommended by the Permittees and approved by the Regional Board.

E. The Regional Board may issue Waste Discharge Requirements for discharges exempted from NPDES requirements, such as agricultural irrigation waters, if identified to be a significant source of pollutants.

E.F. The Regional Board may add categories of non-Urban Runoff discharges that are not significant sources of pollutants or remove categories of non-Urban Runoff discharges listed in Section II.CD., above, based upon a finding that the discharges are a significant source of pollutants.

F.G. When types of discharges listed in Subsections II.C.2-16II.D.2 through II.D.16, above, are identified as a significant source of pollutants to the Waters of the U.S., a Permittee shall either: prohibit the discharge category from entering theirs MS4 or ensure that "structural" and "source eControl BMPs" and Treatment Control BMPs (as defined in Appendix 4, Glossary) are implemented to reduce or eliminate pollutants resulting from the discharge. The Permittees shall evaluate the permitted discharges, as listed in Subsection II.CD.1., above, to their MS4s to determine if any are a significant source of pollutants to their MS4s and notify the Executive Officer if any are a significant source of pollutants to their MS4s.

G.H. The Permittees shall continue to reduce the discharge of pollutants, including trash and debris, from their respective MS4s to Receiving Waters to the MEP.

H.I. Discharges from the MS4s shall be in compliance with the discharge prohibitions contained in Chapter 5 of the Basin Plan.

H.J. Discharge of Urban Runoff from thea Permittee's MS4 shall not cause or contribute to a condition of nuisance as the term is defined in Section 13050 of the Water Code.

III. RECEIVING WATER LIMITATIONS

A. Urban Runoff discharges from the Permittees' MS4s shall not cause or contribute to exceedances of Receiving Water quality standards (as defined by "beneficial uses" and "water quality objectives" in the Basin Plan and amendments thereto) for surface waters or ground waters.

B. The DAMP and its components shall be designed to achieve compliance with Receiving Water Limitations associated with discharges of Urban Runoff to the MEP. It is expected that compliance with Receiving Water Limitations will be achieved through an iterative process and the application of increasingly more effective BMPs.

C. The Permittees shall comply with Sections II and III of this Order through timely implementation of control measures and other actions to reduce pollutants in Urban Runoff in accordance with the DAMP and other requirements of this Order, including modifications thereto.

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D. If exceedance(s) of Receiving wWater eQuality eStandards due to Urban Runoff discharges persist, notwithstanding implementation of the DAMP and other requirements of this Order, the Permittees shall assure compliance with Sections II.B and III of this Order by complying with the following procedure:

1. Upon a determination by either the Permittees or the Executive Officer that ~~at~~ the discharges from the MS4 ~~systems~~ ~~is~~ are causing or contributing to an exceedance of an applicable Water Quality Standard, the Permittees shall, within two (2) working days, provide oral or e-mail notice to Regional Board staff of the location within its jurisdiction where the exceedance occurred and describe the nature of the exceedance. Following oral or e-mail notification, a written report must be submitted to the Executive Officer within thirty (30) calendar days of becoming aware of the situation. The report submitted for review and approval shall, at a minimum, describe the BMPs that are currently being implemented and the additional BMPs that will be implemented to prevent or reduce those ~~p~~ Pollutants that are causing or contributing to the exceedance of the applicable Receiving wWater eQuality eStandards. Alternatively, if the exceedance ~~is~~ are due to discharges to the MS4 from activities or areas not under the jurisdiction of the Permittees, the Permittees shall provide documentation of ~~this~~ ~~ese~~ discharges in the subject report, consistent with Subsection III.D.6, below.
2. Determination of the effect of Urban Runoff discharges from the MS4s on Receiving Water eQuality eStandards shall include a comparative analysis of the Permittees' monitoring data to the applicable wWater eQuality eObjectives for the Receiving Waters specified in Chapter 4 of the Basin Plan for the Receiving Waters.
3. The Executive Officer may by written notice require modifications to the report, required by Subsection III.D.1, above. If required, such modifications shall be submitted within thirty (30) calendar days of receipt of said written notice.
4. Within ninety (90) calendar days following approval by the Executive Officer of the report required by Subsection III.D.1, above, the Permittees shall revise the DAMP and their monitoring and reporting programs to incorporate the approved modified or additional BMPs that have been or are to be implemented, and the implementation schedule.
5. The revised DAMP and monitoring program are to be implemented in accordance with the approved schedule.
6. If the exceedance ~~is~~ are solely due to discharges to the MS4 that are outside the Permittees jurisdiction or control, the Permittees shall, within two (2) working days of becoming aware of the situation, provide oral or e-mail notice to Regional Board staff of the determination of the exceedance and provide written documentation of these discharges to the Executive Officer within ten (10) calendar days of becoming aware of the situation.

~~a.7.~~ So long as the Permittees have complied with the procedures set forth above and are implementing the revised DAMP, the Permittees do not have to repeat the same procedure for continuing or recurring exceedances of the same

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Receiving Water Limitations unless the Executive Officer determines it is necessary to develop additional BMP's and provides written notice to the Permittees of this determination.

IV. IMPLEMENTATION AGREEMENT

~~Within six (6) months of this Order's adoption, the existing Implementation Agreement shall be revised to include the city of Murrieta. A copy of the signature page and revisions to the Agreement shall be included in the Annual Report.~~

No later than November 30th of each year, the Permittees shall evaluate their Urban Runoff management programs and the Implementation Agreement and determine the need, if any, for revision. The Annual Report shall include the findings of this review and a schedule for any necessary revision(s) to the Implementation Agreement.

V. LEGAL AUTHORITY/ENFORCEMENT:

A. The Permittees shall continue to maintain adequate legal authority to control the contribution of ~~p~~Pollutants to the MS4s and enforce those authorities.

~~B.A.~~ The Permittees shall continue to take appropriate enforcement actions against violators of their Storm Water Ordinances, in accordance with the Federal Storm Water Regulations (40CFR, Part 122.26(d)(2)(I)(A-F)), and adopted/established guidelines and procedures as described in Section 3.4 of the DAMPE/CS.

~~C.~~ Within six (6) months of this Order's adoption, the Permittees shall evaluate their ordinances, regulations, rules and codes to determine if it has provided its staff authority to impose administrative fines for violations of its Storm Water Ordinance.

~~D.A.~~ Co-Permittees' Storm Water ~~e~~Ordinances or other local regulatory procedures shall include sanctions to ensure compliance. Sanctions shall include but shall not be limited to: verbal and/or written warnings, notice of violation or non-compliance, obtaining an administrative compliance, stop work or cease and desist order, a civil citation or injunction, the imposition of monetary penalties or criminal prosecution (infraction or misdemeanor). If the Co-Permittee's current ordinances or codes do not provide for the imposition of these civil or criminal penalties for violations of its Storm Water Ordinances, the Co-Permittee shall enact such ordinances within eighteen (18) months of this Order's adoption.

~~E.A.~~ The Permittees shall continue to provide notification of the need for follow-up action by ~~te~~ Regional Board staff regarding Urban Runoff related information gathered during site inspections of construction, and industrial sites regulated by the General Storm Water General Permits ~~or San Jacinto Watershed Construction Activities Permit~~ and at sites that should be regulated under these ~~p~~Permits. The notification should include ~~perceived~~observed violations of these ~~permits~~the Storm Water General Permits, prior history of violations of the Co-Permittee's Storm Water Ordinance, enforcement actions related to the Storm Water Ordinance taken by the Co-Permittee, and other relevant information. In addition, Sections IX, ~~X~~, and XII of this Order address additional notification requirements for construction, industrial and commercial sites not covered

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under the General Storm Water General Permits. The Regional Board shall be responsible for follow-up actions related to enforcement of the Storm Water General Permits.

~~E. Within twelve (12) months of this Order's adoption, and annually thereafter in November, the Permittees shall provide a report containing a review of their Storm Water Ordinances and their ordinance enforcement practices to assess their effectiveness in prohibiting non-exempt, non storm water discharges to the MS4s (the Permittees may propose appropriate control measures in lieu of prohibiting these discharges, where the Permittees are responsible for ensuring that dischargers adequately maintain those control measures). At a minimum, the following types of non-exempt, non-storm water discharges and wastes shall be considered:~~

- ~~1. Sewage, where a Co-Permittee operates a POTW and associated sewage collection system;~~
- ~~2. Wash water resulting from the hosing or cleaning of gas stations, and other types of automobile service stations;~~
- ~~3. Discharges resulting from the cleaning, repair, or maintenance of equipment, machinery, or facilities, including motor vehicles, concrete mixing equipment, portable toilet servicing, etc.;~~
- ~~4. Wash water from mobile auto detailing and washing, steam and pressure cleaning, carpet cleaning, etc.;~~
- ~~5. Water from cleaning of municipal, industrial, and commercial areas including parking lots, streets, sidewalks, driveways, patios, plazas, work yards and outdoor eating or drinking areas, containing chemicals or detergents, and without prior sweeping, etc.;~~
- ~~6. Runoff from material storage areas or uncovered receptacles that contain chemicals, fuels, grease, oil, or other hazardous materials;~~
- ~~7. Discharges of runoff from the washing of toxic materials from paved or unpaved areas;~~
- ~~8. Discharges from pool or fountain water containing chlorine, biocides, or other chemicals; pool filter backwash containing debris and chlorine;~~
- ~~9. Pet waste, yard waste, debris, sediment, etc.;~~
- ~~10. Restaurant or food processing facility wastes such as grease, floor mat and trash bin wash water, food waste;~~

~~G. Within eighteen (18) months of this Order's adoption, each Permittee shall submit a statement (signed by its legal counsel) that the Permittee has obtained all necessary~~

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~~legal authority to comply with this Order through adoption of ordinances and/or municipal code modifications.~~

VI. ILLICIT CONNECTIONS/ILLEGAL DISCHARGES; LITTER, DEBRIS AND TRASH CONTROL

- A. The Co-Permittees shall continue to prohibit ~~IC/ID~~illicit connections and illegal discharges to the MS4s through their Storm Water Ordinances and the Principal Permittee shall do so through its statutory authority. In addition, the Permittees shall continue to implement and improve routine inspection and monitoring and reporting programs for their MS4s. If routine inspections or dry weather monitoring indicate ~~IC/ID~~illicit connections or illegal discharges, they shall be investigated and eliminated or permitted within sixty (60) calendar days of receipt of notice by its staff or from a third "party" (as defined in Appendix 4, Glossary). ~~A summary of these actions shall be submitted annually beginning with the 2003-2004 Annual Report.~~
- B. The Permittees upon being put on notice by staff or a third pParty shall immediately upon becoming aware of the circumstances (within 24 hours of receipt of notice by its staff or from a third pParty) investigate all spills, leaks, and/or iIllegal eDischarges to the MS4s. Based upon their assessment and as specified below, the Permittees shall provide notifications and reporting as described in sSection 4 of the DAMP.

B. follows:

1. All discharges that endanger human health or the environment:

~~a. By phone to the Office of Emergency Services (the "OES") at (800-852-7550) and to the Executive Officer at (909-782-3238). Alternatively, the report to the Executive Officer may be done by e-mail at (sw@rb8.swrcb.ca.gov).~~

~~b. At a minimum, any sewage spill above 1,000 gallons or that could impact water contact recreation, any oil spill that could impact wildlife, any hazardous material spill where residents are evacuated, any spill of reportable quantities of hazardous waste (as defined in 40CFR 117 and 40 CFR 302), or any other spill or discharge that is reportable to the OES (collectively, an "Emergency Situation") shall be reported within twenty-four (24) hours of becoming aware of the circumstances.~~

~~2. Other spill incidents, including any unauthorized discharge, that are not incidents reportable to the OES shall be reported to the Executive Officer within two (2) business days of becoming aware of the circumstances.~~

~~3. A written report of the discharge or incident described in this subsection shall be submitted to the Executive Officer within ten (10) calendar days of becoming aware of the circumstances.~~

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~~4. The Permittees may propose a reporting program, including reportable incidents and quantities, jointly with other agencies such as the County Health Department for approval by the Executive Officer.~~

~~C. The Permittees shall continue to implement control measures to reduce and/or to eliminate the discharge of pollutants, including trash and debris, from MS4s to the Receiving Water. These control measures shall be reported in the Annual Report.~~

~~D. Within eighteen (18) months of this Order's adoption, the Technical Committee shall provide a written assessment of the relative efficiency and cost effectiveness of the available BMPs and the BMPs currently implemented for the control of anthropogenic litter (e.g. street sweeping, catch basin cleaning, deployment of trash receptacles, public education, etc.) and develop recommendations for improving the effectiveness of the currently implemented measures, and implement appropriate BMPs to control trash in Urban Runoff. The Permittees are required to establish a system to record visual observation information regarding the materials collected from the MS4 (e.g. paper, plastic, wood, glass, vegetative litter, and other similar debris), descriptions of its main source(s) (e.g. office, residential, commercial, and industrial waste), and problem areas. The findings of this review, along with supporting field data, shall be included in the Annual Report for 2004-2005.~~

~~E. Within eighteen (18) months of this Order's adoption, the Permittees shall review their litter/trash control ordinances to determine the need for revision to improve the effectiveness of these ordinances. The findings of this review shall be included in the Annual Report for 2003-2004.~~

VII. SEWAGE SPILLS, INFILTRATION INTO THE MS4 SYSTEMS FROM LEAKING SANITARY SEWER LINES, SEPTIC SYSTEM FAILURES, AND PORTABLE TOILET DISCHARGES

~~The Executive Officer will request the local sewerage agencies to take the lead and develop unified response guidance, in cooperation with the Principal Permittee. The Principal Permittees shall continue to work collaborate with the local sewerage agencies to implement the develop a unified response procedure for responding to sewage spills that may have an impact on Receiving Water quality, including. The Permittees shall providing local sanitation districts 24-hour access to the MS4s to address sewage spills. The Permittees shall continue to work cooperatively with the local sewerage agencies to determine and control the impact of infiltration from leaking sanitary sewer systems on Urban Runoff quality.~~

~~B. Within twelve (12) months of this Order's adoption, the Permittees, whose jurisdictions have 50 or more septic tank sub-surface disposal systems in use, shall identify with the appropriate governing agency a procedure to control septic system failures to prevent impacts on Urban Runoff quality and continue to follow procedures established by the State Health Department to address such failures.~~

~~C. Within twelve (12) months of this Order's adoption, the Principal Permittee shall review the Permittees' current oversight programs for portable toilets to determine the need for revisions.~~

VIII. NEW DEVELOPMENT (INCLUDING SIGNIFICANT REDEVELOPMENT)

A. GENERAL REQUIREMENTS:

1. Each Co-Permittee shall, consistent with the DAMP and its Storm Water Ordinance, and any revisions thereto as required by this Order, when considering any map or permit for which ~~a~~Discretionary Project pursuant to California Public Resources Code Section 21065 and 21080(a) and Section 15357 of the Guidelines for CEQA, ~~shall approval is sought~~ require that said map or permit contain a condition requiring the applicant ~~such project~~ to obtain coverage under the General Permit-Construction Activity Storm Water Permit or the San Jacinto Watershed Construction Activities Permit, if applicable (collectively the "Construction Activity Permits"), by filing a Notice of Intent ("NOI") with either the State or Regional Board, as applicable. ~~Verification that said condition has been satisfied may be established, as to the General Construction Activity Storm Water Permit, by presentation of a letter from the State Board indicating that the required fees have been paid and a waste discharge identification number ("WDID No.") has been issued or determining from the State Board's web site that the WDID No. has been issued, and, as to the San Jacinto Watershed Construction Activities Permit, that the required Storm Water Pollution Prevention Plan ("SWPPP") has been approved, fees have been paid and the Regional Board has issued a WDID No. Within six (6) months of this Order's adoption, each Co-Permittee shall review and revise as needed its land use approval process to include a procedure to ensure that coverage has been secured under the appropriate Construction Activity Permit for each map or permit that it has approved.~~
2. Each Co-Permittee shall continue to implement those BMPs identified in ~~s~~Section 6 of the "New Development Guidelines", and the attachment thereto entitled "Selection and Design of Storm Water Quality Controls," that constitute Supplement A ("Supplement A") to the DAMP in its review of any map or permit for which discretionary approval is sought. The land use approval process of each Co-Permittee shall continue to require ~~s~~Source ~~e~~Control BMPs and address the need for structural ~~t~~Treatment Control BMP's, identify their location, and identify how long-term maintenance responsibilities are to be met.
3. The Permittees shall review and revise, as necessary, ~~s~~Sections 6 and 7 of the DAMP, including Supplement A, in order to effect the implementation of new or enhanced BMPs that more effectively reduce ~~p~~Pollutants in runoff from construction sites during all phases of construction, including post-construction. At a minimum, the DAMP shall continue to:
 - a. Discuss possible amendments to the Co-Permittees' ordinances, regulations, and codes that would enhance grading and erosion control and public education,
 - b. Propose review criteria to be applied in land use review processes to better address issues regarding Urban Runoff; and

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- c. Identify BMPs or regional or sub-regional Urban Runoff treatment/infiltration BMPs that would enhance ~~p~~Pollution ~~p~~Prevention measures and address post-construction Urban Runoff issues.
4. The Permittees shall review and revise, as necessary, ~~s~~Sections 6 and 7 of the DAMP, including Supplement A, in order to develop and effect the implementation of new or enhanced BMPs that reduce ~~p~~Pollutants in Urban Runoff from commercial and industrial sites both during and after site construction. Appropriate BMPs will be required for industrial/commercial land uses that are identified during the land use approval process. For industrial/commercial land uses that are identified subsequent to the issuance of a discretionary map or permit, appropriate BMPs will be addressed through ~~s~~Section 6 of the ~~DAMPE/CS~~. At a minimum the DAMP shall continue to address:
 - a. The identification of those characteristics of the development of a commercial or industrial site that are likely to be a source of ~~p~~Pollutants in Urban Runoff that should be addressed and considered during the land use approval process, and
 - b. The identification of regional or sub-regional Urban Runoff treatment/infiltration BMPs that would address post-construction Urban Runoff issues.
 5. Each Co-Permittee shall continue to reduce to the MEP the short and long-term impacts on Receiving Water quality from New Developments, as defined in Subsection B.1, below, and Significant Redevelopment, as defined in Subsection B.1, below, as required in Subsection B., below. In order to reduce pollutants and runoff flows from New Development and Significant Redevelopment to the MEP, the Co-Permittees shall at a minimum:
 - a. Review their respective land use approval and CEQA review processes to insure that each addresses Urban Runoff issues consistent with provisions of this Order and make appropriate revisions to each, and
 - b. Develop and implement a public/business education program as specified in Section ~~IX.c.7, IX.C.4.,~~ below.
 6. Each Co-Permittee shall provide the Regional Board with any draft general plan or any draft general plan amendments for comment in accordance with Government Code Section 65350 et. seq.
 7. Each Co-Permittee shall, through its conditions of approval, continue to address the maintenance and operation of ~~s~~Structural BMPs required to be constructed to ensure Urban Runoff quality from New Development. The parties responsible for the maintenance and operation of such ~~s~~Structural BMPs and an appropriate funding mechanism shall be identified in said conditions of approval.
 8. The Co-Permittees shall continue to implement the BMPs described in ~~s~~Section 6 of the ~~DAMP~~.

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B. WATER QUALITY MANAGEMENT PLAN FOR URBAN RUNOFF (FOR NEW DEVELOPMENT/SIGNIFICANT REDEVELOPMENT)

~~Within twenty (20) months of this Order's adoption, each the Co-Permittees shall develop a~~ include in its LIP a list of project categories over which the Co-Permittee has only ministerial authority (Ministerial Projects) under its laws and ordinances as addressed in California Public Resources Code Section 21080(b)(1) and Sections 15022 (a) (1) (B), 15268(c) of the Guidelines for CEQA.

The Permittees shall continue to implement the approved Water Quality Management Plan (the "WQMP") for Discretionary Projects as described in ~~s~~Section 6 of the DAMP. The WQMP ~~identifying~~ identifies BMPs, including Site ~~d~~Design standards for ~~s~~Source ~~e~~Control and structural Treatment Control BMPs⁹, (as defined in Appendix 4, Glossary) that are to be applied when considering any map or permit for which ~~d~~Discretionary Project approval is sought. The WQMP is ~~intended to address~~ regional and sub-regional source Treatment ~~e~~Control and structural BMPs and ~~to provide~~ guidelines for site specific, "post-construction BMPs" (as defined in Appendix 4, Glossary) to address management of Urban Runoff quantity and quality. The WQMP is ~~to be submitted to the Executive Officer for his review and approval, consistent with the criteria identified in Subsections B.1., 2., and 3., below:~~

1. The WQMP ~~shall address~~ management of Urban Runoff quality from a project site, represented by a map or permit for which discretionary approval is sought from a Co-Permittee, in one of the categories of development identified below:
 - a. "Significant Redevelopment" is defined as the addition or creation of 5,000, or more, square feet of impervious surface on an existing developed site. This includes, but is not limited to, construction of additional buildings and/or structures, extension of the existing footprint of a building, construction of impervious or compacted soil parking lots. Where Significant Redevelopment results in an increase of less than fifty percent of the existing impervious surfaces of an existing developed site, and the existing developed site received its discretionary land use approvals prior to the adoption of the WQMP, the WQMP ~~would apply~~ only to the addition, and not the existing development. Significant Redevelopment does not include routine maintenance activities that are conducted to maintain original line and grade, hydraulic capacity, the original purpose of the constructed facility or emergency actions required to protect public health and safety;
 - b. For purposes of this Order, the categories of development identified below, shall be collectively referred to as "New Development":
 - ~~1~~(1) Residential development of 10 dwelling units, or more, including single family and multi-family dwelling units, condominiums, or apartments.
 - ~~2~~(2) Industrial and commercial development where the land area represented by the proposed map or permit is 100,000 square feet, or more, including, but not limited to, non-residential developments such as hospitals,

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educational institutions, recreational facilities, mini-malls, hotels, office buildings, warehouses, light industrial, and heavy industrial facilities;

~~3.~~(3) Automotive repair shops (with standard industrial classification ("SIC") codes 5013, 7532, 7533, 7534, 7537, 7538, and 7539).

~~4.~~(4) Restaurants (SIC Code 5812) where the project site is 5,000 square feet, or more.

~~5.~~(5) Hillside development that creates 10,000 square feet, or more, of impervious surface(s), including developments located on areas with known erosive soil conditions or where the natural slope is twenty-five percent or more.

~~6.~~(6) Developments creating 2,500 square feet, or more, of impervious surface that is adjacent to (within 200 feet) or discharging directly into areas designated in the Basin Plan as waters supporting habitats necessary for the survival and successful maintenance of plant or animal species designated under state or federal law as rare, threatened, or endangered species (defined in the Basin Plan as "RARE") or waterbodies listed on the CWA Section 303(d) list of Impaired Waterbodies within the Permit Area.

~~7.~~(7) Parking lots of 5,000 square feet or more of impervious surface exposed to storm water. Parking lot is defined as a site or facility for the temporary storage of motor vehicles.

c. The primary objective of the WQMP, by addressing Site Design, sSource eControl and structuralTreatment Control BMPs applied on a regional, sub-regional or site specific basis, is to ensure that the land use approval process of each Co-Permittee will minimize pPollutant loads in Urban Runoff from project sites for a map or permit for which discretionary approval is given.

~~2. This objective may be achieved through source control and structural BMPs. In developing the WQMP, the Permittees are to consider and address the following:~~

~~a. Pollutants of Concern/Conditions of Concern. The WQMP is to include a protocol by which Pollutants of Concern and/or Conditions of Concern are identified and their potential impact on Urban Runoff from a project site that is to be developed by one or more of the categories specified in Section VIII.B.1., above. The protocol shall include, at a minimum, consider_ation of the following:~~

~~(1) The quality of the Receiving Waters in proximity to the project site (including pollutants for which a waterbody within the Permit Area that has been listed as impaired under CWA Section 303(d));~~

~~(2) The category of development and the type of pollutants associated with that development category;~~

~~(3) Pollutants expected to be present on the project site; and~~

~~(4) Sensitivity of the Receiving Waters in proximity to the project site to changes in storm water discharge flow rates, velocities, durations, and volumes.~~

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~~b. Implementation Process. The WQMP shall specify at which point in the land use approval process the provisions of the WQMP should be considered. The WQMP shall generally describe the type of municipal departments or related agencies that are best equipped to evaluate the project site and draft the conditions of approval that will identify the types of BMPs required to address the specified concerns indicated by the protocol developed consistent with Subsection B.2.a, above, and incorporated into the WQMP.~~

~~If the draft condition of approval identifies the need for source control or structural BMPs⁹, the WQMP will require the proposed condition of approval to identify the operation and maintenance requirements for the identified structural source and/or treatment control and identify the funding source(s) and the parties responsible for the ongoing operation, maintenance, repair, rehabilitation and/or replacement of the source control and/or structural BMPs⁹.~~

~~c. The WQMP shall include a list of recommended source control and structural BMPs⁹ and a protocol, developed pursuant to Subsection B.2., above, that will identify those applications that would be most effective for a project site that is to be developed by one or more of the categories specified in Section VIII.B.1., above. The source control and structural BMPs included in said list shall, at a minimum:~~

~~e. Control the post construction peak storm water runoff discharge rates and velocities to avoid increasing downstream erosion beyond pre construction conditions;~~

~~g. Conserve natural areas and protect stream habitat, where feasible;~~

~~i. Minimize the introduction of Pollutants of Concern into Urban Runoff;~~

~~k. Remove Pollutants of Concern from Urban Runoff to the MEP;~~

~~m. Protect slopes and channels from eroding;~~

~~o. Require storm drain inlet stenciling and signage;~~

~~q. Require properly designed outdoor material storage areas;~~

~~s. Require properly designed trash storage areas; and~~

~~u. Be located as close to pollutant sources, as appropriate and economically/technologically feasible, and before the Urban Runoff is discharged into Receiving Waters.~~

~~0. If by January 1, 2005, the Permittees have not developed the WQMP and/or the WQMP has not been approved by the Executive Officer, then each Co Permittee shall cause to be placed on any proposed project submitted to it after said January~~

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~~1st that requires discretionary approval of a map or permit that proposes to develop a site consistent with one or more of the categories specified in Subsection B.1., above, conditions of approval that will require source control and/or structural BMPs that are to meet design standards consistent with those specified in Subsection B.5, below.~~

~~0. Source control and structural BMPs for any proposed project submitted to a Co-Permittee that requires discretionary approval of a map or permit that proposes to develop a site consistent with one or more of the categories specified in Subsection B.1., above, are to be sized to comply with one of the following numeric sizing criteria or be determined by the Co-Permittee to provide equivalent or superior treatment of Urban Runoff, on a site basis:~~

~~aa. Volume. Volume based BMPs shall be designed to treat urban pollutants (including, but not limited to, sediments, copper, lead, arsenic, zinc, and pesticides), or infiltrate either:~~

- ~~29) The volume of Urban Runoff produced from a 24 hour, 85th percentile storm event, as determined from the local historical rainfall record; or~~
- ~~30) The volume of annual Urban Runoff produced from a 24 hour, 85th percentile rainfall event, determined as the maximized capture Urban Runoff volume for the area, from the formula recommended in *Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87 (1998)*; or~~
- ~~31) The volume of annual Urban Runoff based on unit basin storage volume, to achieve 80% or more volume treatment by the method recommended in *California Storm Water Best Management Practices Handbook - Industrial/Commercial (1993)*; or~~
- ~~32) The volume of Urban Runoff, as determined from the local historical rainfall record, that achieves approximately the same reduction in pollutant loads and flows as achieved by mitigation of the Urban Runoff produced from a 24 hour, 85th percentile storm event;~~

~~Or,~~

~~jj. Flow. Flow based BMPs shall be designed to treat urban pollutants (including, but not limited to, sediments, copper, lead, arsenic, zinc, and pesticides), or infiltrate either:~~

- ~~38) The maximum flow rate of Urban Runoff produced from a rainfall intensity of 0.2 inch of rainfall per hour; or~~
- ~~39) The maximum flow rate of Urban Runoff produced by the 85th percentile hourly rainfall intensity, as determined from the local historical rainfall record, multiplied by a factor of two; or~~
- ~~40) The maximum flow rate of Urban Runoff, as determined from the local historical rainfall record, that achieves approximately the same reduction in pollutant loads and flows as achieved by mitigation of the 85th percentile hourly rainfall intensity multiplied by a factor of two.~~

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2. Implementation of ~~the WQMP Subsections B.1. through B.5., above~~ shall include consideration of the following:
 - a. ~~Each Co-Permittee may propose equivalent sizing criteria for Treatment Control~~~~structural~~ BMPs that will achieve greater or substantially similar ~~p~~Pollution control benefits. In the absence of approved equivalent sizing criteria, the Co-Permittee shall implement the ~~above stated~~ sizing criteria ~~specified in sSection 6 of the DAMP.~~
 - b. Waiver Provisions. A Co-Permittee may provide for a project to be waived from the requirement of implementing ~~Treatment Control~~~~structural~~ BMPs (~~Section VIII. B. 5~~)~~in conformance with Section 7 of the approved WQMP.~~ All waivers, along with documentation justifying the issuance of the waiver, must be submitted to Regional Board staff in writing within thirty (30) calendar days. If the Executive Officer determines that waivers are being inappropriately granted, this Order may be reopened to modify these waiver conditions:
 - (1) If infeasibility can be established. A waiver of infeasibility shall only be granted by a Co-Permittee when all available ~~Treatment Control~~~~structural~~ BMPs have been considered and rejected as technically infeasible and/or the cost of implementing the ~~structural~~ ~~Treatment Control~~ BMP greatly outweighs the ~~p~~Pollution control benefit.
 - (2) ~~For those portions of the Permit Area that will not result in a discharge to the Receiving Waters under the rainfall conditions specified in sSection 6 of the DAMP~~~~Subsections B.5., above.~~
 - c. If a particular BMP is not technically feasible, other BMPs should be implemented to achieve the same level of ~~p~~Pollution control or if the cost of implementing a technically feasible BMP greatly outweighs the ~~p~~Pollution control benefits, the Co-Permittees may grant a waiver of the numeric sizing criteria for said BMP as set forth in the WQMP.
 - d. The Principal Permittee and the Co-Permittees, individually or jointly, as appropriate, may develop and implement regional and sub-regional ~~watershed management~~ BMPs that address Urban Runoff from New Development and Significant Redevelopment.
 - e. The obligation to install ~~structural~~ ~~Treatment Control~~ BMPs for New Development will be satisfied if, for a specific plan, multiple subdivisions, or a regional area, ~~structural~~ ~~Treatment Control~~ BMPs are constructed with the requisite capacity to serve the specific plan, multiple subdivisions, or regional area, even if certain phases of the specific plan or the subdivision do not have ~~structural~~ ~~Treatment Control~~ BMP located within the boundaries of the particular phase, provided, however, the ~~structural~~ ~~Treatment Control~~ BMPs are designed and implemented to intercept Urban Runoff prior to it reaching the Receiving Waters and said BMPs meet the sizing criteria set forth in the WQMP ~~or as specified in Subsection B.5, above.~~

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3. Structural Treatment Control BMPs utilizing infiltration [exclusive of incidental infiltration and BMPs not designed to primarily function as infiltration devices (such as grassy swales, detention basins, vegetated buffer strips, constructed wetlands, etc.)] shall comply with the following:
 - a. Infiltration shall not cause or contribute to an exceedance of groundwater Quality Objectives in groundwater.
 - b. Protect groundwater quality.
 - c. Should not be used in high vehicular traffic areas (25,000 or greater average vehicles daily) unless necessary to mitigate peak storm flows for the protection of real and personal property, or for the protection of public health and safety. A sampling and analysis plan shall be implemented for such sites.
 - d. Shall be located at least 500 feet horizontally from water supply wells.
 - e. Shall not cause a nuisance, including odor, vectors or pollution as defined by Water Code Section 13050.

IX. PERMITTEE MUNICIPAL INSPECTION PROGRAMS

The Permittee municipal inspection programs are outlined in Sections 7 and 8 of the DAMPE/CS, prepared by the Permittees. The E/CS describes minimum inspection and enforcement procedures utilizing existing inspection programs, provides criteria for characterizing the significance of violations, criteria for prioritizing violations, appropriate response actions corresponding to the priority of violations and identifies the hierarchy of enforcement/compliance responses. Section 3.4 of the DAMPE/CS comprises provides a framework to standardize the implementation and enforcement by the Co-Permittees of their respective Storm Water Ordinances. As part of the E/CS, the Principal Permittee and the County have implemented the CAP that, through the Riverside County Environmental Health Department, specifically addresses storm water compliance survey/inspections of each facility that must secure a hazardous materials permit for either storing, handling or generating hazardous materials and restaurants. The Co-Permittees shall continue to enforce their respective Storm Water Ordinances consistent with the DAMPE/CS and shall revise the E/CS, within twelve (12) months of the adoption of this Order, and their respective Storm Water Ordinances consistent with the program elements described below. The revision of the E/CS is to be submitted for approval, in writing, by the Executive Officer.

A. Construction Sites

~~17. Each Co-Permittee shall develop within twelve (12) months of this Order's adoption, an inventory of active construction sites within its jurisdiction for projects for which a building or grading permit has been issued for a site that is 1 acre or larger. As written in the "Storm Water Phase II Final Rule - Small Construction Program Overview" (EPA 833 f 00-013, January 2000, Fact Sheet 3.0), smaller parcels that are part of a larger development will also be required to comply with the Phase II rules. A construction site will be included in the inventory regardless of whether the construction site is subject to the Construction Activity Permits or other individual construction storm water NPDES permits. In addition, beginning thirteen months (13) from the adoption date of this Order, New Development/Redevelopment Sites meeting the criteria defined in Section VIII. B.1 shall also be included in this database. This inventory shall be routinely maintained to reflect additional construction sites as permits are issued and may reflect deletions as occupancy permits are issued or a construction site is abandoned. This inventory shall be maintained in a computer database system. An electronic copy or update of the database, in a format acceptable to the Executive Officer, shall be provided with each Annual Report or upon request. The database specifics shall at a minimum include the relevant site information as outlined in the E/CS. The revised E/CS should provide for the inclusion of the following information: facility name (dba), address, city, zip code, mailing address (if different), location reference (such as GIS coordinates, cross streets, etc.) facility contact and phone number, site size, Map/Plot Plan No., Grading Permit No., Assessor's Parcel Number ("APN"), and State WDID No. Linking the database to a Geographical Information System ("GIS") is recommended but is not required.~~

~~18. Within twelve (12) months of this Order's adoption, the Co-Permittees shall inspect all inventoried construction sites, document relevant site information as outlined in the E/CS, and shall cause said information to be entered into the inventory database. In establishing priorities for inspection of construction sites consistent with this Order, the Co-Permittees shall prioritize construction sites within their jurisdiction as a high, medium, or low threat to Receiving Water quality (consistent with the criteria contained in Section IX.A.3., below). Evaluation of construction sites should be based on such factors as soil erosion potential, project size, proximity and sensitivity of Receiving Waters, history of compliance, and other relevant factors. The priority level assigned to a construction site may change during the construction period, however, at a minimum, the following construction sites shall be given a high priority in the initial inventory:~~

~~19. Sites that disturb an area greater than 50 acres;~~

~~21. Sites that disturb an area greater than one (1) acre and are located adjacent to, within 200 feet, of an identified impaired water body within the Permit Area; and,~~

~~23. Sites that disturb an area greater than one (1) acre and directly discharge to an identified Impaired Waterbody within the Permit Area.~~

~~25. Each Co Permittee shall conduct construction site inspections for compliance with its ordinances, including its Storm Water Ordinance, regulations, codes, and the WQMP, when approved. Construction site inspections shall at a minimum address the following areas as outlined in the E/CS:~~

~~aa. Check for submittal of a NOIs in compliance with the Construction Activity Permits, if required;~~

~~cc. Confirm a SWPPP, if required, is on-site;~~

~~ee. Confirm compliance with the Co Permittee's Storm Water Ordinance;~~

~~gg. Check for active non-stormwater discharges or potential illicit connections or illegal discharges to a MS4; and,~~

~~ii. The frequency of inspections shall be as follows:~~

Site Priority Level	Inspection Frequency
High	Once every two weeks
Medium	Once each month
Low	Once during the wet season
Follow up inspections when Storm Water Ordinance violations are observed	As specified in the E/CS, at least within two weeks, or consistent with a compliance schedule.

~~53. Each Co Permittee shall enforce its Storm Water Ordinance at construction sites as necessary to maintain compliance with the E/CS and this Order. Sanctions for non-compliance may include: verbal and/or written warnings, notice of violation or non-compliance, obtaining an administrative compliance, stop work or cease and desist order, a civil citation or injunction, the imposition of monetary penalties or criminal prosecution (infraction or misdemeanor).~~

~~54. As described in the E/CS, the Co Permittees will provide training to staff involved in inspecting construction sites. Staff training will address the requirements of the following:~~

~~ddd. The Storm Water Ordinances, resolutions, and codes;~~

~~fff. This Order, the approved WQMP, and the DAMP;~~

~~hhh. The Construction Activity Permits;~~

~~jjj. The E/CS.~~

~~64. Construction site inspectors will also receive training regarding SWPPPs, selection and maintenance of appropriate BMPs for construction sites, including erosion and sediment control. Each Co-Permittee shall have arranged for adequate training of its current inspection staff within twelve (12) months of this Order's adoption and on an annual basis thereafter, prior to the start of the "Rainy Season" (October 1 through May 31st). Training programs should be coordinated with Regional Board staff and prior notification of formal classroom training activities shall be provided to Regional Board staff. New hires or transfers that will be performing construction site inspections for a Co-Permittee shall be trained within six (6) months of starting inspection duties.~~

~~65. Within twenty four (24) hours of receipt of notice by its staff or from a third party, each Co-Permittee shall continue to provide oral or e-mail notification to Regional Board staff of sites within its jurisdiction that are determined to be an Emergency Situation. Following oral or e-mail notification, a written report must be submitted to Regional Board Staff within ten (10) calendar days of receipt of notice of the Emergency Situation, detailing the nature thereof, corrective actions taken by the site owner, other relevant information (e.g., past history of non-compliance, environmental damage resulting from the Emergency Situation, site owner responsiveness) and the type of enforcement, consistent with Table 4 of the E/CS, that has been or will be carried out by the Co-Permittee. Further, incidences of non-compliance shall be recorded along with the information noted in the written report and the final outcome/enforcement for the incident will be included in the database identified in Subsection A.1, above.~~

~~66.1. If a Co-Permittee receives notice by its staff or from a third party of a non-Emergency Situation representing a possible violation of the General Permit-Construction Activity Permits or other order or permit issued by the State or Regional Board, the Co-Permittee shall, within two (2) working days, provide oral or e-mail notice to Regional Board staff of the location within its jurisdiction where the incident occurred and describing the nature of the incident. Following oral or e-mail notification, a written report must be submitted to the Regional Board staff within ten (10) calendar days of becoming aware of the situation.~~

~~9.2. Upon referral of a construction site to Regional Board staff for failure to obtain coverage under the applicable Construction Activity Permit, failure to keep a SWPPP at the construction site, if applicable, or an observed act or omission that suggests failure to comply with either, the Co-Permittee will take no further action at the construction site with regard to securing compliance with the General Permit-Construction Activity Permits. It is understood by the Co-Permittees and Regional Board staff that this will preclude duplication of effort and insure that consistent direction is provided to the owner/developer and the construction site manager as to what is required to bring the site into compliance with the General Permit-Construction Activity Storm Water Permit or San Jacinto Watershed Construction Activities Permit. Each Co-Permittee shall take appropriate actions to bring a construction site into compliance with its local ordinances, rules, regulations, and WQMP, when approved.~~

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68. The number of inspections and the actions taken will be documented by the Co-Permittees and an appropriate summary of said actions will be provided to the Principal Permittee for inclusion in the Annual Report submitted to the Regional Board.

41.3. The Permittees need not inspect construction sites already inspected by Regional Board staff if the inspection of said site, given its prioritization consistent with Section 7 of the DAMPE/CS, was concluded within the time frame specified for said site's prioritization. To facilitate this, Regional Board staff will post a list of facilities inspected on the website or make this information available to the Co-Permittees by other pre-arranged means.

B. Industrial and Commercial Facilities

The Principal Permittee and the County have implemented the CAP that, through the Riverside County Department of Environmental Health, specifically addresses storm water compliance survey/inspections of food facilities and each business that must secure a hazardous materials permit for either storing, handling or generating hazardous materials. As described in Section 8 of the DAMPE, the Permittees must either participate in the CAP or implement an equivalent inspection program. The cities of Corona and Riverside maintain such programs through their respective POTW pre-treatment programs that may be supplemented by the activities of the Department of Environmental Health during routine inspections. The County is establishing a stand alone NPDES Stormwater Compliance Inspection and Enforcement Program (CIEP) for industrial/commercial facilities in the unincorporated areas of the County.

1. Each Co-Permittee shall ~~continue to maintain~~ develop within eighteen (18) months of this Order's adoption, an inventory of industrial and commercial facilities in the Permit Area within its jurisdiction that has the potential to discharge pollutants to the MS4.
 - a. ~~Each Co-Permittee that presently has an existing local industrial inspection program (the cities of Corona and Riverside as to their respective POTW pre-treatment inspections and the County through the CAP) shall include in their respective inventory of industrial facilities information derived from existing compliance survey and inspection programs.~~
 - b. ~~Each Co-Permittee without an industrial inspection program shall include in their inventory of industrial facilities information from the CAP that is relevant to its jurisdiction and may include information derived from other agencies providing services within its jurisdiction, including, but not limited to, the appropriate Fire Department, health departments, and POTW servicing the Permit Area.~~
 - c. ~~An industrial facility will be included in said inventory, regardless of whether the facility is subject to the General Industrial Activities Storm Water Permit, or other individual NPDES permits issued by the State or Regional Boards.~~
 - d. ~~The inventory shall be routinely updated, information can be derived from any of the following sources: conditional use permits, plot plans, building permits,~~

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~~business licenses, occupancy permits, hazardous materials permits, and hazardous waste generator permits are approved for the development of a new industrial facility, additional facilities are identified through the CAP, and as compliance surveys and inspections are completed and industrial facilities are identified. This inventory shall be maintained in a computer database system.~~

~~e. The Co-Permittees shall not issue an occupancy permit to an industrial facility or other license authorizing the facility to operate, unless the applicant is informed of the General Industrial Activities Storm Water Permit and that it may have to secure coverage thereunder.~~

~~f. The database information content may be Co-Permittee specific and shall be developed and maintained in accordance with the E/CS. The database contents shall at a minimum include the relevant site information, outlined in the E/CS. The revised E/CS should provide for the inclusion of the following information: facility name (dba), address, city, zip code, mailing address (if different), location reference (such as, GIS coordinates, cross streets, etc.) facility contact and phone number, SIC Code(s), State WDID No. (if any), APN, and site size. An electronic copy or update of the database, in a format acceptable to the Executive Officer, shall be provided with each Annual Report or upon request. Linking the database to a GIS is recommended but is not required.~~

~~2. The frequency and priority of an industrial/commercial facility compliance survey or inspection will be based on the most recent facility visit by the CAP or equivalent program as outlined in Section 8 of the DAMPE/CS, as revised, consistent with this Order. The revised E/CS shall prioritize industrial facilities within their jurisdiction as a high, medium, or low threat to water quality. Evaluation of these facilities should be based on such factors as type of industrial activities (SIC codes), materials or wastes used or stored outside, pollutant discharge potential, facility size, proximity and sensitivity of Receiving Waters, frequency of existing inspections, based upon other California statutes or regulations, or local regulations, ordinances, or codes, and any other relevant factors. At a minimum, a high priority classification shall be assigned to facilities subject to Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and facilities with a high potential for or history of unauthorized, non-storm water discharges.~~

~~3.~~

~~4. Once the inventory required by Subsection B.1, above, has been completed and the industrial facilities have been prioritized, consistent with Subsection B.2, above, the Co-Permittees are to determine the frequency with which the inventoried facilities are surveyed or inspected. Unless inspected more frequently pursuant to the existing programs, those industrial facilities given a high priority are to be inspected at least once a year, those industrial facilities given a medium priority are to be inspected at least once biannually, and those industrial facilities given a low priority are to be inspected at least once during the term of this Order. In the event that the industrial facility is found to be in violation of the Co-Permittee's Storm Water Ordinances the frequency of inspection shall be increased consistent with a compliance schedule~~

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determined appropriate by the Co-Permittee and as outlined in the revised E/CS to cause said facility to be brought into compliance.

- ~~5.~~
- ~~6. Industrial facility compliance surveys and inspections shall at a minimum address the following, as outlined in the E/CS:~~
- ~~7.~~
- ~~8. Check for submittal of a NOI to comply with the General Industrial Activities Storm Water Permit or other permit issued by the State or Regional Board to an industrial facility within the Permit Area;~~
- ~~9.~~
- ~~10. Confirm compliance with the Co-Permittee's Storm Water Ordinance;~~
- ~~11.~~
- ~~12. Check for active non-storm water discharges, potential illicit connections, and illegal discharges to the MS4;~~
- ~~13.~~
- ~~14. Potential for discharge of pollutants in Urban Runoff from areas of material storage, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas or loading docks, or other outdoor work areas;~~
- ~~15. Implementation and maintenance of appropriate BMPs for industrial facilities.~~
- ~~16.~~
- ~~17. Each Co-Permittee shall continue to enforce its ordinances, including its Storm Water Ordinance, resolutions and codes at industrial facilities as necessary to maintain compliance with this Order. Sanctions for non-compliance may include: verbal or written warnings, notice of violation or non-compliance, obtaining an administrative compliance, stop work, or cease and desist order, the imposition of monetary penalties or criminal prosecution (infraction or misdemeanor).~~
- ~~18.~~
2. Within twenty four (24) hours, each Co-Permittee shall continue to provide oral or e-mail notification to the Regional Board of facilities within its jurisdiction it perceives to be an illicit connection, illegal discharge, or that is determined to be an Emergency Situation. Following oral or e-mail notification, a written report must be submitted to Regional Board Staff within ten (10) calendar days of the Co-Permittee's receipt of notice of the Emergency Situation, detailing the nature of the Emergency Situation, corrective actions taken by the facility owner, other relevant information (e.g., past history of non-compliance with the Co-Permittee's Storm Water Ordinance, environmental damage resulting from the Emergency Situation, facility owner responsiveness) and the type of enforcement, consistent with Table 4 of the E/CS, that has been or will be carried out by the Co-Permittee. Further, incidences of non-compliance shall be recorded, along with the information noted in the written report and the final outcome/enforcement for the incident shall be included in the database identified in Subsection B.1, above.
3. If a Co-Permittee receives notice by its staff or from a third party of a non-Emergency Situation representing a possible violation of the General Permit-

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~~Industrial Activity Storm Water Permit or other permit issued by the State or Regional Board to an industrial facility, the Co-Permittee shall, within two (2) working days, provide written notice to Regional Board staff of the location within its jurisdiction where the incident occurred and describing the nature of the incident.~~

4. Upon referral of an industrial facility to Regional Board staff for failure to obtain coverage under the General ~~Permit-Industrial Activities Storm Water Permit~~, failure to keep a SWPPP at the industrial facility, or an observed act or omission that suggests failure to comply with either, the Co-Permittee will take no further action at the industrial facility with regard to securing compliance with the General ~~Permit-Industrial Activities Storm Water Permit~~. It is understood by the Co-Permittees and Regional Board staff that this will preclude duplication of effort and insure that consistent direction is provided to the facility owner/manager as to what is required to bring the facility into compliance with the General ~~Permit-Industrial Activities Storm Water Permit~~. Each Co-Permittee shall take appropriate actions to bring an industrial facility into compliance with its local ordinances, rules, regulations, and WQMP, ~~when approved.~~

~~9. The number of compliance surveys/inspections and the actions taken shall be documented by the Co-Permittees and an appropriate summary of said actions shall be provided to the Principal Permittee for inclusion in the Annual Report submitted to the Regional Board.~~

~~10. As described in the E/CS, the Co-Permittees shall provide training to staff that are involved in conducting compliance surveys/inspections of industrial facilities. Staff training will address the requirements of the following:~~

~~a. The Storm Water Ordinance~~

~~b. This Order and the DAMP~~

~~c. The General Industrial Activities Storm Water Permit and any other permit issued to industrial facilities within the Permit Area by the State or Regional Board; and~~

~~d. The E/CS.~~

~~11. Each Co-Permittee's staff assigned to conduct the industrial facilities compliance surveys/inspections will also receive training regarding pollution prevention plans and implementation of appropriate BMPs for industrial facilities. Training programs should be coordinated with Regional Board staff and prior notification of formal classroom training activities shall be provided to the Regional Board staff.~~

~~12. Each Co-Permittee shall have arranged for adequate training of its staff assigned to conduct the industrial facilities compliance surveys/inspections within eighteen (18) months of this Order's adoption, and on an annual basis thereafter. New hires or transfers that will be performing the industrial facilities~~

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~~compliance surveys/inspections for a Co-Permittee will be trained within six (6) months of starting field duties.~~

- ~~5. The Permittees need not inspect industrial or commercial facilities already inspected by Regional Board staff if the inspection of said site, given its prioritization consistent with section Section 8 of the DAMPE/CS, was concluded within the time frame specified for said site's prioritization. To facilitate this, Regional Board staff will post a list of facilities inspected on the website or make this information available to the Co-Permittees by other pre-arranged means.~~

C. Commercial Facilities

~~Within eighteen (18) months of this Order's adoption, the Permittees shall review the E/CS to reflect the following:~~

- ~~1. These Co-Permittees that presently have an existing compliance survey/inspection program for commercial facilities (the cities of Corona and Riverside as to their respective POTW pre treatment inspections and the County through the CAP) shall develop within eighteen (18) months of this Order's adoption, an inventory of the commercial facilities that are surveyed or inspected pursuant to the existing program. The inventory will be updated on a routine basis from such information as conditional use permits, plot plans, building permits, business licenses, occupancy permits, hazardous materials permits, and hazardous waste generator permits are approved for development of a new commercial facility, additional commercial facilities are identified through the CAP and compliance surveys and inspections are completed and new commercial facilities are identified. Each Co-Permittee without a commercial facility inspection program shall include in its inventory of commercial facilities information from the CAP (including automobile mechanical repair, maintenance, fueling, or cleaning; automobile and other vehicle body repair or painting; painting and coating; pool, lake and fountain cleaning (base of operations)) that is relevant to its jurisdiction and may include information derived from other agencies providing services within its jurisdiction, including, but not limited to, the POTW. This inventory shall be maintained in a computer database system. The revised E/CS should provide for the inclusion of the following information: facility name (dba), address, city, zip code, mailing address (if different), location reference (GIS coordinates, cross streets, APN, etc.) facility contact and phone number, SIC code(s), and site size. An electronic copy or update of the database, in a format acceptable to the Executive Officer, shall be provided with each Annual Report or upon request. Linking the database to a GIS is recommended but is not required.~~
- ~~2. In addition, each Permittee shall develop within twenty four (24) months of this Order's adoption, an inventory of the commercial facilities/companies listed below within its jurisdiction:~~
 - ~~a. Mobile automobile or other vehicle washing (base of operations);~~

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- ~~b. Mobile carpet, drape or furniture cleaning (base of operations);~~
 - ~~c. Mobile high pressure or steam cleaning (base of operations);~~
 - ~~d. Nurseries and greenhouses;~~
 - ~~e. Landscape and hardscape installation (base of operations); and,~~
 - ~~f. Other commercial sites/sources that the Permittee determines may contribute a significant pollutant load to the MS4.~~
- ~~3. Within twelve (12) months of this Order's adoption, the CAP will be revised to cause compliance surveys/inspections of restaurants within Riverside County that, at a minimum, include the following:~~
- ~~a. Oil and grease disposal to verify that these wastes are not discharged onto a parking lot, street or adjacent catch basin;~~
 - ~~b. Trash bin areas to verify that these areas are clean, the bin lids are closed, the bins are not filled with liquid, and the bins have not been washed out into the MS4;~~
 - ~~c. Parking lot, alley, sidewalk and street areas to verify that floor mats, filters and garbage containers are not washed in those areas and that no wash water is discharged to MS4s from those areas; and,~~
 - ~~d. Parking lot areas to verify that they are cleaned by sweeping, not by hosing down, and that the facility operator uses dry methods for spill cleanup.~~
- ~~4. The revised E/CS shall prioritize commercial facilities within their jurisdiction as a high, medium, or low threat to water quality. Evaluation of these facilities should be based on such factors as type of commercial activities (SIC codes), materials or wastes used or stored outside, pollutant discharge potential, facility size, proximity and sensitivity of Receiving Waters, frequency of existing inspections, based upon other California statutes or regulations, or local regulations, ordinances, or codes, and any other relevant factors. At a minimum, a high priority classification shall be assigned to facilities with a high potential for or history of unauthorized, non-storm water discharges.~~
- ~~5. Once the inventory required by Subsection C.1, above, has been completed and the commercial facilities have been prioritized, consistent with Subsection C.4, above, the Co-Permittees are to determine the frequency with which the inventoried facilities are surveyed or inspected, pursuant to existing programs. Unless inspected more frequently pursuant to the existing programs, those commercial facilities given a high priority are to be inspected at least once a year, those commercial facilities given a medium priority are to be inspected at least once biannually, and those commercial facilities given a low priority are to be inspected at least once during the term of this Order. In the event that the commercial facility is found to be in violation of the Co-Permittee's Storm Water~~

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~~Ordinances the frequency of inspection shall be increased consistent with a compliance schedule determined appropriate by the Co Permittee and as outlined in the revised E/CS to cause said facility to be brought into compliance.~~

~~6. The commercial facility compliance survey/inspection shall, at a minimum, address the following, consistent with the E/CS:~~

~~a. Commercial activity type(s) and SIC code(s);~~

~~b. Compliance with each Co Permittee's Storm Water Ordinances; If applicable, check for submittal of a NOI to comply with the General Industrial Activities Storm Water Permit or other permit issued by the State or Regional Board; and,~~

~~e. The E/CS.~~

~~7. The Permittees will expand its existing public educational program to include a concentrated, business-specific element. This expanded education element will be described in detail in the WQMP and the DAMP. This education program will include criteria to provide the commercial facility owner and/or operator with information to encourage compliance with the Co Permittees' Storm Water Ordinances and the General Industrial Activities Storm Water Permit or other permit issued by the State or Regional Board, if applicable. If the commercial facility is found to need coverage under the General Industrial Activities Storm Water Permit or other permit issued by the State or Regional Board, information will be provided and the Regional Board will be notified.~~

~~8. Each Co Permittee shall enforce its Storm Water Ordinance prohibiting non-exempt non-storm water discharges at commercial facilities. Sanctions for non-compliance may include: verbal and/or written warnings, notice of violation or non-compliance, obtaining an administrative compliance, stop work, or cease and desist order, a civil citation or injunction, the imposition of monetary penalties or criminal prosecution (infraction or misdemeanor).~~

~~9. The number of compliance surveys/inspections and the actions taken shall be documented by the Co Permittees and an appropriate summary of said actions will be provided to the Principal Permittee for inclusion in the Annual Report submitted to the Regional Board.~~

~~10. Within twenty four (24) hours of receipt of notice by its staff or from a third party, each Co Permittee shall continue to provide oral or e-mail notification to the Regional Board of facilities within its jurisdiction that it perceives to have an illicit connection, illegal discharge, or that is determined to be an Emergency Situation. Following oral or e-mail notification, a written report must be submitted to Regional Board Staff within ten (10) calendar days of the Co-Permittee's receipt of notice of the Emergency Situation. All written reports shall detail the nature of the Emergency Situation, identify corrective actions taken by the facility owner, and note other relevant information (e.g., past~~

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~~history of non-compliance, environmental damage resulting from the Emergency Situation, facility owner or manager's responsiveness) and the type of enforcement, consistent with Table 4 of the E/CS, that has been or will be carried out by the Co-Permittee. Further, incidences of non-compliance shall be recorded along with the information noted in the written report and the final outcome/enforcement for the incident will be included in the database identified in Subsection C.1, above.~~

~~11. If a Co-Permittee discovers, or receives notice by its staff or from a third party of a non-Emergency Situation representing a possible violation of the General Industrial Activity Storm Water Permit, if applicable to the commercial facility, or other permit issued by the State or Regional Board to a commercial facility, the Co-Permittee shall, within two (2) working days, provide written notice to Regional Board staff of the location within its jurisdiction where the incident occurred and describing the nature of the incident.~~

~~12. Not all commercial facilities are required to obtain coverage under the General Industrial Activities Storm Water Permit. However, if required to obtain coverage and upon referral of a commercial facility to Regional Board staff for failure to obtain coverage under the General Industrial Activities Storm Water Permit, failure to keep a SWPPP at the commercial facility, or an observed act or omission that suggests failure to comply with the General Industrial Activities Storm Water Permit, the Co-Permittee will take no further action at the commercial facility with regard to securing compliance with the General Industrial Activities Storm Water Permit. It is understood by the Co-Permittees and Regional Board staff that this will preclude duplication of effort and insure that consistent direction is provided to the facility owner/manager as to what is required to bring the facility into compliance with the General Industrial Activities Storm Water Permit. Each Co-Permittee shall take appropriate actions to bring a commercial facility into compliance with its local ordinances, rules, regulations, and WQMP, when approved.~~

~~13. As described in the E/CS, Co-Permittees will provide training to staff that is involved in the compliance surveys/inspections of commercial facilities. Staff training will address the requirements of the following:~~

~~a. The Storm Water Ordinance;~~

~~b. This Order and the DAMP;~~

~~c. The General Industrial Activities Storm Water Permits and any other permit issued to a commercial facility within the Permit Area by the State or Regional Board;~~

~~d. The E/CS;~~

~~e. Pollution prevention plans; and,~~

~~f. Implementation and maintenance of appropriate BMPs for commercial sites.~~

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~~14. Training programs should be coordinated with Regional Board staff and prior notification of formal classroom training activities shall be provided to Regional Board staff.~~

~~15. Each Co-Permittee shall have arranged for adequate training of its current municipal staff assigned to conduct the commercial facility compliance survey/inspection within eighteen (18) months of this Order's adoption, and on an annual basis thereafter. New hires or transfers that will be performing the commercial facilities compliance surveys/inspections for a Co-Permittees will be trained within six (6) months of starting field duties.~~

X. TOTAL MAXIMUM DAILY LOADS

- A. Nutrient TMDLs for Lake Elsinore and Canyon Lake and Pathogen Indicator TMDLs for the Middle Santa Ana River have been incorporated into Chapter 5 of the Basin Plan. These TMDLs include WLA and Implementation Plan Tasks assigned to specific Permittees. Those Permittees shall comply with the TMDLs WLA by complying with the TMDL Implementation Plan task requirements as described in Chapter 5 of the Basin Plan. Section 13 of the DAMP shall describe the TMDL Implementation Plan tasks.
- B. The Permittees shall modify sSection 13 of the DAMP, as necessary, to incorporate appropriate BMPs to address future USEPA approved TMDL WLA per the requirements of the associated TMDL Implementation Plan tasks assigned to the Permittees. Revisions to the DAMP shall be implemented in accordance with the Implementation Plan for the TMDL WLA.
- C. As Part of the Permittees next ROWD, the Permittees shall evaluate their compliance with the adopted TMDLs and TMDL Implementation Plan tasks referenced in sSection X.A, and propose any new or modified BMPs necessary to achieve compliance with the Permittees' TMDL WLA by the dates specified in the respective TMDL Implementation Plans in Chapter 5 of the Basin Plan.

XI. PUBLIC EDUCATION AND OUTREACH

- A. ~~The storm waterUrban Runoff regulations require public participation in the Urban Runoff management program development and implementation. As such the Permittees shall solicit and consider comments received from the public and submit copies of the comments to the Executive Officer with the Annual Reports due on November 30th, beginning with the report due on November 30, 2003. In response to the public comments, the Permittees may modify reports, plans, or schedules prior to submittal to the Executive Officer.~~
- B. ~~The Permittees shall continue to participate in a joint outreach with other programs including, but not limited to, the California Urban Runoff Quality Task Force, Caltrans, and other Urban Runoff programs to disseminate a consistent message on Urban Runoff pPollution pPrevention to the public. The Permittees shall continue to sponsor or staff an Urban Runoff table or booth at community, regional, and/or countywide~~

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events to distribute public education materials to the public. Each Permittee shall sponsor at least one event per year that provides a venue for Urban Runoff education outreach.

~~C. Within six (6) months of this Order's adoption, t~~The Permittees shall maintain establish a Public Education Committee to provide oversight and guidance for the implementation of the public education program. The ~~Public Education Committee shall meet at least twice per year. The Public Education Committee shall make recommendations for changes to the public and business education program. The goal of the public and business education program shall be to target 100% within the Permit Area of the residents, including businesses, commercial and industrial establishments and to measurably increase the awareness of Urban Runoff quality of the targeted groups. Through use of local print, radio and television, t~~The Permittees must ensure that the public and business education program makes a minimum of 5 million "impressions" per year (as defined in Appendix 4, Glossary).

~~D. Within twelve (12) months of formation, the Public Education Committee shall conduct an evaluation to determine the best method of establishing a procedure(s) for providing educational and General Industrial Activities Storm Water Permit compliance guidance materials to businesses within their jurisdiction. This procedure(s) for distributing educational materials to businesses shall be implemented within six (6) months after conducting said evaluation.~~

D. The Permittees shall continue to implement the public education efforts already underway and shall modify the program as necessary to promote implement the most effective elements of the public and business education strategy contained in the Only Rain Down the Storm Drain Storm Water/Clean Water Protection Program. Within eighteen (18) months of formation, the Public Education Committee shall propose a survey for measuring changes in awareness of Urban Runoff quality as a result of the education program. The findings of this survey will provide information for the development of a future Public Education action plan. Upon approval by the Executive Officer, the study shall be completed by the end of the permit cycle.

~~F. Within twelve (12) months of this Order's adoption, the Public Education Committee shall develop BMP guidance for restaurants, automotive service centers, and gasoline service stations, and the discharges listed in Section II.C.IX.C.2. of this Order, where appropriate, for the Co-Permittees to distribute to these facilities.~~

E. The Permittees will continue to implement the concentrated, business-specific element of the existing public educational program as described in sSection 10 of the DAMP.

F. Within twelve (12) months of this Order's adoption, tThe Permittees shall distribute develop public education materials to encourage the public to report (including a hotline line number to report) illegal dumping from residential, industrial, construction and commercial sites into public streets, storm drains and other waterbodies, clogged storm drains, and faded or missing catch basin stencils, and In addition, Permittee websites and hotlines should provide access to information regarding general Urban Runoff and BMP information. This Principal Permittee's hotline and website shall continue to be included in the public and business education program and shall be submitted for listing in the governmental pages of all major regional phone books.

G. ~~Within eighteen (18) months of this Order's adoption, t~~The Permittees shall continue to distribute~~develop~~ BMP guidance for the household use of fertilizers, pesticides, and other chemicals, mobile vehicle maintenance, carpet cleaners, residential, business and construction activities found to be a significant source of Pollutant~~se~~commercial landscape maintenance, and pavement cutting. Additionally, BMP guidance shall be developed for categories of discharges listed in Section II.C, identified to be significant sources of pollutants unless appropriate BMPs are implemented. These guidance documents shall continue to be distributed to the public, trade associations, etc., through participation in community events, trade association meetings, and/or mail.

XII. PERMITTEEMUNICIPAL FACILITIES PROGRAMS AND ACTIVITIES

A.B. Successful implementation of the provisions and limitations in this Order will require the cooperation of all the public agency organizations within Riverside County having programs/activities that have an impact on Urban Runoff quality. This may include, but not be limited to, those listed in Appendix 2. As such, the Regional Board will coordinate with these organizations to ensure participation~~are expected to actively participate~~ in implementing this area-wide Urban Runoff program. The Permittees shall notify the Regional Board of non-compliance. The Permittees shall be responsible for involving the public agency organizations in their Urban Runoff program.

G. ~~Within eighteen (18) months of this Order's adoption, the Permittees, in coordination with the Riverside County Fire Chiefs Association, or equivalent organization, shall develop a list of appropriate BMPs to be implemented to reduce pollutants from fire training activities, fire hydrant/sprinkler testing or flushing, and BMPs feasible for emergency fire fighting flows.~~

C. Each Permittee shall continue to implement measures ~~the recommendations in the Municipal Facilities Strategy to ensure that their public agency facilities and activities do not cause or contribute to a pPollution or aNuisance in Receiving Waters, as defined in Section 13050 of the Water Code. By August 1 of each year, the Permittees shall review their activities and facilities to determine the need for revisions to sSection 5 of the DAMPMunicipal Facilities Strategy. The Annual Report shall include the findings of this review and a schedule for needed revisions. Revisions should consider a pPollution pPrevention strategy to ensure that the public agency facilities and/or activities including those that are currently not required to obtain coverage under the Storm Water State's General Permits Urban Runoff Permits or the San Jacinto Watershed Construction Activities Permit are not sources of pPollutants into the Waters of the U.-S.- In addition, the Permittees shall evaluate the applicability of the DAMPMunicipal Facilities Strategy to Permitteemunicipal maintenance contracts, contracts for field maintenance operations, and leases.~~

I. ~~Within six (6) months of adoption of this Order, the Permittees shall evaluate their established criteria for inspections of the MS4s and establish criteria for regular maintenance thereof.~~

J. ~~Within twenty (20) months of this Order's adoption, the Permittees shall complete an assessment of their MS4s to evaluate opportunities to configure and/or to reconfigure~~

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~~channel segments to function as pollution control devices and to optimize beneficial uses. These modifications may include in-channel sediment basins, bank stabilization, water treatment wetlands, etc. This shall be reported in the 2004-2005 Annual Report.~~

- ~~K. Within twelve (12) months of this Order's adoption, the Permittees shall develop and distribute model maintenance procedures for public agency activities and MS4s such as street sweeping, catch basin stenciling, MS4 inspection, "cleaning" (see definition in Appendix 4), and maintenance. This shall be included in the 2004-2005 Annual Report.~~
- ~~D. Within twelve (12) months of this Order's adoption, ~~t~~The Permittees shall implement the review, document, and submit for approval by the Executive Officer, their program for cleaning out open channel MS4s, catch basins, retention/detention basins, and wetlands created for Urban Runoff treatment, prioritized on such factors as distance to Receiving Water, Receiving Water beneficial uses and impairments of beneficial uses, historical pollutant types and loads from past inspections/cleanings, regulatory restrictions, cost/benefit, and the presence of downstream regional facilities that would remove the types of pollutants found in the drainage facilities. Using these factors, the Permittees shall propose revised clean out schedules and frequency for the specified MS4 facilities as described in the 2003-2004 Annual Report during the wet and dry season to protect Receiving Water quality to the MEP. The Permittees should be prepared to implement the approved clean out program within twenty four (24) months of this Order's adoption. The inspection and cleaning maintenance frequency for all portions of the MS4s described in the 2003-2004 Annual Report shall be included in each Permittee's LIP and shall be observed/evaluated annually to determine the need for increasing the inspection and cleaning maintenance frequency and This information shall initially be included in the 2003-2004-2012 ROWD Annual Report. Each Permittee shall clean those MS4 facilities where there is evidence of Illegal Discharge. In addition, each Permittee shall clean those retention/detention basins where the inspection reveals that the storage volume is about 25% full or if accumulated Sediment or debris impairs the hydraulic capacity of the facility.~~
- ~~M. If by November 1, 2004, the Permittees have not developed revised clean out schedules and frequencies, required in Subsection G, above, and/or the revised schedules and frequencies have not been approved by the Executive Officer, then each Permittee shall expand existing programs to inspect, clean, and maintain at least 80% of its open channel MS4s, catch basins, retention/detention basins, and wetlands created for Urban Runoff treatment on an annual basis, with 100% of the facilities included in a two year period, using the model maintenance procedures developed by the Permittees in Subsection F, above. Each Permittee shall clean those open channel MS4s and retention/detention basins where there is evidence of illegal discharge. In addition, each Permittee shall clean those retention/detention basins where the inspection reveals that the sediment/storage volume is about 25% full or if accumulated sediment or debris impairs the hydraulic capacity of the facility.~~

Contractor training requirements for Urban Runoff management shall be included in new contracts and contracts that come up for renewal. This shall be reported in the 2002-2003 Annual Report.

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- ~~E. Within eighteen (18) months of this Order's adoption, t[he Principal Permittee shall continue to develop and distribute BMP guidance for public agency and contract field operations and maintenance staff to provide guidance in appropriate p[re]vention control measures, how to respond to spills and reports of i[ll]legal d[is]charges, etc. This shall be reported in the 2004-2005 Annual Report.~~
- ~~P. At least on an annual basis, each Permittee shall provide training to the public agency staff and to contract field operations staff on fertilizer and pesticide management, model maintenance procedures, and other pollution control measures. Permittee staff responsible for application of fertilizer or pesticides shall attend at least three of these training sessions during the five-year term of this Order (from 2002 to 2007).~~
- ~~Q. Each Permittee shall identify areas that are not subject to street sweeping due to lack of continuous curb and gutter, and evaluate their potential for impacting Urban Runoff quality. Appropriate BMPs shall be implemented where significant water quality impact is identified associated with lack of street sweeping. This shall be reported in the 2003-2004 Annual Report.~~
- ~~R. Each Permittee shall annually evaluate their street/road sweeping frequency based on land use and historical information to determine the need to revise their sweeping frequency. This information shall be provided in the Annual Report beginning with the 2003-2004 Annual Report.~~
- ~~F. The Permittees shall maintain an updated site-specific Urban Runoff p[re]vention p[lan] for their facilities and activities with potential to contribute to Pollution or Nuisance in Receiving Waters.~~

~~The San Bernardino County Flood Control District and RCFC&WCD, in cooperation with local municipalities, are coordinating an effort to construct flood control facilities in the Chino-Corona Agricultural Preserve area. A status report of this project shall be provided in the Annual Report.~~

XIII. PERMITTEEMUNICIPAL COMPLIANCE WITH GENERAL PERMITSCONSTRUCTION PROJECTS/ACTIVITIES

A. Permittee Compliance with the General Permit-Construction

- ~~1. All Permitteemunicipal construction activity shall be in compliance with the latest version of the applicable General Permit-Construction-Activity Permit.~~
- ~~2. This Order authorizes the discharge of storm water runoff from construction projects that may result in "land disturbance" (as defined in Appendix 4, Glossary) consistent with the acreage criteria of the current-latest version of the General Permit-Construction-Activity Storm Water Permit.~~
- ~~3. By March 10, 2003, or as specified in the latest version of the General Construction Activity Storm Water Permit, t[he Permittees shall comply with the requirements for theirmunicipal construction projects that may result in l[and] d[isturbance]~~

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consistent with the acreage criteria of the latest version of the current General Permit-Construction Activity Permits.

4. Prior to commencement of construction activities, the Permittees shall notify the Executive Officer of the proposed construction project by submitting a ~~Notice of Intent (NOI)~~ as provided in Attachment 5. The submittal fees for these NOIs are waived for the Permittees. Upon completion of the construction project, the Executive Officer shall be notified of the completion of the project by submitting a Notice of Termination (NOT), provided in Attachment 5.
5. The Permittees shall develop and implement a SWPPP and a monitoring and reporting program that is specific for the construction project prior to the commencement of construction activities. The SWPPP shall be kept at the construction site and released to the public and/or Regional Board staff upon request.
6. The SWPPP and the monitoring and reporting program for the construction projects shall be consistent with the requirements of the latest version of the General Permit-Construction Activity Permits, as applicable for the size and location of the site. ~~If the site is within the San Jacinto Watershed then the terms and conditions of the San Jacinto Watershed Construction Activities Permit apply, except with respect to submittal of a fee with the NOI and the requirement for this Regional Board to review and approve the site specific SWPPP. The applicable Permittee shall review and approve the SWPPP prepared by their contractor to insure the SWPPP substantially complies with the San Jacinto Watershed General Permit-Construction Activities Permit. Upon request, the applicable Permittee shall submit a copy of the approved SWPPP to the Regional Board.~~
7. The Permittees shall give advance notice to the Executive Officer of planned changes in the construction activity, which may result in non-compliance with the latest version of the General Permit-Construction Activity Permits, as applicable.
8. Emergency Permittee public works projects required to protect public health and safety are exempted from compliance with the ~~SWPPP~~ requirements of ~~Subsections E, and the requirements of subsections F and G XIII.A.6, XIII.A.7, and XIII.A.8, above.~~

B. Permittee Compliance with the General Permit-De Minimus Discharges

Permittees owning potable water supply system(s), when performing maintenance on the system(s), shall follow provisions outlined in the General Permit-De Minimus Discharges. Other Permittee activities that would fall under the General Permit-De Minimus Discharges include hydrant flushing and construction dewatering activities. Section 5 of the DAMP incorporates minimum BMPs necessary to ensure compliance with Order R8-2003-0061, so separate coverage under that permit is not required.

C. Permittee Compliance with the General Permit-Utility Vaults

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The General Permit-Utility Vaults covers short-term intermittent discharges from utility vaults and underground structures to Waters of the U.S. that do not cause, have the reasonable potential to cause, or contribute to an instream excursion above any applicable state or federal Water Quality Objectives/Criteria or cause acute or chronic toxicity in Receiving Waters. Section 5 of the DAMP (Permittee Facilities and Activities) incorporates minimum BMPs necessary to ensure compliance with the General Permit-Utility Vaults, so separate coverage under that permit is not required.

D. Permittee Compliance with the General Permit-Small Linear Underground Projects

The General Permit-Small Linear Underground Projects covers discharges of stormwater runoff associated with small linear underground/overhead construction projects. Section 5 of the DAMP (Permittee Facilities and Activities) incorporates minimum BMPs necessary to ensure compliance with the General Permit-Small Linear Underground Projects, so separate coverage under that permit is not required.

XIV. TRAINING OF PERMITTEE STAFF

- A. Each Permittee's LIP shall describe a program to provide formal and informal training to Permittee staff that implements the provisions of this Order (i.e. construction site inspectors, industrial/commercial facility inspectors, municipal maintenance employees, municipal development review employees, etc).
- B. Formal (classroom or computer based) Training Programs must address the following:
1. The requirements of Storm Water Ordinances, resolutions, and codes that relate to the duties of the target audience;
 2. The provisions of this Order that relate to the duties of the target audience;
 3. The provisions of the General Permit-Construction, the General Permit-Industrial, and any other permit issued within the Permit Area by the State or Regional Board that is appropriate due to the relationship of the permit provisions to the duties of the target audience;
 4. Implementation and assessment of appropriate Pollution Prevention Plans relative to the duties of the target audience;
 5. Selection, implementation and maintenance of appropriate BMPs relative to the duties of the target audience;
- C. At a minimum, the Permittees shall jointly, or individually, develop, implement and document formal training programs that target Permittee construction inspectors, Permittee industrial and/or commercial facility inspectors, Permittee maintenance employees and Permittee development review staff. Formal training should be summarized and documented in the Annual Reports. Training schedule shall be as follows:

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1. New probationary employees responsible for implementing requirements of this Order shall receive formal training within six months of hire.
 2. Existing career employees shall receive follow-up formal training at least once during the Permit term.
 3. Construction and stormwater inspection employees shall receive refresher training focused on appropriate BMP implementation at least once a year prior to the rainy season.
- D. Formal training programs should be coordinated with Regional Board staff and prior notification of formal classroom training activities shall be provided to Regional Board staff.
- E. The Permittees shall jointly or individually provide for annual informal training programs that address the topics discussed in sSection XIV.B. Informal training programs may include training that occurs during Permittee staff meetings, tailgate field trainings, supervisor procedure reviews with Permittee employees or similar informal activities. Formal training may be substituted for informal training. Informal training activities shall be documented.

XV. PROGRAM MANAGEMENT/DAMP REVIEW

- A. The Permittees shall continue to implement all elements of the approved DAMP. Program elements revised in compliance with the requirements of this Order shall be implemented in conformance with the schedules specified in this Order following approval of the Executive Officer. ~~Within six (6) months of approval of the WQMP by the Executive Officer, or no later than January 1, 2005, whichever comes first, the Permittees shall submit a revised DAMP incorporating the revised program elements and other information as specified by this Order for approval by the Executive Officer. The Permittees shall implement all elements of the approved DAMP.~~
- B. ~~By August 1 of each year, beginning in 2004,~~ the Permittees shall evaluate the effectiveness of the Urban Runoff management program described in the DAMP ~~to determine the need for revisions.~~ The Permittees shall modify the DAMP, as necessary, or at the direction of the Executive Officer to incorporate additional provisions to improve the effectiveness of the Urban Runoff management program. Such provisions may include regional and watershed-specific requirements and/or WLAs developed and approved pursuant to the TMDL process for Impaired Waterbodies. Proposed revisions to the DAMP shall be submitted to the Executive Officer for review and approval. Revisions to the DAMP approved by the Executive Officer shall be implemented in a timely manner. The Annual Report shall include the findings of this review and a schedule for needed revisions.

C. At a minimum, each Annual Report shall include a progress report of:

~~1. The formal training and coordination meeting needs for the Co-Permittees' staff responsible for performing compliance survey/inspections or educational programs;~~

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~~2. Source identification and prioritization;~~

~~3. Grading and erosion control for construction sites;~~

~~4. Verification of coverage under the appropriate General Construction and Industrial Activities Permits;~~

~~5. Facility inspection and enforcement consistent with local ordinances, rules, and regulations;~~

~~6. Procedures for reporting to the Permittees and this Regional Board non-compliance with each Co-Permittee's Storm Water Ordinance and enhancing current planning review processes to better address issues regarding Urban Runoff;~~

~~7. Implementation of new development BMPs, or identification of regional or sub-regional Urban Runoff treatment/infiltration BMPs in which New Development projects could participate.~~

- C. Each Permittee shall designate at least one representative to the Management Steering Committee and Technical Committee as described in Sections I.A.2.a and II.B.2.a of this Order. The Principal Permittee shall be notified immediately, in writing of changes to the designated representative to either Committee. The designated representative for each Committee shall attend that Committee's meeting as follows: at least three (3) out of four (4) Management Steering Committee meetings and eight (8) out of ten (10) Technical Committee meetings per year.

XVI. MONITORING AND REPORTING PROGRAM

The Permittees shall comply with Monitoring and Reporting Program No. ~~R8-2002-0044~~R8-2007-xxxx, located in Appendix 3, and any revisions thereto, which are hereby made a part of this Order. The Executive Officer is hereby authorized to revise the Monitoring and Reporting Program in a manner consistent with this Order to allow the Permittees to participate in regional, statewide, national or other monitoring and reporting programs in lieu of or in addition to Monitoring and Reporting Program No. ~~R8-2002-0044~~R8-2007-xxxx located in Appendix 3. In addition, significant completion and implementation dates required by this Order are outlined in Section V of the Monitoring and Reporting Program (~~Appendix 3~~).

XVII. PROVISIONS

A. GENERAL

1. Reports submitted by the Permittees as per the requirements in this Order for the approval of the Executive Officer shall be publicly noticed and made available on the Regional Board's website, or through other means, for public review and comments. The Executive Officer shall consider all comments received prior to approval of the reports. Unresolved issues shall be scheduled for a public hearing at a Regional Board meeting prior to approval by the Executive Officer.

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2. The purpose of this Order is to require the implementation of BMPs to reduce, to the MEP, the discharge of ~~p~~Pollutants from ~~the MS4s~~ in order to support further progress towards attainment of ~~w~~Water ~~q~~Quality ~~e~~Objectives.
3. Permittees shall demonstrate compliance with all the requirements in this Order and shall implement their DAMP and modifications, revisions, or amendments thereto, which are developed pursuant to this Order or determined by the Permittees to be necessary to meet the requirements of this Order and approved by the Executive Officer. The DAMP and amendments thereto are hereby made an enforceable part of this Order.
4. Each Permittee shall continue to implement necessary controls, in addition to those specific controls and actions required by (1) the terms of this Order and (2) the DAMP, to reduce the discharge of ~~p~~Pollutants in Urban Runoff to the MEP.
5. The Permittees shall complete changes to plans or programs described in this Order no later than twelve (12) months after this Order goes into effect, unless otherwise specified.
6. Certain BMPs implemented or required by the Permittees for Urban Runoff management may create habitat for vectors (e.g., mosquitoes and rodents) if not properly designed and maintained. Close collaboration and cooperative effort between the Permittees and local vector control agencies and the State Department of Health Services during the development and implementation of Urban Runoff management programs are necessary to minimize potential vector habitat and public health impacts resulting from vector breeding. Nothing in this Order is intended to prohibit inspection or abatement of vectors by the State or local vector control agencies in accordance with the Health and Safety Code of the State of California.
7. The Permittees shall report to the Executive Officer:
 - a. Any enforcement actions and known discharges of Urban Runoff or wastewater to MS4 facilities owned or operated by the Permittees which may impair domestic water supply sources (e.g., discharges due to a levee break, ~~i~~llegal ~~e~~Discharges to the street, etc.) or which may have an impact on human health or the environment; if the discharge is to Canyon Lake or any tributary to Canyon Lake, Elsinore Valley Municipal Water District shall also be notified immediately;
 - b. Industrial and/or construction facilities found not to be in compliance with the Storm Water General Construction Activity Permits, or where the activities may be contributing ~~p~~Pollutants to the Waters of the U.-S.; and,
 - c. Suspected or reported activities on federal, state, or other entity's land or facilities, where the Permittees do not have any jurisdiction, and where the suspected or reported activities may be contributing ~~p~~Pollutants to the Waters of the U.-S.

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8. The Permittees shall coordinate their activities to promote consistent implementation of storm water ~~Urban Runoff~~ regulations.
9. The Permittees must comply with all terms, requirements, and conditions of this Order. Any violation of this Order constitutes a violation of the CWA, its regulations and the Water Code, and is grounds for enforcement action, Order termination, Order revocation and re-issuance, denial of an application for re-issuance, Order revisions, or a combination thereof.
10. Permittees shall continue to take reasonable steps to minimize or prevent any discharge to the MS4 that has a reasonable likelihood of adversely affecting human health or the environment.
11. Regional Board staff, USEPA, and other authorized representatives shall be allowed to:
 - a. Inspect Permittee records associated with compliance of this Order.
 - b. Access to and copying of records that are kept under the conditions of this Order.
 - c. Photograph and inspect any facilities or equipment (including monitoring and control equipment) that are related to or may impact storm water discharge or authorized ~~Non-storm w~~ Water discharge.
 - d. Conduct sampling, and monitoring activities for the purpose of assuring compliance with this Order, or as otherwise authorized by the CWA and/or the Water Code.
 - e. Review the Permittee's programs and require modification to their programs to comply with the requirements of this Order.
 - f. Request copies of data, monitoring reports, and sampling data and copies of the Permittee's conclusions and evaluations of the data.

B. FISCAL RESOURCES

—The Permittees shall prepare and submit a unified fiscal analysis report appropriate for implementation of the requirements of this Order to the Executive Officer. ~~The fiscal analysis report shall be submitted no later than November 30, of each year and shall at a minimum include the following:~~

—
~~Each Permittee's expenditures for the previous fiscal year;~~

~~Each Permittee's budget for the current fiscal year;~~

~~A description of the source of funds;~~

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XVIII. PERMIT EXPIRATION AND RENEWAL

A. This Order expires on ~~October 26~~ August XX, 2012~~07~~, and the Permittees must file a ROWD no later than one hundred eighty (180) calendar days in advance of such expiration date as application for issuance of new Waste Discharge Requirements. The ROWD shall, at a minimum, include the following:

1. Any revisions to the DAMP including, but not limited to, activities the Permittees propose to undertake during the next permit term, goals and objectives of such activities, an evaluation of the need for additional Treatment~~source~~ Control and/or structural BMPs, proposed pilot studies, etc.;
2. Any new or revised program elements and compliance schedule(s) necessary to comply with Section III of this Order;
- ~~2-3.~~ Changes in land use and/or population including map updates; and
4. Significant changes to the MS4s, outfalls, detention or retention basins or dams, and other controls, including map updates of the MS4s.

B. This Order may be modified, revoked or reissued prior to its expiration date for the following reasons:

1. To address significant changes in conditions identified in the technical reports required by the Regional Board which were unknown at the time of the issuance of this Order;
2. To incorporate applicable requirements of statewide water quality control plans and policies adopted by the State Board or amendments to the Basin Plan approved by the Regional Board, the State Board, and, if necessary, by the Office of Administrative Law; or
3. To comply with applicable requirements, guidelines, or regulations issued or approved under the CWA, if the requirements, guidelines, or regulations contain different conditions or additional requirements than those included in this Order.
4. To incorporate new or revised program elements and compliance schedule(s) necessary to comply with this Order.
5. To incorporate any requirements imposed upon the Permittees through the TMDL process.
6. Pursuant to Section 13228 of the Water Code, ~~this~~ Regional Board may exercise its option allowing the portion of recently annexed 375 acres to the City of Murrieta that are located within the Region to be regulated by the San Diego Regional Water Quality Control Board's Riverside MS4 Permit once it has been renewed.

C. This Order shall serve as a NPDES permit pursuant to Section 402-(p) of the CWA, or amendments thereto, and shall become effective ten (10) calendar days after the date

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of its adoption provided the Regional Administrator of the USEPA has no objections. If the Regional Administrator objects to its issuance, this Order shall not become effective until such objection is withdrawn.

D. Order No. ~~96-30~~R8-2002-0011 is hereby rescinded.

I, Gerard J. Thibeault, 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, Santa Ana Region, on October 25, 2002.

Gerard J. Thibeault
Executive Officer

April 27, 2007

ATTACHMENT 48

**California Regional Water Quality Control Board
Santa Ana Region**

RESOLUTION NO. R8-2005-0001

**Resolution Amending the Water Quality Control Plan for the Santa Ana River Basin to
Incorporate Bacterial Indicator Total Maximum Daily Loads (TMDLs) for Middle Santa Ana
River Watershed Waterbodies**

WHEREAS, the California Regional Water Quality Control Board, Santa Ana Region (hereinafter, Regional Board), finds that:

1. An updated Water Quality Control Plan for the Santa Ana River Basin (Basin Plan) was adopted by the Regional Board on March 11, 1994, approved by the State Water Resources Control Board (SWRCB) on July 21, 1994, and approved by the Office of Administrative Law (OAL) on January 24, 1995.
2. The waterbodies within the Middle Santa Ana River Watershed listed on the Clean Water Act Section 303(d) list for bacterial contamination are as follows: Santa Ana River, Reach 3; Chino Creek, Reach 1; Chino Creek, Reach 2; Mill Creek (Prado Area); Cucamonga Creek, Reach 1; and Prado Park Lake.
3. Water contact recreation (REC1) and non water contact recreation (REC2) are among the beneficial uses designated in the Basin Plan for the Santa Ana River, Reach 3, Chino Creek, Reaches 1 and 2, Mill Creek (Prado Area), Cucamonga Creek, Reach 1, and Prado Park Lake.
4. For the protection of REC1 beneficial uses of inland surface waters, including the Middle Santa Ana River Watershed Waterbodies, the Basin Plan specifies the following numeric water quality objectives for fecal coliform indicator bacteria: log mean less than 200 organisms/100 mL based on five or more samples per 30 day period, and not more than 10% of the samples exceed 400 organisms/100 mL for any 30-day period.
5. The numeric fecal coliform water quality objectives are not being met in Middle Santa Ana River Watershed Waterbodies. The beneficial use adversely affected by elevated fecal coliform densities in Middle Santa Ana River Watershed Waterbodies is REC1.
6. As a result of violations of the fecal coliform objectives and beneficial use impacts to the Middle Santa Ana River waterbodies, the Regional Board listed these waterbodies as water quality limited in accordance with Section 303(d) of the Clean Water Act. Section 303(d) requires the establishment of a Total Maximum Daily Load (TMDL) for the pollutant(s) causing surface water impairment. The purpose of the TMDL is to assure that water quality standards are achieved. TMDLs to address fecal coliform impairment of the Middle Santa Ana River Watershed Waterbodies are required. Section 303(d) also requires the allocation of each TMDL among the sources of fecal coliform inputs. State law requires an implementation plan and schedule to ensure that the TMDL is met.
7. The TMDLs/Basin Plan amendment shown in the attachment to this Resolution was developed in accordance with Clean Water Act Section 303(d) and Water Code Section 13240 *et seq.* The TMDLs/Basin Plan amendment include background information concerning the water quality impairment being addressed, and the sources of fecal coliform to Middle Santa Ana River

waterbodies. The proposed TMDLs are supported by a detailed report prepared by Regional Board staff and titled "Total Maximum Daily Loads for Bacterial Indicators in the Middle Santa Ana River Watershed", February 3, 2005.

8. The TMDLs/ Basin Plan amendment will be incorporated into Chapter 5 "Implementation", of the Basin Plan.
9. The TMDLs/Basin Plan amendment specifies numeric targets for fecal coliform to be achieved in all Middle Santa Ana River Waterbodies. Control of fecal coliform is needed to ensure compliance with relevant numeric water quality objectives specified in the Basin Plan.
10. The U.S. Environmental Protection Agency (USEPA) has required the states to evaluate and incorporate more appropriate bacterial indicators, including *Escherichia coliform (E. coli)* as water quality standards based on its "Ambient Water Quality Criteria for Bacteria – 1986". The TMDLs/Basin Plan amendment specify alternative numeric targets for *E. coli* to be achieved in all Middle Santa Ana River Waterbodies. The *E. coli* targets are based on USEPA *E. coli* criteria that roughly correspond to the health risk level associated with the existing Basin Plan fecal coliform objectives.
11. The TMDLs/Basin Plan amendment specify Dry Season TMDLs, wasteload allocations for point source discharges (WLAs) and load allocations for nonpoint source discharges (LAs) for fecal coliform and *E. coli* in Middle Santa Ana River Watershed waterbodies. Compliance with the Dry Season TMDLs, wasteload allocations and load allocations is to be achieved as soon as possible, but no later than December 31, 2015.
12. In recognition of the difficulties associated with the control of stormwater discharges, the TMDLs/Basin Plan amendment specify Wet Season TMDLs, waste load allocations for point source discharges and load allocations for nonpoint source discharges for fecal coliform and *E. coli* in Middle Santa Ana River Watershed waterbodies. Compliance with the Wet Season TMDLs, waste load allocations and load allocations is to be achieved as soon as possible, but no later than December 31, 2025.
13. To account for unknowns such as bacterial re-growth, die-off and dilution, the TMDLs/Basin Plan amendment specify an explicit margin of safety of 10% applied to the TMDLs, waste load allocations and load allocations.
14. The TMDLs/Basin Plan amendment specify an implementation plan for bacteria reduction. The implementation plan includes compliance schedules for achieving the numeric targets, TMDLs, wasteload allocations and load allocations, as well as a monitoring program to track progress toward compliance.
15. Stakeholders throughout the Santa Ana Region have formed the Storm Water Quality Standards Task Force (SWQSTF) to evaluate USEPA's bacterial indicator recommendations and appropriate recreational beneficial use designations for waterbodies throughout the Region. The SWQSTF is expected to make recommendations for the adoption of alternative bacterial quality indicators such as *E. coli*, based on USEPA's "Ambient Water Quality Criteria for Bacteria – 1986". These and other recommendations of the SWQSTF for revisions to recreational beneficial use designations will be considered through the Basin Planning process. When and if the Basin Plan is amended to incorporate new bacterial indicators, these TMDLs will be revised as appropriate.

16. The TMDLs/Basin Plan amendment will assure the reasonable protection of the beneficial uses of surface waters within the Region and is consistent with the state's antidegradation policy (SWRCB Resolution No. 68-16).
17. The Regional Board has considered the costs associated with implementation of this amendment, as well as costs resulting from failure to implement bacteria control measures necessary to prevent adverse effects on beneficial uses. The implementation plan in the TMDLs/Basin Plan amendment, which includes extended compliance schedules and employs a phased TMDL approach to provide for refinement based on additional studies and analyses, will ensure that implementation expenditures are reasonable and fairly apportioned among responsible parties.
18. The proposed amendment results in no potential for adverse effects, either individually or cumulatively, on fish and/or wildlife species.
19. The adoption of these TMDLs is necessary to reduce loadings of fecal coliform to Middle Santa Ana River waterbodies and to address water quality impairments that arise therefrom.
20. The proposed amendment meets the "Necessity" standard of the Administrative Procedure Act, Government Code, Section 11352, subdivision (b).
21. The Regional Board submitted the relevant technical documents that serve as the basis for the proposed amendment to an external scientific peer reviewer and has considered the comments and recommendations of the peer reviewer in drafting the amendment. The peer reviewer found the TMDLs to be scientifically valid.
22. The Regional Board discussed this matter at workshops conducted on February 3, 2005 and June 24, 2005 after notice was given to all interested persons in accordance with Section 13244 of the California Water Code. Based on the discussion at these workshops, the Board directed staff to prepare the appropriate Basin Plan amendment and related documentation to incorporate the Middle Santa Ana River Bacterial Indicator TMDLs.
23. The Regional Board prepared and distributed written reports (staff reports) regarding adoption of the TMDLs/Basin Plan amendment in accordance with applicable state and federal environmental regulations (California Code of Regulations, Section 3775, Title 23, and 40 CFR Parts 25 and 131).
24. The process of basin planning has been certified by the Secretary for Resources as exempt from the requirement of the California Environmental Quality Act (Public Resources Code Section 21000 et seq.) to prepare an Environmental Impact Report or Negative Declaration. The TMDLs/Basin Plan amendment package includes staff reports, an Environmental Checklist, an assessment of the potential environmental impacts of the TMDLs/Basin Plan amendment, and a discussion of alternatives. The TMDLs/Basin Plan amendment, Environmental Checklist, staff reports, and supporting documentation are functionally equivalent to an Environmental Impact Report or Negative Declaration.
25. On August 26, 2005, the Regional Board held a Public Hearing to consider the TMDLs/Basin Plan amendment. Notice of the Public Hearing was given to all interested persons and published in accordance with Water Code Section 13244.
26. The TMDLs/Basin Plan amendment must be submitted for review and approval by the State Water Resources Control Board (SWRCB), Office of Administrative Law (OAL) and U.S. Environmental Protection Agency (USEPA). Once approved by the SWRCB, the amendment is submitted to OAL

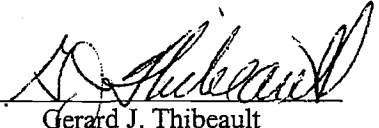
and USEPA. The TMDLs/Basin Plan amendment will become effective upon approval by OAL and USEPA. A Notice of Decision will be filed.

27. The Notice of Filing, the TMDL Report, environmental checklist, and the draft amendment were prepared and distributed to interested individuals and public agencies for review and comment, in accordance with state and federal regulations (23 CCR §3775, 40 CFR-25 and 40 CFR-131).
28. For the purposes of specifying compliance schedules in NPDES permits for effluent limitations necessary to implement these TMDLs, the schedule(s) specified in these TMDLs shall govern, notwithstanding other compliance schedule authorization language in the Basin Plan.

NOW, THEREFORE BE IT RESOLVED THAT:

1. The Regional Board adopts the amendment to the Water Quality Control Plan for the Santa Ana River Basin (Region 8), as set forth in the attachment.
2. The Executive Officer is directed to forward copies of the TMDLs/Basin Plan amendment to the SWRCB in accordance with the requirements of Section §13245 of the California Water Code.
3. The Regional Board requests that the SWRCB approve the TMDLs/Basin Plan amendment, in accordance with Sections §13245 and §13246 of the California Water Code, and forward it to the OAL and U.S. EPA for approval.
4. If, during its approval process, the SWRCB or OAL determines that minor, non-substantive corrections to the language of the amendment are needed for clarity or consistency, the Executive Officer may make such changes, and shall inform the Board of any such changes.
5. The Executive Officer is authorized to sign a Certificate of Fee Exemption in lieu of payment of the California Department of Fish and Game filing fee.

I, Gerard J. Thibeault, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of a resolution adopted by the California Regional Water Quality Control Board, Santa Ana Region, on August 26, 2005.


Gerard J. Thibeault
Executive Officer

ATTACHMENT TO RESOLUTION NO. R8-2005-0001

Amendment to the Santa Ana Region Basin Plan

Chapter 5 - Implementation Plan

(NOTE: The following language is to be added in Chapter 5 of the Basin Plan. If the amendments are approved, corresponding changes will be made to the Table of Contents, the List of Tables, page numbers, and page headers in the plan. Due to the two-column page layout of the Basin Plan, the location of tables in relation to text may change during final formatting of the amendments. For formatting purposes, the maps may be redrawn for inclusion in the Basin Plan, and the final layout may differ from that of the draft.)

Middle Santa Ana River Watershed

The Middle Santa Ana River Watershed covers approximately 488 square miles and lies largely in the southwestern corner of San Bernardino County, and the northwestern corner of Riverside County. A small part of Los Angeles County (Pomona/Claremont area) is also included. This watershed is comprised of three sub-watersheds. The first sub-watershed is the Chino Basin Watershed, which includes portions of San Bernardino County, Los Angeles County, and Riverside County. Surface drainage in this area is directed to Chino Creek and Cucamonga/Mill Creek and is generally southward, from the San Gabriel Mountains toward the Santa Ana River and the Prado Flood Control Basin. The second sub-watershed, the Riverside Watershed, is located in Riverside County. Surface drainage in this area is generally westward from the City of Riverside to the Santa Ana River, Reach 3. The third sub-watershed, the Temescal Canyon Watershed, is also located in Riverside County. Surface drainage in this area is generally northward to Temescal Creek.

Land uses in the Middle Santa Ana River watershed include urban, agriculture, and open space. Although originally developed as an agricultural area, the watershed is being steadily urbanized. Incorporated cities in the Middle Santa Ana River watershed include Pomona, Chino Hills, Upland, Montclair, Claremont, Ontario, Rancho Cucamonga, Rialto, Chino, Fontana, Norco, Corona, and Riverside. In addition, there are several pockets of urbanized unincorporated areas. The current population of the watershed, based upon 2000 census data, is approximately 1.4 million people. The principal remaining agricultural area in the watershed is the area formerly known as the Chino Dairy Preserve. This area is located in the south-central part of the Chino Basin watershed and contains approximately 300,000 cows, which generate the waste equivalent of more than two million people. Recently, the cities of Ontario and Chino annexed the San Bernardino County portions of this area. The remaining portion of the former preserve, which is in Riverside County, remains unincorporated. Open space areas include National Forest lands and State Parks lands.

Middle Santa Ana River Watershed Bacterial Indicator Total Maximum Daily Loads(TMDLs)

Middle Santa Ana River Watershed waterbodies listed on the Clean Water Act Section 303(d) list of impaired waters due to violations of REC1 fecal coliform bacteria objectives are shown in Table 5-9w.

Table 5-9w – Middle Santa Ana River Watershed Waterbodies on the 303(d) List Due to Bacterial Contamination

Waterbody, Reach
Santa Ana River, Reach 3
Chino Creek, Reach 1
Chino Creek, Reach 2
Mill Creek (Prado Area)
Cucamonga Creek, Reach 1
Prado Park Lake

During storm events, these waterbodies receive and transport runoff from urban, agricultural, and open space areas. During dry weather, these waterbodies receive and transport nuisance runoff, primarily from urban areas. Based on monitoring results, and observed waterbody conditions (fish kills and waste-laden stormflows), the Regional Board placed these waterbodies on the 303(d) list of impaired waters due to levels of bacterial indicators that exceeded established objectives for REC1 uses. The listings took place from 1988 to 1998.

A TMDL technical report prepared by Regional Board staff describes the bacterial indicator related problems in the Middle Santa Ana River Watershed waterbodies in greater detail and discusses the technical basis for the TMDLs that follow [Ref. # 1].

A. Middle Santa Ana River Watershed Bacterial Indicator TMDL Numeric Targets

Bacterial indicator numeric targets for the Middle Santa Ana River Watershed waterbodies shown in Table 5-9x are based, in part, on the fecal coliform water quality objective specified in Chapter 4 for the protection of body-contact recreation (REC1) in inland surface waters.

Recognizing that, in the future, *Escherichia coli* (*E. coli*) may be incorporated into the Basin Plan as new bacterial water quality objectives for REC1, alternative numeric targets for *E. coli* are also specified¹. These targets are based on *E. coli* criteria recommended by the U.S. Environmental Protection Agency [Ref #2]. The *E. coli* levels were chosen to roughly correspond to the health risk level associated with the fecal coliform objectives.

The numeric targets for both bacterial indicators incorporate an explicit 10% margin of safety to address uncertainties recognized in the development of the TMDLs.

¹ USEPA is requiring the states to evaluate and incorporate more appropriate bacterial indicators, including *E. coli*, as water quality standards based on its Ambient Water Quality Criteria for Bacteria – 1986. The Regional Board is participating in the efforts of the Storm Water Quality Standards Task Force (SWQSTF), which is evaluating USEPA's bacterial indicator recommendations and REC1 beneficial use designations for waterbodies within the Santa Ana Region, including the Middle Santa Ana River watershed waterbodies. This numeric target and resulting TMDLs, WLAs and LAs will be adjusted accordingly when and if recommendations from the SWQSTF are incorporated into the Basin Plan.

These numeric targets are specified as follows:

Fecal coliform: log mean less than 200 organisms/100 mL based on five or more samples per 30 day period, and not more than 10% of the samples exceed 400 organisms/100 mL for any 30-day period.

***E. coli*: log mean less than 126 organisms/100 mL based on five or more samples per 30-day period, and not more than 10% of the samples exceed 235 organisms/100mL for any 30 day period.**

The fecal coliform numeric targets (and other fecal coliform related provisions of these TMDLs) will become ineffective upon the replacement of the fecal coliform REC1 objectives in the Basin Plan with REC1 objectives based on *E. coli*. Incorporation of new *E. coli* objectives will be considered through the Basin Planning process.

B. Middle Santa Ana River Watershed Bacterial Indicator TMDLs, Wasteload Allocations, Load Allocations and Compliance Dates

As discussed in the technical TMDL Report, the bacterial indicator TMDLs are expressed in terms of density since it is the number of organisms in a given volume of water (i.e., their density), and not their mass that is significant with respect to public health and the protection of beneficial uses. Similarly, the wasteload allocations for point source discharges (WLAs) and load allocations for nonpoint source discharges (LAs) are also based on density. The density-based WLAs and LAs do not add up to equal the TMDLs, since this is not scientifically valid. To achieve the density-based TMDLs, each WLA and LA must meet the density-based TMDL. As indicated in Table 5-9x, the TMDLs, WLAs and LAs also include a 10% margin of safety (see C., below) applied to the existing Basin Plan fecal coliform objective for REC1 for inland surface waters and to the alternative indicator *E. coli* criteria recommended by the U.S. Environmental Protection Agency. Again, the *E. coli* was chosen to correspond with the health risk level associated with the fecal coliform objectives.

WLAs are specified for urban discharges and discharges from Confined Animal Feeding Operations, including stormwater. LAs are specified for runoff from other types of agriculture and from natural sources (open space/undeveloped forest land). TMDLs, WLAs and LAs are specified for both dry weather discharges and wet weather discharges, with separate compliance schedules. An extended schedule for compliance with the wet weather TMDLs is specified in light of the expected increased difficulty in achieving compliance under these conditions.

Table 5-9x – Total Maximum Daily Loads, Waste Load Allocations, and Load Allocations for Bacterial Indicators in Middle Santa Ana River Waterbodies^{a,b,c}

Indicator	Total Maximum Daily Loads for Bacterial Indicators	Waste Load Allocation for Bacterial Indicators in Urban Runoff including stormwater discharges	Waste Load Allocation for Bacterial Indicators in Confined Animal Feeding Operations discharges	Load Allocation for Bacterial Indicators in Agricultural runoff discharges	Load Allocation for Bacterial Indicators from Natural Sources
Dry Summer Conditions: April 1 through October 31, as soon as possible, but no later than December 31, 2015					
Fecal coliform	5-sample/30-day Logarithmic Mean less than 180 organisms/100mL, and not more than 10% of the samples exceed 360 organisms/100mL for any 30-day period.	5-sample/30-day Logarithmic Mean less than 180 organisms/100mL, and not more than 10% of the samples exceed 360 organisms/100mL for any 30-day period.	5-sample/30-day Logarithmic Mean less than 180 organisms/100mL, and not more than 10% of the samples exceed 360 organisms/100mL for any 30-day period.	5-sample/30-day Logarithmic Mean less than 180 organisms/100mL, and not more than 10% of the samples exceed 360 organisms/100mL for any 30-day period.	5-sample/30-day Logarithmic Mean less than 180 organisms/100mL, and not more than 10% of the samples exceed 360 organisms/100mL for any 30-day period.
E. coli	5-sample/30-day Logarithmic Mean less than 113 organisms/100mL, and not more than 10% of the samples exceed 212 organisms/100mL for any 30-day period.	5-sample/30-day Logarithmic Mean less than 113 organisms/100mL, and not more than 10% of the samples exceed 212 organisms/100mL for any 30-day period.	5-sample/30-day Logarithmic Mean less than 113 organisms/100mL, and not more than 10% of the samples exceed 212 organisms/100mL for any 30-day period.	5-sample/30-day Logarithmic Mean less than 113 organisms/100mL, and not more than 10% of the samples exceed 212 organisms/100mL for any 30-day period.	5-sample/30-day Logarithmic Mean less than 113 organisms/100mL, and not more than 10% of the samples exceed 212 organisms/100mL for any 30-day period.
Wet Winter Conditions: November 1 through March 31, as soon as possible, but no later than December 31, 2025					
Fecal coliform	5-sample/30-day Logarithmic Mean less than 180 organisms/100ml, and not more than 10% of the samples exceed 360 organisms/100ml for any 30-day period.	5-sample/30-day Logarithmic Mean less than 180 organisms/100ml, and not more than 10% of the samples exceed 360 organisms/100ml for any 30-day period.	5-sample/30-day Logarithmic Mean less than 180 organisms/100ml, and not more than 10% of the samples exceed 360 organisms/100ml for any 30-day period.	5-sample/30-day Logarithmic Mean less than 180 organisms/100ml, and not more than 10% of the samples exceed 360 organisms/100ml for any 30-day period.	5-sample/30-day Logarithmic Mean less than 180 organisms/100ml, and not more than 10% of the samples exceed 360 organisms/100ml for any 30-day period.
E. coli	5-sample/30-day Logarithmic Mean less than 113 organisms/100mL, and not more than 10% of the samples exceed 212 organisms/100mL for any 30-day period.	5-sample/30-day Logarithmic Mean less than 113 organisms/100mL, and not more than 10% of the samples exceed 212 organisms/100mL for any 30-day period.	5-sample/30-day Logarithmic Mean less than 113 organisms/100mL, and not more than 10% of the samples exceed 212 organisms/100mL for any 30-day period.	5-sample/30-day Logarithmic Mean less than 113 organisms/100mL, and not more than 10% of the samples exceed 212 organisms/100mL for any 30-day period.	5-sample/30-day Logarithmic Mean less than 113 organisms/100mL, and not more than 10% of the samples exceed 212 organisms/100mL for any 30-day period.

^a To be achieved as soon as possible, but no later than dates specified.

^b TMDLs, WLAs and LAs, include a 10% Margin of Safety

^c The fecal coliform TMDLs, WLAs and LAs become ineffective upon the replacement of the REC1 fecal coliform objectives in the Basin Plan by approved REC1 objectives based on *E. coli*.

C. Margin of Safety

A 10% margin of safety is explicitly incorporated into the Bacterial Indicator TMDLs for the Middle Santa Ana River Watershed to account for unknowns, such as bacterial regrowth, bacteria dilution and organism die-off. As additional data on bacterial dynamics in the Middle Santa Ana River watershed are developed, the margin of safety can be adjusted accordingly.

D. Seasonal Variations/Critical Conditions

The Basin Plan REC1 fecal coliform objectives apply year-round; no distinctions based on climate or other conditions that may affect actual REC1 use are specified². As shown in Table 5-9x, different compliance dates are specified for dry season discharges and wet season discharges. This ensures that dry season recreational beneficial uses are addressed on a priority basis. Additional time is allowed to address complexities associated with the control of wet weather discharges.

E. TMDL Implementation

Implementation is expected to result in compliance with the water quality objectives/numeric targets for fecal coliform and with the numeric targets for *E. coli*. The intent is to ensure protection of the REC1 beneficial uses of Middle Santa Ana River Watershed waterbodies. Collection of additional monitoring data is critical to developing long-term solutions for bacterial indicator control, as well as to consider whether changes to the TMDL are appropriate. With that in mind, the requirements for submittal of plans and schedules to implement the TMDLs take into consideration the need to develop and implement effective short-term solutions, as well as allow for the development of long-term solutions once additional data have been generated.

Implementation of tasks and schedules as specified in Table 5-9y is expected to achieve compliance with the TMDLs and, thereby, water quality standards. Each of these tasks is described below:

² The SWQSTF may recommend changes to the REC1 objectives to reflect conditions, such as high flows, that affect REC1 use. Any such changes will be considered through the Basin Planning process.

Table 5-9y – Middle Santa Ana River Watershed Bacterial Indicator TMDL Implementation Plan/Schedule Due Dates

Task	Description	Compliance Date-As soon As Possible but No Later Than
TMDL Phase 1		
Task 1	Revise Existing Waste Discharge Requirements	(*9 months after BPA approval*)
Task 2	Identify Agricultural Operators	(*1 month after BPA approval*)
Task 3	Develop Watershed-Wide Bacterial Indicator Water Quality Monitoring Program Implement Watershed-Wide Bacterial Indicator Water Quality Monitoring Program	(* 6 months after BPA approval*) Upon Regional Board approval Seasonal reports due May 31 and December 31 of each year Triennial reports due every 3 years beginning with first report due February 15, 2007.
Task 4	Urban Discharges 4.1 Develop and Implement Bacterial Indicator Urban Source Evaluation Plan 4.2 San Bernardino County MS4: Revise Municipal Storm Water Management Program (MSWMP) 4.3 Riverside County MS4: Revise Drainage Area Management Plan (DAMP) 4.4 San Bernardino County MS4: Revise Water Quality Management Plan (WQMP) 4.5 Riverside County MS4: Revise Water Quality Management Plan (WQMP)	Plan/schedule due 4.1 (* 6 months after BPA approval*); 4.2 Dependent on Task 4.1 results (see text) 4.3 Dependent on Task 4.1 results (see text) 4.4 Dependent on Task 4.1 results (see text) 4.5 Dependent on Task 4.1 results (see text)
Task 5	Agricultural Discharges 5.1 Develop and Implement Bacterial Indicator Agricultural Source Evaluation Plan 5.2 Develop and Implement Bacterial Indicator Agricultural Source Management Plan	Plan/schedule due 5.1 (*6 months after BPA approval*); 5.2 Dependent on Task 5.1 results (see text)
Task 6	Review of TMDLs/WLAs/LAs	Once every 3 years to coincide with the Regional Board's triennial review, or more frequently as warranted

[Note: BPA => Basin Plan Amendment]

Task 1: Review and/or Revise Existing Waste Discharge Requirements

There are three Waste Discharge Requirements (WDRs) issued by the Regional Board regulating discharge of various types of wastes in the watershed. On or before (**9 months from the effective date of this Basin Plan amendment**), each of these WDRs shall be reviewed and revised as necessary to implement the TMDLs, including the appropriate wasteload allocations, compliance schedules and/or monitoring program requirements.

- 1.1 Waste Discharge Requirements for the San Bernardino County Flood Control and Transportation District, the County of San Bernardino and the Incorporated Cities of San Bernardino County within the Santa Ana Region, Areawide Urban Runoff, NPDES No. CAS 618036 (Regional Board Order No. R8-2002-0012). The current Order has provisions to address TMDL issues (see Task 4, below). In light of these provisions, revision of the Order may not be necessary to address TMDL requirements.
- 1.2 Waste Discharge Requirements for the Riverside County Flood Control and Water Conservation District, the County of Riverside and the Incorporated Cities of Riverside County within the Santa Ana Region, Areawide Urban Runoff, NPDES No. CAS 618033 (Regional Board Order No. R8-2002-0011). The current Order has provisions to address TMDL issues (see Task 4, below). In light of these provisions, revision of the Order may not be necessary to address TMDL requirements.
- 1.3 General Waste Discharge Requirements for Concentrated Animal Feeding Operations (Dairies and Related Facilities) within the Santa Ana Region, NPDES No. CAG018001 (Regional Board Order No. 99-11). Updated waste discharge requirements for Concentrated Animal Feeding Operations are expected to be considered by the Regional Board in 2005. These requirements will include appropriate TMDL requirements.

Other waste discharge requirements may be reviewed and/or revised to address bacterial indicator discharges as appropriate.

Task 2: Identify Agricultural Operators

On or before (**1 month from the effective date of this BPA**), the Regional Board shall develop a list of all known agricultural owners/operators in the Middle Santa Ana River watershed that will be responsible for implementing requirements of these TMDLs. The Regional Board will send a notice to these operators informing them of their TMDL responsibility and alerting them to the potential regulatory consequences of failure to comply.

To implement the agricultural load allocations for non-Concentrated Animal Feeding Operations, monitoring program requirements specified in Task 3 and the agricultural source evaluation studies (Task 5), the Regional Board may issue waste discharge requirements or a waiver of such waste discharge requirements that is conditioned on satisfactory compliance with these TMDL elements.

Task 3: Watershed-Wide Bacterial Indicator Water Quality Monitoring Program

No later than (**6 months from effective date of this Basin Plan amendment**), the US Forest Service, the County of San Bernardino, the County of Riverside, the cities of Ontario, Chino, Chino Hills, Montclair, Rancho Cucamonga, Upland, Rialto, Fontana, Norco, Riverside, and Corona, Pomona and Claremont and

agricultural operators in the watershed, shall as a group, submit to the Regional Board for approval a proposed watershed-wide monitoring program that will provide data necessary to review and update the TMDLs. Data to be collected and analyzed shall address, at a minimum, determination of compliance with the TMDLs, WLAs and LAs.

At a minimum, the stations specified in Tables 5-9z and 5-9aa and shown in Figure 5-6, at the frequency specified in Tables 5-9z and 5-9aa, shall be considered for inclusion in the proposed monitoring plan. If one or more of these monitoring stations are not included, the rationale shall be provided and proposed alternative monitoring locations shall be identified in the proposed monitoring plan. The proposed monitoring plan shall also include a plan to compile streamflow measurements at existing USGS stream gauging stations.

At a minimum, samples shall be analyzed for the following constituents:

- Fecal Coliform
- Escherichia Coliform (*E. coli*)
- Total Suspended Solids
- pH
- Temperature
- Electrical Conductivity
- Dissolved Oxygen
- Turbidity

The proposed monitoring plan shall be implemented upon Regional Board approval at a duly noticed public meeting. Seasonal reports summarizing and including copies of the data collected during the dry season and wet season monitoring periods shall be submitted by May 31 and December 31 of each year. In order to facilitate review and update of the numeric targets and/or the TMDLs, WLAs, LAs, a triennial report summarizing the data collected for the preceding 3 year period and evaluating compliance with the WLAs/LAs shall be submitted every three years, beginning with the first report due February 15, 2007.

In lieu of this coordinated monitoring plan, one or more of the parties identified above may submit a proposed individual or group monitoring plan for Regional Board approval. Any such individual or group monitoring plan is due no later than (* 6 months from effective date of this Basin Plan amendment*) and shall be implemented upon Regional Board approval at a duly noticed public meeting. Seasonal reports summarizing and including copies of the data collected during the dry season and wet season monitoring periods shall be submitted by May 31 and December 31 of each year. In order to facilitate review and update of the numeric targets and/or the TMDLs, WLAs, LAs, a triennial report summarizing the data collected for the preceding 3 year period and evaluating compliance with the WLAs/LAs shall be submitted every three years, beginning with the first report due February 15, 2007.

It may be that implementation of these monitoring requirements will be required through the issuance of Water Code Section 13267 letters to the affected parties. The monitoring plan(s) will be considered by the Regional Board and shall be implemented upon the Regional Board's approval.

Table 5-9z – Watershed Minimum Required Weekly Sampling Station Locations

Station Number	Station Description
C1	Icehouse Canyon Creek
C2	Chino Creek at Schaeffer Avenue
C3	Prado Park Lake at lake outlet
C7	Chino Creek at Central Avenue
C8	Chino Creek at Prado Golf Course
M2	Cucamonga Creek at Regional Plant No. 1
M5	Mill Creek at Chino-Corona Road
S1	Santa Ana River at MWD Crossing
S3	Santa Ana River at Hamner Avenue
T1	Temescal Wash at Lincoln Avenue
TQ1	Tequesquite Arroyo at Palm Avenue

Frequency of sampling:

dry season: weekly

wet season: two 30-day sampling periods during which a minimum of 5 samples are to be collected (at least one sample weekly) and if possible, a minimum of 5 of those samples must be from storm events.

Table 5-9a-a --Additional Watershed Storm Event Sampling Locations

Station Number	Station Description
M3	Bon View Avenue @ Merrill Avenue
M4	Archibald Avenue @ Cloverdale Avenue
G1	Grove Channel @ Pine Avenue
E1	Euclid Avenue Channel @ Pine Avenue

Frequency of sampling: wet weather – one sample/storm event for 5 storm events/year; dry weather – none.

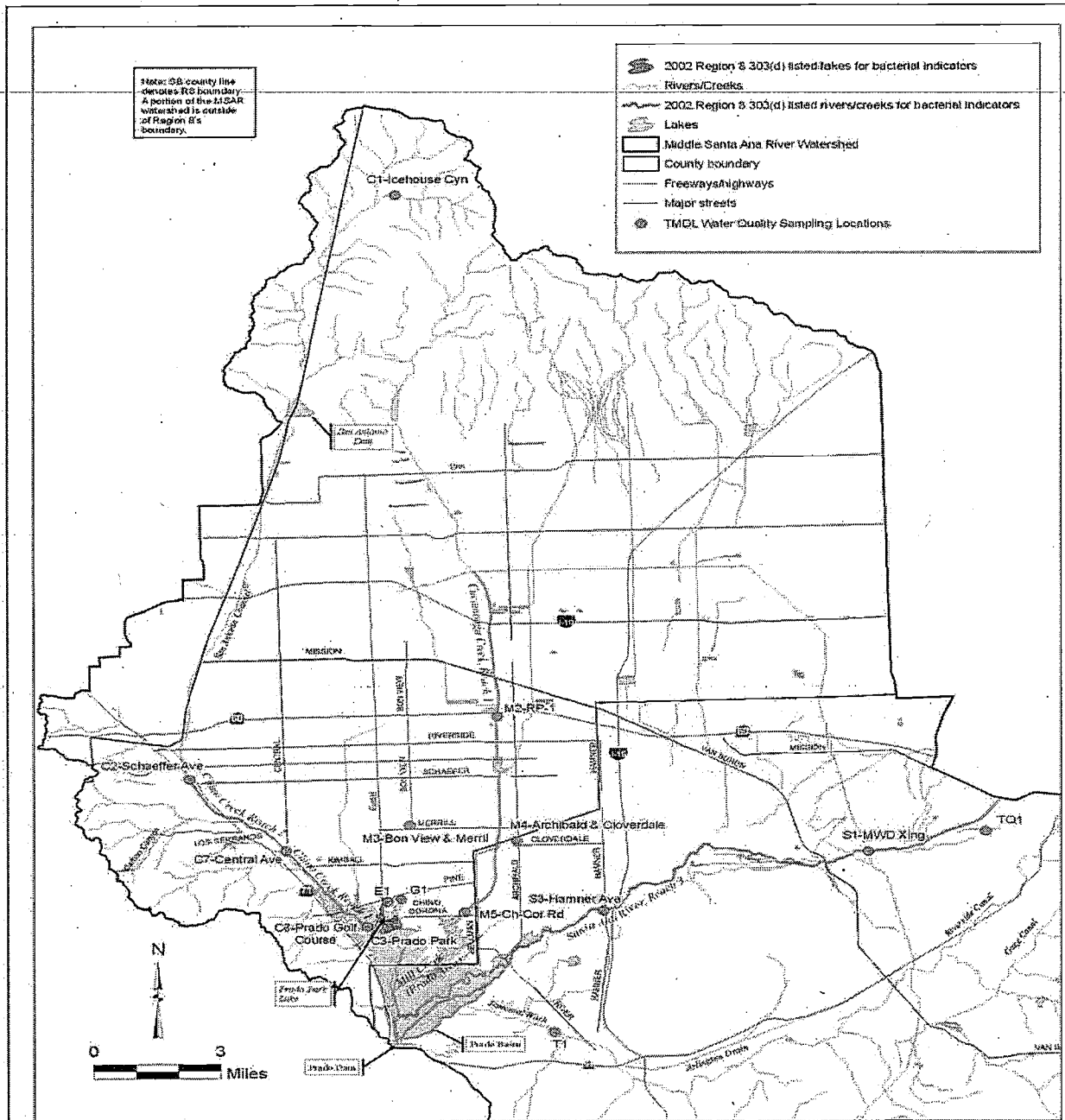
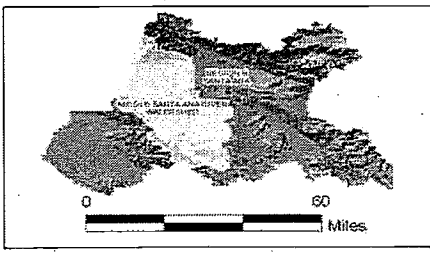


FIGURE 5-6: TMDL WATER QUALITY SAMPLING LOCATIONS



Data Sources:
 Middle Santa Ana River Watershed:
 based on Calwater v. 2.2.1 boundaries -
 CA Spatial Information Library (2004),
 Santa Ana River reach designations,
 and GET streets (SWRCB, 2002)
 County: CA Spatial Information Library (2004)
 Rivers/creeks, and lakes:
 CA Spatial Information Library (1998)
 2002 303(d) listed water bodies:
 SWRCB (2003)

Task 4: Urban Discharges

Phase I urban discharges, including stormwater runoff, include those from the cities and unincorporated communities in the Middle Santa Ana River Watershed. These discharges are regulated under the MS4 NPDES permits identified in Tasks 1.1 and 1.2 (Review and Revise Existing Waste Discharge Requirements), above. The requirements of these NPDES permits differ somewhat and therefore the TMDL implementation requirements that pertain to the permittees under each permit also vary slightly, as shown below³.

4.1 Develop and Implement Bacterial Indicator Urban Source Evaluation Plans

On or before (**6 months from the effective date of this Basin Plan amendment**), the County of San Bernardino, the County of Riverside, the cities of Ontario, Chino, Chino Hills, Montclair, Rancho Cucamonga, Upland, Rialto, Fontana, Norco, Riverside, and Corona, Pomona and Claremont shall develop a Bacterial Indicator Urban Source Evaluation Plan(s) (USEP). This plan shall include steps needed to identify specific activities, operations, and processes in urban areas that contribute bacterial indicators to Middle Santa Ana River Watershed waterbodies. The plan shall also include a proposed schedule for completion of each of the steps identified. The proposed schedules can include contingency provisions that reflect uncertainty concerning the schedule for completion of the SWQSTF work and/or other investigations that may affect the steps that are proposed. The USEP shall be implemented upon Regional Board approval at a duly noticed public meeting.

4.2 Revise the San Bernardino County Municipal Storm Water Management Program (MSWMP)

Provision XVI.3. of Order No. R8-2002-0012 (see 1.1, above) requires the permittees to revise their Municipal Storm Water Management Program (MSWMP) to include TMDL requirements. Revisions to the MSWMP may be necessary based on the results of Task 4.1, Basin Plan amendments to address recommendations of the SWQSTF, or other investigations. Because of uncertainties regarding the timing of completion of these studies, it is not feasible to identify an explicit date whereby the revision of the MSWMP is to be accomplished. Instead, the Executive Officer shall notify the permittees of the need to revise the MSWMP. Within 90 days of notification by the Executive Officer, the permittees shall submit for Regional Board approval, a plan and schedule to review and revise the MSWMP as necessary to incorporate measures to address the results of the USEP and/or other studies. Further review and revision of the MSWMP needed to address these TMDLs shall be completed in accordance with the requirements of Order No. R8-2002-0012 or amendments thereto that are adopted by the Regional Board at a public hearing. The MSWMP revisions shall include schedules for meeting the bacterial indicator wasteload allocations based on the schedule established in these TMDLs. In order to facilitate any needed update of the numeric targets and/or the TMDLs and urban discharge WLAs, the proposed schedule shall take into consideration the Regional Board's triennial review schedule. The permittees shall also provide a proposal and schedule for 1) evaluating the effectiveness of BMPs and other control actions implemented and 2) evaluating compliance with the bacterial indicator waste load allocations for urban runoff. The plan and schedule to review the MSWMP must be implemented upon approval by the Regional Board after public notice and public hearing, or upon approval by the Executive Officer if no significant comments are received during the public notice period.

³ The San Bernardino MS4 permit requires the development and implementation of a Municipal Stormwater Management Program (MSWMP) to address stormwater discharges from existing urban activities. For the Riverside County MS4 permit, the Drainage Area Management Plan (DAMP) addresses stormwater discharges from existing urban activities.

4.3 Revise the Riverside County Drainage Area Management Plan (DAMP)

Provision XIII.B. of Order No. R8-2002-0011 (see 1.2, above) requires the permittees to revise their Drainage Area Management Plan (DAMP) to include TMDL requirements. Revisions to the DAMP may be necessary based on the results of Task 4.1, Basin Plan amendments to address recommendations of the SWQSTF, or other investigations. Because of uncertainties regarding the timing of completion of these studies, it is not feasible to identify an explicit date whereby the revision of the DAMP is to be accomplished. Instead, the Executive Officer shall notify the permittees of the need to revise the DAMP. Within 90 days of notification by the Executive Officer, the permittees shall submit for Regional Board approval, a plan and schedule to review and revise the DAMP as necessary to incorporate measures to address the results of the USEP and/or other studies. Further review and revision of the DAMP needed to address these TMDLs shall be completed in accordance with the requirements of Order No. R8-2002-0011 or amendments/updates thereto that are adopted by the Regional Board at a public hearing. The DAMP revisions shall include schedules for meeting the bacterial indicator wasteload allocations based on the schedule established in these TMDLs. In order to facilitate review and update of the numeric targets and/or the TMDLs and urban discharge WLAs, the proposed schedule shall take into consideration the Regional Board's triennial review schedule. The revised DAMP shall also include a proposal and schedule for 1) evaluating the effectiveness of BMPs and other control actions implemented and 2) evaluating compliance with the bacterial indicator waste load allocations for urban runoff. The plan and schedule to review and revise the DAMP must be implemented upon approval by the Regional Board after public notice and public hearing, or upon approval by the Executive Officer if no significant comments are received during the public notice period.

4.4 Revise the San Bernardino County Water Quality Management Plan (WQMP)

Provision XII.B. 1: of Order No. R8-2002-0012 requires the permittees to develop and submit a WQMP for new developments and significant redevelopments by January 2004 for the Executive Officer's approval. Revisions to the WQMP may be necessary based on the results of Task 4.1, Basin Plan amendments to address recommendations of the SWQSTF, or other investigations. Because of uncertainties regarding the timing of completion of these studies, it is not feasible to identify an explicit date whereby the revision of the WQMP is to be accomplished. Instead, the Executive Officer shall notify the permittees of the need to revise the WQMP. Within 90 days of notification by the Executive Officer, the permittees shall submit for Regional Board approval a plan and schedule to review and revise the WQMP that addresses the bacterial indicator input from new developments and significant redevelopments to assure compliance with the bacterial indicator wasteload allocations for urban runoff. Further review and revision of the WQMP necessary to address TMDL requirements, shall be completed in accordance with the requirements of Order No. R8-2002-0012 or amendments/updates thereto that are adopted by the Regional Board at a public hearing.

4.5 Revise the Riverside County Water Quality Management Plan (WQMP)

Provision VIII.B. of Order No. R8-2002-0011 (see 1.2, above) requires the permittees to develop and submit a WQMP for new developments and significant redevelopments by June 2004 for approval. On September 17, 2004, the Board approved a WQMP developed by the permittees. The approved WQMP includes source control BMPs, design BMPs and treatment control BMPs. Further revisions to the WQMP may be necessary to meet the WLA for urban runoff. Such revisions may be necessary based on the results of Task 4.1, Basin Plan amendments to address recommendations of the SWQSTF, or other investigations. Because of uncertainties regarding the timing of completion of these studies, it is not feasible to identify an explicit date whereby the revision of the WQMP is to be accomplished. Instead, the Executive Officer shall notify the permittees of the need to revise the WQMP. Within 90 days of notification by the Executive

Officer, the permittees shall submit for Regional Board approval a plan and schedule for review and revision of the WQMP that addresses the bacterial indicator input from new developments and significant redevelopments to assure compliance with the bacterial indicator wasteload allocations for urban runoff. Further review and revision of the WQMP necessary to address TMDL requirements, shall be completed in accordance with the requirements of Order No. R8-2002-0011 or amendments/updates thereto that are adopted by the Regional Board at a public hearing.

If the results of studies conducted pursuant to Tasks 3 and 4.1 above demonstrate that either the Phase II non-traditional small MS4 discharges covered under the statewide Waste Discharge Requirements for Stormwater Discharges from Small Municipal Separate Storm Systems (Order No. 2003-0005-DWQ) or industrial discharges from facilities covered by the statewide Industrial Stormwater General Permit (Order 97-03-DWQ) or any Regional Board individual industrial permit, are responsible, to a significant degree, for exceedances of the urban WLAs, the Regional Board will take the appropriate regulatory steps to address these discharges.

Task 5: Agricultural Discharges

Agricultural discharges include stormwater runoff, wastewater release and tailwater runoff from agricultural land uses. Tailwater runoff is irrigation water that runs off of agricultural land. Agricultural land uses include concentrated animal feeding operations and irrigated and dry-land farming in the Middle Santa Ana River Watershed. Concentrated animal feeding operations are regulated under WDRs (see Task 1.3, above); irrigated agriculture and dry-land farming are not currently regulated.

5.1 Develop and Implement Bacterial Indicator Agricultural Source Evaluation Plans

On or before (**6 months from the effective date of this Basin Plan amendment**), concentrated animal feeding facility operators and agricultural operators in the Middle Santa Ana River Watershed shall develop and implement Bacterial Source Agricultural Source Evaluation Plans (AGSEP). These plans shall include steps needed to identify specific activities, operations, and processes in agricultural areas that contribute bacterial indicators to Middle Santa Ana River Watershed waterbodies. The plan shall also include a proposed schedule for completion of each of the steps identified. The proposed schedules can include contingency provisions that reflect uncertainty concerning the schedule for completion of the SWQSTF work and/or other investigations that may affect the steps that are proposed. The AGSEP shall be implemented upon Regional Board approval at a duly noticed public meeting.

The Regional Board expects that the AGSEP will be submitted and implemented pursuant to these TMDL requirements. Where and when necessary to implement these requirements, the Regional Board will utilize appropriate waste discharge requirements including those for concentrated animal feeding operations (see 1.3, above), or other Water Code authorities.

In lieu of a coordinated source evaluation plan, one or more of the parties identified above may submit a proposed individual or group AGSEP to conduct the above studies for areas within their jurisdiction. Any such individual or group plan shall also be submitted for Regional Board approval no later than (**6 months from the effective date of this Basin Plan amendment**). This AGSEP shall be implemented upon Regional Board approval at a duly noticed public meeting.

5.2 Develop and Implement a Bacterial Indicator Agricultural Source Management Plan

Based on the results of Task 5.1 or other studies conducted in the watershed, concentrated animal feeding operators and agricultural operators within the Middle Santa Ana River Watershed shall, as a group, submit a proposed Bacterial Indicator Agricultural Source Management Plan (BASMP). Because of uncertainties regarding the timing of completion of these studies and in recognition that readily identifiable steps may be taken to reduce bacterial discharges from agricultural lands, it is not feasible to identify an explicit date whereby the development and implementation of the BASMP is to be accomplished. Instead, the Executive Officer shall notify agricultural operators of the need to submit the proposed BASMP in whole or to submit plans and schedule to address a subset of tasks identified in the AGSEP. Within 90 days of notification by the Executive Officer, the proposed BASMP, or a subset thereof, shall be submitted. The BASMP, or subset thereof, shall be implemented upon Regional Board approval at a duly noticed public meeting. At a minimum, the BASMP shall include, plans and schedules for the following:

- A. implementation of bacterial indicator controls, BMPs and reduction strategies designed to meet load allocations;
- B. evaluation of effectiveness of BMPs; and
- C. development and implementation of compliance monitoring program(s).

The Regional Board expects that the BASMP will be submitted and implemented pursuant to these TMDL requirements. Where and when necessary to implement these requirements, the Regional Board will utilize appropriate waste discharge requirements or other Water Code authorities.

In lieu of a coordinated plan, one or more of the parties identified above may submit a proposed individual or group BASMP to develop and implement the above plan for areas within their jurisdiction. Any such individual or group plan shall also be submitted for Regional Board approval. Because of uncertainties regarding the timing of completion of these studies and in recognition that readily identifiable steps may be taken to reduce bacterial discharges from agricultural lands, it is not feasible to identify an explicit date whereby the development and implementation of the BASMP is to be accomplished. Instead, the Executive Officer shall notify agricultural operators of the need to submit the proposed BASMP in whole or to submit plans and schedule to address a subset of tasks identified in the AGSEP. Within 90 days of notification by the Executive Officer, the proposed BASMP, or a subset thereof, shall be submitted. This BASMP, or a subset thereof, shall be implemented upon Regional Board approval at a duly noticed public meeting.

Task 6: Review/Revision of the Bacterial Indicator TMDL (TMDL "Re-opener")

The basis for the TMDLs and implementation schedule will be re-evaluated at least once every three years⁴ to determine the need for modifying the load and wasteload allocations, numeric targets and TMDLs. Regional Board staff will continue to review all data and information generated pursuant to the TMDL requirements on an ongoing basis. Based on results generated through the monitoring programs, special studies, modeling analysis, efforts of the Storm Water Quality Standards Task Force⁵ and/or

⁴ The three-year schedule will coincide with the Regional Board's triennial review schedule.

⁵ Stakeholders formed the Storm Water Quality Standards Task Force (Task Force) in 2002 to support review and update of the bacterial quality objectives for REC1 waters and to review the REC1 designations themselves to assure their accuracy. Participants include representatives from the Santa Ana Watershed Project Authority, (SAWPA) flood control agencies from the 3 counties within the Santa Ana Region, POTW dischargers and stormwater staff from various municipalities in the watershed. Environmental groups, Regional Board staff and USEPA staff are also participants. SAWPA staff serve as facilitators for the Task Force.

special studies by one or more responsible parties, changes to the TMDLs, including revisions to the numeric targets, WLAs and LAs, may be warranted. Such changes would be considered through the Basin Plan Amendment process.

The Regional Board is committed to the review of this TMDL every three years, or more frequently if warranted by the results of monitoring and/or other relevant studies

References

1. California Regional Water Quality Control Board, Total Maximum Daily Load for Bacterial Indicators in the Middle Santa Ana River Watershed, February 3, 2005
2. US Environmental Protection Agency (USEPA). Ambient Water Quality Criteria for Bacteria, 1986

ATTACHMENT 49

**California Regional Water Quality Control Board
Santa Ana Region**

RESOLUTION NO. R8-2006-0023

Resolution Amending the Water Quality Control Plan for the Santa Ana River Basin to Incorporate a Nutrient
Total Maximum Daily Load (TMDL) for Dry Hydrological Conditions
for Big Bear Lake

WHEREAS, the California Regional Water Quality Control Board, Santa Ana Region (hereinafter, Regional Board), finds that:

1. An updated Water Quality Control Plan for the Santa Ana River Basin (Basin Plan) was adopted by the Regional Board on March 11, 1994, approved by the State Water Resources Control Board (SWRCB) on July 21, 1994, and approved by the Office of Administrative Law (OAL) on January 24, 1995.
2. The Basin Plan specifies the following beneficial uses for Big Bear Lake: cold freshwater habitat (COLD), warm freshwater habitat (WARM), water contact recreation (REC1), non-contact water recreation (REC2), wildlife habitat (WILD), municipal and domestic supply (MUN), agricultural supply (AGR), rare, threatened or endangered species (RARE) and groundwater recharge (GWR).
3. For COLD designated inland surface waters, the Basin Plan specifies the narrative objective that dissolved oxygen levels shall not be depressed below 6 mg/L. For WARM designated inland surface waters, the Basin Plan specifies the narrative objective that dissolved oxygen levels shall not be depressed below 5 mg/L.
4. The narrative objectives pertaining to dissolved oxygen are not being met consistently in Big Bear Lake, as demonstrated by relevant monitoring.
5. The Basin Plan specifies numeric total phosphorus and total inorganic nitrogen water quality objectives for Big Bear Lake. These water quality objectives were based on ambient concentrations of total phosphorus and total inorganic nitrogen as determined in the 1970s. Evidence now indicates that these objectives are not sufficiently stringent to protect beneficial uses and should be revised. Relevant monitoring demonstrates that these objectives are not consistently met in Big Bear Lake.
6. Proliferation of nuisance aquatic plants has been recorded in Big Bear Lake since the 1970s. Nutrient discharges have promoted the growth of aquatic plants. These nuisance aquatic plants serve as both a sink and a source of nutrients.
7. Big Bear Lake's designated beneficial uses adversely impacted by nuisance aquatic plants and low dissolved oxygen levels include COLD, WARM, WILD, REC1, REC2 and RARE.
8. As a result of the beneficial use impacts to Big Bear Lake, the Regional Board listed Big Bear Lake as water quality limited in accordance with Section 303(d) of the Clean Water Act. Section 303(d) requires the establishment of a Total Maximum Daily Load (TMDL) for the pollutant(s) causing the impairment. Phosphorus is the principal nutrient causing the impairment. Section 303(d) also requires the allocation of the TMDL among the sources of nutrient inputs. State law requires an implementation plan and schedule to ensure that the TMDL is met and that compliance with water quality standards is achieved.

9. The Basin Plan amendment shown in the attachment to this Resolution was developed in accordance with Clean Water Act Section 303(d) and Water Code Section 13240 *et seq.* The amendment is proposed for incorporation into Chapter 5 "Implementation", of the Basin Plan. The proposed Basin Plan amendment includes background information concerning the water quality impairment being addressed and the sources of nutrients to Big Bear Lake. The proposed TMDL is supported by a detailed report prepared by Regional Board staff and titled "Staff Report on the Nutrient Total Maximum Daily Loads for Big Bear Lake", June 2005 (hereinafter, "TMDL Report").
10. The Basin Plan amendment specifies a numeric target for total phosphorus. Control of phosphorus is one of the potential methods to ensure compliance with relevant numeric and narrative water quality objectives specified in the Basin Plan, and to prevent adverse beneficial use impacts resulting from the proliferation of nuisance aquatic plants. There is evidence that nitrogen is the limiting nutrient under certain circumstances and that control of nitrogen inputs may be an additional method to address beneficial use impairment in Big Bear Lake. However, due to data and analytical model limitations, it is infeasible to identify an appropriate and achievable nitrogen TMDL, targets and wasteload and load allocations at this time. The Basin Plan amendment requires the collection and evaluation of nitrogen data that will support future revision of the TMDL, if and as necessary.
11. The Basin Plan amendment specifies response numeric targets for chlorophyll a, macrophyte coverage and percentage of nuisance aquatic vascular plant species for Big Bear Lake. These response numeric targets provide a method to track improvements in water quality resulting from reductions in the loading of phosphorus.
12. The numeric targets apply to all hydrological conditions.
13. The Basin Plan amendment specifies a TMDL, wasteload allocations for point source discharges (WLAs), load allocations for nonpoint source discharges (LAs) for total phosphorus for Big Bear Lake for Dry Hydrological Conditions only.
14. The TMDL for Dry Hydrological Conditions specifies a reduction in phosphorus from internal nutrient sources, which are lake sediment and macrophytes. External load dischargers are responsible for reducing their contributions to the internal nutrient loads.
15. The TMDL for Dry Hydrological Conditions does not specify nutrient reductions from external watershed sources, which include resorts, urban discharges and open space/forested lands.
16. The Basin Plan amendment specifies an implementation plan for nutrient reduction. The implementation plan includes compliance schedules for the numeric targets, TMDL, wasteload allocations and load allocations, as well as a monitoring program to track progress toward compliance.
17. The Implementation Plan specifies a requirement for the development of TMDLs, WLAs, and LAs for wet and/or average hydrological conditions once sufficient data are obtained.
18. Given the complex nature of Big Bear Lake, the Implementation Plan specifies the development of a Lake Management Plan that will address competing uses, nutrient reduction strategies and other plans to control nutrient discharges and aquatic plants as appropriate.
19. The Basin Plan amendment will assure the reasonable protection of the beneficial uses of surface waters within the Region and is consistent with the state's antidegradation policy (SWRCB Resolution No. 68-16).

20. The Regional Board has considered the costs associated with implementation of this amendment, as well as costs resulting from failure to implement nutrient control measures necessary to prevent adverse effects on beneficial uses. The implementation plan in the Basin Plan, which includes extended compliance schedules and employs a phased TMDL approach to provide for refinement based on additional studies and analyses, will ensure that implementation expenditures are reasonable and fairly apportioned among dischargers.
21. Review of the potential environmental impacts of the adoption and implementation of the Big Bear Lake Nutrient TMDL was conducted. The adoption of the TMDL would have no direct effect on the environment. The implementation of projects that may be conducted to implement the Nutrient TMDL is expected to have less than significant impacts or less than significant impacts with application of mitigation measures on the following: air quality, biological resources, hazards and hazardous materials, hydrology and water quality, noise, aesthetics and transportation and traffic. As projects to implement the TMDL are developed, specific environmental impacts and mitigation measures to address those impacts are subject to thorough and separate evaluation pursuant to the California Environmental Quality Act (CEQA).
22. Provided that appropriate mitigation is implemented, projects designed and conducted to achieve the TMDL are expected to have less than significant impact, either individually or cumulatively, on fish and/or wildlife species.
23. The adoption of this TMDL is necessary to reduce loadings of nutrients to Big Bear Lake and to address water quality impairments that arise therefrom.
24. The proposed amendment meets the "Necessity" standard of the Administrative Procedure Act, Government Code, Section 11352, subdivision (b).
25. The Regional Board submitted the relevant technical documents that serve as the basis for the proposed amendment to an external scientific review panel and has considered the comments and recommendations of that panel in drafting the amendment.
26. The proposed amendment will result in revisions to the Basin Plan Chapter 5 "Implementation".
27. The Regional Board discussed this matter at a workshop conducted on August 26, 2005 after notice was given to all interested persons in accordance with Section 13244 of the California Water Code. Based on the discussion at those workshops, the Board directed staff to prepare the appropriate Basin Plan amendment and related documentation to incorporate the Big Bear Lake Nutrient TMDL.
28. The Regional Board prepared and distributed written reports (staff reports) regarding adoption of the Basin Plan amendment in accordance with applicable state and federal environmental regulations (California Code of Regulations, Section 3775, Title 23, and 40 CFR Parts 25 and 131).
29. The process of basin planning has been certified by the Secretary for Resources as exempt from the requirement of the California Environmental Quality Act (Public Resources Code Section 21000 et seq.) to prepare an Environmental Impact Report or Negative Declaration. The Basin Plan amendment package includes staff reports, an Environmental Checklist, an assessment of the potential environmental impacts of the Basin Plan amendment, and a discussion of alternatives. The Basin Plan amendment, Environmental Checklist, staff reports, and supporting documentation are functionally equivalent to an Environmental Impact Report or Negative Declaration.

30. On April 21, 2006, the Regional Board held a Public Hearing to consider the Basin Plan amendment. Notice of the Public Hearing was given to all interested persons and published in accordance with Water Code Section 13244.
31. The Basin Plan amendment must be submitted for review and approval by the State Water Resources Control Board (SWRCB), Office of Administrative Law (OAL) and U.S. Environmental Protection Agency (USEPA). Once approved by the SWRCB, the amendment is submitted to OAL and USEPA. The Basin Plan amendment will become effective upon approval by OAL. A Notice of Decision will be filed.
32. The Notice of Filing, the TMDL Report, environmental checklist, and the draft amendment were prepared and distributed to interested individuals and public agencies for review and comment, in accordance with state and federal regulations (23 CCR §3775, 40 CFR 25 and 40 CFR 131).
33. For the purposes of specifying compliance schedules in NPDES permits for effluent limitations necessary to implement this TMDL, the schedule(s) specified in this TMDL shall govern, notwithstanding other compliance schedule authorization language in the Basin Plan.

NOW, THEREFORE BE IT RESOLVED THAT:

1. The Regional Board adopts the amendment to the Water Quality Control Plan for the Santa Ana River Basin (Region 8), as set forth in the attachment.
2. The Executive Officer is directed to forward copies of the Basin Plan amendment to the SWRCB in accordance with the requirements of Section §13245 of the California Water Code.
3. The Regional Board requests that the SWRCB approve the Basin Plan amendment, in accordance with Sections §13245 and §13246 of the California Water Code, and forward it to the OAL and U.S. EPA for approval.
4. If, during its approval process, Regional Board staff, SWRCB or OAL determines that minor, non-substantive corrections to the language of the amendment are needed for clarity or consistency, the Executive Officer may make such changes, and shall inform the Board of any such changes.
5. The Executive Officer is authorized to sign a Certificate of Fee Exemption in lieu of payment of the California Department of Fish and Game filing fee.

I, Gerard J. Thibeault, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of a resolution adopted by the California Regional Water Quality Control Board, Santa Ana Region, on April 21, 2006.



Gerard J. Thibeault
Executive Officer

ATTACHMENT TO RESOLUTION NO. R8-2006-0023

(NOTE: The following language will be inserted into Chapter 5 of the Basin Plan. Corresponding changes will be made to the Table of Contents, the List of Tables, page numbers, and page headers in the plan. Due to ongoing revisions of the Basin Plan layout, the location of tables in relation to text may change during final formatting of the amendments. For formatting purposes, the maps may be redrawn for inclusion in the Basin Plan, and the final layout may differ from that of the draft.)

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Big Bear Lake

Big Bear Lake, located in the San Bernardino Mountains, was created by the construction of the Bear Valley Dam in 1884. The Lake has a surface area of approximately 3,000 acres, a storage capacity of 73,320 acre-ft and an average depth of 24 feet. The lake reaches its deepest point of 72 feet at the dam. The Big Bear Lake drainage basin encompasses 37 square miles and includes more than 10 streams. Local stream runoff and precipitation on the Lake are the sole source of water supply to the Lake. The spillway altitude is 6,743.2 feet. The major inflows to the lake are creeks, including Rathbone (Rathbun) Creek, Summit Creek, and Grout Creek. Outflow from the Lake is to Bear Creek, which is tributary to the Santa Ana River at about the 4,000-foot elevation level. Twelve percent of Big Bear Lake's drainage basin consists of the Lake itself. The US Forest Service is the largest landowner in the Big Bear area. Two ski resorts, Bear Mountain and Snow Summit, lease land from the Forest Service.

The beneficial uses of Big Bear Lake include cold freshwater habitat (COLD), warm freshwater habitat (WARM), water contact recreation (REC1), non-contact water recreation (REC2), municipal and domestic supply (MUN), agriculture supply (AGR), groundwater recharge (GWR), wildlife habitat (WILD) and rare, threatened or endangered species (RARE).

Big Bear Lake is moderately eutrophic. During the summer months, deeper water may exhibit severe oxygen deficits. Nutrient enrichment has resulted in the growth of aquatic plants, which has impaired the fishing, boating, and swimming uses of the lake. To control this vegetation, mechanical harvesters are used to remove aquatic plants, including the roots.

Toxics may be entering the Big Bear Lake watershed and accumulating in aquatic organisms and bottom sediments at concentrations that are of concern, not only for the protection of aquatic organisms, but for the protection of human health as well. Past Toxic Substances Monitoring Program data have indicated the presence of copper, lindane, mercury, zinc, and PCBs in fish tissue.

During 1992-93, the Regional Board conducted a Phase I Clean Lakes study (Section 314 of the Clean Water Act) to evaluate the current water quality condition of the lake and its major tributaries [Ref. 20]. The focus of the study was to identify the tributaries responsible for inputs of toxics and nutrients. As a result of data collected in the Clean Lakes Study, Big Bear Lake and specific tributaries were placed on the 1994 Clean Water Act Section 303(d) List of Water Quality Limited Segments for the reasons indicated in Table 5-9a-b.

Table 5-9a-b

Big Bear Lake Watershed Waterbodies on the
 1994 303(d) List of Impaired Waters

WATERBODY	STRESSOR
Big Bear Lake	nutrients
	noxious aquatic plants
	sedimentation/siltation
	metals
	copper
Rathbone (Rathbun) Creek	mercury
	nutrients
Grout Creek	sedimentation/siltation
	metals
Summit Creek	nutrients
	nutrients
Knickerbocker Creek	metals
	pathogens

In 2000, the Regional Board convened a TMDL workgroup to assist in the development of Total Maximum Daily Loads for the Big Bear Lake watershed. The Big Bear Municipal Water District, a key contributor to the workgroup, created the Big Bear Lake TMDL Task Force, including representatives of the District, Regional Board staff, the San Bernardino County Flood Control District, the City of Big Bear Lake, the Big Bear Area Regional Wastewater Authority, the State of California, Department of Transportation (Caltrans), the US Forest Service and the Big Bear Mountain Resorts. Initial TMDL development efforts were focused on nutrients, leading to Regional Board adoption of a nutrient TMDL for dry hydrological conditions for Big Bear Lake in 2006. Nutrient TMDLs for wet and/or average hydrological conditions will be incorporated in the Basin Plan when these TMDLs are developed in the future. As shown in Table 5-9a-f, the development of these TMDLs is a requirement of the adopted TMDL implementation plan for the nutrient TMDL for dry hydrological conditions.

1. Big Bear Lake Nutrient Total Maximum Daily Loads (TMDLs)

Past studies, starting in 1968/1969, have shown that Big Bear Lake is moderately eutrophic and that the limiting nutrient is generally phosphorus. In Big Bear Lake, nutrients (nitrogen and phosphorus) are available in the water column and sediment and are taken up by aquatic macrophytes and algae. Nutrients are also bound in living and dead organic material, primarily macrophytes and algae. Decomposition of this organic material, as well as macrophyte and algal respiration, consumes dissolved oxygen, resulting in the depletion of dissolved oxygen from the water column. Oxygen depletion in the hypolimnion results in anoxic conditions, leading to periodic fish kills in Big Bear Lake. Oxygen depletion also results in the release of nutrients from the sediment into the water column, promoting more algae and aquatic macrophyte production. Nutrients released by plant decomposition are cycled back into a bioavailable form.

Although aquatic macrophytes provide protection from shoreline erosion, habitat for fish and other aquatic biota and waterfowl habitat, excessive growth of noxious and nuisance species, particularly Eurasian watermilfoil (*Myriophyllum spicatum*) impairs recreational uses of the Lake and reduces plant and animal species and habitat diversity.

As stated above, development of nutrient TMDLs to address these problems was initiated in 2000. In this process, it was recognized that insufficient data for wet or average hydrological conditions were available to allow calibration of the lake water quality model used to calculate the TMDL. Accordingly, a TMDL was developed to address dry hydrologic conditions only (see Section 1.B., below). This TMDL was adopted by the Regional Board in 2006 and became effective on August 21, 2007. The implementation plan included with this TMDL specifies a requirement for the development of nutrient TMDLs for wet and/or average hydrological conditions.

A key step in the development of the nutrient TMDL was the identification of the numeric targets to be achieved. The numeric targets, identified in Section 1.A., below, do not vary based upon hydrological condition. Like the approved TMDL for dry hydrological conditions, the TMDLs for wet and/or average hydrological conditions that will be developed are expected to assure also that these numeric targets are achieved. Indeed, since the TMDL for dry hydrological conditions was developed to meet the targets under the critical, worst-case conditions, consistent compliance with these targets is expected to be achieved even in the absence of TMDLs for wet/average hydrological conditions, given the greater lake volume and dilution anticipated under wetter conditions. It is recognized that future modifications to the targets may be found necessary.

1. A. Numeric Targets

As shown in Table 5-9a-c, both "causal and response" numeric targets are specified for Big Bear Lake. The causal target is for phosphorus. Phosphorus is the primary limiting nutrient in Big Bear Lake¹. Response targets include macrophyte coverage, percentage of nuisance aquatic vascular plant species and chlorophyll *a* concentration. These response targets are more direct indicators of impairment and are specified to assess and track water quality improvements in Big Bear Lake.

A weight of evidence approach will be used to assess compliance with the TMDL, which means that data pertaining to all the numeric targets will be evaluated and non-compliance with one target will not automatically imply non-compliance with the TMDL.

¹ There is evidence that nitrogen is a limiting nutrient under certain conditions. However, given data and analytical limitations, no nitrogen targets are specified. Nitrogen monitoring is required as part of this TMDL. The data will be used to specify nitrogen targets in the future, as warranted.

Table 5-9a-c
 Big Bear Lake Nutrient TMDL Numeric Targets^a

Indicator	Target Value
Total P concentration	Annual average ^b no greater than 35 µg/L; to be attained no later than 2015 (dry hydrological conditions), 2020 (all other times) ^c
Macrophyte Coverage	30-40% on a total lake area basis; to be attained by 2015 (dry hydrological conditions), 2020 (all other times) ^{c, d}
Percentage of Nuisance Aquatic Vascular Plant Species	95% eradication on a total area basis of Eurasian Watermilfoil and any other invasive aquatic plant species; to be attained no later than 2015 (dry hydrological conditions), 2020 (all other times) ^{c, d}
Chlorophyll <i>a</i> concentration	Growing season ^e average no greater than 14 µg/L; to be attained no later than 2015 (dry hydrological conditions), 2020 (all other times) ^c

^a Compliance with the targets to be achieved as soon as possible, but no later than the date specified

^b Annual average determined by the following methodology: the nutrient data from both the photic composite and discrete bottom samples are averaged by station number and month; a calendar year average is obtained for each sampling location by averaging the average of each month; and finally, the separate annual averages for each location are averaged to determine the lake-wide average. The open-water sampling locations used to determine the annual average are MWDL1, MWDL2, MWDL6, and MWDL9 (see 1.B.4. Implementation, Task 4.2, Table 5-9a-i).

^c Compliance date for wet and/or average hydrological conditions may change in response to approved TMDLs for wet/average hydrological conditions.

^d Calculated as a 5-yr running average based on measurements taken at peak macrophyte growth as determined in the Aquatic Plant Management Plan (see 1.B.4. Implementation, Task 6C)

^e Growing season is the period from May 1 through October 31 of each year. The open-water sampling locations used to determine the growing season average are MWDL1, MWDL2, MWDL6 and MWDL9 (see 1.B.4. Implementation, Task 4.2, Table 5-9a-i). The chlorophyll *a* data from the photic samples are averaged by station number and month; a growing season average is obtained for each sampling location by averaging the average of each month; and finally, the separate growing season averages for each location are averaged to determine the lake-wide average.

1.B. Big Bear Lake Nutrient Total Maximum Daily Load (TMDL) for Dry Hydrological Conditions

The TMDL technical report [Ref. #1] describes in detail the technical basis for the TMDL for Dry Hydrological Conditions that follow.

1. B. 1. Nutrient TMDL, WLAs and LAs and Compliance Dates – Dry Hydrological Conditions

A TMDL, and the WLAs and LAs necessary to achieve it, are established for total phosphorus for dry hydrological conditions only. As stated above, phosphorus and nitrogen are the nutrients that cause beneficial use impairment in Big Bear Lake. Dry hydrological conditions are defined by the conditions observed from 1999-2003; that is, average tributary inflow to Big Bear Lake ranging from 0 to 3,049 AF, average lake levels ranging from 6671 to 6735 feet and annual precipitation ranging from 0 to 23 inches. TMDLs, WLAs and LAs for wet and/or average hydrological conditions will be established as part of the TMDL Phase 2 activities once additional data have been collected (see 1.B.4. TMDL Implementation, Task 9).

The phosphorus TMDL for Big Bear Lake for dry hydrological conditions is shown in Table 5-9a-d. Wasteload allocations for point source discharges and load allocations for nonpoint source discharges are shown in Table 5-9a-e.

Table 5-9a-d

Big Bear Lake Nutrient TMDL for Dry Hydrological Conditions

	Total Phosphorus (lbs/yr)^b
TMDL ^a	26,012

^a Compliance to be achieved as soon as possible, but no later than December 31, 2015.

^b Specified as an annual average for dry hydrological conditions only.

Table 5-9a-e
 Big Bear Lake
 Phosphorus Wasteload and Load Allocations for Dry Hydrological Conditions

Big Bear Lake Nutrient TMDL for Dry Hydrological Conditions	Total Phosphorus Load Allocation (lbs/yr) ^{a, b}
TMDL	26,012
WLA	475
Urban	475
LA	25,537
Internal Sediment	8,555
Internal macrophyte	15,700
Atmospheric Deposition	1,074
Forest	175
Resort	33

^a Allocation compliance to be achieved as soon as possible, but no later than December 31, 2015.

^b Specified as an annual average for dry hydrological conditions only.

1.B.2. Margin of Safety

The Big Bear Lake Nutrient TMDL for Dry Hydrological Conditions includes an implicit margin of safety (MOS) as follows:

1. The derivation of numeric targets based on the 25th percentile of nutrient data;
2. The use of conservative assumptions in modeling the response of Big Bear Lake to nutrient loads.

1. B.3. Seasonal Variations/Critical Conditions

The critical condition for attainment of aquatic life and recreational uses in Big Bear Lake occurs during the summer and during dry years, when nutrient releases from the sediment are greatest and water column concentrations increase. Macrophyte biomass peaks in the summer/early fall. Recreational uses of the lake are also highest during the summer. This nutrient TMDL for Big Bear Lake is focused on the critical dry hydrological conditions and, in particular, on the control of the internal sediment loads that dominate during these periods. This is the first phase of TMDLs needed to address eutrophication in Big Bear Lake. The next phase will include collection of data needed to refine the in-lake and watershed models (see 1.B.4. TMDL Implementation, Task 6A) and to develop TMDLs that address other hydrological conditions (see 1.B.4. TMDL Implementation, Task 9). TMDLs for wet and average hydrological conditions will be developed to address external loading that contributes to the nutrient reservoir in the

lake and thus eutrophic conditions, particularly during the critical dry periods. However, it is important to note again that since the TMDL for dry hydrological conditions was developed to meet the numeric targets under the critical, worst-case conditions, consistent compliance with these targets is expected to be achieved even in the absence of TMDLs for wet/average hydrological conditions, given the greater lake volume and dilution anticipated under wetter conditions.

The TMDL recognizes that different nutrient inflow and cycling processes dominate the lake during different seasons. These processes were simulated in the in-lake model using data collected during all seasons over a multi-year period. Thus, the model results reflect all seasonal variations. The phosphorus numeric target is expressed as an annual average, while the chlorophyll *a* numeric target is expressed as a growing season average. The intent is to set targets that will, when achieved, result in improvement of the trophic status of Big Bear Lake year-round.

Compliance with numeric targets will ensure water quality improvements that prevent excessive algae blooms and fish kills, particularly during the critical summer period when these problems are most likely to occur.

1.B.4. TMDL Implementation

Table 5-9a-f outlines the tasks and schedules to implement the TMDL for Dry Hydrological Conditions. Each of these tasks is described below.

Table 5-9a-f

Big Bear Lake Nutrient TMDL Implementation
 Plan/Schedule Report Due Dates

Task	Description	Compliance Date-As soon As Possible but No Later Than
TMDL Phase 1		
Task 1	Establish New Waste Discharge Requirements for Nutrient Sources	February 29, 2008
Task 2	Establish New Waste Discharge Requirements for Lake Restoration Activities	February 28, 2009
Task 3	Revise Existing Waste Discharge Requirements	February 29, 2008
Task 4	Nutrient Water Quality Monitoring Program 4.1 Watershed-wide Nutrient Monitoring Plan(s) 4.2 Big Bear Lake Nutrient Monitoring Plan(s)	Plan/schedule due November 30, 2007 Annual reports due February 15
Task 5	Atmospheric Deposition Determination	Plan/schedule due August 31, 2008
Task 6	Big Bear Lake – Lake Management Plan, including: 6A. Big Bear Lake and Watershed Model Updates 6B. Big Bear Lake In-Lake Sediment Nutrient Reduction Plan 6C. Big Bear Lake Aquatic Plant Management Plan	Plan/schedule due August 31, 2008 Annual reports due February 15
TMDL Phase 2		
Task 7	Review/Revision of Big Bear Lake Water Quality Standards 7.1 Review/Revise Nutrient Water Quality Objectives 7.2 Development of biocriteria 7.3 Development of natural background definition	December 31, 2015
Task 8	Review Big Bear Lake Tributary Data	December 31, 2008
Task 9	Develop TMDLs, WLAs and LAs for wet and/or average hydrological conditions	December 31, 2012
Task 10	Review of TMDL/WLAs/Las	Once every 3 years

Task 1: Establish New Waste Discharge Requirements for Nutrient Sources

On or before February 29, 2008, the Regional Board shall issue the following new waste discharge requirements

- 1.1 Waste Discharge Requirements (WDRs) or Conditional Waiver of WDRs to the US Forest Service to incorporate the nutrient load allocations, compliance schedule and monitoring and reporting requirements for Forested Areas.

Other nutrient discharges will be addressed and permitted as appropriate.

Task 2: Establish New Waste Discharge Requirements for Lake Restoration Activities

On or before February 28, 2009, the Regional Board shall issue the following new waste discharge requirements

NPDES Permit to the US Forest Service, the State of California, Department of Transportation (Caltrans), the County of San Bernardino, San Bernardino County Flood Control District, the City of Big Bear Lake, and Big Bear Mountain Resorts for Lake restoration activities; including, but not limited to alum treatment and/or herbicide treatment. Requirements specified in these Waste Discharge Requirements, shall be developed using the Aquatic Plant Management Plan and Schedule submitted pursuant to Task 6C.

Task 3: Review and/or Revise Existing Waste Discharge Requirements

Waste Discharge Requirements (WDRs) have been issued by the Regional Board regulating discharge of various types of wastes in the Big Bear Lake watershed. On or before February 29, 2008, these WDRs shall be reviewed and revised as necessary to incorporate the nutrient wasteload allocations, compliance schedule and TMDL monitoring and reporting requirements.

- 3.1 Waste Discharge Requirements for the San Bernardino County Flood Control and Transportation District, the County of San Bernardino and the Incorporated Cities of San Bernardino County within the Santa Ana Region, Areawide Urban Runoff, NPDES No. CAS 618036 (Regional Board Order No. R8-2002-0012). The current Order has provisions to address TMDL issues. In light of these provisions, revision of the Order may not be necessary to address TMDL requirements.
- 3.2 State of California, Department of Transportation (Caltrans) Stormwater Permit Provision E.1 of Order No. 99-06-DWQ requires Caltrans to maintain and implement a Storm Water Management Plan (SWMP). Annual updates of the SWMP needed to maintain an effective program are required to be submitted to the State Water Resources Control Board.

Provision E.2 of Order No. 99-06-DWQ requires Caltrans to submit a Regional Workplan by April 1 of each year for the Executive Officer's approval. As part of the annual update of the SWMP and Regional Workplan, Caltrans shall submit plans and schedules for conducting the monitoring and reporting requirements specified in Task 4 and the special studies required in Task 6.

Task 4: Monitoring

4.1 Watershed-wide Nutrient Water Quality Monitoring Program

No later than November 30, 2007, the US Forest Service, the State of California, Department of Transportation (Caltrans), the County of San Bernardino, San Bernardino County Flood Control District, the City of Big Bear Lake and Big Bear Mountain Resorts shall, as a group, submit to the Regional Board for approval a proposed watershed-wide nutrient monitoring program that will provide data necessary to review and update the Big Bear Lake Nutrient TMDL, to determine specific sources of nutrients and to develop TMDLs for other hydrological conditions. Data to be collected and analyzed shall address, at a minimum, determination of compliance with the phosphorus dry condition TMDL, including the WLAs and LAs, and with the existing total inorganic nitrogen (TIN) objective.

At a minimum, the proposed plan shall include the collection of samples at the stations specified in Table 5-9a-g and shown in Figure 5-7, at the frequency specified in Table 5-9a-h. Modifications to the required sampling stations, sampling frequencies and constituents to be monitored (see below) will be considered upon request by the stakeholders, accompanied by a report that describes the rationale for the proposed changes and identifies recommended alternatives. In addition to water quality samples, every two weeks on a year-round basis, visual monitoring (including documenting flow type and stage) determinations shall be made at all stations shown in Table 5-9a-g. Flow measurements will be required each time water quality samples are obtained.

At a minimum, samples shall be analyzed for the following constituents:

- Total nitrogen
- Nitrate + nitrite nitrogen
- Total phosphorus
- Total dissolved phosphorus
- Suspended sediment concentration
- Chlorophyll *a*
- Dissolved oxygen
- Alkalinity
- Bedload concentration
- Total nitrogen in sediment
- Ammonia nitrogen
- Total dissolved nitrogen
- Ortho-phosphate (SRP)
- Temperature
- Turbidity
- pH
- Conductivity
- Hardness
- Grain size
- Total phosphorus in sediment

Note: Chlorophyll *a* to be collected and analyzed only from May 1- October 31 of each year at the frequencies described in Table 5-9a-h; chlorophyll *a* sampling not required at Bear Creek outlet.

In addition, the proposed plan shall include a proposed plan and schedule for development of a Big Bear Lake Sedimentation Processes Plan for the determination of nutrient loads associated with sediment. At a minimum, the proposed plan shall include the placement of sediment traps at the mouths of Rathbun, Knickerbocker, Grout and Boulder Creeks to determine the rate of influx of sediment and particulate nutrients to Big Bear Lake, as specified in Table 5-9a-g and shown in Figure 5-7, at the specified frequency indicated in Table 5-9a-h. Modifications to the required sampling stations, sampling frequencies and constituents to be monitored will be considered upon request by the stakeholders, accompanied by a report that describes the rationale for the proposed changes and identifies recommended alternatives. The proposed monitoring plan shall be implemented upon Regional Board approval at a duly noticed public meeting. An annual report

summarizing the data collected for the year and evaluating compliance with the TMDL/WLAs/LAs shall be submitted by February 15 of each year.

In lieu of this coordinated monitoring plan, one or more of the parties identified above may submit a proposed individual or group monitoring plan for Regional Board approval. Any such individual or group monitoring plan is due no later than November 30, 2007 and shall be implemented upon Regional Board approval at a duly noticed public meeting. An annual report of data collected pursuant to approved individual/group plan(s) shall be submitted by February 15 of each year. The report shall summarize the data and evaluate compliance with the TMDL/WLAs/LAs.

Table 5-9a-g

Big Bear Lake Watershed
 Minimum Required Sampling Station Locations

Station Number	Station Description
MWDC2	Bear Creek Outlet
MWDC3	Grout Creek at Hwy 38
MWDC4	Rathbun Creek at Sandalwood Ave.
MWDC5	Summit Creek at Swan Dr.
MWDC6	Rathbun Creek below the Zoo
MWDC8	Knickerbocker Creek at Hwy 18
MWDC13	Boulder Creek at Hwy 18

Note: Bear Creek outlet to be sampled monthly from March -November

At a minimum, samples shall be analyzed at the frequencies specified in Table 5-9a-h:

Table 5-9a-h

Big Bear Lake Watershed
 Sampling Frequency

Flow type	Months monitoring is required	Frequency
Baseflow	January 1 – December 31	Once/month when baseflow is present;
Snowmelt	January 1 – May 31 ¹	Varied -See note 2 below
Storm events	January 1 – December 31	3 storms per year ³

¹ Sampling to begin after the first substantial snowfall resulting in an accumulation of 1.0 inch or more of snow

² Samples to be collected daily for the first three days of the snowmelt period. If ambient air temperatures remain above freezing after three days have passed, snowmelt sampling will then be performed once a week for the following three weeks or until the snowmelt period ceases. Snowmelt cessation will be determined by one of the following: a) ambient air temperatures drop below freezing during most of the day; or b) a storm/rain precipitation event occurs after the snowmelt event was initiated. Beginning March 15th of each year, snowmelt flows will most likely be continuous since ambient air temperatures will usually remain above freezing. From March 15th through May 31 of each year, snowmelt sampling events will be conducted daily for the first two days of a snowmelt event and then once a week thereafter until the spring runoff period has ended or the tributary station location shows no signs of daily flows for one week. Flow status will be evaluated in the afternoon, when ambient air temperatures are highest and flow potential is greatest.

³ Two storm events to be sampled during October – March; 1 storm event to be sampled during April – September. For each storm event, eight samples across the hydrograph are to be collected.

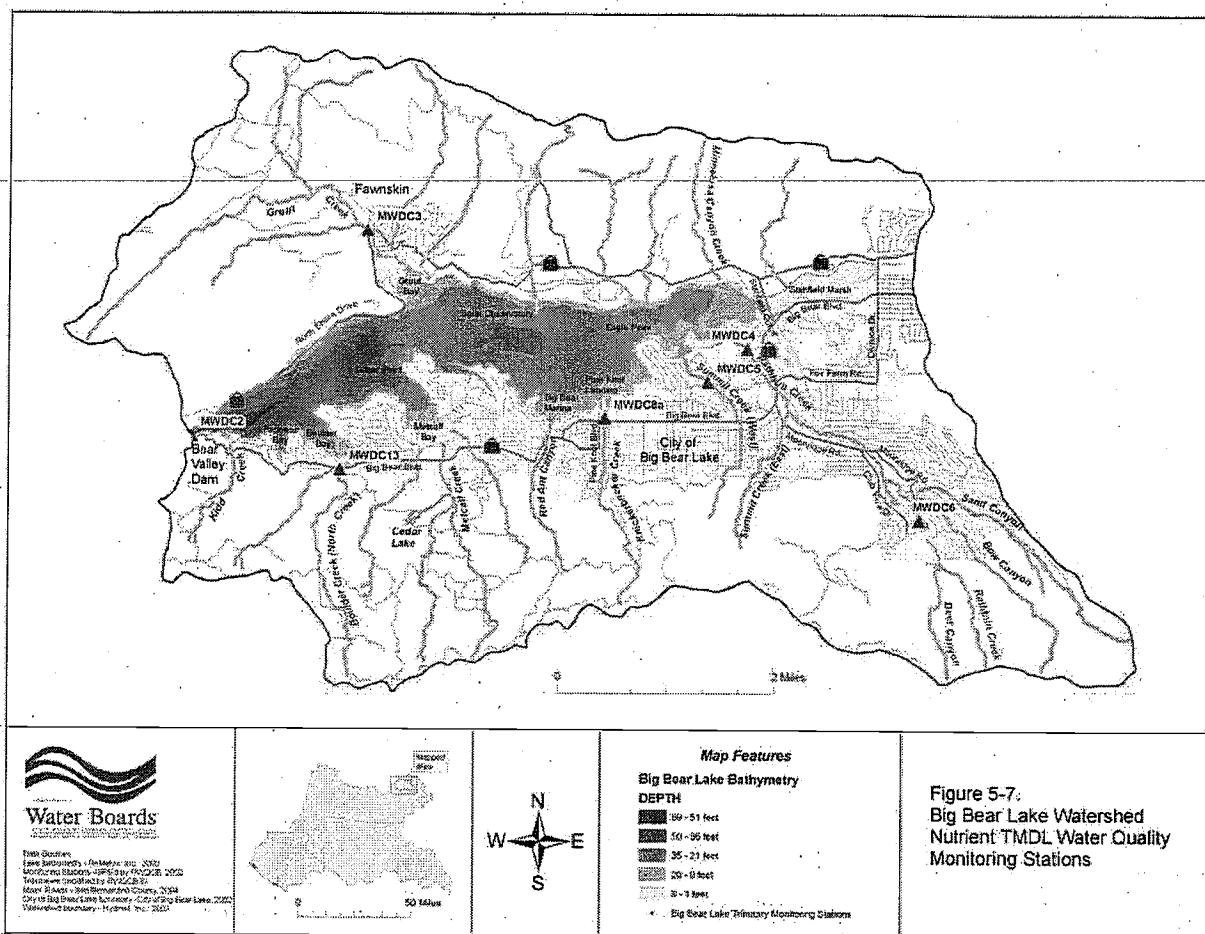


Figure 5-7 – Big Bear Lake Watershed Nutrient TMDL Water Quality Stations

4.2 Big Bear Lake: In-Lake Nutrient Monitoring Program

No later than November 30, 2007, the US Forest Service, the State of California, Department of Transportation (Caltrans), the County of San Bernardino, San Bernardino County Flood Control District, the City of Big Bear Lake, and Big Bear Mountain Resorts shall, as a group, submit to the Regional Board for approval a proposed Big Bear Lake nutrient monitoring program that will provide data necessary to review and update the Big Bear Lake Nutrient TMDL, and to develop TMDLs for other hydrological conditions. Data to be collected and analyzed shall address, at a minimum: (1) determination of compliance with phosphorus and chlorophyll *a* numeric targets; (2) determination of compliance with the existing total inorganic nitrogen (TIN) objective; and (3) refinement of the in-lake model for the purposes of TMDL review and development.

At a minimum, the proposed plan shall include the collection of samples at the stations specified in Table 5-9a-i and shown in Figure 5-8, at the specified frequency indicated in Table 5-9a-i. Modifications to the required sampling stations, sampling frequencies and constituents to be monitored (see below) will be considered upon request by the stakeholders, accompanied by a report that describes the rationale for the

proposed changes and identifies recommended alternatives. With the exception of hardness, alkalinity, total organic carbon (TOC), dissolved organic carbon (DOC), and chlorophyll *a*, each sample to be analyzed shall be collected as a photic zone composite (from the surface to 2 times the secchi depth) and as a bottom discrete (0.5 meters off the surface bottom) sample. Hardness, alkalinity, TOC, DOC, and chlorophyll *a* shall be collected as photic zone composites. Dissolved oxygen, water temperature, turbidity, specific conductance, and pH shall be measured at 1-meter intervals from the surface to 0.5 meters from the bottom using a multi-parameter water quality meter. Water clarity shall be measured with a secchi disk.

At a minimum, in-lake samples must be analyzed for the following constituents:

- Specific conductance
- Water temperature
- Chlorophyll *a*
- Total nitrogen
- Nitrate +nitrite nitrogen
- Total phosphorus
- Total hardness
- Total dissolved phosphorus
- Dissolved organic carbon (DOC)
- Total dissolved nitrogen
- Dissolved oxygen
- Water clarity (secchi depth)
- Ammonia nitrogen
- Alkalinity
- Turbidity
- Ortho-phosphate (SRP)
- Total suspended solids (TSS)
- pH
- Total dissolved solids (TDS)
- Total organic carbon (TOC)

The monitoring plan shall be implemented upon Regional Board approval at a duly noticed public meeting. An annual report summarizing the data collected for the year and evaluating compliance with the TMDL/WLAs/LAs and numeric targets shall be submitted by February 15 of each year.

Table 5-9a-i

Big Bear Lake Minimum Required Sampling Station Locations

Station Number	Station Description
MWDL1	Big Bear Lake – Dam
MWDL2	Big Bear Lake – Gilner Point
MWDL6	Big Bear Lake – Mid Lake Middle
MWDL9	Big Bear Lake – Stanfield Middle

Frequency of sampling at all stations: for all constituents except TOC and DOC, monthly from March – November; bi-weekly (i.e., every other week) from June 1 through October 31. TOC and DOC to be monitored four times per year (quarterly) from January through December.

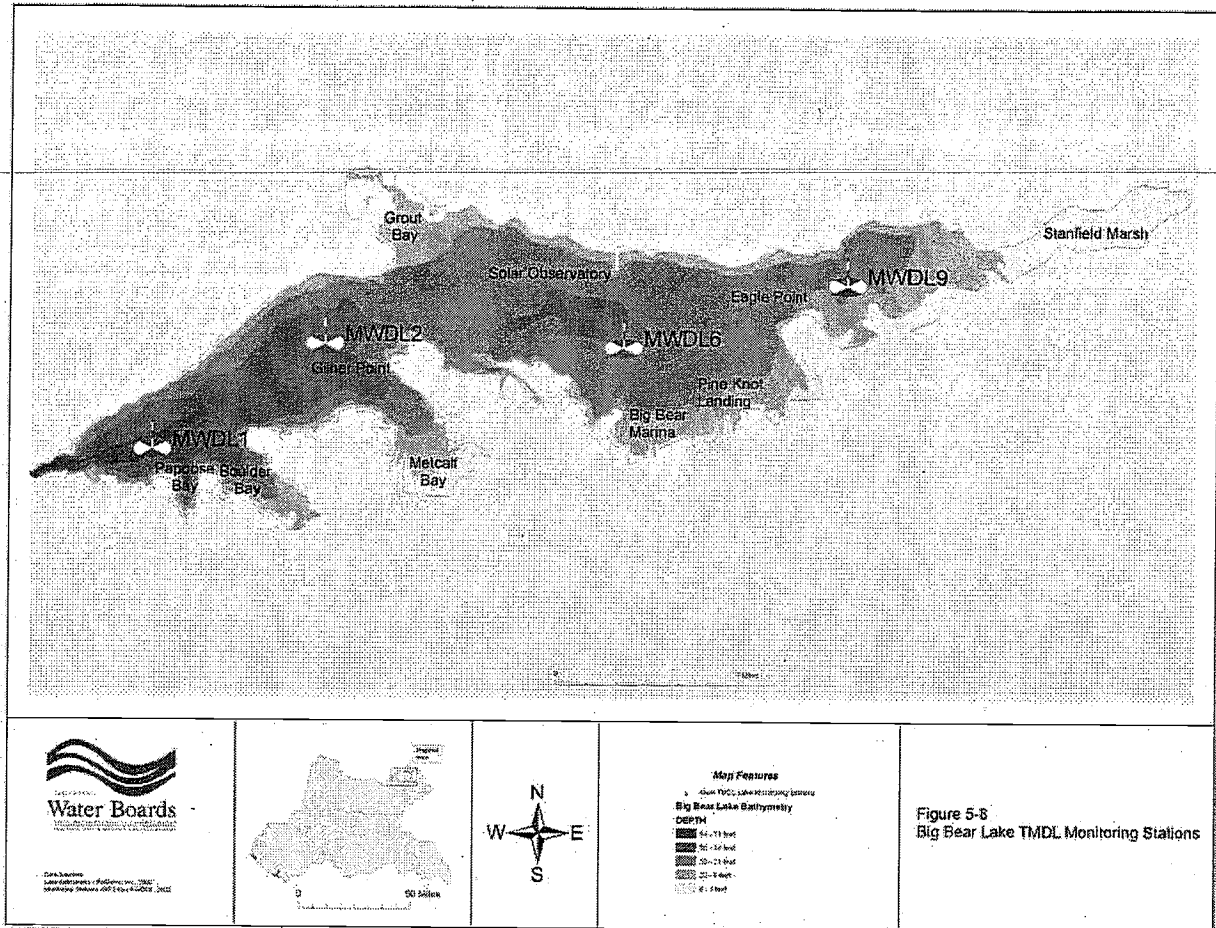


Figure 5-8 Big Bear Lake TMDL Monitoring Stations

In lieu of this coordinated monitoring plan, one or more of the parties identified above may submit a proposed individual or group monitoring plan for Regional Board approval. Any such individual or group monitoring plan is due no later than November 30, 2007 and shall be implemented upon Regional Board approval at a duly noticed public meeting. An annual report of data collected pursuant to approved individual/group plan(s), shall be submitted by February 15 of each year. The report shall summarize the data and evaluate compliance with the TMDL/WLAs/LAs and numeric targets.

Task 5: Atmospheric Deposition Determination

No later than August 31, 2008, the Regional Board, in coordination with local stakeholders, the South Coast Air Quality Management District and the California Air Resources Board, shall develop a plan and schedule for quantifying atmospheric deposition of nutrients in the Big Bear Lake watershed.

Task 6: Big Bear Lake-Lake Management Plan

No later than August 31, 2008, the US Forest Service, the State of California, Department of Transportation (Caltrans), the County of San Bernardino, San Bernardino County Flood Control District, the City of Big Bear Lake, and Big Bear Mountain Resorts, shall, as a group, submit to the Regional Board for approval a proposed Lake Management Plan for Big Bear Lake. The purpose of the plan is to identify a coordinated and comprehensive strategy for management of the lake and surrounding watershed to address restoration and protection of the lake's beneficial uses. The plan shall include the following:

- A) A proposed plan and schedule for updating the existing Big Bear Lake watershed nutrient model and the Big Bear Lake in-lake nutrient model. The plan and schedule must take into consideration additional data and information that are or will be generated from the required TMDL monitoring programs (Tasks 4.1 and 4.2, above).
- B) A proposed plan and schedule for in-lake sediment nutrient reduction for Big Bear Lake. The proposed plan shall include an evaluation of the applicability of various in-lake treatment technologies to support development of a long-term strategy for control of nutrients from the sediment. The submittal shall also contain a proposed sediment nutrient monitoring program to evaluate the effectiveness of any strategies implemented.
- C) The proposed plan shall include an evaluation of the applicability of various in-lake treatment technologies to control noxious and nuisance aquatic plants. The plan shall also include a description of the monitoring conducted and proposed to track aquatic plant diversity, coverage, and biomass. Data to be collected and analyzed shall address, at a minimum, determination of compliance with the numeric targets for macrophyte coverage and percentage of nuisance aquatic vascular plant species (see 1.A., above).

In addition, at a minimum, the proposed plan shall also address the following:

- The plan shall be based on identified and acceptable goals for lake capacity, biological resources and recreational opportunities. Acceptable goals shall be identified in coordination with the Regional Board and other responsible agencies, including the California Department of Fish and Game and the U.S. Fish and Wildlife Service.
- The plan shall include a proposed plan and schedule for the development of biocriteria for Big Bear Lake. (This is intended to complement Regional Board efforts to develop biocriteria and to signal the parties' commitment to participate substantively.)
- The plan must identify a scientifically defensible methodology for measuring changes in the capacity of the lake.
- The proposed plan shall identify recommended short and long-term strategies for control and management of sediment and dissolved and particulate nutrient inputs to the lake.
- The plan shall also integrate the beneficial use survey information required to be developed pursuant to the Regional Board's March 3, 2005, Clean Water Act Section 401 Water Quality Standards Certification for Big Bear Lake Nutrient/Sediment Remediation Project, City of Big Bear Lake, County of San Bernardino, California. The purpose of the beneficial use survey is to correlate beneficial uses of the lake with lake bottom contours. The survey is required to be conducted throughout the lake. The survey will determine the location and the quality of beneficial uses of the lake and the contours of the lake bottom where these uses occur. The survey is expected to be used in regulating future lake dredge projects to maximize the restoration and protection of the lake's beneficial uses.

The Big Bear Lake – Lake Management Plan shall be implemented upon Regional Board approval at a duly noticed public meeting. Once approved, the plan shall be reviewed and revised as necessary at least once

every three years. The review and revision shall take into account assessments of the efficacy of control/management strategies implemented and relevant requirements of new or revised TMDLs for Big Bear Lake and its watershed. An annual report summarizing the data collected for the year and evaluating compliance with the TMDL/WLAs/LAs and numeric targets shall be submitted by February 15 of each year.

~~In lieu of this coordinated plan, one or more of the parties identified above may submit a proposed individual or group Big Bear Lake – Lake Management Plan and schedule for approval by the Regional Board. Any such individual or group plan must conform to the requirements specified above and is due no later than August 31, 2008. An individual or group plan shall be implemented upon Regional Board approval at a duly noticed public meeting. An annual report summarizing the data collected for the year and evaluating compliance with the TMDL/WLAs/LAs and numeric targets shall be submitted by February 15 of each year.~~

Task 7: Review and Revision of Big Bear Lake Water Quality Standards

By December 31, 2015, the Regional Board shall:

- 7.1 Review/revise as necessary the total inorganic nitrogen and total phosphorus numeric water quality objectives for Big Bear Lake. The Regional Board shall also consider the development of narrative or numeric objectives for other indicators of impairment (e.g., chlorophyll *a*, macrophyte coverage and species composition), in lieu of or in addition to review/revision of the numeric objectives for phosphorus and nitrogen.
- 7.2 Develop biocriteria for Big Bear Lake.
- 7.3 Develop a definition for natural background sources of nutrients (and other constituents) to Big Bear Lake and its tributaries.

Given budgetary constraints, completion of these tasks are likely to require substantive contributions from interested parties.

Task 8: Review of Big Bear Lake Tributary Data

No later than December 2008, the Regional Board shall review data collected on Rathbun Creek, Summit Creek and Grout Creek to determine whether beneficial uses of these tributaries are impaired by nutrients. If the Creeks are found to be impaired by nutrients, the Regional Board shall develop a TMDL development project plan and schedule.

If these tributaries are found not to be impaired by nutrients, Regional Board shall schedule the delisting of the tributaries from the 303(d) list of impaired waters at the earliest opportunity.

Task 9: Development of TMDLs for Wet and/or Average Hydrological Conditions

No later than December 31, 2012, the Regional Board shall utilize additional water quality data and information collected pursuant to monitoring program requirements (Tasks 4 and 5) and model updates (Task 6A) to develop proposed nutrient TMDLs for Big Bear Lake for wet and/or average hydrological conditions. Completion of this task is contingent on the collection of requisite data for wet and/or average hydrological conditions.

Task 10: Review/Revision of the Big Bear Lake Nutrient TMDL for Dry Hydrological Conditions (TMDL "Re-opener")

The basis for the TMDL for Dry Hydrological Conditions, the implementation plan and schedule will be re-evaluated at least once every three years² to determine the need for modifying the allocations, numeric targets and TMDL. Regional Board staff will continue to review all data and information generated pursuant to the TMDL requirements on an ongoing basis. Based on results generated through the monitoring programs, special studies and/or modeling analyses, changes to the TMDL may be warranted. Such changes will be considered through the Basin Plan Amendment process.

The Regional Board is committed to the review of this TMDL every three years, or more frequently if warranted by these or other studies.

References

1. California Regional Water Quality Control Board, Santa Ana Region. Staff Report on the Nutrient Total Maximum Daily Loads for Big Bear Lake, June, 2005.

² The three-year schedule is tied to the 3 year triennial review schedule.

ATTACHMENT 50

CHAPTER 4

WATER QUALITY OBJECTIVES

INTRODUCTION

The Porter-Cologne Act defines water quality objectives as "...the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area" (§13050 (h)). Further, the Act directs (§13241) that:

"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 as 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:

- (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."

Two important additional factors which were also considered in setting the water quality objectives in this Plan are (1) historic and present water quality, and (2) the antidegradation policies cited in Chapter 2.

The water quality objectives in this plan supersede and replace those adopted in the 1983 Basin Plan. Perhaps the most significant difference between this and the prior Plan is the inclusion of new objectives for un-ionized ammonia and site-specific objectives for the middle Santa Ana River system for copper, cadmium, and lead.

Some of these water quality objectives refer to "controllable sources" or "controllable water quality factors." Controllable sources include both point and nonpoint source discharges, such as conventional discharges from pipes, as well as discharges from land areas or other diffuse sources. Controllable water quality factors are those characteristics of the discharge and/or the receiving water which can be controlled by

treatment or management methods. Examples of other activities which may not involve waste discharges, but which also constitute controllable water quality factors, include the percolation of storm water, transport/delivery of water via natural stream channels, and stream diversions.

The water quality objectives in this Plan are specified according to waterbody type: ocean waters; enclosed bays and estuaries; inland surface waters; and groundwaters.

The narrative water quality objectives below are arranged alphabetically. They vary in applicability and scope, reflecting the variety of beneficial uses of water that have been identified (Chapter 3). Where numerical objectives are specified, they generally represent the levels that will protect beneficial uses. However, in establishing waste discharge requirements for specific discharges, the Regional Board may find that more stringent levels are necessary to protect beneficial uses. In other cases, an objective may prohibit the discharge of specific substances, may tolerate natural or "background" levels of certain substances or characteristics but no increases over those values, or may express a limit in terms of not impacting other beneficial uses. An adverse effect or impact on a beneficial use occurs where there is an actual or threatened loss or impairment of that beneficial use.

OCEAN WATERS (Amended by Resolution No. 97-20, April 18, 1997)

Water quality objectives specified in the "Water Quality Control Plan for Ocean Waters of California" (Ocean Plan) and the "Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California" (Thermal Plan) are incorporated into this Basin Plan by reference. The provisions of the Ocean Plan and Thermal Plan apply to the ocean waters within this Region. (End of Resolution No. 97-20)

ENCLOSED BAYS AND ESTUARIES

"Enclosed bays" means indentations along the coast which enclose an area of oceanic water within distinct headlands or harbor works. "Estuaries" means waters, including coastal lagoons, located at the mouths of streams which serve as areas of mixing for fresh and ocean waters. Enclosed bays and estuaries do not include ocean waters or inland surface waters (see definition in the Inland Surface Waters section).

The objectives which are included below apply to all enclosed bays and estuaries within the region. In addition to these parameter-specific objectives, the following narrative objective shall apply:

Enclosed bay and estuarine communities and populations, including vertebrate, invertebrate, and plant species, shall not be degraded as a result of the discharge of waste. Degradation is damage to an aquatic community or population with the result that a balanced community no longer exists. A balanced community is one that is (1) diverse, (2) has the ability to sustain itself through cyclic seasonal changes, (3) includes necessary food chain species, and (4) is not dominated by pollution-tolerant

species, unless that domination is caused by physical habitat limitations. A balanced community also (5) may include historically introduced non-native species, but (6) does not include species present because best available technology has not been implemented, or (7) because site-specific objectives have been adopted, or (8) because of thermal discharges.

Algae

Excessive growth of algae and/or other aquatic plants can degrade water quality. Algal blooms sometimes occur naturally, but they are often the result of excess nutrients (*i.e.*, nitrogen, phosphorus) from waste discharges or nonpoint sources. These blooms can lead to problems with tastes, odors, color, and increased turbidity and can depress the dissolved oxygen content of the water, leading to fish kills. Floating algal scum and algal mats are also an aesthetically unpleasant nuisance.

Waste discharges shall not contribute to excessive algal growth in receiving waters.

Bacteria, Coliform

Fecal bacteria are part of the intestinal flora of warm-blooded animals. Their presence in bay and estuarine waters is an indicator of pollution. Total coliform is measured in terms of the number of coliform organisms per unit volume. Total coliform numbers can include non-fecal bacteria, so additional testing is often done to confirm the presence and numbers of fecal coliform bacterial. Water quality objectives for numbers of total and fecal coliform vary with the uses of the water, as shown below.

Bays and Estuaries

REC-1 *Fecal coliform: log mean less than 200 organisms/100 mL based on five or more samples/30 day period, and not more than 10% of the samples exceed 400 organisms/100 mL for any 30-day period.*

SHEL *Fecal coliform: median concentration not more than 14 MPN (most probable number)/100 ml and not more than 10% of samples exceed 43 mpn / 100 mL*

Chlorine, Residual

Wastewater disinfection with chlorine usually produces a chlorine residual. Chlorine and its reaction products are toxic to aquatic life.

To protect aquatic life, the chlorine residual in wastewater discharged to enclosed bays and estuaries shall not exceed 0.1 mg/L.

Color

Color in water may arise naturally, such as from minerals, plant matter or algae, or may be caused by industrial pollutants. Color is primarily an aesthetic consideration.

Waste discharges shall not result in coloration of the receiving waters which causes a nuisance or adversely affects beneficial uses. The natural color of fish, shellfish or other bay and estuarine water resources used for human consumption shall not be impaired.

Floatables

Floatables are an aesthetic nuisance as well as a substrate for algae and insect vectors.

Waste discharges shall not contain floating materials, including solids, liquids, foam or scum, which cause a nuisance or adversely affect beneficial uses.

Oil and Grease

Oil and grease can be present in water as a result of the discharge of treated wastes and the accidental or intentional dumping of wastes into sinks and storm drains. Oils and related materials have a high surface tension and are not soluble in water, therefore forming a film on the water's surface. This film can result in nuisance conditions because of odors and visual impacts. Oil and grease can coat birds and aquatic organisms, adversely affecting respiration and/or thermoregulation.

Waste discharges shall not result in deposition of oil, grease, wax or other materials in concentrations which result in a visible film or in coating objects in the water, or which cause a nuisance or adversely affect beneficial uses.

Oxygen, Dissolved

Adequate dissolved oxygen (D.O.) is vital for aquatic life. Depression of D.O. levels can lead to fish kills and odors resulting from anaerobic decomposition. Dissolved oxygen content in water is a function of water temperature and salinity.

The dissolved oxygen content of enclosed bays and estuaries shall not be depressed to levels that adversely affect beneficial uses as a result of controllable water quality factors.

pH

pH is a measure of the hydrogen ion concentration of water. pH values generally range from 0 (most acidic) to 14 (most alkaline). Many pollutants can alter the pH, raising or lowering it excessively. These extremes in pH can have adverse effects on aquatic biota and can corrode pipes and concrete. Even small changes in pH can harm aquatic biota.

The pH of bay or estuary waters shall not be raised above 8.6 or depressed below 7.0 as a result of controllable water quality factors; ambient pH levels shall not be changed more than 0.2 units.

Radioactivity

Radioactive materials shall not be present in the bay or estuarine waters of the region in concentrations which are deleterious to human, plant or animal life.

Solids, Suspended and Settleable

Settleable solids are deleterious to benthic organisms and may cause anaerobic conditions to form. Suspended solids can clog fish gills and interfere with respiration in aquatic fauna. They also screen out light, hindering photosynthesis and normal aquatic plant growth and development.

Enclosed bays and estuaries shall not contain suspended or settleable solids in amounts which cause a nuisance or adversely affect beneficial uses as a result of controllable water quality factors.

Sulfides

Sulfides are generated by many industries and from the anaerobic decomposition of organic matter. In water, sulfides can react to form hydrogen sulfide (H₂S), commonly known for its "rotten egg" odor. Sulfides in ionic form are also toxic to fish.

The dissolved sulfide content of enclosed bays and estuaries shall not be increased as a result of controllable water quality factors.

Surfactants (surface-active agents)

This group of materials includes detergents, wetting agents, and emulsifiers.

Waste discharges shall not contain concentrations of surfactants which result in foam in the course of flow or the use of the receiving water, or which adversely affect aquatic life.

Taste and Odor

Undesirable tastes and odors in water may be a nuisance and may indicate the presence of a pollutant(s).

The enclosed bays and estuaries of the region shall not contain, as a result of controllable water quality factors, taste- or odor-producing substances at concentrations which cause a nuisance or adversely affect beneficial uses. The natural taste and odor of fish, shellfish or other enclosed bay and estuarine water resources used for human consumption shall not be impaired.

Temperature

Waste discharges can cause temperature changes in the receiving waters which adversely affect the aquatic biota. Discharges most likely to cause these temperature effects are cooling tower and heat exchanger blowdown.

All bay and estuary waters shall meet the objective specified in the Thermal Plan.

Toxic Substances

Toxic substances shall not be discharged at levels that will bioaccumulate in aquatic resources to level which are harmful to human health.

The concentrations of toxic substances in the water column, sediments or biota shall not adversely affect beneficial uses.

Turbidity

Turbidity is a measure of light scattered due to particulates in water.

Increases in turbidity which result from controllable water quality factors shall comply with the following:

<u>Natural Turbidity</u>	<u>Maximum Increase</u>
0-50 NTU	20%
50-100 NTU	10 NTU
Greater than 100 NTU	10%

All enclosed bay and estuaries of the region shall be free of changes in turbidity which adversely affect beneficial uses.

INLAND SURFACE WATERS

Inland surface waters include streams, rivers, lakes, and wetlands in the Region. Ocean waters and enclosed bays and estuaries are not considered inland surface waters.

The narrative objectives which are included below apply to all inland surface waters within the region, including lakes, streams, and wetlands. In addition, specific numerical objectives are listed in Table 4-1. Where more than one objective is applicable, the stricter shall apply. In addition to these objectives, the following shall apply:

Inland surface water communities and populations, including vertebrate, invertebrate, and plant species, shall not be degraded as a result of the discharge of waste. Degradation is damage to an aquatic community or population with the result that balanced community no longer exists. A balanced community is one that is (1) diverse, (2) has the ability to sustain itself through cyclic seasonal changes, (3) includes necessary food chain species, and (4) is not dominated by pollution-tolerant species, unless that domination is caused by physical habitat limitations. A balanced community also (5) may include historically introduced non-native species, but (6) does not include species present because best available technology has not been implemented, or (7) because site-specific objectives have been adopted, or (8) because of thermal discharges.

Algae

Excessive growth of algae and/or other aquatic plants can degrade water quality. Algal blooms sometimes occur naturally, but they are often the result of excess nutrients (*i.e.*, nitrogen, phosphorous) from waste discharges or nonpoint sources. These blooms can lead to problems with tastes, odors, color, and increased turbidity and can depress the dissolved oxygen content of the water, leading to fish kills. Floating algal scum and algal mats are also an aesthetically unpleasant nuisance.

Waste discharges shall not contribute to excessive algal growth in inland surface receiving waters.

Ammonia, Un-ionized

Un-ionized ammonia (NH₃, or UIA) is toxic to fish and other aquatic organisms. In water, UIA exists in equilibrium with ammonium (NH₄⁺) and hydroxide (OH) ions. The proportions of each change as the temperature, pH, and salinity of the water change.

The 1983 Basin Plan specified an UIA objective of 0.8 mg/L for waterbodies designated **WARM**. The SWRCB directed the Regional Board to review the 0.8 mg/L objective because of concerns that it is not stringent enough to protect aquatic wildlife. The USEPA concurred that this review was necessary.

The Regional Board contracted with California State University, Fullerton to conduct a study of un-ionized ammonia in the Santa Ana River and to develop recommendations regarding the UIA objective. This study, which was conducted in 1985-87, was complemented by additional Regional Board staff analysis. The additional staff analysis focused on adjusting EPA's national criteria for **WARM** waters (published in 1984 and amended in 1992), using the recalculation procedure. With this procedure, cold and warmwater species not found in the Santa Ana Region's **WARM** designated waters were deleted from the database used to derive the national criteria, and new criteria were calculated.

Based on these analyses, this Plan specifies UIA objectives for **WARM** and **COLD** designated waterbodies in the Region. **Note:** site-specific objectives have been developed for the Santa Ana River and certain tributaries (see next page).

Acute (1-hour) UIA-N Objectives

For waterbodies designed **COLD**:

Objective = 0.822 [0.52/FT/FPH/2], where

$$\begin{array}{ll} FT = 10^{(0.03(20-T))} & 0 \leq T \leq 20^{\circ}\text{C} \\ FT = 1 & 20 \leq T \leq 30^{\circ}\text{C} \end{array}$$

$$FPH = \frac{1 + 10^{(7.4 - \text{pH})}}{1.25} \quad 6.5 \leq \text{pH} \leq 8$$

$$FPH = 1 \quad 8 \leq \text{pH} \leq 9$$

For waterbodies designated **WARM**:

Objective = $0.822[0.87/FT/FPH/2]$, where

$$FT = 10^{(0.03(20-T))} \quad 0 \leq T \leq 25^{\circ}\text{C}$$

$$FT = 0.7079 \quad 25 \leq T \leq 30^{\circ}\text{C}$$

$$FPH = \frac{1+10^{(7.4-pH)}}{1.25} \quad 6.5 \leq pH \leq 8$$

$$FPH = 1 \quad 8 \leq pH \leq 9$$

Chronic (4-day) UIA-N Objectives

For waterbodies designated **COLD**:

Objective = $0.822[0.52/FT/FPH/RATIO]$, where

$$FT = 10^{(0.03(20-T))} \quad 0 \leq T \leq 15^{\circ}\text{C}$$

$$FT = 1.4125 \quad 15 \leq T \leq 30^{\circ}\text{C}$$

$$FPH = \frac{1+10^{(7.4-pH)}}{1.25} \quad 6.5 \leq pH \leq 8$$

$$FPH = 1 \quad 8 \leq pH \leq 9$$

$$RATIO = \frac{24[10^{(7.7-pH)}]}{1+10^{(7.4-pH)}} \quad 6.5 \leq pH \leq 7.7$$

$$RATIO = 13.5 \quad 7.7 \leq pH \leq 9$$

For waterbodies designated **WARM**:

Objective = $0.822[0.87/FT/FPH/RATIO]$, where

$$FT = 10^{(0.03(20-T))} \quad 0 \leq T \leq 20^{\circ}\text{C}$$

$$FT = 1 \quad 20 \leq T \leq 30^{\circ}\text{C}$$

$$FPH = \frac{1+10^{(7.4-pH)}}{1.25} \quad 6.5 \leq pH \leq 8$$

$$FPH = 1 \quad 8 \leq pH \leq 9$$

$$RATIO = \frac{24[10^{(7.7-pH)}]}{1+10^{(7.4-pH)}} \quad 6.5 \leq pH \leq 7.7$$

$$RATIO = 13.5 \quad 7.7 \leq pH \leq 9$$

Calculated numerical UIA-N objectives as well as corresponding total ammonia nitrogen concentration for various pH and temperature conditions are shown in Tables

4-2 and 4-3. Table 4-4 lists the above equations in a form that can be entered into a computer or calculator program.

Site-specific Un-ionized Ammonia Objective for the Santa Ana River System

In addition to the un-ionized ammonia (UIA) objectives specified above, this Plan includes a chronic (4-day) site-specific UIA objective for the middle Santa Ana River, Chino Creek, Mill Creek (Prado Area), Temescal Creek, and San Timoteo Creek. This site-specific objective is based on carefully controlled chronic toxicity tests on Santa Ana River water conducted as part of the Santa Ana River Use-Attainability Analysis Study. The Santa Ana River water was spiked with UIA concentrations ranging from 0.0 (control) to 1.0 mg/L. The No Observed Effect Level (NOEL) was found to be at a UIA concentration of 0.24 mg/L (or 0.19 mg/L as UIA-nitrogen). Using a 50% safety factor, the UIA objective developed is 0.12 mg/L (or 0.098 mg/L UIA-nitrogen).

To prevent chronic toxicity to aquatic life in the Santa Ana River, Reaches 2, 3, and 4, Chino Creek, Mill Creek (Prado Area), Temescal Creek and San Timoteo Creek, discharges to these waterbodies shall not cause the concentration of un-ionized ammonia (as nitrogen) to exceed 0.098 mg/L) (NH₃-N) as a 4-day average.

Bacteria, Coliform

Fecal bacteria are part of the intestinal flora of warm-blooded animals. Their presence in surface waters is an indicator of pollution. Total coliform is measured in terms of the number of coliform organisms per unit volume. Total coliform numbers can include non-fecal bacteria, so additional testing is often done to confirm the presence and numbers of fecal coliform bacteria. Water quality objectives for numbers of total and fecal coliform vary with the uses of the water, as shown below.

Lakes and Streams

MUN *Total coliform: less than 100 organisms/100 mL*

REC-1 *Fecal coliform: log mean less than 200 organisms/100 mL based on five or more samples/30 day period, and not more than 10% of the samples exceed 400 organisms/100 mL for any 30-day period*

REC-2 *Fecal coliform: average less than 2000 organisms/100 mL and not more than 10% of samples exceed 4000 organisms/100 mL for any 30-day period*

Boron

Boron is not considered a problem in drinking water supplies until concentrations of 20-30 mg/L are reached. In irrigation, boron is an essential element. However, boron concentrations in excess of 0.75 mg/L may be deleterious to certain crops, particularly citrus. The maximum safe concentration of even the most tolerant plants is about 4.0mg/L of boron.

Boron concentrations shall not exceed 0.75 mg/L in inland surface waters of the region as a result of controllable water quality factors.

Chemical Oxygen Demand (COD)

COD is a measure of the total amount of oxidizable material present in a sample, including stable organic materials which are not measured by the BOD test.

Waste discharges shall not result in increases in COD levels in inland surface waters which exceed the values shown in Table 4-1 or which adversely affect beneficial uses.

Chloride

Excess chloride concentrations lead primarily to economic damage rather than public health hazards. Chlorides are considered to be among the most troublesome anions in water used for industrial or irrigation purposes since they significantly affect the corrosion rate of steel and aluminum and can be toxic to plants. A safe value for irrigation is considered to be less than 175 mg/L of chloride. Excess chlorides affect the taste of potable water, so drinking water standards are generally based on potability rather than on health. The secondary drinking water standard for chloride is 500 mg/L.

The chloride objectives listed in Table 4-1 shall not be exceeded as a result of controllable water quality factors.

Chlorine, Residual

Wastewater disinfection with chlorine usually produces a chlorine residual. Chlorine and its reaction products are toxic to aquatic life.

To protect aquatic life, the chlorine residual in wastewater discharged to inland surface waters shall not exceed 0.1 mg/L.

Color

Color in water may arise naturally, such as from minerals, plant matter, or algae, or may be caused by industrial pollutants. Color is primarily an aesthetic consideration, although it can discolor clothes and food. The secondary drinking water standard for color is 15 color units.

Waste discharges shall not result in coloration of the receiving waters which causes a nuisance or adversely affect beneficial uses. The natural color of fish, shellfish or other inland surface water resources used for human consumption shall not be impaired.

Dissolved Solids, Total (Total Filtrable Residue)

The department of Health Services recommends that the concentration of total dissolved solids (TDS) in drinking water be limited to 1000 mg/L (secondary drinking water standard) due to taste considerations. For most irrigation uses, water should have a TDS concentration under 700mg/L. Quality-related consumer cost analyses

have indicated that a benefit to consumers exist if water is supplied at or below 500mg/L TDS.

The dissolved mineral content of the waters of the region, as measured by the total dissolved solids test ("Standard Methods for the Examination of Water and Wastewater, 16th Ed.," 1985: 209B (180°C), p. 95), shall not exceed the specific objectives listed in Table 4-1 as a result of controllable water quality factors.

Filtrable Residue, Total

See Dissolved Solids, Total

Floatables

Floatables are an aesthetic nuisance as well as a substrate for algae and insect vectors.

Waste discharges shall not contain floating materials, including solids, liquids, foam or scum, which cause a nuisance or adversely affect beneficial uses.

Fluoride

Fluoride in water supply used for industrial or irrigation purposes has certain detrimental effects. Fluoride in optimum concentrations in water supply (concentrations dependent upon the mean annual air temperature) is considered beneficial for preventing dental caries, but concentrations above approximately 1 mg/L, or its equivalent at a given temperature, are considered likely to increase the risk of occurrence of dental fluorosis.

*Fluoride concentrations shall not exceed values specified in the table below in inland surface waters designated **MUN** as a result of controllable water quality factors.*

Annual Average of Maximum Optimum Fluoride

<u>Daily Air Temperature (°C)</u>	<u>Concentration (mg/L)</u>
12.0 and below	1.2
12.1 to 14.6	1.1
14.7 to 17.6	1.0
17.7 to 21.4	0.9
21.5 to 26.2	0.8
26.3 to 32.5	0.7

Hardness (as CaCO₃)

The major detrimental effect of hardness is economic. Any concentration (reported as mg/L CaCO₃) greater than 100mg/L results in the increased use of soap, scale buildup in utensils, in domestic uses, and in plumbing. Hardness in industrial cooling waters is generally objectionable above 50mg/L.

The objectives listed in Table 4-1 shall not be exceeded as a result of controllable water quality factors. If no hardness objective is listed in Table 4-1, the hardness of

receiving waters used for municipal supply (MUN) shall not be increased as a result of waste discharges to levels that adversely affect beneficial uses.

Inorganic Nitrogen, Total

see Nitrogen, Total Inorganic

Metals

Metals can be toxic to human and animal life.

In 1990, the Environmental Protection Agency (EPA) placed the Santa Ana River, reaches 2, 3, and 4, and Chino Creek on the §304(1) list of "Waters Not Meeting Applicable Water Quality Standards" based on its review of data on certain metals in POTW discharges to the River.

The Santa Ana River dischargers and the Regional Board disagreed with and objected to EPA's §304(1) designation. To demonstrate whether or not the §304(1) designation is correct and what effects, if any, heavy metal levels may have on aquatic life in the Region, the Santa Ana River Dischargers Association and the Santa Ana Watershed Project Authority agreed to conduct a Use-Attainability Analysis (UAA).

The purpose of a Use-Attainability Analysis is to evaluate the "physical, biological, chemical, and hydrological conditions of a river to determine what specific beneficial uses the waterbody can support." If local conditions preclude full attainment of an aquatic life beneficial use for reasons unrelated to water quality, federal and state authorities may allow variances from the generic water quality criteria.

The UAA began in February 1991 and concluded in March 1992. It provided detailed information on chemical, biological, and hydrologic conditions in the middle Santa Ana River aquatic system. Conclusions and recommendations were presented to the Board in June 1992. The information presented is reflected in the Santa Ana River discussion in Chapter 1 and in the new **LWRM** Beneficial Use designation (Chapter 3). Data provided by the UAA was also used to support the adoption of site-specific objectives for three metals, cadmium (Cd), copper (Cu), and lead (Pb) for the Santa Ana River (Reaches 2, 3, and 4) and the perennial portions of some tributaries (including Chino Creek, Cucamonga/Mill Creek, Temescal Creek, and creeks in the Riverside Narrows area).

In adopting these SSOs the Regional Board found (RWQCB Resolution No. 94-1) that:

- a. The Site-Specific Water Quality Objectives (SSOs) will protect the beneficial uses of the Santa Ana River.
- b. The SSOs are conservative.
- c. The SSOs, which represent higher quality than presently exists, will not result in degradation of water quality.

- d. Existing levels of cadmium, copper, and lead in the Santa Ana River do not contribute to toxicity in the Santa Ana River.

The toxicity of these metals varies with water hardness. No fixed hardness value is assumed; objectives are calculated using the hardness of the collected sample.

The following equations represent the SSOs which apply to these waterbodies. These SSOs are expressed as the dissolved form of the metals.

SSO for cadmium:

$$\text{Cd SSO} = 0.85[e^{(0.7852*\ln(\text{TH})-3.490)}]$$

SSO for Copper

$$\text{Cu SSO} = 0.85[e^{(0.8545*\ln(\text{TH})-1.465)}]$$

SSO for lead

$$\text{Pb SSO} = 0.25 [e^{(1.237*\ln(\text{TH})-3.958)}]$$

where TH is the total hardness (as CaCO_3) in mg/L.

The SSOs for cadmium and copper are simply the hardness-dependent formulas for calculating the objective (national criteria), corrected by the dissolved-to-total (metal) ratio. The SSO for lead is the recalculated* hardness-dependant formula, corrected by the dissolved-to-total ratio.

*Recalculation for lead was carried out by EPA-Region IX, using the lowest genus mean acute value (GMAV) as the final acute value (FAV) and an acute-to chronic ratio (ACR) of 51.29, resulting in a final chronic value (FCV) of 2.78 and the SSO formula already shown.

The Table below shows the site-specific objectives for cadmium, copper, and lead that would apply to a water sample with 200 mg/L total hardness (as CaCO₃).

<u>Metal</u>	<u>Calculated WQO</u>	<u>Recalculated Value</u>	<u>EPA</u>	
			<u>Correction Factor</u>	<u>SSO</u>
Cd	2.0	NA	0.85	1.7
Cu	21.4	NA	0.85	18.2
Pb	7.7	16.2	0.25	4.1

Toxicity testing performed as part of the Santa Ana River Use-Attainability Analysis (UAA) has demonstrated that the levels of dissolved metal shown below are safe and non-toxic in Santa Ana River water.

Cadmium	4 µg/L
Copper	37 µg/L
Lead	28 µg/L

There is also evidence that levels as much as 100% higher than those shown above do not result in chronic toxicity.

Methylene Blue-Activated Substances (MBAS)

The MBAS test is sensitive to the presence of detergents (see surfactants). Positive results may indicate the presence of wastewater. The secondary drinking water standard for MBAS is 0.05 mg/L.

*MBAS concentrations shall not exceed 0.05mg/L in inland surface waters designated **MUN** as a result of controllable water quality factors.*

Nitrate

High nitrate concentrations in domestic water supplies can be toxic to human life. Infants are particularly susceptible and may develop methemoglobinemia (blue baby syndrome). The primary drinking water standard for nitrate (as NO₃) is 45 mg/L or 10 mg/L (as N) in inland surface waters designated MUN as a result of controllable water quality factors.

*Nitrate-nitrogen concentrations shall not exceed 45 mg/L (as NO₃) or 10 mg/L (as N) in inland surface waters designated **MUN** as a result of controllable water quality factors.*

Nitrogen, Total Inorganic

The objectives listed in Table 4-1 shall not be exceeded as a result of controllable water quality factors.

Oil and Grease

Oil and grease can be present in water as a result of the discharge of treated wastes and the accidental or intentional dumping of wastes into sinks and storm drains. Oils and related materials have a high surface tension and are not soluble in water, therefore forming a film on the water's surface. This film can result in nuisance conditions because of odors and visual impacts. Oil and grease can coat birds and aquatic organisms, adversely affecting respiration and/or thermoregulation.

Waste discharges shall not result in deposition of oil, grease, wax, or other material in concentrations which result in a visible film or in coating objects in the water, or which cause a nuisance or adversely affect beneficial uses.

Oxygen, Dissolved

Adequate dissolved oxygen (D.O.) is vital for aquatic life. Depression of D.O. levels can lead to fish kills and odors resulting from anaerobic decomposition. Dissolved oxygen content in water is a function of water temperature and salinity.

*The dissolved oxygen content of surface waters shall not be depressed below 5mg/L for waters designated **WARM**, or 6mg/L for waters designated **COLD**, as a result of controllable water quality factors. In addition, waste discharges shall not cause the median dissolved oxygen concentration to fall below 85% of saturation or the 95th percentile concentration or fall below 75% of saturation within a 30-day period.*

pH

pH is a measure of the hydrogen ion concentration of water. pH values generally range from 0 (most acidic) to 14 (most alkaline). Many pollutants can alter the pH, raising or lowering it excessively. These extremes in pH can have adverse effects on aquatic biota and can corrode pipes and concrete. Even small changes in pH can harm aquatic biota.

The pH of inland surface waters shall not be raised above 8.5 or depressed below 6.5 as a result of controllable water quality factors.

Radioactivity

*Radioactivity materials shall not be present in the waters of the region in concentrations which are deleterious to human, plant or animal life. Waters designated **MUN** shall meet the limits specified in the California Code of Regulations, Title 22, and listed here:*

Combined Radium-226 and Radium-228	5	pCi/L
Gross Alpha particle activity	15	pCi/L
Tritium	20,000	pCi/L
Strontium-90	8	pCi/L
Gross Beta particle activity	50	pCi/L
Uranium	20	pCi/L

Sodium

The presence of sodium in drinking water may be harmful to persons suffering from cardiac, renal, and circulatory diseases. It can contribute to taste effects, with the taste threshold depending on the specific sodium salt. Excess concentrations of sodium in irrigation water reduce soil permeability to water and air. The deterioration of soil quality because of the presence of sodium in irrigation water is cumulative and is accelerated by poor drainage.

The sodium objectives listed in Table 4-1 shall not be exceeded as a result of controllable water quality factors.

Solids, Suspended and Settleable

Settleable solids are deleterious to benthic organisms and may cause anaerobic conditions to form. Suspended solids can clog fish gill and interfere with respiration in aquatic fauna. They also screen out light, hindering photosynthesis and normal aquatic plant growth and development.

Inland surface waters shall not contain suspended or settleable solids in amounts which cause a nuisance or adversely affect beneficial uses as a result of controllable water quality factors.

Sulfate

Excessive sulfate, particularly magnesium sulfate ($MgSO_4$) in potable waters can lead to laxative effects; but this effect is temporary. There is some taste effect from magnesium sulfate in the range of 400-600 mg/L as $MgSO_4$. The secondary drinking water standard for sulfate is 500 mg/L. Sulfate concentrations in waters native to this region are normally low, less than 40 mg/L, but imported Colorado River water contains approximately 300 mg/L of sulfate.

The objectives listed in Table 4-1 shall not be exceeded as a result of controllable water quality factors.

Sulfides

Sulfides are generated by many industries and from the anaerobic decomposition of organic matter. In water, sulfides can react to form hydrogen sulfide (H_2S), commonly known for its "rotten egg" odor. Sulfides in ionic form are also toxic to fish.

The dissolved sulfide content of inland surface waters shall not be increased as a result of controllable water quality factors.

Surfactants (surface-active agents)

This group of materials includes detergents, wetting agents, and emulsifiers. See also Methylene Blue-Activated Substances (MBAS).

Waste discharges shall not contain concentrations of surfactants which result in foam in the course of flow or use of the receiving water, or which adversely affect aquatic life.

Taste and Odor

Undesirable tastes and odors in water may be a nuisance and may indicate the presence of a pollutant(s). The secondary drinking water standard for odor (threshold) is about 3 odor units.

The inland surface waters of the region shall not contain, as a result of controllable water quality factors, taste- or odor-producing substances at concentrations which cause a nuisance or adversely affect beneficial uses. The natural taste and odor of fish, shellfish or other regional inland surface water resources used for human consumption shall not be impaired.

Temperature

Waste discharges can cause temperature changes in the receiving waters which adversely affect the aquatic biota. Discharges most likely to cause these temperature effects are cooling tower and heat exchanger blowdown.

*The natural receiving water temperature of inland surface waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Board that such alteration in temperature does not adversely affect beneficial uses. The temperature of waters designated **COLD** shall not be increased by more than 5°F as a result of controllable water quality factors. The temperature of waters designated **WARM** shall not be raised above 90°F June through October or above 78°F during the rest of the year as a result of controllable water quality factors. Lake temperatures shall not be raised more than 4°F above established normal values as a result of controllable water quality factors.*

Total Dissolved Solids

See Dissolved Solids, Total

Total Filtrable Residue

See Dissolved Solids, Total

Total Inorganic Nitrogen

See Nitrogen, Total Inorganic

Toxic Substances

Toxic substances shall not be discharged at levels that will bioaccumulate in aquatic resources to levels which are harmful to human health.

The concentrations of contaminants in waters which are existing or potential sources of drinking water shall not occur at levels that are harmful to human health.

The concentrations of toxic pollutants in the water column, sediments or biota shall not adversely affect beneficial uses.

Turbidity

Turbidity is a measure of light scattered due to particulates in water. The secondary drinking water standard for turbidity is 5 NTU (nephelometric turbidity units).

Increases in turbidity which result from controllable water quality factors shall comply with the following:

<u>Natural Turbidity</u>	<u>Maximum Increase</u>
0-5 NTU	20%
50-100 NTU	10 NTU
Greater than 100 NTU	10%

All inland surface waters of the region shall be free of changes in turbidity which adversely affect beneficial uses.

GROUNDWATERS

The narrative objectives that are included below apply to all groundwaters, as noted. In addition, specific numerical objectives are listed in Table 4-1. With the exception of the "maximum benefit" objective identified in this Table (see further discussion below and in Chapter 5), where more than one objective is applicable, the stricter shall apply.

Arsenic

*Arsenic concentrations shall not exceed 0.05 mg/L in groundwater designated **MUN** as a result of controllable water quality factors.*

Bacteria, Coliform

Fecal bacteria are part of the intestinal flora of warm-blooded animals. Their presence in groundwater is an indicator of pollution. Total coliform is measured in terms of the number of coliform organisms per unit volume. Total coliform numbers can include non-fecal bacteria, so additional testing is often done to confirm the presence and numbers of fecal coliform bacteria. Water quality objectives for numbers of total fecal coliform vary with the uses of the water, as shown below.

*Total coliform numbers shall not exceed 2.2 organism/100 mL median over any seven-day period in groundwaters designated **MUN** as a result of controllable water quality factors.*

Barium

*Barium concentrations shall not exceed 1.0mg/L in groundwaters designated **MUN** as a result of controllable water quality factors.*

Boron

Boron is not considered a problem in drinking water supplies until concentrations of 20-30 mg/L are reached. In irrigation, boron is an essential element. However, boron concentrations in excess of 0.75 mg/L may be deleterious to certain crops, particularly citrus. The maximum safe concentration of even the most tolerant plants is about 4.0 mg/L of boron.

Boron concentrations shall not exceed 0.75 mg/L in groundwaters of the region as a result of controllable water quality factors.

Chloride

Excess chloride concentrations lead primarily to economic damage rather than public health hazards. Chlorides are considered to be among the most troublesome anion in water used for industrial or irrigation purposes since they significantly affect the corrosion rate of steel and aluminum and can be toxic to plants. A safe value for irrigation is considered to be less than 175 mg/L of chloride. Excess chlorides affect the taste of potable water, so drinking water standards are generally based on potability rather than on health. The secondary maximum contaminant level range - upper for chloride is 500 mg/L (CCR, Division 4, Chapter 15, Article 16, § 64449).

*Chloride concentrations shall not exceed 500 mg/L in groundwaters of the region designated **MUN** as a result of controllable water quality factors.*

Color

Color in water may arise naturally, such as from minerals, plant matter or algae, or may be caused by industrial pollutants. Color is primarily an aesthetic consideration, although it can discolor clothes and food. The secondary drinking water standard for color is 15 color units.

Waste discharges shall not result in coloration of the receiving waters which causes a nuisance or adversely affects beneficial uses.

Cyanide

*Cyanide concentrations shall not exceed 0.2mg/L in groundwaters designated **MUN** as a result of controllable water quality factors.*

Dissolved Solids, Total (Total Filtrable Residue)

The Department of Health Services recommends that the concentration of total dissolved solids (TDS) in drinking water be limited to 500 mg/L (secondary maximum contaminant level) (CCR, Division 4, Chapter 15, Article 16, § 64449), due to taste considerations. For most irrigation uses, water should have a TDS concentration under 700 mg/L. Quality-related consumer cost analyses have indicated that a benefit to consumers exists if water is supplied at or below 500 mg/L TDS².

The dissolved mineral content of the waters of the region, as measured by the total dissolved solids test ("Standard Methods for the Examination of Water and Wastewater, 20th Ed.," 1998: 2540C (180°C), p.2-56), shall not exceed the specific objectives listed in Table 4-1 as a result of controllable water quality factors. (See also discussion of management zone TDS and nitrate nitrogen water quality objectives).

Filtrable Residue, Total

See Dissolved Solids, Total

Fluoride

Fluoride in water supply used for industrial or irrigation purposes has certain detrimental effects. Fluoride in optimum concentrations in water supply (concentration dependent upon the mean annual air temperature) is considered beneficial for preventing dental caries, but concentrations above approximately 1 mg/L, or its equivalent at a given temperature, are considered likely to increase the risk of occurrence of dental fluorosis.

*Fluoride concentrations shall not exceed 1.0 mg/L in groundwaters designated **MUN** as a result of controllable water quality factors.*

Hardness (as CaCO₃)

The major detrimental effect of hardness is economic. Any concentration (reported as mg/L CaCO₃) greater than 100mg/L results in the increased use of soap, scale buildup in utensils in domestic uses, and in plumbing. Hardness in industrial cooling waters is generally objectionable above 50 mg/L.

*The hardness of receiving waters used for municipal supply (**MUN**) shall not be increased as a result of waste discharges to levels that adversely affect beneficial uses.*

Metals

Metals can be toxic to human and animal life.

*Metals concentrations shall not exceed the values listed below in groundwaters designated **MUN** as a result of controllable water quality factors.*

² These TDS values are noted for information purposes only. For some management zones, the historic ambient quality, on which the TDS objectives are largely based (see also discussion of maximum benefit objectives for specific management zones), exceeds these recommended levels.

<u>Metal</u>	<u>Concentration (mg/L)</u>
Cadmium	0.01
Chromium	0.05
Cobalt	0.2
Copper	1.0
Iron	0.3
Lead	0.05
Manganese	0.05
Mercury	0.002
Selenium	0.01
Silver	0.05

Methylene Blue-Activated Substances (MBAS)

The MBAS test is sensitive to the presence of detergents (see surfactants in inland surface waters discussion). Positive results may indicate the presence of wastewater. The secondary drinking water standard for MBAS is 0.05 mg/L.

*MBAS concentrations shall not exceed 0.05 mg/L in groundwaters designated **MUN** as a result of controllable water quality factors.*

Nitrate

High nitrate concentrations in domestic water supplies can be toxic to human life. Infants are particularly susceptible and may develop methemoglobinemia (blue baby syndrome). The primary drinking water standard for nitrate (as NO₃) is 45 mg/L or 10 mg/L (as N).

Nitrate-nitrogen concentrations listed in Table 4-1 shall not be exceeded as a result of controllable water quality factors. (See also discussion of management zone TDS and nitrate nitrogen water quality objectives below).

Oil and Grease

Oil and grease can be present in water as a result of the discharge of treated wastes and the accidental or intentional dumping of wastes into sinks and storm drains. Oils and related materials have a high surface tension and are not soluble in water, therefore forming a film on the water's surface. This film can result in nuisance conditions because of odors and visual impacts.

Waste discharges shall not result in deposition of oil, grease, wax or other materials in concentrations which cause a nuisance or adversely affect beneficial uses.

pH

pH is a measure of the hydrogen ion concentration of water. pH values generally range from 0 (most acidic) to 14 (most alkaline). Many pollutants can alter the pH,

raising or lowering it excessively. These extremes in pH can corrode pipes and concrete.

The pH of groundwater shall not be raised above 9 or depressed below 6 as a result of controllable water quality factors.

Radioactivity

*Radioactive materials shall not be present in the waters of the region in concentrations which are deleterious to human, plant or animal life. Groundwaters designated **MUN** shall meet the limits specified in the California Code of Regulations, Title 22, and listed here:*

<i>Combined Radium-226 and Radium-228</i>	5	pCi/L
<i>Gross Alpha particle activity</i>	15	pCi/L
<i>Tritium</i>	20,000	pCi/L
<i>Strontium-90</i>	8	pCi/L
<i>Gross Beta particle activity</i>	50	pCi/L
<i>Uranium</i>	20	pCi/L

Sodium

The presence of sodium in drinking water may be harmful to persons suffering from cardiac, renal and circulatory diseases. It can contribute to taste effects, with the taste threshold depending on the specific sodium salt (US Geological Survey, Resources Agency of California – State Water Resources Control Board). Excess concentrations of sodium in irrigation water reduce soil permeability to water and air. The deterioration of soil quality because of the presence of sodium in irrigation water is cumulative and is accelerated by poor drainage (California State Water Resources Control Board).

The California Department of Health Services and the U.S. Environmental Protection Agency have not provided a limit on the concentration of sodium in drinking water. Sodium concentrations shall not exceed 180 mg/L in groundwaters designated MUN as a result of controllable water quality factors.

Groundwaters designated AGR shall not exceed a sodium absorption ration (SAR³) of 9 as a result of controllable water quality factors.

³ Sodium absorption ratio (SAR) =
$$\frac{Na}{\left[\frac{1}{2}(Ca + Mg) \right]^{1/2}}$$

where Sodium (Na), Calcium (Ca) and Magnesium (Mg) are concentrations in milliequivalents per liter

Sulfate

Excessive sulfate, particularly magnesium sulfate ($MgSO_4$) in potable waters can lead to laxative effects, but this effect is temporary. There is some taste effect from magnesium sulfate in the range of 400-600mg/L as $MgSO_4$. The secondary drinking water standard for sulfate is 500mg/L (CCR, Division 4, Chapter 15, Article 16, §64449). Sulfate concentrations in waters native to this region are normally low, less than 40mg/L, but imported Colorado River water contains approximately 300mg/L of sulfate.

Sulfate concentrations shall not exceed 500 mg/L in groundwaters of the region designated MUN as a result of controllable water quality factors.

Taste and Odor

Undesirable tastes and odors in water may be a nuisance and may indicate the presence of a pollutant(s). The secondary drinking water standard for odor (threshold) is 3 odor units.

The groundwaters of the region shall not contain, as a result of controllable water quality factors, taste- or odor-producing substances at concentrations which cause a nuisance or adversely affect beneficial uses.

Total Dissolved Solids

See Dissolved Solids, Total

Total Filtrable Residue

See Dissolved Solids, Total

Total Inorganic Nitrogen

See Nitrogen, Total Inorganic

Toxic Substances

All waters of the region shall be maintained free of substances in concentrations which are toxic, or that produce detrimental physiological responses in human, plant, animal or aquatic life.

Management Zone TDS and Nitrate-nitrogen Water Quality Objectives (Amended by Resolution No. R8-2004-0001, January 22, 2004)

The TDS and nitrate-nitrogen objectives specified in the 1975 and 1984 Basin Plans, and initially in this 1995 Basin Plan, were based on an evaluation of groundwater samples from the five year period 1968 through 1972. This period represented ambient quality at the time of preparation of the 1975 Basin Plan. As part of the 2004 update of the TDS/Nitrogen management plan in the Basin Plan, historical ambient quality was reviewed using additional data and rigorous statistical procedures. This update also included characterization of current water quality. A

comprehensive description of the methodology employed is published in the "Final Technical Memorandum for Phase 2A of the Nitrogen-TDS Study" (Wildermuth Environmental Inc., July 2000). This effort, coupled with "maximum benefit" demonstrations by certain agencies in the watershed (see further discussion below and in Chapter 5), culminated in the adoption of the TDS and nitrate-nitrogen objectives specified in Table 4-1.

For the most part, the TDS and nitrate-nitrogen water quality objectives for each management zone are based on historical concentrations of TDS and nitrate-nitrogen from 1954 through 1973 and are referred to herein as the "antidegradation" objectives. This period brackets 1968, when the State Board adopted the state's antidegradation policy in Resolution No. 68-16, "Policy with Respect to Maintaining High Quality Waters". This Resolution establishes a benchmark for assessing and considering authorization of degradation of water quality. The 20-year period was selected in order to ensure that at least 3 data points in each management zone would be available to calculate historical ambient quality. In general, the following steps were taken to calculate the TDS and nitrate objectives:

- a. Annual average TDS and nitrate-nitrogen data from 1954 – 1973 for each well in a management zone were compiled;
- b. For each well, the data were statistically analyzed. The mean plus "t" (Student's t) times the standard error of the mean was calculated;
- c. A rectangular grid across all management zones was overlaid. Groundwater storage within each grid was computed; and,
- d. The volume-weighted TDS and nitrate-nitrogen concentration for each management zone was computed. These concentrations are the calculated historical ambient quality for each zone.⁴

These volume-weighted TDS and nitrate-nitrogen concentrations for each management zone were typically identified as the appropriate objectives. However, it is important to note that if the calculated nitrate-nitrogen concentration exceeded 10 mg/L, the nitrate-nitrogen objective was set to 10 mg/L to be consistent with the primary drinking water standard, or to current ambient quality if less than 10 mg/L.

Finally, in some cases, certain agencies proposed alternative, less stringent TDS and nitrate-nitrogen objectives for specific management zones, based on additional consideration of antidegradation requirements and the factors specified in Water Code Section 13241 (see below and Chapter 5). Table 4-1 includes both the historical ambient quality TDS and nitrate-nitrogen objectives (the "antidegradation" objectives) and the objectives based on this additional consideration (the "maximum benefit"

⁴ In limited cases, data for ammonia-nitrogen and nitrite-nitrogen as well as nitrate-nitrogen were available and included in the analysis. The ammonia-nitrogen and nitrite-nitrogen values were insignificant. The objectives are thus expressed as nitrate-nitrogen, even where ammonia-nitrogen and nitrite-nitrogen data were included in the analysis.

objectives) for specific management zones. Chapter 5 specifies detailed requirements noticed Public Hearing, the Regional Board finds that "maximum benefit" is not being demonstrated, then the "antidegradation" objectives apply for regulatory purposes.

THE SANTA ANA RIVER

Setting objectives for the flowing portions of the Santa Ana River is a significant feature of this Basin Plan. The River provides water for recreation and for aquatic and wildlife habitat. River flows are a significant source of groundwater recharges in lower basin, which provides domestic supplies for more than two million people. These flows account for about 70% of the total recharge.

The dividing line between reaches 2 and 3 of the River, and between the upper and lower Santa Ana Basins, is Prado Dam, a flood control facility built and operated by the U.S. Army Corps of Engineers. The dam includes a subsurface groundwater barrier, and as a result all ground and surface waters from the upper basin are forced to pass through the dam (or over the spillway). For this reason, it is an ideal place to measure flows and monitor water quality.

The Prado Settlement, a stipulated court judgement (*Orange County Water District vs. City of Chino, et al*), which requires that a certain minimum amount of water be released each year from the upper basin, is overseen by the Santa Ana River Watermaster. The U.S. Geologic Survey (USGS) operates a permanent continuous monitoring station immediately below Prado Dam, and the data collected there are utilized by the Watermaster. Orange County Water District (OCWD) samples the river monthly at the USGS gage and determines the water quality. Compliance with the objective for reaches 2 and 3 is monitored by the Regional Board, using the data and information available from the USGS gage and these sources, plus the data from its own specific sampling programs. (see Chapter 6).

The quality of the Santa Ana River is a function of the quantity and quality of the various components of the flows. The two major components of total flow are storm flow and base flow. Storm flow is the water which results directly from rainfall (surface runoff) in the upper basin; it also includes the stormwater runoff from the San Jacinto Basin which may reach the River via Temescal Creek. Most storms occur during the winter rainy season (December through April). Base flow is composed of wastewater discharges, rising groundwater, and nonpoint source discharges. Wastewater discharges are the treated sewage effluents discharged by municipalities to the river and its tributaries. Rising groundwater occurs at a number of locations along the River, including the San Jacinto Fault, Riverside Narrows, and in or near the Prado flood Control Basin. Nonpoint source discharges include uncontrolled runoff from agricultural and urban areas which is not related to storm flows.

Nontributary flow is a third element of total flow. It is generally imported water released in the upper basin, for recharge in the lower basin (Santa Ana Forebay).

The Santa Ana River Watermaster calculates the amount and quality of total flow for each water year (October 1 to September 30). The Watermaster's Annual Report is used to determine compliance with the stipulated judgement referred to earlier, which set quality and quantity limits on the river. The Watermaster's report presents summary data compiled from the continuous monitoring of flow in cfs (cubic feet per second) and salinity as EC (electrical conductivity) at the USGS Prado Gaging Station. The Watermaster's annual determination of total flow quality will be used to determine compliance with the total flow objective in this Plan. In years of normal rainfall, most of the total flow of the river is percolated in the Santa Ana Forebay, and directly affects the quality of the groundwater. For that reason, compliance with the total dissolved solids (TDS) water quality objective for Reach 2 will be based on the five-year moving average of the annual TDS content of total flow. Use of this moving average allows the effects of wet and dry years to be smoothed out over the five-year period.

As was noted earlier, the three components of base flow in the river are wastewater, rising water, and nonpoint source discharges. These three components are present in varying amounts throughout the year, and the contributions and quality of each can be affected by the regulatory activities of the Regional Board. The quantity of storm flow is obviously highly variable; programs to control its quality are in their nascent stages. For these reasons, water quality objectives for controllable constituents are set based on the base flow of the river, rather than on total flow.

The regulatory activities of the Regional Board include setting waste discharge requirements on point source discharges. Waste discharge requirements are developed on the basis of the limited assimilative capacity of the river (see TDS and Nitrogen Wasteload Allocation, Chapter 5). Nonpoint source discharges, generally urban runoff (nuisance water) and agricultural tailwater, will be regulated by requiring compliance with Best Management Practices (BMPs), where appropriate. The rising water component of base flow will be affected by the extraction of brackish groundwater in several subbasins (a Basin Plan implementation action), by regulation of wastewater discharges, and other activities.

In order to determine whether the water quality and quantity objectives for base flow in Reach 3 are being met, the Regional Board will collect a series of grab and composite samples when the influence of storm flows and nontributary flows is at a minimum. This typically occurs during August and September. At this time of year, there is usually no water impounded behind Prado Dam. The volumes of storm flows, rising water and nonpoint source discharges tend to be low. The major component of base flow at this time is municipal wastewater. The results of this sampling will be compared with the continuous monitoring data collected by USGS and data from other sources. These data will be used to evaluate the efficacy of the Regional Board's regulatory approach, including the TDS and nitrogen wasteload allocations (see Chapter 5). Additional sampling in Reach 3 by the Board and other agencies will help evaluate the fate and effects of the various constituents

of base flow, including the validity of the 50% nitrogen loss coefficient (discussed in Chapter 5).

Future river flows and quality (TDS and TIN) were projected by computer models. The results indicate that the objectives for TDS and total nitrogen will be met. The objectives for individual mineral constituents are expected to be met if the TDS objective is met.

Prado Basin Surface Water Management Zone

As discussed in Chapter 3 – Beneficial Uses, the Prado Basin Management Zone (PBMZ) is generally defined as a surface water feature within the Prado Basin. It is defined by the 566-foot elevation above mean sea level along the Santa Ana River and the four tributaries to the Santa Ana River in the Prado Basin (Chino Creek, Temescal Creek, Mill Creek and Cucamonga Creek). Nitrogen, TDS and other water quality objectives that have been established for these surface waters that flow within the proposed PBMZ are shown in Table 4-1. For the purpose of regulating discharges that would affect the PBMZ and downstream waters, these surface water objectives apply. This application of the existing surface water objectives assures continued water quality and beneficial use protection for waters within and downstream of the PBMZ.

“MAXIMUM BENEFIT” WATER QUALITY OBJECTIVES

As part of the 2004 update of the TDS/Nitrogen Management plan in the Basin Plan, several agencies proposed that alternative, less stringent TDS and/or nitrate-nitrogen water quality objectives be adopted for specific groundwater management zones and surface waters. These proposals were based on additional consideration of the factors specified in Water Code Section 13241 and the requirements of the State's antidegradation policy (State Board Resolution No. 68-16). Since the less stringent objectives would allow a lowering of water quality, the agencies were required to demonstrate that their proposed objectives would protect beneficial uses, and that water quality consistent with maximum benefit to the people of the state would be maintained (thus, the use of the term “maximum benefit” water quality objectives).

Appropriate beneficial use protection/maximum benefit demonstrations were made by the Chino Basin Watermaster/Inland Empire Utilities Agency, the Yucaipa Valley Water District and the City of Beaumont/San Timoteo Watershed Management Authority to justify alternative “maximum benefit” objectives for the Chino North, Cucamonga, Yucaipa, Beaumont and San Timoteo groundwater management zones. These “maximum benefit” proposals, which are described in detail in Chapter 5 – Implementation, entail commitments by the agencies to implement specific projects and programs. While these agencies' efforts to develop these proposals indicate their strong interest to proceed with these commitments, unforeseen circumstances may impede or preclude it. To address this possibility,

this Plan includes both the "antidegradation" and "maximum benefit" objectives for the subject waters (See Table 4-1). Chapter 5 specifies the requirements for implementation of these objectives. Provided that these agencies' commitments are met, then the agencies have demonstrated maximum benefit, and the "maximum benefit" objectives included in Table 4-1 for these waters apply for regulatory purposes. However, if the Regional Board finds that these commitments are not being met and that "maximum benefit" is thus not demonstrated, then the "antidegradation" objectives for these waters will apply. Chapter 5 also describes the mitigation requirements that will apply should discharges based on "maximum benefit" objectives occur unsupported by the demonstration of "maximum benefit".

COMPLIANCE WITH OBJECTIVES (Amended by Resolution No. 00-27, May 19, 2000)

"The Regional Board recognizes that immediate compliance with new, revised or newly interpreted water quality objectives adopted by the Regional Board or the State Water Resources Control Board, or with new, revised or newly interpreted water quality criteria promulgated by the U.S. Environmental Protection Agency, may not be feasible in all circumstances. Where the Regional Board determines that it is infeasible for a discharger to comply immediately with effluent limitations specified to implement such objectives or criteria, compliance shall be achieved in the shortest practicable period of time, not to exceed ten years after the adoption or interpretation of applicable objectives or criteria. This provision authorizes schedules of compliance for objectives and criteria that are adopted or revised or newly interpreted after the effective date of this amendment July 15, 2002.

REFERENCES

The "Federal Clean Water Act," 33 USC 466 *et seq.*

California Water Code, Section 13000 "Water Quality," *et seq.*

California State Water Resources Control Board, "Water Quality Criteria, Second Edition," 1963.

US EPA, "Ambient Water Quality Criteria for Ammonia," 1984.

US EPA Memorandum, "Revised Tables for Determining Average Freshwater Ammonia Concentrations," 1992.

California State University, Fullerton, "Investigation of Un-ionized Ammonia in the Santa Ana River, Final Project Report," February 1988.

California Regional Water Quality Control Board, "Public Workshop – Review of the Un-ionized Ammonia Objective – Summary of Findings & Recommendations," Staff Report, December 1988.

Santa Ana Watershed Project Authority, "Final Report, Santa Ana River Use-Attainability Analysis," June 1992.

California Regional Water Quality Control Board, Resolution No. 93-64, "Resolution Amending the Water Quality Control Plan to Set Site-Specific Water Quality Objectives for Cadmium, Copper, and Lead in the Middle Santa Ana River," October 1993.

ENSR Consulting and Engineering, "Short-Term Chronic Toxicity of Un-ionized Ammonia to Fathead Minnows (*Pimephales promelas*) in a Site Water," September 1993.

California Code of Regulations (CCR), Division 4, Chapter 15, Article 16, § 64449

Wildermuth Environmental, Inc., TIN/TDS – Phase 2A of the Santa Ana Watershed, Development of Groundwater Management Zones, Estimation of Historic and Current TDS and Nitrogen Concentrations in Groundwater, Final Technical Memorandum," July 2000.

40 Code of Federal Regulations (CFR), Chapter 1, § 143,3

The Resources Agency of California, State Water Resources Control Board, Publication No. 3-1, "Water Quality Criteria", pages 258-26, 1963

US Geological Survey, "Basic Ground-Water Hydrology", Water Supply Paper 2220, pages 64-65, 1984.

California State Water Resources Control Board, "Irrigation with Reclaimed Municipal Wastewater, A Guidance Manual", Report No. 84-1, wr, July 1984.

NOTE:

- The names and areas shown on this map are the same as used by the Department of Water Resources (DWR) in their Bulletin 130 Series except as explained below.
- The numbering system used on this map is an adaptation of the numbering system used in the 130 Series.
- The boundary between Region 6 and Region 4 follows the boundary between Santa Ana County and Orange or San Bernardino Counties, not the Hydrologic Boundary. The San Bernardino County line splits Hydrologic Unit 1 (Santa Ana River HU) so that Sub-Areas 481.21, 481.22, and 481.23 are in Region 4 but drain into Region 6. The Orange-San Gabriel River HU is split into Sub-Areas 845.15, 845.81, 845.62 and 845.63 are locally in Region 6 but drain into Region 4. Therefore, a 5 digit number on the map indicates that a regional boundary crosses a hydrologic unit, area or subarea. In these cases, the hydrologic area number of the region from which the hydrologic area number of the region is separated by the regional boundary. All other digits are as described in the legend.
- The 1986 updated names shown on the map are in accordance with agreement with DWR and US Geological Survey.

REGION B INDEX

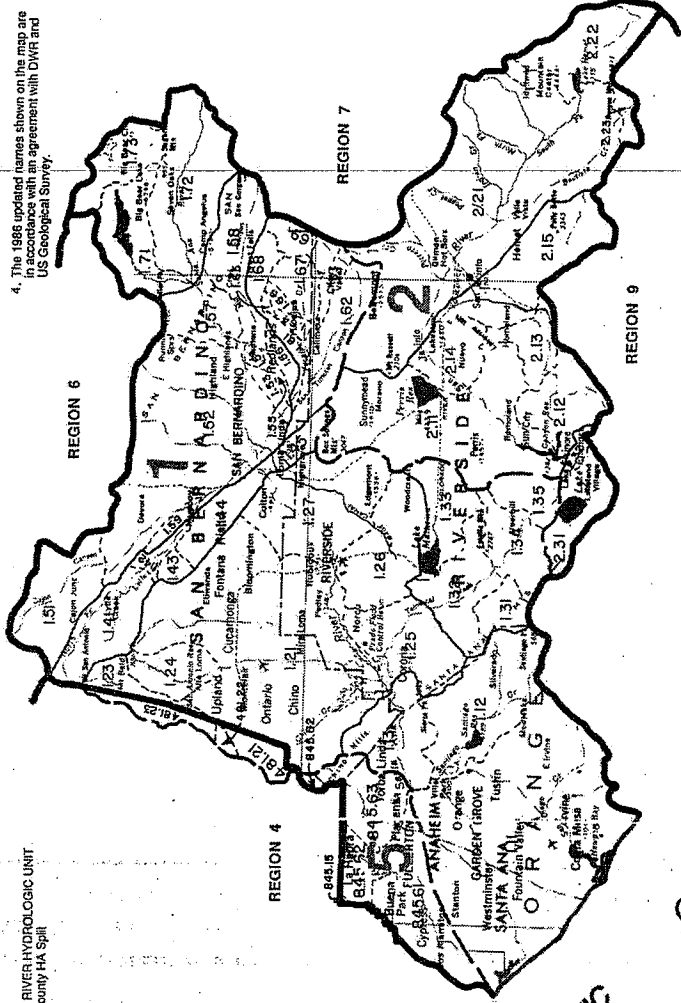
801.00	SANTA ANA RIVER HYDROLOGIC UNIT
801.10	Lower Santa Ana River HSA
1.11	East Coastal Plain HSA
1.12	Santiago HSA
1.13	West Coast HSA
801.20	Middle Santa Ana River HA Spill
481.21	Chino HSA Spill
481.22	Harrison HSA
801.23	Cheremon Heights HSA Spill
801.24	Cheremon Heights HSA Spill
801.25	Cucamonga HSA
1.26	Tennessee HSA
1.27	Arlington HSA
801.30	Little Matthews HSA
1.31	San Gabriel HSA
1.32	Boford HSA
1.33	Calico HSA
1.34	Los Lake HSA
1.35	Terra Cotta HSA
801.40	Colton-Rialto HA
1.41	Upper Lytle HSA
1.42	Lytle HSA
1.43	Rialto HSA
1.44	Colton HSA
1.45	Reche HSA
801.50	Upper Santa Ana River HA
1.51	Upper Lytle HSA
1.52	Burton Hill HSA
1.53	Redlands HSA
1.54	Mentona HSA
1.55	Reservoir HSA
1.56	Craton HSA
1.57	Mil Creek HSA
1.58	San Gabriel HSA
1.59	Sycamore HSA
801.60	San Timoteo HA
1.61	Yucalpa HSA
1.62	Beaumont HSA
1.63	Cherry Valley HSA
1.64	Cherry Valley HSA
1.65	Galaway HSA
1.66	Oak Glen HSA
1.67	South Mesa HSA
1.68	Triple Falls Creek HSA
1.69	Noble Creek HSA
801.70	San Gabriel HSA
1.71	Bear Valley HSA
1.72	San Gabriel HSA
1.73	Baldwin HSA

REGION B INDEX

802.00	SAN JACINTO VALLEY HYDROLOGIC UNIT
802.10	Perris Valley HSA
2.11	Mentone HSA
2.12	Wheeler HSA
2.13	Lakeview HSA
2.14	La Brea HSA
2.15	San Jacinto HA
802.20	Chinon Hot Springs HSA
2.21	Hemet Lake HSA
2.22	Baullista HSA
2.23	Esplanade Valley HA
802.30	Esplanade Valley HA
2.31	Railroad HSA
2.32	Railroad HSA

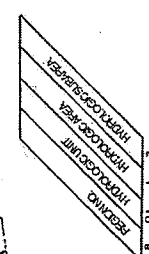
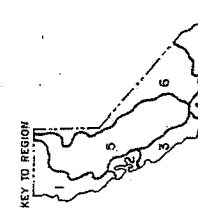
REGION B INDEX

805.00	LOS ANGELES-SAN GABRIEL RIVER HYDROLOGIC UNIT
805.10	Coastal Plain of Los Angeles County HA Spill
845.15	Central HSA Spill
845.62	Arroyo HSA Spill
845.63	La Habra HSA Spill
845.62	Yorba Linda HSA Spill



LEGEND

- STREAM
- REGIONAL BOUNDARY
- HYDROLOGIC UNIT BOUNDARY (HU)
- HYDROLOGIC AREA BOUNDARY (HA)
- HYDROLOGIC SUBAREA BOUNDARY (SA)
- HYDROLOGIC UNIT NUMBER



April 1973
 Revised: July 1976
 Revised: August 1986
 State Water Resources Control Board
 Surveillance and Monitoring Section
 T.E. Lavenda, P.E., T.C. 2000-447

State of California
REGIONAL WATER QUALITY CONTROL BOARD
Santa Ana Region (8)
SANTA ANA HYDROLOGIC BASIN PLANNING AREA (SA)

Table 4-1 WATER QUALITY OBJECTIVES

OCEAN WATERS	WATER QUALITY OBJECTIVES (mg/l)							Hydrologic Unit	
	Total Dissolved Solids	Hardness	Sodium	Chloride	Total Inorganic Nitrogen	Sulfate	Chemical Oxygen Demand	Primary	Secondary
NEARSHORE ZONE*									
San Gabriel River to Poppy Street in Corona del Mar+	---	---	---	---	---	---	---	801.11	
Poppy Street to Southeast Regional Boundary+	---	---	---	---	---	---	---	801.11	
OFFSHORE ZONE									
Waters Between Nearshore Zone And Limit of State Waters+	---	---	---	---	---	---	---		

* Defined by Ocean Plan Chapter II A.1.: "Within a zone bounded by shoreline and a distance of 1000 feet from shoreline or the 30-foot depth Contour, whichever is further from shoreline."

+ Numeric objectives have not been established; narrative objectives apply.

Table 4-1 WATER QUALITY OBJECTIVES - Continued

BAYS, ESTUARIES, AND TIDAL PRISMS	WATER QUALITY OBJECTIVES (mg/l)								Hydrologic Unit	
	Total Dissolved Solid	Hardness	Sodium	Chloride	Total Inorganic Nitrogen	Sulfate	Chemical Oxygen Demand	Primary	Secondary	
Anaheim Bay – Outer Bay+	---	---	---	---	---	---	---	801.11		
Anaheim Bay – Seal Beach National Wildlife Refuge+	---	---	---	---	---	---	---	801.11		
Sunset Bay – Huntington Harbour+	---	---	---	---	---	---	---	801.11		
Bolsa Bay+	---	---	---	---	---	---	---	801.11		
Bolsa Chica Ecological Reserve+	---	---	---	---	---	---	---	801.11		
Lower Newport Bay+	---	---	---	---	---	---	---	801.11		
Upper Newport Bay+	---	---	---	---	---	---	---	801.11		
Santa Ana River Salt Marsh+	---	---	---	---	---	---	---	801.11		
Tidal Prism of Santa Ana River (to within 1000' of Victoria Street) and Newport Slough+	---	---	---	---	---	---	---	801.11		
Tidal Prism of San Gabriel River – River Mouth to Marina Drive+	---	---	---	---	---	---	---	845.61		
Tidal Prisms of Flood Control Channels Discharging to Coastal or Bay Waters+	---	---	---	---	---	---	---	801.11		

+ Numeric objectives have not been established; narrative objectives apply.

Table 4-1 WATER QUALITY OBJECTIVES - Continued

INLAND SURFACE STREAMS	WATER QUALITY OBJECTIVES (mg/l)										Hydrologic Unit	
	Total Dissolved Solids	Hardness	Sodium	Chloride	Total Inorganic Nitrogen	Sulfate	Chemical Oxygen Demand	Primary	Secondary			
LOWER SANTA ANA RIVER BASIN												
Santa Ana River												
Reach 1 - Tidal Prism to 17 th Street in Santa Ana+											801.11	
Reach 2 - 17 th Street in Santa Ana to Prado Dam	650 ¹	---	---	---	---	---	---	---	---	---	801.11	801.12
Aliso Creek+	---	---	---	---	---	---	---	---	---	---	845.63	
Carbon Canyon Creek+	---	---	---	---	---	---	---	---	---	---	845.63	
Santiago Creek Drainage												
Santiago Creek												
Reach 1 - below Irvine Lake	600	---	---	---	---	---	---	---	---	---	801.12	801.11
Reach 2 - Irvine Lake (see Lakes, Pg. 4-46)		---	---	---	---	---	---	---	---	---		
Reach 3 - Irvine Lake to Modjeska Canyon	350	260	20	12	2	80	---	---	---	---	801.12	
Reach 4 - in Modjeska Canyon	350	260	20	12	2	80	---	---	---	---	801.12	
Silverado Creek	650	450	30	20	1	275	---	---	---	---	801.12	
Black Star Creek+	---	---	---	---	---	---	---	---	---	---	801.12	
Ladd Creek+	---	---	---	---	---	---	---	---	---	---	801.12	

¹ Five-year moving average
+ Numeric objectives have not been established; narrative objectives apply.

Table 4-1 WATER QUALITY OBJECTIVES - Continued

INLAND SURFACE STREAMS	WATER QUALITY OBJECTIVES (mg/l)							Hydrologic Unit	
	Total Dissolved Solids	Hardness	Sodium	Chloride	Total Inorganic Nitrogen	Sulfate	Chemical Oxygen Demand	Primary	Secondary
San Diego Creek Drainage									
San Diego Creek									
Reach 1 – below Jeffrey Road	1500	---	---	---	13	---	90	801.11	
Reach 2 – above Jeffrey Road to Headwaters	720	---	---	---	5	---	---	801.11	
Other Tributaries: Bonita Creek, Serrano Creek, Peters Canyon Wash, Hicks Canyon Wash, Bee Canyon Wash, Borrego Canyon Wash, Agua Chinon Wash, Laguna Canyon Wash, Rattlesnake Canyon Wash, Sand Canyon Wash and other Tributaries to these Creeks+	---	---	---	---	---	---	---	801.11	
San Gabriel River Drainage									
Coyote Creek (within Santa Ana Regional Boundary)+	---	---	---	---	---	---	---	---	---

+ Numeric objectives have not been established; narrative objectives apply.

Table 4-1 WATER QUALITY OBJECTIVES - Continued

INLAND SURFACE STREAMS	WATER QUALITY OBJECTIVES (mg/l)								Hydrologic Unit	
	Total Dissolved Solids	Hardness	Sodium	Chloride	Total Inorganic Nitrogen	Sulfate	Chemical Oxygen Demand	Primary	Secondary	
UPPER SANTA ANA RIVER BASIN										
Santa Ana River										
Reach 3 - Prado Dam to Mission Blvd. in Riverside - Base Flow ²	700	350	110	140	10 ³	150	30	801.21	801.27, 801.25	
Reach 4 - Mission Blvd. in Riverside to San Jacinto Fault in San Bernardino	550	---	---	---	10	---	30	801.27	801.44	
Reach 5 - San Jacinto Fault in San Bernardino to Seven Oaks Dam	300	190	30	20	5	60	25	801.52	801.57	
Reach 6 - Seven Oaks Dam to Headwaters (see also Individual Tributary Streams)	200	100	30	10	1	20	5	801.72		
San Bernardino Mountain Streams										
Mill Creek Drainage:										
Mill Creek										
Reach 1 - Confluence with Santa Ana River to Bridge Crossing Route 38 at Upper Powerhouse	200	100	30	10	1	20	5	801.58		
Reach 2 - Bridge Crossing Route 38 at Upper Powerhouse to Headwaters	110	100	25	5	1	15	5	801.58		

² Additional Objectives: Boron: 0.75 mg/l

³ Total nitrogen, filtered sample

Table 4-1 WATER QUALITY OBJECTIVES - Continued

INLAND SURFACE STREAMS	WATER QUALITY OBJECTIVES (mg/l)										Hydrologic Unit	
	Total Dissolved Solids	Hardness	Sodium	Chloride	Total Inorganic Nitrogen	Sulfate	Chemical Oxygen Demand	Primary	Secondary			
Mountain Home Creek	200	100	30	10	1	20	5	801.58				
Mountain Home Creek, East Fork	200	---	---	---	---	---	---	801.70				
Monkey Face Creek	200	100	30	10	1	20	5	801.70				
Alger Creek	200	---	---	---	---	---	---	801.70				
Falls Creek	200	100	30	10	1	20	5	801.70				
Vivian Creek	200	---	---	---	---	---	---	801.70				
High Creek	200	---	---	---	---	---	---	801.70				
Other Tributaries: Lost, Oak Cove, Green, Skinner, Momyer, Glen Martin, Camp, Hatchery, Rattlesnake, Slide, Snow, Bridal Veil, and Oak Creeks, and other Tributaries to these Creeks	200	---	---	---	---	---	---	801.70				
Bear Creek Drainage:												
Bear Creek	175	115	10	10	1	4	5	801.71				
Siberia Creek	200	---	---	---	---	---	---	801.71				
Slide Creek	175	---	---	---	---	---	---	801.71				
All other Tributaries to these Creeks+	---	---	---	---	---	---	---	801.71				
Big Bear Lake (see Lakes, pg. 4-46)												

+ Numeric objectives have not been established; narrative objectives apply.

Table 4-1 WATER QUALITY OBJECTIVES - Continued

INLAND SURFACE STREAMS	WATER QUALITY OBJECTIVES (mg/l)								Hydrologic Unit	
	Total Dissolved Solids	Hardness	Sodium	Chloride	Total Inorganic Nitrogen	Sulfate	Chemical Oxygen Demand	Primary	Secondary	
Big Bear Lake Tributaries:										
North Creek	175	---	---	---	---	---	---	801.71		
Metcalf Creek	175	---	---	---	---	---	---	801.71		
Grout Creek	150	---	---	---	---	---	---	801.71		
Rathbone (Rathbun) Creek	300	---	---	---	---	---	---	801.71		
Meadow Creek+	---	---	---	---	---	---	---	801.71		
Summit Creek+	---	---	---	---	---	---	---	801.71		
Other Tributaries to Big Bear Lake: Knickerbocker, Johnson, Minnelusa, Polique, and Red Ant Creeks, and other Tributaries to these Creeks	175	---	---	---	---	---	---	801.71		
Baldwin Lake (see Lakes, pg. 4-46)										
Baldwin Lake Drainage:										
Shay Creek+	---	---	---	---	---	---	---	801.73		
Other Tributaries to Baldwin Lake: Sawmill, Green, and Caribou Canyons and other Tributaries to these Creeks+	---	---	---	---	---	---	---	801.73		

+ Numeric objectives have not been established; narrative objectives apply.

Table 4-1 WATER QUALITY OBJECTIVES - Continued

INLAND SURFACE STREAMS	WATER QUALITY OBJECTIVES (mg/l)										Hydrologic Unit		
	Total Dissolved Solids	Hardness	Sodium	Chloride	Total Inorganic Nitrogen	Sulfate	Chemical Oxygen Demand	Primary	Secondary				
Other Streams Draining to Santa Ana River (Mountain Reaches [†])													
Cajon Creek	200	100	30	10	1	20	5	801.51					
City Creek	200	115	30	10	1	20	5	801.57					
Devil Canyon Creek	275	125	35	20	1	25	5	801.57					
East Twin and Strawberry Creeks	475	---	---	---	---	---	---	801.57					
Waterman Canyon Creek	250	---	---	---	---	---	---	801.57					
Fish Creek	200	100	30	10	1	20	5	801.57					
Forsee Creek	200	100	30	10	1	20	5	801.72					
Plunge Creek	200	100	30	10	1	20	5	801.72					
Barton Creek	200	100	30	10	1	20	5	801.72					
Bailey Canyon Creek	200	---	---	---	---	---	---	801.72					
Kimbark Canyon, East Fork Kimbark Canyon, Ames Canyon And West Fork Cable Canyon Creeks	325	---	---	---	---	---	---	801.52					
Valley Reaches [†] of Above Streams	(Water Quality Objectives Correspond to Underlying GW Basin Objectives)										801.52		

[†] The division between Mountain and Valley reaches occurs at the base of the foothills of the San Bernardino or San Gabriel Mountains.

Table 4-1 WATER QUALITY OBJECTIVES - Continued

INLAND SURFACE STREAMS	WATER QUALITY OBJECTIVES (mg/l)								Hydrologic Unit	
	Total Dissolved Solids	Hardness	Sodium	Chloride	Total Inorganic Nitrogen	Sulfate	Chemical Oxygen Demand	Primary	Secondary	
Other Tributaries (Mountain Reaches [†]): Alder, Badger Canyon, Bledsoe Gulch, Borea Canyon, Breakneck, Cable Canyon, Cienega Seca, Cold, Converse, Coon, Crystal, Deer, Elder, Fredalba, Frog, Government, Hamilton, Heart Bar, Hemlock, Keller, Kilpecker, Little Mill, Little Sand Canyon, Lost, Meyer Canyon, Mile, Monroe Canyon, Oak, Rattlesnake, Round Cienega, Sand, Schneider, Staircase, Warm Springs Canyon And Wild Horse Creeks, and other tributaries to those Creeks	200	100	30	10	1	20	5	801.72	801.71, 801.57	
San Gabriel Mountain Streams (Mountain Reaches [†])										
San Antonio Creek	225	150	20	6	4	25	5	801.23		
Lytle Creek (South, Middle, and North Forks) and Coldwater Canyon Creek	200	100	15	4	4	25	5	801.41	801.42, 801.52, 801.59	
Day Creek	200	100	15	4	4	25	5	801.21		
East Etiwanda Creek	200	100	15	4	4	25	5	801.21		
Valley Reaches [†] of Above Streams	(Water Quality Objectives Correspond to Underlying GW Basin Objectives)								801.21	

[†] The division between Mountain and Valley reaches occurs at the base of the foothills of the San Bernardino or San Gabriel Mountains.

Table 4-1 WATER QUALITY OBJECTIVES - Continued

INLAND SURFACE STREAMS	WATER QUALITY OBJECTIVES (mg/l)										Hydrologic Unit		
	Total Dissolved Solids	Hardness	Sodium	Chloride	Total Inorganic Nitrogen	Sulfate	Chemical Oxygen Demand	Primary	Secondary	Primary	Secondary		
Cucamonga Creek													
Reach 1 – Confluence with Mill Creek to 23 rd St. in Upland+	---	---	---	---	---	---	---	801.21					
Reach 2 (Mountain Reach [†]) – 23 rd St. in Upland to headwaters	200	100	15	4	4	25	5	801.24					
Mill Creek+	---	---	---	---	---	---	---	801.25					
Other Tributaries (Mountain Reaches+): Cajon Canyon, San Sevaine, Deer, Duncan Canyon, Henderson Canyon, Bull, Fan, Demens, Thorpe, Angalls, Telegraph Canyon, Stoddard Canyon, Icehouse Canyon, Cascade Canyon, Cedar, Falling Rock, Kerkhoff and Cherry Creeks, and other Tributaries to these Creeks	200	---	---	---	---	---	---	801.21					801.23
San Timoteo Area Streams													
San Timoteo Creek **													
Reach 1A – Santa Ana River Confluence to Barton Road	---	---	---	---	---	---	---	801.52					801.53
Reach 1B – Barton Road to Gage at San Timoteo Canyon Rd. u/s of Yucaipa Valley WD discharge	---	---	---	---	---	---	---	801.52					801.53
Reach 2 – Gage at San Timoteo Canyon Road to Confluence with Yucaipa Creek	---	---	---	---	---	---	---	801.52					801.62

+ Numeric objectives have not been established; narrative objectives apply

† The Division between Mountain and Valley reaches occurs at the base of the foothills of the San Bernardino or San Gabriel Mountains

** Surface water objectives not established; underlying Management Zone objectives apply. Biological quality protected by narrative objectives

Table 4-1 WATER QUALITY OBJECTIVES - Continued

INLAND SURFACE STREAMS	WATER QUALITY OBJECTIVES (mg/l)										Hydrologic Unit	
	Total Dissolved Solids	Hardness	Sodium	Chloride	Total Inorganic Nitrogen	Sulfate	Chemical Oxygen Demand	Primary	Secondary			
Reach 2 – Gage at San Timoteo Canyon Road to Confluence with Yucaipa Creek	---	---	---	---	---	---	---	801.52	801.62			
Reach 3** – Confluence with Yucaipa Creek to confluence with Little San Gorgonio and Noble Creeks (Headwaters of San Timoteo Creek)	---	---	---	---	---	---	---	801.62				
Oak Glen, Potato Canyon and Birch Creeks	230	125	50	40	3	45	5	801.67				
Little San Gorgonio Creek	230	125	50	40	3	45	5	801.69	801.62, 801.63			
Yucaipa Creek	290	175	60	60	6	45	15	801.67	801.61, 801.62 801.64			
Other Tributaries to these Creeks – Valley Reaches †	---	---	---	---	---	---	---	801.62	801.52, 801.53			
Other Tributaries to these Creeks – Mountain Reaches †	290	---	---	---	---	---	---	801.69	801.67			
Anza Park Drain+	---	---	---	---	---	---	---	801.27				
Sunnyslope Channel+	---	---	---	---	---	---	---	801.27				
Tequesquite Arroyo (Sycamore Creek)+	---	---	---	---	---	---	---	801.27				

+ Numeric objectives have not been established; narrative objectives apply
 ** Surface water objectives not established; underlying Management Zone objectives apply. Biological quality protected by narrative objectives
 † The Division between Mountain and Valley reaches occurs at the base of the foothills of the San Bernardino or San Gabriel Mountains

Table 4-1 WATER QUALITY OBJECTIVES - Continued

INLAND SURFACE STREAMS	WATER QUALITY OBJECTIVES (mg/l)										Hydrologic Unit	
	Total Dissolved Solids	Hardness	Sodium	Chloride	Total Inorganic Nitrogen	Sulfate	Chemical Oxygen Demand	Primary		Secondary		
Prado Area Streams												
Chino Creek												
Reach 1A - Santa Ana River confluence to downstream of confluence with Mill Creek (Prado Area) - Base Flow*	700	350	110	140	10**	150	30	801.21	801.21			
Reach 1B - Confluence of Mill Creek (Prado Area) to beginning of concrete-lined channel south of Los Serranos Road	550	240	75	75	8	60	15	801.21	801.21			
Reach 2 - Beginning of concrete lined channel south of Los Serranos Road to confluence with San Antonio Creek	---	---	---	---	---	---	---	801.21	801.21			
Temescal Creek												
Reach 1 - Lincoln Avenue to Riverside Canal+	---	---	---	---	---	---	---	801.25	801.25			
Reach 2 - Riverside Canal to Lee Lake+	---	---	---	---	---	---	---	801.32	801.32	801.25		
Reach 3 - Lee Lake, (see Lakes, Pg. 4-46)												

* Additional objective: Boron 0.75 mg/l

** Total nitrogen, filtered sample

+ Numeric objectives have not been established; narrative objectives apply

Table 4-1 WATER QUALITY OBJECTIVES - Continued

INLAND SURFACE STREAMS	WATER QUALITY OBJECTIVES (mg/l)								Hydrologic Unit	
	Total Dissolved Solids	Hardness	Sodium	Chloride	Total Inorganic Nitrogen	Sulfate	Chemical Oxygen Demand	Primary	Secondary	
Reach 4 - Lee Lake to Mid-section line of Section 17 (downstream end of freeway cut)+	---	---	---	---	---	---	---	801.34		
Reach 5 - Mid-section line of Section 17 (downstream end of freeway cut) to Elsinore Groundwater Subbasin Boundary+	---	---	---	---	---	---	---	801.35		
Reach 6 - Elsinore Groundwater Subbasin Boundary to Lake Elsinore Outlet+	---	---	---	---	---	---	---	801.35		
Coldwater Canyon Creek	250	---	---	---	---	---	---	801.32		
Bedford Canyon Creek+	---	---	---	---	---	---	---	801.32		
Dawson Canyon Creek+	---	---	---	---	---	---	---	801.32		
Other Tributaries to these Creeks	250	---	---	---	---	---	---	801.32		

+ Numeric objectives have not been established; narrative objectives apply

Table 4-1 WATER QUALITY OBJECTIVES - Continued

INLAND SURFACE STREAMS	WATER QUALITY OBJECTIVES (mg/l)										Hydrologic Unit	
	Total Dissolved Solids	Hardness	Sodium	Chloride	Total Inorganic Nitrogen	Sulfate	Chemical Oxygen Demand	Primary	Secondary			
San Jacinto River Basin												
San Jacinto River												
Reach 1 – Lake Elsinore to Canyon Lake	450	260	50	65	3	60	15	802.32	802.31			
Reach 2 – Canyon Lake (see Lakes, Pg. 4-47)												
Reach 3 – Canyon Lake to Nuevo Road	820	400	---	250	6	---	15	802.11				
Reach 4 – Nuevo Road to North-South Mid-Section Line, T4S/R1W-38*	500	220	75	125	5	65	---	802.14	802.21			
Reach 5 – North-South Mid-Section Line, T4S/R1 W-SB, to Confluence With Poppet Creek	300	140	30	25	3	40	12	802.21				
Reach 6 – Poppet Creek to Cranston Bridge	250	130	25	20	1	30	12	802.21				
Reach 7 – Cranston Bridge to Lake Hemet	150	100	10	15	1	20	5	802.21				
Bautista Creek – Headwaters to Debris Dam	250	130	25	20	1	30	5	802.21	802.23			
Strawberry Creek and San Jacinto River, North Fork	150	100	10	15	1	20	5	802.21				

* Note the quality objective for Reach 4 is not intended to preclude transport of water supplies or delivery to Canyon Lake

Table 4-1 WATER QUALITY OBJECTIVES - Continued

INLAND SURFACE STREAMS	WATER QUALITY OBJECTIVES (mg/l)								Hydrologic Unit	
	Total Dissolved Solids	Hardness	Sodium	Chloride	Total Inorganic Nitrogen	Sulfate	Chemical Oxygen Demand	Primary	Secondary	
Fuller Mill Creek	150	100	10	15	1	20	5	802.22		
Stone Creek	150	100	10	15	1	20	5	802.21		
Salt Creek+	---	---	---	---	---	---	---	802.12		
Other Tributaries: Logan, Black Mountain, Juaro Canyon, Indian, Hurkey, Poppet and Protrero Creeks, and other Tributaries to these Creeks	150	70	10	12	1	15	5	802.12	802.22	

+ Numeric objectives have not been established; narrative objectives apply.

Table 4-1 WATER QUALITY OBJECTIVES - Continued

LAKES AND RESERVOIRS	WATER QUALITY OBJECTIVES (mg/l)										Hydrologic Unit	
	Total Dissolved Solids	Hardness	Sodium	Chloride	Total Inorganic Nitrogen	Sulfate	Chemical Oxygen Demand	Primary	Secondary			
UPPER SANTA ANA RIVER BASIN												
Baldwin Lake*+	---	---	---	---	---	---	---	801.73				
Big Bear Lake**	175	125	20	10	0.15	10	---	801.71				
Erwin Lake+	---	---	---	---	---	---	---	801.73				
Evans Lake	490	---	---	---	---	---	---	801.27				
Jenks Lake	200	100	30	10	1	20	---	801.72				
Lee Lake+	---	---	---	---	---	---	---	801.34				
Mathews, Lake	700	325	100	90	---	290	---	801.33				
Mockingbird Reservoir	650	---	---	---	---	---	---	801.26				
Norconian, Lake	1050	---	---	---	---	---	---	801.25				
LOWER SANTA ANA RIVER BASIN												
Anaheim Lake	600	---	---	---	---	---	---	801.11				
Irvine Lake (Santiago Reservoir)	730	360	110	130	6	310	---	801.12				
Laguna, Lambert, Peters Canyon, Rattlesnake, Sand Canyon, and Siphon Reservoirs	720	---	---	---	---	---	---	801.11				

* Fills occasionally with storm flows; may evaporate completely

** Additional Objective: 0.15 mg/l Phosphorus

+ Numeric objectives have not been established; narrative objectives apply.

Table 4-1 WATER QUALITY OBJECTIVES - Continued

LAKES AND RESERVOIRS	WATER QUALITY OBJECTIVES (mg/l)								Hydrologic Unit	
	Total Dissolved Solids	Hardness	Sodium	Chloride	Total Inorganic Nitrogen	Sulfate	Chemical Oxygen Demand	Primary	Secondary	
SAN JACINTO RIVER BASIN										
Canyon Lake (Railroad Canyon Reservoir)***	700	325	100	90	8	290	---	802.11	802.12	
Elsinore, Lake****	2000	---	---	---	1.5	---	---	802.31		
Fulmor, Lake	150	70	10	12	1	15	---	802.21		
Hemet, Lake	135	---	25	20	1	10	---	802.22		
Perris, Lake	220	110	50	55	1	45	---	802.11		

*** Note: The quality objectives for Canyon Lake is not intended to preclude transport of water supplies or delivery to the Lake.
**** Lake volume and quality highly variable

Table 4-1 WATER QUALITY OBJECTIVES - Continued

WETLANDS (INLAND)	WATER QUALITY OBJECTIVES (mg/l)								Hydrologic Unit	
	Total Dissolved Solids	Hardness	Sodium	Chloride	Total Inorganic Nitrogen	Sulfate	Chemical Oxygen Demand	Primary	Secondary	
San Jacinto Freshwater Marsh**	2000	---	---	---	13	---	90	801.11		
Shay Meadows+	---	---	---	---	---	---	---	801.73		
Stanfield Marsh+**	---	---	---	---	---	---	---	801.71		
Prado Basin Management Zone @	---	---	---	---	---	---	---	801.21		
San Jacinto Wildlife Preserve+**	---	---	---	---	---	---	---	802.11	802.14	
Glen Helen+	---	---	---	---	---	---	---	801.59		

** This is a created wetlands as defined in the wetlands discussion (see Chapter 3)

+ Numeric objectives have not been established; narrative objectives apply

@ includes the Prado Flood Control Basin, a created wetland as defined in the wetlands discussion (see Chapter 3). Chino Creek, Reach 1A, Chino Creek, 1B, Mill Creek (Prado Area) and Santa Ana River, Reach 3 TDS and TIN numeric objectives apply (see discussion).

Table 4-1 WATER QUALITY OBJECTIVES - Continued

GROUNDWATER MANAGEMENT ZONES	WATER QUALITY OBJECTIVES (mg/l)							Hydrologic Unit	
	Total Dissolved Solids	Hardness	Sodium	Chloride	Nitrate as Nitrogen	Sulfate	Primary	Secondary	
UPPER SANTA ANA RIVER BASIN									
Big Bear Valley	220	225	20	10	5.0	20	801.73		
Beaumont "maximum benefit"++	330	---	---	---	5.0	---	801.62	801.63, 801.69	
Beaumont "antidegradation"++	230	---	---	---	1.5	---	801.62	801.63, 801.69	
Bunker Hill - A	310	---	---	---	2.7	---	801.51	801.52	
Bunker Hill - B	330	---	---	---	7.3	---	801.52	801.53, 801.54, 801.57, 801.58	
Colton	410	---	---	---	2.7	---	801.44	801.45	
Chino - North "maximum benefit"++	420	---	---	---	5.0	---	801.21	481.21, 481.23, 481.22, 801.21, 801.23, 801.24	
Chino 1 - "antidegradation"++	280	---	---	---	5.0	---	802.21	481.21	
Chino 2 - "antidegradation"++	250	---	---	---	2.9	---	801.21		
Chino 3 - "antidegradation"++	260	---	---	---	3.5	---	801.21		
Chino - East @	730	---	---	---	10.0	---	801.21	801.27	
Chino - South @	680	---	---	---	4.2	---	801.21	801.26	
Cucamonga "maximum benefit"++	380	---	---	---	5.0	---	801.24	801.21	

++ "Maximum benefit" objectives apply unless Regional Board determines that lowering of water quality is not of maximum benefit to the people of the state; in that case, "antidegradation" objectives apply (for Chino North, antidegradation objectives for Chino 1, 2, 3 would apply if maximum benefit is not demonstrated). (see discussion in Chapter 5).

@ Chino East and South are the designations in the Chino Basin Watermaster "maximum benefit" proposal (see Chapter 5) for the management Zones identified by Wildermuth Environmental, Inc., (July 2000) as Chino 4 and Chino 5, respectively.

Table 4-1 WATER QUALITY OBJECTIVES - Continued

GROUNDWATER MANAGEMENT ZONES	WATER QUALITY OBJECTIVES (mg/l)							Hydrologic Unit	
	Total Dissolved Solids	Hardness	Sodium	Chloride	Nitrate as Nitrogen	Sulfate	Primary	Secondary	
UPPER SANTA ANA RIVER BASIN									
Cucamonga "antidegradation"++	210	---	---	---	2.4	---	801.24	801.21	
Lytle	260	---	---	---	1.5	---	801.41	801.42	
Rialto	230	---	---	---	2.0	---	801.41	801.42	
San Timoteo "maximum benefit"++	400	---	---	---	5.0	---	801.62		
San Timoteo "antidegradation"++	300	---	---	---	2.7	---	801.62		
Yucaipa "maximum benefit"++	370	---	---	---	5.0	---	801.61	801.55, 801.54, 801.56, 801.63, 801.65, 801.66	
Yucaipa "antidegradation"++	320	---	---	---	4.2	---	801.61	801.55, 801.54, 801.56, 801.63, 801.65, 801.66	
MIDDLE SANTA ANA RIVER BASIN									
Arlington	980	---	---	---	10	---	801.26		
Bedford**	---	---	---	---	---	---	801.32		
Coldwater	380	---	---	---	1.5	---	801.31		
Elsinore	480	---	---	---	1.0	---	802.31		
Lee Lake**	---	---	---	---	---	---	801.34		

++ "Maximum benefit" objectives apply unless Regional Board determines that lowering of water quality is not of maximum benefit to the people of the state; in that case, "antidegradation" objectives apply (for Chino North, antidegradation objectives for Chino 1, 2, 3 would apply if maximum benefit is not demonstrated). (see discussion in Chapter 5).

** Numeric objectives not established; narrative objectives apply

Table 4-1 WATER QUALITY OBJECTIVES - Continued

GROUNDWATER MANAGEMENT ZONES	WATER QUALITY OBJECTIVES (mg/l)								Hydrologic Unit	
	Total Dissolved Solids	Hardness	Sodium	Chloride	Nitrate as Nitrogen	Sulfate	Primary	Secondary	Primary	Secondary
Riverside - A	560	---	---	---	6.2	---	801.27		801.27	
Riverside - B	290	---	---	---	7.6	---	801.27		801.27	
Riverside - C	680	---	---	---	8.3	---	801.27		801.27	
Riverside - D	810	---	---	---	10.0	---	801.27		801.27	
Riverside - E	720	---	---	---	10.0	---	801.27		801.27	
Riverside - F	660	---	---	---	9.5	---	801.27		801.27	
Temescal	770	---	---	---	10.0	---	801.25		801.25	
SAN JACINTO RIVER BASIN										
Gardner Valley	300	100	65	30	2.0	40	802.22		802.22	
Idyllwild Area**	---	---	---	---	---	---	802.22		802.22	802.21
Canyon	230	---	---	---	2.5	---	802.21		802.21	
Hemet - South	730	---	---	---	4.1	---	802.15		802.15	802.21
Lakeview - Hemet North	520	---	---	---	1.8	---	802.14		802.14	802.15

** Numeric objectives not established; narrative objectives apply

Table 4-1 WATER QUALITY OBJECTIVES - Continued

GROUNDWATER MANAGEMENT ZONES	WATER QUALITY OBJECTIVES (mg/l)							Hydrologic Unit	
	Total Dissolved Solids	Hardness	Sodium	Chloride	Nitrate as Nitrogen	Sulfate	Primary	Secondary	
Menifee	1020	---	---	---	2.8	---	802.13		
Perris North	570	---	---	---	5.2	---	802.11		
Perris South	1260	---	---	---	2.5	---	802.11	802.12, 802.13	
San Jacinto - Lower	520	---	---	---	1.0	---	802.21		
San Jacinto - Upper	320	---	---	---	1.4	---	802.21	802.23	
LOWER SANTA ANA RIVER BASIN									
La Habra**	---	---	---	---	---	---	845.62		
Santiago**	---	---	---	---	---	---	801.12		
Orange	580	---	---	---	3.4	---	801.11	801.13, 845.61, 801.14	
Irvine	910	---	---	---	5.9	---	801.11		

** Numeric objectives not established; narrative objectives apply

Table 4-2

**4-Day Average Concentration for Ammonia
 Salmonids or Other Sensitive Coldwater Species Present
 (COLD)**

Un-ionized Ammonia (mg/liter N)		Temperature, C						
		0	5	10	15	20	25	30
pH	6.50	0.0004	0.0005	0.0007	0.0010	0.0010	0.0010	0.0010
	6.75	0.0006	0.0009	0.0013	0.0018	0.0018	0.0018	0.0018
	7.00	0.0011	0.0016	0.0022	0.0031	0.0031	0.0031	0.0031
	7.25	0.0020	0.0028	0.0040	0.0056	0.0056	0.0056	0.0056
	7.50	0.0035	0.0050	0.0070	0.0099	0.0099	0.0099	0.0099
	7.75	0.0069	0.0097	0.0137	0.0194	0.0194	0.0194	0.0194
	8.00	0.0080	0.0112	0.0159	0.0224	0.0224	0.0224	0.0224
	8.25	0.0080	0.0112	0.0159	0.0224	0.0224	0.0224	0.0224
	8.50	0.0080	0.0112	0.0159	0.0224	0.0224	0.0224	0.0224
	8.75	0.0080	0.0112	0.0159	0.0224	0.0224	0.0224	0.0224
9.00	0.0080	0.0112	0.0159	0.0224	0.0224	0.0224	0.0224	

Total Ammonia (mg/liter N)		Temperature, C						
		0	5	10	15	20	25	30
pH	6.50	1.36	1.27	1.20	1.15	0.796	0.556	0.393
	6.75	1.36	1.27	1.20	1.15	0.796	0.556	0.393
	7.00	1.36	1.27	1.20	1.16	0.798	0.558	0.395
	7.25	1.36	1.27	1.20	1.16	0.800	0.560	0.397
	7.50	1.36	1.27	1.21	1.16	0.804	0.565	0.402
	7.75	1.49	1.40	1.33	1.28	0.890	0.627	0.448
	8.00	0.974	0.913	0.871	0.844	0.589	0.418	0.302
	8.25	0.551	0.519	0.497	0.484	0.341	0.245	0.179
	8.50	0.313	0.297	0.286	0.282	0.202	0.147	0.111
	8.75	0.180	0.172	0.168	0.169	0.123	0.093	0.072
9.00	0.105	0.101	0.101	0.105	0.079	0.062	0.050	

Table 4-3

4-Day Average Concentration for Ammonia
 Salmonids or Other Sensitive Coldwater Species Absent
 (WARM)

Un-ionized Ammonia (mg/liter N)		Temperature, C						
		0	5	10	15	20	25	30
pH	6.50	0.0006	0.0008	0.0012	0.0017	0.0024	0.0024	0.0024
	6.75	0.0010	0.0015	0.0021	0.0030	0.0042	0.0042	0.0042
	7.00	0.0019	0.0026	0.0037	0.0053	0.0074	0.0074	0.0074
	7.25	0.0033	0.0047	0.0066	0.0094	0.0132	0.0132	0.0132
	7.50	0.0059	0.0083	0.0118	0.0166	0.0235	0.0235	0.0235
	7.75	0.0115	0.0162	0.0229	0.0324	0.0458	0.0458	0.0458
	8.00	0.0133	0.0188	0.0265	0.0375	0.0530	0.0530	0.0530
	8.25	0.0133	0.0188	0.0265	0.0375	0.0530	0.0530	0.0530
	8.50	0.0133	0.0188	0.0265	0.0375	0.0530	0.0530	0.0530
	8.75	0.0133	0.0188	0.0265	0.0375	0.0530	0.0530	0.0530
9.00	0.0133	0.0188	0.0265	0.0375	0.0530	0.0530	0.0530	

Total Ammonia (mg/liter N)		Temperature, C						
		0	5	10	15	20	25	30
pH	6.50	2.27	2.12	2.01	1.93	1.88	1.31	0.928
	6.75	2.27	2.12	2.01	1.93	1.88	1.31	0.930
	7.00	2.27	2.12	2.01	1.93	1.89	1.32	0.933
	7.25	2.27	2.12	2.01	1.94	1.89	1.32	0.939
	7.50	2.27	2.13	2.02	1.95	1.90	1.33	0.949
	7.75	2.49	2.34	2.22	2.14	2.10	1.48	1.06
	8.00	1.63	1.53	1.46	1.41	1.39	0.987	0.173
	8.25	0.922	0.868	0.831	0.811	0.806	0.578	0.424
	8.50	0.524	0.496	0.479	0.472	0.476	0.348	0.262
	8.75	0.301	0.287	0.281	0.282	0.291	0.219	0.170
9.00	0.175	0.170	0.170	0.175	0.187	0.146	0.119	

1 The values may be conservative, however. If a more refined criterion is desired, EPA recommends a site-specific Criteria modification.

Table 4-4

**Equations Used to Calculate UIA-N and Total Ammonia -N
 Water Quality Objectives for COLD and WARM Waterbodies**

COLD-Chronic UIA-N	$0 \leq T \leq 15$	$15 \leq T \leq 30$
$6.5 \leq \text{pH} \leq 7.7$	$\frac{0.0223}{10^{(8.3-0.03T-\text{pH})}}$	$\frac{0.0158}{10^{(7.7-\text{pH})}}$
$7.7 \leq \text{pH} \leq 8$	$\frac{0.0396}{10^{(0.6-0.03T)}} + 10^{(8.0-0.03T-\text{pH})}$	$\frac{0.0280}{1+10^{(7.4-\text{pH})}}$
$8 \leq \text{pH} \leq 9$	$\frac{0.0317}{10^{(0.6-0.03T)}}$	0.0224

WARM-Chronic UIA-N	$0 \leq T \leq 15$	$15 \leq T \leq 30$
$6.5 \leq \text{pH} \leq 7.7$	$\frac{0.0372}{10^{(8.3-0.03T-\text{pH})}}$	$\frac{0.0372}{10^{(7.7-\text{pH})}}$
$7.7 \leq \text{pH} \leq 8$	$\frac{0.0662}{10^{(0.6-0.03T)}} + 10^{(8.0-0.03T-\text{pH})}$	$\frac{0.0662}{1+10^{(7.4-\text{pH})}}$
$8 \leq \text{pH} \leq 9$	$\frac{0.0530}{10^{(0.6-0.03T)}}$	0.0530

Total Ammonia-N Objectives

$$\text{NH}_3\text{-N} = \text{UIA-N} \cdot [1 + 10^{(0.09018 + \frac{2729.92}{T+273.15} - \text{pH})}]$$

Note: For all equations, T is the temperature in °C

ATTACHMENT 51

**RIVERSIDE COUNTY
CONSOLIDATED PROGRAM FOR
WATER QUALITY MONITORING**

**WHITEWATER WATERSHED
SANTA ANA WATERSHED
SANTA MARGARITA WATERSHED**

December 15, 2003

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APPENDIX A - WHITEWATER WATERSHED

APPENDIX B - SANTA ANA WATERSHED

Table B-1. Core CMP Stations in the Santa Ana Watershed

Table B-2. San Jacinto Watershed Nutrient TMDL Stations

Table B-3. SAR Bacti study stations

Table B-4. Sampling Requirements

APPENDIX C - SANTA MARGARITA WATERSHED

APPENDIX D - WATER QUALITY PARAMETERS THAT MAY BE MONITORED

APPENDIX E - GLOSSARY

APPENDIX F - REFERENCES

1. INTRODUCTION

A. Clean Water Act

The federal Clean Water Act (CWA) established a national policy designed to help maintain and restore the physical, chemical and biological integrity of the nation's waters. In 1972, the CWA established the NPDES permit program to regulate the discharge of pollutants from "point sources" to waters of the United States. From 1972 to 1987, the main focus of the NPDES program was to regulate conventional point pollutant sources such as sewage treatment plants and industrial facilities. As a result, on a nationwide basis, "non-point sources", including agricultural runoff and Urban Runoff, now contribute a larger portion of many kinds of Pollutants than the more thoroughly regulated sewage treatment plants and industrial facilities.

B. MS4 Program Goal

The goal of the Municipal Separate Storm Sewer System (MS4) program is to manage the quality of Urban Runoff to prevent impacts to Receiving Waters. To this end, the Permittees developed a Consolidated Program for Water Quality Monitoring (CMP) that included monitoring at selected stations throughout the Permittees' collective jurisdictional boundaries. The original CMP was drafted in March 1994 and was included with the application materials for the previous round of permits. The CMP was accepted by the Colorado, San Diego and Santa Ana RWQCBs in 1995 as part of their respective permit applications. Subsequently, the RWQCBs directed the Riverside County Permittees to implement the CMP in the "second round" MS4 permits. In addition, in reissuing the MS4 permit for the Santa Margarita Region, USEPA Region IX directed the implementation of the CMP. The CMP is being updated to more effectively address the monitoring program objectives and the requirements of the third round MS4 permits issued by the Colorado and Santa Ana RWQCBs in 2001 and 2002, respectively. Additional revisions are anticipated to address the requirements of the MS4 permit for the Santa Margarita Region that is scheduled to be reissued in April 2004.

C. MS4 Functions

The primary purpose of MS4s is to protect life and property from the impacts of unconfined flooding. Flood prevention protects the environment by protecting materials from exposure to flood waters. For example, flooding of homes or commercial or industrial facilities would result in inundation of stored materials and liquid and solid wastes. This would result in the release of Pollutants to Receiving Waters, even if those materials and wastes were properly stored and managed using appropriate BMPs. In addition, unconfined flooding often results in the discharge of sanitary wastes to Receiving Waters. MS4s protect receiving waters from environmental damage that may result from such releases. An additional objective of the regional MS4 in Riverside County is water conservation. The District also allows public agencies to use the MS4 for water transfers to facilitate water conservation. Even though most of the point sources have brought the quality of their discharges under control or sent their wastes to a treatment facility, there are existing water quality impairments in Riverside County.

Many non-point sources, including agricultural discharges and discharges from open space and government lands not under the jurisdiction of the Permittees, are not treated or are inadequately treated and may be discharged into an MS4 or Receiving Water. In most cases, discharges to MS4s receive no additional treatment. It is important that the nature of all sources of Pollutants contributing to these impairments, including Urban Runoff, be characterized, both in identifying the types and amounts of Pollutants present, and in identifying the point and non-point sources most likely to have contributed to the Pollution. For purposes of the MS4 permits, the nature of discharges from urban land uses need to be characterized and controlled.

D. Climate and Flow Conditions

Precipitation patterns in Southern California are complex compared with the eastern and central United States. In Riverside County alone, there is a coastal influence, one east-west and two north-south trending mountain ranges with intermediate valleys, and a major desert. In a matter of minutes one can travel from an area where convective storms are the most critical to one influenced primarily by orographic conditions. Average annual precipitation is generally correlated with altitude. The climate in the Santa Margarita and Santa Ana Regions is characterized as semi-arid with an average annual precipitation of 11-14 inches in the urbanized areas of the Santa Ana Region and 12-16 inches in the urbanized areas of the Santa Margarita Region. The climate in the Whitewater Region is characterized as arid, with an average annual precipitation of 4-6 inches in the urbanized areas. Due to the climate, geology, geography, and development conditions, the flows in the MS4s are generally ephemeral or intermittent.

E. Potential Pollution Sources

Even though most point sources have brought the quality of their discharges under control or sent their wastes to a treatment facility, there remain water quality impairments in Riverside County. These impairments are nutrients and suspended solids in the San Jacinto watershed, elevated bacterial levels in the Santa Ana River and phosphorous in Murrieta Creek. Urban Runoff is believed to contribute to each of these impairments. Many non-point sources, including agricultural discharges and discharges from open space and government lands not under the jurisdiction of the Permittees, are not treated or are inadequately treated and may be discharged into an MS4 or Receiving Water. In most cases, discharges to MS4s receive no additional treatment. It is important that the nature of all sources of Pollutants contributing to these impairments, including Urban Runoff, be characterized, both in identifying the types and amounts of Pollutants present, and in identifying the point and non-point sources most likely to have contributed to the Pollution. For purposes of the MS4 permits, the nature of discharges from urban land uses need to be characterized and controlled.

Sources of Pollutants in Riverside County include aerial deposition, motor vehicles, agricultural runoff and overflows from holding ponds, illegal dumping and discharges, overflows from fire suppression activities, and malfunctioning and leaking sanitary sewer systems or improperly treated discharges from publicly-owned treatment works (POTWs). Other sources may include improperly stored materials at industrial and commercial facilities, runoff from landscape irrigation and discharge of pool water from residences and apartments, and parking lot wash water. Although industrial and commercial facilities are required to have Waste Discharge Requirements or NPDES Permits, discharges may occur, whether by an accidental spill or a deliberate violation of an existing Permit. These point and non-point sources discharge to the MS4, where they may ultimately be conveyed to a Receiving Water. In arid and semi-arid Riverside County, dry-weather flows that reach the MS4 generally soak into the ground or evaporate long before reaching a Receiving Water. Even during smaller storms, the only rainfall that reaches an MS4 is what directly falls into one. In general, flow is only observed as a result of larger storms. Exceptions include flows from springs, rising groundwater, POTW discharges and water delivery discharges.

F. Coverage Under Three MS4 Permits

Riverside County is under the purview of three California Regional Water Quality Control Boards: the Colorado River (Whitewater) Region, the Santa Ana River Region, and the San Diego (Santa Margarita) River Region. The MS4 permit for the Whitewater Region was adopted in September 2001 and for the Santa Ana Region in October 2002. The current MS4 permit for the Santa Margarita Region was issued by USEPA Region IX in 1998. This permit is currently being drafted for reissuance with a target date of April 2004. Monitoring requirements are still in the discussion

stage with San Diego Regional Board staff. The CMP is intended to comply with the core programmatic elements of each of the watershed MS4 permits.

The Riverside County Flood Control and Water Conservation District (District) serves as the Principal Permittee in all three MS4 Permits. The 26 Co-Permittees are identified in the Glossary. As Principal Permittee, the District leads in the development of permit compliance programs, coordinates and prepares annual reports, and administers regional programs including public education, monitoring, and other requirements proscribed by Implementation Agreements with each watershed's Co-Permittees. Generally, as the MS4 Principal Permittee, the District processes contracts and service agreements for laboratory, consulting, and interagency services. Under the previous round of permits, the District has also been responsible for collecting samples required under the MS4 permits, ensuring that the samples are analyzed at a certified laboratory, and analyzing the resulting data. Co-Permittees may also conduct monitoring activities, such as water quality sampling and field reconnaissance, either under the umbrella of the CMP or due to MS4 permit-specific monitoring requirements.

G. CMP Elements

The five program elements of the CMP are:

- Field Reconnaissance
- Water Chemistry
- Toxicity
- Bioassessment
- Special Studies

These elements will be described in more detail later in this document.

H. Revisions to CMP

This document represents a major revision to the original CMP and will be revised as new developments are made to program elements and as MS4 permit requirements change. As already noted, MS4 permits have been recently renewed for the Santa Ana and Whitewater Regions, and the CMP recognized their monitoring programs. The MS4 permit for the Santa Margarita Region is scheduled for adoption in April 2004, and the CMP will be re-evaluated to incorporate its monitoring program.

2. GOALS AND OBJECTIVES

As previously stated, the goal of the MS4 Urban Runoff program is to manage the quality of Urban Runoff to prevent impacts to Receiving Waters within the Permittee's collective jurisdictions. The objectives necessary to support this goal are as follows:

- Develop and support an effective MS4 management program.
- Identify those Receiving Waters, which, without additional action to control Pollution from Urban Runoff, cannot reasonably be expected to achieve or maintain applicable Water Quality Standards.
- Characterize Pollutants associated with Urban Runoff and assess the influence of Urban land uses on Receiving Water quality.

- Analyze and interpret the collected data to identify trends, if any, both to prevent impairments through the implementation of preventive BMPs and to track improvements based on the MS4 management program.

3. EPA GUIDANCE

The information in this section is largely taken from EPA's NPDES Storm Water Sampling Guidance Document (EPA 833-B-92-001), which provides recommendations on the frequency and method of collecting samples.

A. Nature of MS4 Discharges

Urban Runoff is a complex blend of countless diverse point and non-point sources conveyed in such a way that they outlet at measurable points. The non-point inputs are varied, and, in Riverside County, include significant inputs from open space, agricultural, and other non-Urban sources. The Permittees also lack legal jurisdiction over storm water discharges into their respective MS4s from agricultural activities, California and federal facilities, utilities and special districts, Native American tribal lands, wastewater management agencies and other point and non-point source discharges otherwise permitted by or under the jurisdiction of the Regional Board. Further, certain activities that generate pollutants present in Urban Runoff, including operation of internal combustion engines, atmospheric deposition, brake pad wear, tire wear, residues from lawful application of pesticides, nutrient runoff from agricultural activities, and leaching of naturally occurring minerals from local geography, are beyond the ability of the Permittees to eliminate. The USEPA has recognized this situation by holding Urban Runoff standards to "Maximum Extent Practicable" as opposed to the "Best Available Technology" standard for Industrial waste streams.

Industrial waste streams are relatively constant and consistent in chemical composition and flow; there are no engineering controls on Urban Runoff other than gross flow control and Best Management Practices. The chemical makeup of the MS4 discharges may also differ immensely by location, from storm to storm and even during a storm. The volumetric rate of Urban Runoff in Riverside County may vary from nonexistent to hundreds of cfs. During dry weather, inputs to the MS4 may include industrial accidents, broken sprinkler or pressure mains, rising ground water, sanitary sewer overflows, agricultural irrigation discharges, and intentional discharges. Flows may enter the MS4 from sheet flow, through a pipe, or through an illicit connection cut into the wall of a MS4. Deciding where to sample the MS4 is problematic because of the vast number of discharge locations to the MS4 and discharge locations from the MS4 to Receiving Waters. The manpower and expense that would be necessary to monitor every possible entrance and discharge location would outstrip available resources for implementation, and would overload the capacity of many contract analytical laboratories. The CMP proposes a sampling plan that includes representative land use and Receiving Water stations to generally characterize land uses and Receiving Waters, provides for the removal of illicit discharges, and makes the best use of available resources.

B. Representative Storm

The USEPA guidance document states that three different storm events should be sampled each year. A "representative" storm is defined as:

- Greater than 0.1 inch accumulation;
- Preceded by at least 72 hours of dry weather; and
- Where feasible, the depth of rain and duration of the event should not vary by more than 50 percent from the average depth and duration.

These criteria were established to:

- Ensure adequate flow;
- Allow Pollutants to build up during the dry weather intervals; and
- Ensure that the storm would be typical for the area in terms of intensity, depth, and duration.

In ephemeral watersheds, the USEPA's recommended storm may not generate sufficient flow in the MS4 to sample. For example, in a dry watershed, rainfall will soak into the ground and will not generate runoff. A subsequent storm on a saturated watershed may generate substantial flow in portions of the MS4. Therefore, a storm is further defined as

- one in which there is sufficient flow to collect a sample.

The District has prepared guidance on when wet-weather sampling should be initiated (See Section 4.B).

USEPA's wet weather sampling guidance recognizes that it may not be feasible to collect a sample. For instance, flow in a channel may be too swift for safe collection or lightning may be active in the area. Also, antecedent conditions may preclude generation of adequate runoff, and there may not be sufficient flow to allow collection of a sample adequate for analysis. In cases such as these, attempts to collect a sample should be noted and submitted to the Regional Board for their certification.

C. Composite Sampling

Composite sampling is required for most MS4 permits. Composite samples are intended to characterize the average quality of the entire storm water discharge. The most accurate type of composite sampling is flow-weighted, where the amount of sample collected is proportional to the flow rate. Composite samples may be collected manually (as outlined in the CMP) or with the use of an automatic device. However, there are several problems inherent in using an automatic sampler. As several pollutants must be measured in the field, including pH and temperature, no reduction in field staff requirements will be realized with the use of automatic samplers. Other concerns include that biological indicators of sanitary contamination, such as fecal streptococcus, fecal coliform and chlorine have very short (i.e., 6 hours) holding times. Collection of samples for oil and grease requires teflon-coated equipment to prevent adherence to the sampling equipment. Volatile organic compounds (VOCs) are likely to volatilize as a result of agitation during automatic sampler collection and/or may contaminate other samples already collected. Also, pH, temperature, cyanide, total phenols, residual chlorine, oil and grease, fecal coliform, and fecal streptococcus tend to transform to different substances or change in concentration after a short period of time, particularly in the presence of other reactive pollutants. The requirements for grab sampling are stated in 40 CFR 122.21(g)(7). Outside of water quality issues, equipment vandalism is a common occurrence. Replacing the equipment is expensive and it takes time for replacement equipment to be delivered.

Sampling across the hydrograph, using flow-weighted proportions, results in the most accurate estimate of mass loading of a Pollutant for a given storm. However, knowing when and for how long to sample is problematic as it is not possible to predict storm duration or intensity, and the resulting flow conditions, to the accuracy needed to calculate mass loading. Storms in Southern California are often of short duration and high intensity. The "storm" may actually consist of many spotty periods of rainfall with a half-hour or so between cloudbursts. In addition, precipitation is generally inconsistent across a watershed as "storms" generally move across a watershed in cells. Hydrographs in Riverside County are very spiky and the rise and fall cannot be determined until

after the storm has passed. USEPA's guidance document states that the flow-weighted composite sample must be taken for either the first 3 hours of a storm or for the entire discharge (if the event is less than 3 hours long). For stop/start rains (rainfall is intermittent), the reference recommends that samples be taken until an adequate sample volume is obtained. In either event, the grab samples collected during the first 30 minutes of a storm event will generally contain higher concentrations of pollutants, since they pick-up pollutants that have accumulated since the last storm event and are on the rising arm of the hydrograph, i.e., there is less runoff for dilution. This guidance is implemented in the CMP.

A composite sample may be collected on a flow-weighted basis to estimate the load over a storm. The composited concentration is assumed to be the same over the course of the storm. Samples may be collected on an equal-time basis as long as flow is also measured or estimated at the time the sample is collected. The composite is proportioned according to the flow represented by the individual samples.

D. Sampling Locations

USEPA's guidance says that the ideal sampling location would be at the lowest point in the drainage area where a conveyance discharges storm water to Waters of the U.S. or to a MS4. Typical sampling locations may include the discharge at the end of a pipe, a ditch, or a channel. The sample point should be in a safe area that is easily accessible on foot.

In addition to considering USEPA guidance, the Permittees considered urban land uses in siting the sampling locations, although isolating an individual land use was not always possible. Reference stations have also been established in locations above the influence of Urban Runoff.

E. Challenges of Ephemeral Watersheds

During dry weather in an ephemeral MS4 where flows are not present except during storms, a better use will be made of finite resources to focus on reconnaissance of the MS4. This consists of visual inspection of the channels and determining the sources of flows found in the MS4. The flow may be coming from discharges permitted, allowed (e.g., springs), or exempted by a Regional Board (e.g., agriculture, water transfer discharges), but it may also be coming from an illegal discharge or an illicit connection. Once the source of the discharge is determined, steps should be taken to minimize or eliminate the flow. If the source cannot be determined, a sample should be collected and analyzed for parameters based on the surrounding land use. Use of the MS4 for water conservation transfers (e.g., imported water deliveries) may confound finding illegal discharges. In this situation, other possible sources of the non-storm water discharge should be examined and ruled out.

F. Video Reconnaissance

Extensive videotape "reconnaissance surveys" of the Permittees' underground MS4s and visual inspections of open channel facilities were completed in September 1994. The surveys revealed that illicit connections are essentially non-existent, and connections tended to occur to open facilities. Regular surveys of underground facilities require entry into confined spaces, and as illicit connections are not expected, would be putting municipal personnel at unnecessary risk. Reconnaissance surveys will be limited to open facilities, and if flows originate in underground facilities, they will be discovered during the survey.

4. CONSOLIDATED MONITORING PROGRAM

A. Field Reconnaissance

In an ephemeral watershed, this is the most important element of the monitoring program. The MS4 permits require that the Permittees effectively prohibit the discharge of non-storm water into their respective MS4s and to Waters of the U.S. During dry weather, regular surveys of their MS4s need to be conducted by each Permittee. If water is observed, its source must be located. If the water is associated with a permitted discharge, the facility owner would have laboratory analyses as required by their discharge permit issued by a Regional Board. Other discharges may be allowed as discussed below or may be required to be stopped by the jurisdictional Permittee.

1) *Allowed or Permitted Discharges*

40 CFR 122.26(d)(2)(iv)(B)(1) includes a provision that certain categories of discharges need not be prohibited. These categories are:

- Water line flushing;
- Landscape irrigation;
- Diverted stream flows;
- Rising ground waters;
- Uncontaminated ground water infiltration [as defined at 40 CFR 35.2005(20)] to MS4s;
- Uncontaminated pumped ground water;
- Discharges from potable water sources
- Foundation drains;
- Air conditioning condensation;
- Irrigation water;
- Springs;
- Water from crawl space pumps;
- Footing drains;
- Lawn watering;
- Individual residential car washing;
- Flows from riparian habitats and wetlands;
- Dechlorinated swimming pool discharges;
- Street wash water; and
- Non-emergency fire fighting flows.

MS4 permits may include additional exempt discharge categories. Permits may also prohibit one or more of the aforementioned discharge categories if they have been shown to contribute pollutants within a particular watershed. Discharges covered by an NPDES permit, Waste Discharge Requirements, or waivers issued by the Regional or State Board are not prohibited from entering a MS4, but they also do not have to be accepted by the jurisdictional Permittee.

2) **When to Sample**

The following procedure is recommended in determining when to collect samples and what level of analysis is necessary. See the suggested equipment list under Section B, Water Chemistry for a suggested equipment list for field personnel.

- a) ~~No action is required where the source is determined to be a permitted, allowed, or exempted discharge.~~
- b) If a permitted, allowed, or exempted discharge is exposed to a source of pollutants (e.g., recently-applied fertilizers or pesticides) it will be treated as an illegal discharge.
- c) Where an illegal discharge is identified, actions will be implemented to eliminate the source of discharge until the discharger is able to obtain a permit from the jurisdictional Regional Board and the discharge is determined to be acceptable by the Permittees. In addition, at least one sample of the discharge will be collected and analyzed as specified in items e) and f) below for evidence in a complaint investigation.
- d) At each site inspected or sampled, record general information such as time since last rain, quantity of last rain, site description (e.g., conveyance type, dominant land uses), flow estimation (e.g., width of water surface, approximate water depth, approximate flow rate), and visual observations (e.g., odor, color, clarity, floatables, deposits/stains, vegetation condition, structural condition, and biology).
- e) Field screening will be conducted when the source of a discharge cannot be determined or as part of a complaint response. At a minimum, the following field screening analyses should be made:
 - Specific conductance and/or total dissolved solids
 - Turbidity
 - pH
 - Temperature
 - Dissolved Oxygen
- f) If field screening indicates potential water quality impairment (e.g., very high specific conductance, total dissolved solids, or turbidity, pH below 6 or above 9, dissolved oxygen below 4 mg/L), and/or visual observations in the area of the discharge indicate the presence of Pollutants (e.g., staining, water sheen, water color and/or odor, algae, foaming), a sample should be collected for laboratory analysis. The decision of what parameters to monitor should be based on the visual observations, the types of nearby businesses or land uses, and history of complaints in the area. Suggested parameters include:
 - Total Hardness
 - Oil and Grease
 - Cadmium (Dissolved)
 - Copper (Dissolved)
 - Lead (Dissolved)
 - Zinc (Dissolved)

- Diazinon and Chlorpyrifos (or another suspected pesticide, if use in the area is known)
- Enterococcus
- Total Coliform
- Fecal Coliform

g) Where visual investigations do not result in identification of the source of non-storm Urban Runoff, water quality samples will be collected and analyzed as specified in the previous bulleted item to assist in source identification and potential enforcement action.

Follow up activities should be undertaken to ensure that undesired flows have been ceased.

B. Water Chemistry

This section addresses monitoring requirements that are common to all three watershed MS4 permits. Permit requirements that deviate from this protocol will be outlined in the watershed-specific appendix.

1) Need for Both Chemistry and Flow Data

Chemical data allow for comparisons with Basin Plan Objectives and among monitoring stations. An understanding of impacts, however, requires an understanding of the flows throughout the MS4 and Receiving Waters. For example, a water quality analysis may indicate a high concentration of a pollutant in an MS4, but flows may be very low and visual observation may show that the flow will not reach a Receiving Water. Development of a watershed computer model may be an effective approach to understand the impacts of point and non-point discharges. However, establishing and maintaining a watershed computer model requires both chemical and flow data.

2) Wet-Weather Monitoring

The MS4 permits require that wet-weather samples are to be collected from the first storm event that produces flow and two more storm events during the rainy season. The definition of wet season may differ by watershed, but in general falls between October 1 and April 30. In an ephemeral watershed, the first storm of the year that falls under the USEPA-recommended criteria may not result in runoff from surrounding properties. The District has developed guidance on when wet-weather samples should be collected. Two National Weather Service weather forecasts are monitored, the normal 7-day forecast for the possibility of a rain event and the Qualitative Precipitation Forecast (QPF) to determine how much rain is predicted to fall in 6-hour increments over the next 24-hour period and during days 2 and 3 of the rain event. The antecedent moisture condition (AMC) of the watershed is also evaluated. AMC is a subjective measure of runoff potential. AMC I represents low runoff potential, such as from a dry watershed. AMC II represents moderate runoff potential. AMC III represents high runoff potential, such as a watershed saturated from previous rain events. Based on the QPF and AMC, the following guidelines are recommended in determining when a wet-weather sample should be collected:

- AMC I and QPF of $\frac{1}{2}$ inch of precipitation in 24 hours
- AMC II and QPF of $\frac{3}{8}$ inch of precipitation in 24 hours
- AMC III and QPF of $\frac{1}{4}$ inch of precipitation in 24 hours

These guidelines may be modified based on differences in hydrology in a particular drainage area.

During the first storm event, the analysis may include the entire priority pollutant list (Table 1). Other analyses may include a subset of the priority pollutant list or may include parameters listed in Table 2. If Constituents of Concern (e.g., parameters that exceed an applicable Basin Plan Objective) that could impact aquatic habitat (e.g., metals) are identified, sediment samples may be collected and analyzed for those parameters.

3) *Dry-Weather Monitoring*

A minimum of two dry-weather samples should also be collected to determine the effects of seasonality, if they exist. In an ephemeral watershed, monitoring efforts will be focused on characterizing flows that cannot be traced to a source during field reconnaissance.

4) *Factors Influencing the Nature of Urban Runoff*

Regular monitoring is needed to assess the quality of Urban Runoff, identify seasonal differences, and determine if Urban Runoff is impacting Receiving Waters. Several factors influence the nature of Urban Runoff:

- Land Use – Certain types of Pollutants may be expected from specific land use categories. For example, metals and organics may be found in industrial wastes, nutrients may be found in agricultural return flows and precipitation, and pesticides and herbicides may be found in residential or commercial landscaped areas.
- Season – As Riverside County is arid or semi-arid, most of the Receiving Waters are ephemeral or at most intermittent. During dry weather the only flows that discharge to Receiving Waters are rising groundwater, water conservation transfers, treated sanitary sewer effluent, discharges from sources not under control of the Permittees, and illegal discharges. During dry weather Urban Runoff flows carried by MS4s tend to evaporate or soak into the ground before they reach a Receiving Water. During small storms, the only stormwater entering a MS4 is what directly falls on it as precipitation or from highly paved adjacent surfaces. Only during larger storms will the watershed become sufficiently saturated for surface runoff to be generated and sustain continued flows in a MS4.
- MS4 Type – Discharges entering an earthen channel will absorb into the stream bed and will sustain flows only when the stream bed is saturated. Low-volume discharges to concrete-lined channels may evaporate before reaching a Receiving Water. During large storms, both types may sustain flows for several days following the storm.
- Storm Interval – A watershed may still be saturated for several days after a significant rainfall event. A subsequent storm may sustain flows through an MS4 and carry additional Pollutants. After a few weeks, the watershed may have dried enough that flows will not occur.
- Illicit and Accidental Discharges – Pollutants may be intentionally discharged directly or indirectly into a MS4. Examples range from the illegal discharge of wastewater from mobile operations into a MS4 to legal discharges of overflow water to a MS4 from fire-suppression activities.

5) *Sampling Procedure and Recommended Equipment*

For safety reasons and to minimize sample contamination, at least two people are recommended for each sampling team. Samples need to be collected in a way that minimizes disturbance of sediments and avoids introduction of additional contaminants. The USGS

recommends a "Clean Hands/Dirty Hands" technique, in which the "Clean Hands" (CH) person conducts the tasks related to direct contact with the sample bottles and record-keeping and the "Dirty Hands" (DH) person collects the samples and makes equipment and gauge readings.

When collecting samples, CH fills out the labels, places them on the bottles, opens the bottles, and hands the bottles to DH. DH takes the bottles and either fills them directly from the flow or uses a pole sampler or bucket to collect the water and pours the water into the bottle. DH also fills a bucket or cup with water for the field meters and reads the measurements to CH. After samples are collected, the field data sheet needs to be filled out and the bottles placed in the ice chest. The chain of custody form can be filled out as the samples are collected or prior to arrival at the lab, where the information is transcribed from the field data sheet. Sampling equipment should be as inert as possible (e.g., glass, stainless steel, teflon) to minimize the introduction of contaminants that could leach from the sampling equipment. Sampling equipment, such as a bucket, that is reused during a sampling event should be thoroughly wiped clean with a fresh towel or wipe after a sample is collected and rinsed at least three times in the water to be sampled before the next sample is collected.

Sampling equipment should be stored in a secure location where it can be accessed when needed. There should be a working power source for charging batteries. A work table is needed to hold materials to calibrate field equipment and make repairs. A sink is needed for cleaning equipment and rinsing non-hazardous calibration standards. Hazardous materials should be properly stored and disposed of.

Flow measurements may be:

- Determined by using an available USGS flow gauge. During storm sampling, uncalibrated flows will be used in determining proportions for preparing a flow-weighted composite.
- Calculated where there is a staff gauge and knowledge of channel geometry. A calibration curve will be available that correlates gauge height and volumetric flow.
- Estimated by dropping a floatable object such as a leaf or twig in the water, timing how long it takes to move from one landmark to another, measuring the distance between the two landmarks. With knowledge or an estimate of the channel cross-sectional area, the volumetric flow rate may be calculated as $\text{area} * \text{distance}/\text{time}$.
- Where flows are very low or not amenable to the measurement methods noted above, a visual estimate will be recorded based on the experience of the field staff.

Suggested equipment list:

- Note pad
- Pen or pencil
- Ice chest
- Ice
- Sampling Bottles
- Chain of Custody forms from the contract laboratory
- Field Data Sheets
- Labels for sampling bottles
- Powder-free gloves, such as nitrile or latex
- Leather or heavy cloth gloves
- Orange or yellow rain gear or safety vest
- Multimeter or individual meters that measure temperature, pH, TDS, conductivity, turbidity, dissolved oxygen
- Bottle carrier
- Pole sampler
- Rope
- Lanyard
- Bucket(s)
- Facility map(s) or map book
- General map book
- Cell phone
- Camera (digital or film)
- Steel tape (to measure flow depth if no flow or staff gauge)
- PVC boots and/or hip waders
- Trash bags
- Hand sanitizer
- Towels and/or rags
- First aid kit
- Fire extinguisher
- Flashlight and/or spotlight
- Jumper cables
- List of office phone numbers and/or other team cell phone numbers
- Vehicle with full gas tank
- Keys to open access locks
- Extra locks (in case replacements are needed)
- Short length of chain
- Bolt cutters
- Tool Box

The contract laboratory should provide the necessary bottles. Some tests require the use of preservatives, usually an acid, in the sample bottle. The contract laboratory provides the preservative in the bottle.

6) Safety

Safety of the sampling team is paramount. The field vehicle should start out with a full tank of gas and be in good repair. Extra care must be taken when driving at night or in the rain. If the sampling location is unsafe, make note of the unsafe situation and do not collect a sample or come back after the hazardous situation has ceased.

7) Irreducible Concentrations

One of the purposes for collecting water quality data is to evaluate BMP performance. For example, studies have been conducted that evaluate percent reductions of various Pollutants. In addition, GeoSyntec Consultants, in cooperation with the Urban Water Resources Research Council of the American Society of Civil Engineers and USEPA's office of Water, prepared a guidance manual that provides an overview of BMP monitoring, discusses difficulties in assessing BMP performance, and addresses "the relationship between BMP study design and the attainment of monitoring program goals." The manual presents a table (Table 2.9, page 33) of "irreducible concentrations," the lowest concentration that can possibly be achieved using existing BMPs, of selected Pollutants. The table, reprinted below, is:

Contaminant	Irreducible Concentration
Total Suspended Solids	20 – 40 mg/L
Total Phosphorus	0.15 – 0.2 mg/L
Total Nitrogen	1.9 mg/L
Nitrate as Nitrogen	0.7 mg/L
Total Kjeldahl Nitrogen	1.2 mg/L

C. Toxicity

Toxicity testing may provide for the assessment of impacts a discharge may have on aquatic life. Studies throughout California have shown that the most common sources of toxicity are pesticides, such as diazinon and chlorpyrifos, and metals.

1) Typical Method

The toxicity tests were developed using East Coast species in perennial flow conditions. Difficulties have been encountered in the use of toxicity tests for POTWs in ephemeral systems as no dilution occurs in the Receiving Water and the species the tests are based on may do poorly if at all in ephemeral flow conditions, even in the absence of treated effluent or Urban Runoff discharges. Additionally, if marine species are used, changing the water chemistry (e.g., salinity, pH, temperature) to ensure survival of the test species may create conditions, unrelated to the original test water, which could be toxic to the test species. This could result in a false positive, and could lead to time-consuming and costly search for a toxicant that is an artifact of the test procedure.

Many times, the drainage area contributing flows to a station selected for toxicity testing will include land uses other than Urban, such as agriculture, parks, and state and federal lands. Repeated indications of toxicity, even after the implementation of measures to control the toxicant(s)' presence in Urban Runoff, may indicate that the toxicants are being contributed from these other land uses, which are outside of the Permittee's ability to control. Therefore, the presence of toxicity does not in itself indicate that Urban Runoff is contributing to Receiving Water impairment.

The MS4 permits generally specify the species to be tested and under what conditions the samples are to be collected. If toxicity is found, the source must be determined and reduced or eliminated. The procedure to find the source is a Toxicity Identification Evaluation (TIE) and to reduce it is a Toxicity Reduction Evaluation (TRE). The MS4 permits usually require that a criteria be identified that will trigger the initiation of TIEs and TREs. The County of San Diego utilizes a "triad approach" decision matrix that includes actions to be undertaken based on the results of chemical, toxicity, and bioassessment tests at a single station. This decision matrix is being reviewed by the Southern California Stormwater Monitoring Coalition for applicability to ephemeral watersheds.

2) Alternate Method

Toxicity tests and TIEs are expensive (see Table 3). Toxicity tests conducted on MS4s throughout the state have determined that the most common sources of toxicity in Urban Runoff are diazinon, chlorpyrifos, and metals. Having to repeatedly confirm the presence of these toxicants will divert resources that could better be used in Pollutant source reduction and BMP implementation.

In light of this, an alternate approach is to conduct a TIE at a station at the bottom of the watershed. Since this station will include land uses other than urban, the tests run should focus on pesticides, metals, and other common sources of toxicity typically associated with Urban Runoff. If toxicity is found, and the toxicants can be associated with Urban Runoff, the inspection, IC/ID, and education programs may need to be expanded to address the identified Urban Runoff sources of toxicity. Positive indications of toxicity should be confirmed before additional activities are implemented. Further TIEs would not need to be conducted as the identified source(s) of toxicity would be assumed to be present, unless proved otherwise, during the remaining term of the MS4 permit. Chemical monitoring could be used to determine if chemical concentrations of identified toxicants are decreasing.

In the fifth year of the MS4 permit term, prior to permit renewal, a TIE would be conducted and confirmed to determine if these sources of toxicity are still indicated. Repeated presence of toxicity using this alternate method may indicate that sources other than Urban Runoff, such as agriculture or activities on state or federal lands, are contributing Pollutants, and that other regulatory approaches by the Regional Boards are necessary to address those sources.

Table 3 includes a list of toxicity tests required or recommended in the MS4 permits, the volume of water required, and the cost. MS4 permit-specific requirements are outlined in the watershed-specific appendix. Toxicity testing requires personnel with proper equipment and expertise in handling the test species, and therefore should be conducted by a contract laboratory.

D. Bioassessment

Bioassessment may be used to assess the cumulative impacts of discharges to water-supported native stream species including benthic invertebrates, algae, fish and plants. It is the direct measurement of the biological and physical condition of a watershed. Additionally, bioassessment may provide a direct measurement of the impacts of cumulative, sub-lethal doses of pollutants that may be not be detectable in a water chemistry analysis, but that may still have biological effects, therefore, it may detect impacts that chemical and toxicity monitoring cannot. However, there are some limitations to this method. From USEPA's Rapid Bioassessment Protocol guidance, an accurate assessment of stream biological data is difficult because natural variability cannot be controlled. Unlike analytical assessments conducted in the laboratory, in which accuracy can be verified in a number of ways, the accuracy of field assessments cannot be objectively verified. For example, it isn't possible to "spike" a stream with a known species assemblage and then determine

the accuracy of a bioassessment method. Depending on which methods are chosen, the actual structure and condition of the assemblage present or the trends in status of the assemblage over time may be misinterpreted.

USEPA protocol allows the use of fish, macroinvertebrates, periphyton (algae), and macrophytes (plants). The MS4 permits currently require the use of the macroinvertebrate protocol. Extreme care must be taken when conducting bioassessments. Bioassessment includes comparing the biological integrity of the monitoring station with that of a reference station. Differences in habitat quality between a reference and the monitored station could lead to false indications of impairment. For example, if a bioassessment indicator species is found at the reference station but not at a monitored station or at a reduced population, it may indicate the presence of toxicity, or it may be due to the lack of specific habitat necessary for their survival at the monitored station. For this reason, it is important that the reference station represent the same hydrogeology as the monitoring stations.

Bioassessment requires personnel with expertise in identifying and classifying the target species, and therefore is better done by a contract laboratory.

E. Special Studies

Special studies may be needed to address unique watershed-based issues or to answer specific questions that the routine monitoring program may generate. Generally, special studies are short-term efforts with a predefined goal. As research, special studies are often expensive, and may be beyond the expertise and/or ability of the Permittees to fund without outside state and federal sources. Special studies do not have to involve field investigation. Where watershed issues are not unique, special studies may consist of a literature review and a discussion of the applicability of the findings to the identified issue.

5. MONITORING COSTS

Monitoring costs include monitoring program design, establishment of monitoring stations, equipment purchase and installation, field time, sampling time, laboratory analysis, flow gauge operation and maintenance, data management and analysis, reporting, regulatory coordination, contract administration, training, other staff time, and vehicle operation. Costs can vary greatly; for example, a TMDL station requires an installed flow gauge that can cost upwards of \$17,000 for yearly operation. Alternatively, a staff gauge on the wall of a concrete channel may cost only \$100. Sampling over the course of a storm could take 12 hours of staff overtime, while dry weather monitoring is usually conducted during regular working hours.

Analytical costs for chemical analyses are included in Tables 1 and 2, and for toxicity testing in Table 3. Where there is no cost or water volume entry in Table 1, that parameter is part of the full USEPA priority pollutant screening, which costs approximately \$1000 per test. Bioassessment costs, which include collection and evaluation of three replicate samples, are approximately \$2200 per station.

6. QUALITY ASSURANCE/QUALITY CONTROL

The measurement of chemical constituents in Urban Runoff at the trace level is often difficult due to inherent variability of environmental samples, field sampling techniques, and analytical techniques. In order to assess and maximize data quality, a Quality Assurance and Quality Control (QA/QC) Plan is implemented as an integral part of the monitoring program. The QA/QC program is designed to enable an

evaluation and validation of the analytical data for representativeness, accuracy, and precision. The following text includes separate descriptions for the field and laboratory portions of the QA/QC program.

A. Field QA/QC Procedures

Several additional samples will be collected and analyzed to help identify potential sources of error introduced during the storm water sampling process. Procedures are being developed that will incorporate the following QA/QC samples:

Grab Sample Equipment Blanks – Assesses whether contamination is being introduced during the sampling process.

Grab Sample Duplicate – Assesses sampling and analytical precision.

Flow-Weighted Duplicate – Assesses analytical precision.

B. Laboratory QA/QC Procedures

Edward S. Babcock & Sons, Inc., located in Riverside, has been contracted by the Permittees to perform or to have a Permittee-approved subcontract laboratory perform all chemical analyses. The laboratory maintains a Quality Assurance Manual that is available on request.

The suite of chemical analyses for all storm water samples is shown in Tables 1 and 2. In addition to performing the analyses, the laboratory will make every effort to meet holding times and target detection limits for each analyte. The following laboratory QA/QC procedures will be followed for both the flow-weighted sampling program and the manual grab sampling program:

Standards – Calibration standards with known concentrations will be prepared and used in the laboratory to obtain instrument calibration curves in accordance with the provisions of the various analysis method specifications.

Method Blanks – Analyte-free water will be processed through all sample preparation procedures and analyzed as a method blank. One such method blank will be analyzed per storm event. This will provide an indication as to whether contamination is occurring as a result of laboratory procedures.

Internal Spikes – Internal spikes (matrix spikes) will be prepared in the laboratory by adding a known amount of target and or surrogate analyte(s) into a field sample prior to laboratory preparation. The matrix spike will be at one to five times the analyte concentration, based on prior analysis for the analyte. If the matrix spike is outside of the desired “one to five” range, a second spike will be required. Each of the spiked samples will also be analyzed in duplicate for an assessment of the analytical method precision. One internal spike will be analyzed per storm event.

C. Data Reduction, Validation and Reporting

Results of precision and contamination checks (described above) will be reviewed by an in-house chemist after each storm event. In the event that data quality objectives are not met, data will be qualified as necessary in the final data report.

D. Biological Parameters

Bacteria – Accuracy for bacteria will be determined by analyzing a positive control sample twice annually. A positive control is similar to a standard, except that a specific discreet value is not assigned to the bacterial concentrations in the sample. This is due to the fact that bacteria are alive

and capable of mortality and reproduction. Instead of a specific value, an approximate target value of the bacterial concentration is assigned to the sample by the laboratory preparing the positive control sample.

Benthic Macroinvertebrates – Aquatic Bioassay & Consulting Laboratories in Ventura conducts bioassessment monitoring for the Riverside County Permittees and maintains a Quality Assurance Manual. For benthic macroinvertebrate analysis, accuracy will be determined by having 20% of the samples (annually) re-analyzed and validated to CSBP Level 3 (genus level) by a professional taxonomist.

7. DATA COLLECTION AND ANALYSIS

A. Database

The District maintains its rainfall and water quality data in a proprietary integrated data management system known as Hydstra^{®1}. The Hydstra[®] software system was installed early in FY 1999-2000. It uses stringent quality control procedures and includes a set of data analysis and reporting procedures. Additional reports have been created under contract to improve presentation of the raw data. The District also uses Statistica[®] to develop reports and graphs that will later be implemented as part of Hydstra[®] or to prepare more complicated statistical analyses. Water quality data collected by other Co-Permittees may also be stored in the District's database.

B. Trend Analysis

Part of a proper statistical analysis is to plot the raw data (e.g., chemistry or mass load) and examine it to identify the existence of obvious patterns, such as seasonality, if they exist. Upward or downward trends should also be analyzed, if they exist. The data may be so scattered that no trend is apparent. Characteristics of Urban Runoff may vary significantly if collected during dry weather as opposed to during storm conditions.

In addition to evaluating trends in chemical concentrations over time, correlations and trends may also be determined between or among sets of parameters, for example, "Is there a correlation between changes in urban land use and metals concentrations?" Trends may also be evaluated spatially (cluster analysis), for example, "Do concentrations or mass loads tend to be higher in one geographical area?" As trends are identified, focused measures may be taken to reduce or eliminate sources of the identified Pollutant. Trend analysis may also allow proactive measures to be taken, for example, if concentrations of a particular Pollutant are rising.

The Permittees currently examine data for trends and make comparisons with Basin Plan Objectives (see Section C. below) in the Annual Report. The data are plotted as concentration vs. date both as the raw data and as box-and-whisker plots, which summarize statistical measures such as minimum, maximum, and average. Other analyses may be added, such as land use correlations or cluster analysis, to further utilize the water quality data in implementing the Permittees' Urban Runoff management program.

¹ Although Hydstra is a proprietary data management system, the program supports export of data in commonly used spreadsheet and database formats. The use of trademark or brand names does not connote a recommendation of a particular product.

C. Comparison with a Benchmark

If an appropriate benchmark exists, such as Basin Plan Objectives, direct comparisons may be made. It is possible that water quality data do not exhibit a clear trend, but still exceed a benchmark value.

Does exceedence of a benchmark in and of itself necessarily mean that the environment is being harmed or degraded? The classic SWRCB reference Water Quality Criteria (see Appendix F for citation) warned that water quality objectives were meant to represent "an aim or a goal toward which to strive, and it may represent an ideal condition that is difficult, if not impossible, of economic attainment. Most certainly, however, it does not imply strict adherence nor rigid enforcement by a regulatory agency." It also says that "[t]he fact that a standard has been established by authority makes it quite rigid, official, or quasi-legal. An authoritative origin does not necessarily mean that the standard is fair, equitable, or based on sound scientific knowledge, for it may have been established somewhat arbitrarily on the basis of inadequate technical data tempered by a cautious factor of safety. There is a tendency ... for regulatory authorities to promulgate standards of questionable scientific justification to serve as a crutch that facilitates administrative action and enforcement." This implies that based on numeric objective alone, exceedences may not indicate environmental harm. Toxicity testing and biological assessment may provide additional information needed to indicate whether environmental harm is occurring or has the potential to occur.

The Permittees have developed a report that lists the data collected on a given date. If a Basin Plan Objective exists and is exceeded, the report flags it. The District intends to print these reports as the monitoring results are submitted by the contract laboratory and forward them to the appropriate Permittee for follow-up, if necessary.

D. Calculating Mass Load

Mass load information is important in determining the amount of pollutant passing through a MS4, either instantaneously or over a period of time, such as during a storm event. Watershed models are based on mass load in addition to chemical concentrations and flow.

To calculate mass load over a storm, two approaches may be used.

- Assume that the concentration of a grab sample is constant over the storm event. Mass load is calculated as the concentration multiplied by the total flow over the storm period, or mass load = concentration * total flow. Adjustments for units may be necessary.
- Collect a flow-weighted composite of samples collected during a storm event and assume that the composite concentration (Event Mean Concentration, or EMC) is constant over the storm event. EMC is calculated as the sum of flow measured at the time a sample was collected multiplied by the concentration of that sample and the sum divided by the total flow over the storm period, or $EMC = \frac{\sum(\text{concentration} * \text{flow})}{\text{total flow}}$. Mass load is calculated as the EMC multiplied by the total flow over the storm period, or mass load = EMC * total flow. Adjustments for units may be necessary.

E. Consideration of Historical Data

Many sources of data exist. Historical water quality data may have been entered into USEPA's STORET (STORage and RETrieval) database. USGS also maintains a database of water quality and flow data they have collected. Other municipalities may have collected data that is stored in in-house databases or spreadsheets. These datasets may be useful in looking at long-term trends or in establishing baseline conditions.

Using historical data can be problematic. For example, detection levels for certain constituents may have been higher under older test methods. The level of quality control in collecting and analyzing the data may have been less rigorous, especially if an in-house, uncertified laboratory was used. The original paper records may have been lost, preventing the establishment of a paper trail to verify questionable data.

F. Power Analysis

A goal in developing a monitoring design is to detect trends in the data and take action based on those trends. For example, if water quality trends show that concentrations of a Pollutant are increasing and could exceed a benchmark value in the future, measures need to be taken to eliminate nonpermitted sources of that Pollutant. Trends may not be apparent in the short term due to natural variability, but may be more obvious over a longer period of time. Or more frequent monitoring may point out trends in a shorter period of time.

The statistical power of a monitoring design is its ability to detect a change, such as a trend, if it in fact has occurred. Power analysis is used to estimate the power of a given design and can provide insight into the sampling effort, both in terms of the number of samples and the number of years, required to observe trends of different sizes. In addition, power analyses can reveal important inherent constraints on the ability to detect trends imposed by underlying variability in the system being monitored. This can provide a realistic basis for establishing both management and monitoring goals, as well as a basis for making tradeoffs in the monitoring design (e.g., between the number of samples collected per year and the number of years over which the trend monitoring will extend).

In one instance, a power analysis may show that a trend will not be evident even after decades of monitoring at frequent intervals, and, therefore trend monitoring would be futile and monitoring resources should be shifted to another site and/or issue. In another instance, improving the sampling design's ability to detect a trend may require an increase in the number of years to be monitored. In this case, the length of time needed to detect a trend must be compared against both the management time horizon (i.e., how quickly is information needed?) and the timeframe over which changes are expected to occur (e.g., how rapidly are BMPs expected to reduce loads?). In a third instance, the main way to improve the design's power is to increase the number of samples collected per year. However, there is a natural constraint imposed by the relatively small number of storms per year in Riverside County. In such cases, the monitoring design will have an inherent limit on its ability to detect trends within a given time period. Sampling additional times per year and monitoring for more years must be traded off against each other, since increasing both kinds of sampling intensity improves power. Such tradeoffs should be based on the management time horizon, the timeframe over which changes are expected to occur, and the resources available to the Permittees.

The Stormwater Monitoring Coalition is developing Urban Runoff monitoring program guidance that will include a procedure in calculating statistical power. The Permittees will use the guidance to evaluate the statistical power of its current monitoring program design and that of the revised monitoring program as it is implemented. The results will be discussed in future Annual Reports.

Table 1. EPA Priority Pollutant List

Hydron No.	Parameter	container	holding time (days)	field preserv *	pre-treat	Analysis Method	Reporting Limit		Current cost	Comments
							Value	Units		
2000	1,1,1-trichloroethane (ug/l)	VOA Vial	14	Na2S2O3		EPA 624	0.5	ug/L	\$ 176.00	Incls. All 624 param.
2005	1,1,2,2-tetrachloroethane (ug/l)	VOA Vial	14	Na2S2O3		EPA 624	0.5	ug/L	---	Analyzed with EPA 624
2010	1,1,2-trichloroethane (ug/l)	VOA Vial	14	Na2S2O3		EPA 624	0.5	ug/L	---	Analyzed with EPA 624
2015	1,1-dichloroethane (ug/l)	VOA Vial	14	Na2S2O3		EPA 624	0.5	ug/L	---	Analyzed with EPA 624
2020	1,1-dichloroethane (ug/l)	VOA Vial	14	Na2S2O3		EPA 624	0.5	ug/L	---	Analyzed with EPA 624
2025	1,2,4-trichlorobenzene (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
2030	1,2-dichlorobenzene (ug/l)	VOA Vial	14	Na2S2O3		EPA 624	0.5	ug/L	---	Analyzed with EPA 624
2035	1,2-dichlorobenzene (ug/l)	VOA Vial	14	Na2S2O3		EPA 624	0.5	ug/L	---	Analyzed with EPA 624
2040	1,2-dichloroethane (ug/l)	VOA Vial	14	Na2S2O3		EPA 624	0.5	ug/L	---	Analyzed with EPA 624
2045	1,2-dichloropropane (ug/l)	VOA Vial	14	Na2S2O3		EPA 624	1	ug/L	---	Analyzed with EPA 624
2050	1,2-diphenylhydrazine (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
2055	1,3-dichlorobenzene (ug/l)	VOA Vial	14	Na2S2O3		EPA 624	0.5	ug/L	---	Analyzed with EPA 624
2245	cis-1,3-dichloropropene (ug/l)	VOA Vial	14	Na2S2O3		EPA 624	0.5	ug/L	---	Analyzed with EPA 624
2060	1,4-dichlorobenzene (ug/l)	VOA Vial	14	Na2S2O3		EPA 624	0.5	ug/L	---	Analyzed with EPA 624
†	2,3,7,8-TCDD (Dioxin)									
2070	2,4,6-trichlorophenol (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	\$ 296.00	Incls. All 625 param.
2075	2,4-dichlorophenol (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
2080	2,4-dimethylphenol (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
2085	2,4-dinitrophenol (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
2090	2,4-dinitrotoluene (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
2100	2,6-dinitrotoluene (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
2105	2-chloroethylvinyl ether (ug/l)	VOA Vial	14	Na2S2O3		EPA 624	10	ug/L	---	Analyzed with EPA 624
2110	2-chloronaphthalene (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
2115	2-chlorophenol (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
2120	2-methyl-4,6-dinitrophenol (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
2125	2-nitrophenol (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
2130	3,3'-dichlorobenzidine (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
2135	4,4'-ddd (ug/l)	1 L Amber	7 e + 40 a	NaSO3		EPA 608	0.11	ug/L	---	Analyzed with EPA 608

Table 1. EPA Priority Pollutant List

Hydron No.	Parameter	container	holding time (days)	field preserv *	pre-treat	Analysis Method	Reporting Limit		Current cost	Comments
							Value	Units		
2140	4,4'-dde (ug/l)	1 L Amber	7 e + 40 a	NaSO3		EPA 608	0.04	ug/L	---	Analyzed with EPA 608
2145	4,4'-ddt (ug/l)	1 L Amber	7 e + 40 a	NaSO3		EPA 608	0.12	ug/L	---	Analyzed with EPA 608
2150	4-bromophenyl phenyl ether (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
2155	4-chloro-3-methylphenol (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
2160	4-chlorophenyl phenyl ether (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
2165	4-nitrophenol (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
1005	Acenaphthene (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
1010	Acenaphthylene (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
1011	Acrolein (ug/l)	VOA Vial	14	Na2S2O3		EPA 624 (8260B)	10	ug/L	---	Analyzed with EPA 624
1012	Acrylonitrile (ug/l)	VOA Vial	14	Na2S2O3		EPA 624 (8260B)	10	ug/L	---	Analyzed with EPA 624
1013	Aldrin (ug/l)	1 L Amber	7 e + 40 a	NaSO3		EPA 608	0.04	ug/L	\$ 160.00	Incls. All 608 Pests & PCBs
1060	Anthracene (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
1065	Antimony (mg/l)	500 mL Poly	180	HNO3	digest	EPA 200.8	10	ug/L	\$ 12.00	
1070	Arsenic, total (mg/l)	500 mL Poly	180	HNO3	digest	EPA 200.8	2	ug/L	\$ 12.00	
†	Asbestos									
1092	Benzene (ug/l)	VOA Vial	14	Na2S2O3		EPA 624	0.5	ug/L	---	Analyzed with EPA 624
1093	Benzidine (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	50	ug/L	---	Analyzed with EPA 625
1095	Benzo(a)anthracene (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
1096	Benzo(a)pyrene (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
1097	Benzo(b)fluoranthene (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
1098	Benzo(ghi)perylene (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
1099	Benzo(k)fluoranthene (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
1101	Benzyol butyl phthalate (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
1120	Beryllium (mg/l)	500 mL Poly	180	HNO3	digest	EPA 200.8	10	ug/L	\$ 12.00	
1127	bis(2-chloroethoxy)methane (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625

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Hydron No.	Parameter	container	holding time (days)	field preserv *	pre-treat	Analysis Method	Reporting Limit		Current cost	Comments
							Value	Units		
1128	bis(2-chloroethyl)ether (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
1129	bis(2-chloroisopropyl)ether (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
1131	bis(2-ethylhexyl)phthalate (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
1141	Bromodichloromethane (ug/l)	VOA Vial	14	Na2S2O3		EPA 624	0.75	ug/L	---	Analyzed with EPA 624
1142	Bromoform (ug/l)	VOA Vial	14	Na2S2O3		EPA 624	0.5	ug/L	---	Analyzed with EPA 624
†	Butylbezy l Phthalate									
1145	Cadmium, total (mg/l)	500 mL Poly	180	HNO3	digest	EPA 200.7	2	ug/L	\$ 12.00	
1156	Carbon tetrachloride (ug/l)	VOA Vial	14	Na2S2O3		EPA 624	0.5	ug/L	---	Analyzed with EPA 624
2215	chloridane (ug/l)	1 L Amber	7 e + 40 a	NaSO3		EPA 608	0.1	ug/L	---	Analyzed with EPA 608
2220	chlorobenzene (ug/l)	VOA Vial	14	Na2S2O3		EPA 624	0.5	ug/L	---	Analyzed with EPA 624
2225	chloroethane (ug/l)	VOA Vial	14	Na2S2O3		EPA 624	1	ug/L	---	Analyzed with EPA 624
2230	chloroform (ug/l)	VOA Vial	14	Na2S2O3		EPA 624	0.5	ug/L	---	Analyzed with EPA 624
1180	Chromium, total, all valences (mg/l)	500 mL Poly	180	HNO3	digest	EPA 200.8	20	ug/L	\$ 12.00	
2240	chrysene (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
1210	Copper, total (mg/l)	500 mL Poly	180	HNO3	digest	EPA 200.8	10	ug/L	\$ 12.00	
1215	Cyanide, total (mg/l)	500 mL Poly	14	NaOH		SM 4500 CN E	0.005	mg/L	\$ 32.00	
2255	di-n-butylphthalate (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
2260	di-n-octylphthalate (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
1230	Dibenzo(a,h)anthracene (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
1231	Dibromochloromethane (ug/l)	VOA Vial	14	Na2S2O3		EPA 624	0.5	ug/L	---	Analyzed with EPA 624
1233	Dieldrin (ug/l)	1 L Amber	7 e + 40 a	NaSO3		EPA 608	0.02	ug/L	---	Analyzed with EPA 608
1234	Diethyl phthalate (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
1236	Dimethyl phthalate (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
2265	endosulfan ii (ug/l)	1 L Amber	7 e + 40 a	NaSO3		EPA 608	0.04	ug/L	---	Analyzed with EPA 608
2270	endosulfan i (ug/l)	1 L Amber	7 e + 40 a	NaSO3		EPA 608	0.14	ug/L	---	Analyzed with EPA 608
2275	endosulfan sulfate (ug/l)	1 L Amber	7 e + 40 a	NaSO3		EPA 608	0.66	ug/L	---	Analyzed with EPA 608
2285	endrin (ug/l)	1 L Amber	7 e + 40 a	NaSO3		EPA 608	0.06	ug/L	---	Analyzed with EPA 608

Table 1. EPA Priority Pollutant List

Hydron No.	Parameter	container	holding time (days)	field preserv *	pre-treat	Analysis Method	Reporting Limit		Current cost	Comments
							Value	Units		
2280	formaldehyde (ug/l)	1 L Amber	7 e + 40 a	NaSO3		EPA 608	0.23	ug/L	---	Analyzed with EPA 608
2290	ethylbenzene (ug/l)	VOA Vial	14	Na2S2O3		EPA 624	0.5	ug/L	---	Analyzed with EPA 624
1245	Fluoranthene (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
1250	Fluorene (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
2305	heptachlor epoxide (ug/l)	1 L Amber	7 e + 40 a	NaSO3		EPA 608	0.01	ug/L	---	Analyzed with EPA 608
2310	heptachlor (ug/l)	1 L Amber	7 e + 40 a	NaSO3		EPA 608	0.01	ug/L	---	Analyzed with EPA 608
2315	hexachlorobenzene (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
†	Hexachlorobutadiene									
†	Hexachlorocyclopentadiene									
2330	hexachloroethane (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
2335	indeno(1,2,3-cd)pyrene (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
2340	isophorone (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
1290	Lead, total (mg/l)	500 mL Poly	180	HNO3	digest	EPA 200.8	10	ug/L	\$ 12.00	
1310	Mercury, total (mg/l)	500 mL Poly	28	HNO3	digest	SM 3112 B	0.2	ug/L	\$ 18.40	
†	Methyl Bromide									
†	Methyl Chloride									
1308	Methylene chloride (ug/l)	VOA Vial	14	Na2S2O3		EPA 624	3	ug/L	---	Analyzed with EPA 624
2350	n-nitrosodi-n-propylamine (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
2355	n-nitrosodimethylamine (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
2360	n-nitrosodiphenylamine (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
1315	Naphthalene (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
1320	Nickel, total (mg/l)	500 mL Poly	180	HNO3	digest	EPA 200.8	20	ug/L	\$ 12.00	
1331	Nitrobenzene (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
1447	Pentachlorophenol (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
1455	Phenanthrene (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
1459	Phenol (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
†	Polychlorinated Biphenyls (PCBs)									

Table 1. EPA Priority Pollutant List

Hydron No.	Parameter	container	holding time (days)	field preserv *	pre-treat	Analysis Method	Reporting Limit		Current cost	Comments
							Value	Units		
2175	aroclor 1016 (ug/l)	1 L Amber	7 e + 40 a	NaSO3		EPA 608	1	ug/L	---	Analyzed with EPA 608
2180	aroclor 1221 (ug/l)	1 L Amber	7 e + 40 a	NaSO3		EPA 608	1	ug/L	---	Analyzed with EPA 608
2185	aroclor 1232 (ug/l)	1 L Amber	7 e + 40 a	NaSO3		EPA 608	1	ug/L	---	Analyzed with EPA 608
2190	aroclor 1242 (ug/l)	1 L Amber	7 e + 40 a	NaSO3		EPA 608	1	ug/L	---	Analyzed with EPA 608
2195	aroclor 1248 (ug/l)	1 L Amber	7 e + 40 a	NaSO3		EPA 608	1	ug/L	---	Analyzed with EPA 608
2200	aroclor 1254 (ug/l)	1 L Amber	7 e + 40 a	NaSO3		EPA 608	2	ug/L	---	Analyzed with EPA 608
2205	aroclor 1260 (ug/l)	1 L Amber	7 e + 40 a	NaSO3		EPA 608	1	ug/L	---	Analyzed with EPA 608
1505	Pyrene (ug/l)	1 L Amber	7 e + 40 a	Na2S2O3		EPA 625	10	ug/L	---	Analyzed with EPA 625
1520	Selenium, total (mg/l)	500 mL Poly	180	HNO3	digest	EPA 200.8	5	ug/L	\$ 12.00	
1535	Silver, total (mg/l)	500 mL Poly	180	HNO3	digest	EPA 200.8	10	ug/L	\$ 12.00	
1661	Tetrachloroethene (ug/l)	VOA Vial	14	Na2S2O3		EPA 624	0.5	ug/L	---	Analyzed with EPA 624
1665	Thallium(mg/l)	500 mL Poly	180	HNO3	digest	EPA 200.8	200	ug/L	---	
1671	Toluene (ug/l)	VOA Vial	14	Na2S2O3		EPA 624	0.5	ug/L	---	Analyzed with EPA 624
1681	Toxaphene (ug/l)	1 L Amber	7 e + 40 a	NaSO3		EPA 608	1	ug/L	---	Analyzed with EPA 608
1682	Trans-1,2-dichloroethene (ug/l)	VOA Vial	14	Na2S2O3		EPA 624	0.5	ug/L	---	Analyzed with EPA 624
1683	Trans-1,3-dichloropropene (ug/l)	VOA Vial	14	Na2S2O3		EPA 624	0.5	ug/L	---	Analyzed with EPA 624
1684	Trichloroethene (ug/l)	VOA Vial	14	Na2S2O3		EPA 624	0.75	ug/L	---	Analyzed with EPA 624
1698	Vinyl Chloride (ug/l)	VOA Vial	14	Na2S2O3		EPA 624	0.5	ug/L	---	Analyzed with EPA 624
1700	Zinc, total (mg/l)	500 mL Poly	180	HNO3	digest	EPA 200.8	10	ug/L	\$ 12.00	
2170a	bhc (ug/l)	1 L Amber	7 e + 40 a	NaSO3		EPA 608	0.03	ug/L	---	Analyzed with EPA 608
2210b	bhc (ug/l)	1 L Amber	7 e + 40 a	NaSO3		EPA 608	0.06	ug/L	---	Analyzed with EPA 608
2250d	bhc (ug/l)	1 L Amber	7 e + 40 a	NaSO3		EPA 608	0.09	ug/L	---	Analyzed with EPA 608
2380y	bhc (Lindane) (ug/l)	1 L Amber	7 e + 40 a	NaSO3		EPA 608	0.04	ug/L	---	Analyzed with EPA 608
1292	Lindane (ug/l)	1 L Amber	7 e + 40 a	NaSO3		EPA 608	0.04	ug/L	---	Analyzed with EPA 608

* Additional steps may need to be taken, such as dechlorination, contact lab

7 e + 40 a = seven days to extraction, 40 days to analyze

† Parameter not sampled in the past

Table 2. Non-Priority Pollutant Parameters that may be required.

Hydro- No.	Parameter	container	holding time (days)	field preserv *	pre-treat	Analysis Method	Reporting Limit		Current cost	Comments
							Value	Units		
810	Turbidity (NTU)	Quart Poly	2	Unpres.		SM 2130 B	0.2	NTU	\$ 8.00	
1035	Alkalinity, total (CaCO3) (mg/l)	Quart Poly	14	Unpres.		SM 2320 B	3	mg/L	\$ 8.00	
1040	Aluminum (mg/l)	500 mL Poly	180	HNO3		EPA 6010B	50	ug/L	\$ 12.00	
1050	Ammonia, un-ionized (NH3) (mg/l)								\$ 12.00	
1051	Ammonia-nitrogen (mg/l)	Quart Poly	28	H2SO4	fix	SM 4500 NH3H	0.1	mg/L	\$ 12.00	
1055	Ammonium (NH4) (mg/l)	N/A							---	Analyzed with Total Ammonia
1075	Bact, fecal coliforms (MPN)	125 mL Sterile	0.25	Na2S2O3		SM 9221 E	2	MPN/100 mL	\$ 20.00	Must be performed in conjunction with coliform test
1077	Bact, Escherichia Coli (MPN)	125 mL Sterile	0.25	Na2S2O3		SM 9221 E	1.1	MPN/100 mL	\$ 20.00	Must be performed in conjunction with coliform test
1080	Bact, fecal streptococci (MPN)	125 mL Sterile	0.25	Na2S2O3		SM 9230 B	2	MPN/100 mL	\$ 40.00	
1085	Bact, total coliforms (MPN)	125 mL Sterile	0.25	Na2S2O3		SM 9221 B	1.1	MPN/100 mL	\$ 40.00	
1090	Barium, total (mg/l)	500 mL Poly	180	HNO3	digest	EPA 200.8	20	ug/L	\$ 12.00	
1125	Bicarbonate (HCO3) (mg/l)	(see Alkalinity)							---	Analyzed with Alkalinity
1135	Boron, total (mg/l)	500 mL Poly	180	HNO3	digest	EPA 200.7	100	ug/L	\$ 12.00	
1140	Bromide (mg/l)	Quart Poly	28	Unpres.		EPA 300.0	0.02	mg/L	\$ 40.00	
1143	Bromomethane (ug/l)	VOA Vial	14	Na2S2O3		EPA 624	0.5	ug/L	---	Analyzed with EPA 624
1150	Calcium, total (mg/l)	500 mL Poly	180	HNO3	digest	EPA 200.7	1	ug/L	\$ 12.00	
1155	Carbon, total organic (TOC) (mg/l)	500 mL Poly	28	H2SO4		SM 5310 B	0.7	mg/L	\$ 32.00	
1160	Carbonate (CO3) (mg/l)	(see Alkalinity)							---	Analyzed with Alkalinity
1165	Chloride (mg/l)	Quart Poly	28	Unpres.		EPA 300.0	1	mg/L	\$ 8.00	
1170	Chlorine, free (mg/l)	Quart Poly	1	Unpres.		SM 4500 Cl G	0.1	mg/L	\$ 8.00	
1175	Chlorine, total (mg/l)	Quart Poly	1	Unpres.		SM 4500 Cl G	0.1	mg/L	\$ 8.00	
2255	chloromethane (ug/l)	VOA Vial	14	Na2S2O3		EPA 624	0.5	ug/L	---	Analyzed with EPA 624

Table 2. Non-Priority Pollutant Parameters that may be required.

Hydron No.	Parameter	container	holding time (days)	field preserv *	pre-treat	Analysis Method	Reporting Limit		Current cost	Comments
							Value	Units		
1178	Chlorpyrifos (ppb)	1 L Amber	7 e + 40 a	Na2S2O3		ELISA	4	ug/L	\$ 100.00	
1194	Cobalt (mg/l)	500 mL Poly	180	HNO3	digest	EPA 200.8	10	ug/L	\$ 12.00	
1195	Color (units)	Quart Poly	2	Unpres.		SM 2120B	3	Color Units	\$ 8.00	
1205	Conductance, specific-lab (umho/cm)	Quart Poly	28	Unpres.		SM 2510	1	umhos/cm	\$ 8.00	
1225	Detergent-MethyleneBlueActiveS (mg/l)	Quart Poly	2	Unpres.		SM 5540 C	0.05	mg/L	\$ 28.00	
1227	Diazinon (ppb)	1 L Amber	7 e + 40 a	Na2S2O3		ELISA	4	ug/L	\$ 100.00	
1232	Dichlorodifluoromethane (ug/l)	VOA Vial	14	Na2S2O3		EPA 624	0.5	ug/L	---	Analyzed with EPA 624
1235	ElectroChemical Balance (me/l)	Quart Poly	10	Unpres.		Calculation	N/A	me/L	---	Calculation
2300	ethylene glycol (mg/l)	1 L Amber	7	Unpres.		GCMS	1	mg/L	\$ 150.00	
1255	Fluoride (mg/l)	Quart Poly	28	Unpres.		SM 4500 F C	0.1	mg/L	\$ 8.00	
1260	Glycol, ethylene (mg/l)	1 L Amber	7	Unpres.		GCMS	1	mg/L	\$ 120.00	
1265	Hardness, total (CaCO3) (mg/l)	Quart Poly	180	HNO3	digest	EPA 200.7	3	mg/L	\$ 24.00	Incls. Ca + Mg
1270	Hydrocarbons, total petroleum (mg/l)	1 L Amber	28	H2SO4		EPA 418.1	1	mg/L	\$ 60.00	
1275	Hydroxide (OH) (mg/l)	(see Alkalinity)							---	Analyzed with Alkalinity
1285	Iron (mg/l)	500 mL Poly	180	HNO3	digest	EPA 200.7	50	ug/L	\$ 12.00	
1300	Magnesium, total (mg/l)	500 mL Poly	180	HNO3	digest	EPA 200.7	1	mg/L	\$ 12.00	
1305	Manganese (mg/l)	500 mL Poly	180	HNO3	digest	EPA 200.8	10	ug/L	\$ 12.00	
1306	Methoxychlor (ug/l)	1 L Amber	7 e + 40 a	NaSO3		EPA 608	1.8	ug/L	---	Analyzed with EPA 608
1307	Methyl tert butyl ether (ug/l)	VOA Vial	14	Na2S2O3		EPA 624	5	ug/L	---	Analyzed with EPA 624
1311	Molybdenum (mg/l)	500 mL Poly	180	HNO3	digest	EPA 200.8	10	ug/L	\$ 12.00	
1325	Nitrate (NO3) (mg/l)	Quart Poly	2	Unpres.		EPA 300.0	0.2	mg/L	\$ 8.00	
1330	Nitrite (NO2) (mg/l)	Quart Poly	2	Unpres.		SM4500 NO2 B	0.1	mg/L	\$ 8.00	
1340	Nitrogen, nitrate (N) (mg/l)	Quart Poly	2	Unpres.		EPA 300.0	0.2	mg/L	\$ 8.00	
1345	Nitrogen, nitrite (N) (mg/l)	Quart Poly	2	Unpres.		SM 4500 NO2 B	0.1	mg/L	\$ 8.00	
1350	Nitrogen, organic (N) (mg/l)	(difference of Ammonia-N and Kjeldahl-N)				Calculation	0.1	mg/L	\$ 44.00	diff btwn Ammonia-N and Kjeldahl-N

Table 2. Non-Priority Pollutant Parameters that may be required.

Hydron No.	Parameter	container	holding time (days)	field preserv *	pre-treat	Analysis Method	Reporting Limit		Current cost	Comments
							Value	Units		
1355	Nitrogen, total (N) (mg/l)	(sum of Kjeldahl-N, Nitrite-N, and Nitrate-N)				Calculation	0.2	mg/L	\$ 48.00	sum of Kjeldahl-N, Nitrite-N, and Nitrate-N
1360	Nitrogen, total Kjeldahl (N) (mg/l)	500 mL Poly	28	H2SO4	fix	EPA 351.1	0.1	mg/L	\$ 32.00	
1365	Nitrogen, total inorganic (N) (mg/l)	(sum of Ammonia-N, Nitrite-N, and Nitrate-N)				Calculation	0.2	mg/L	\$ 28.00	sum of Ammonia-N, Nitrite-N, and Nitrate-N
1370	Nitrogen, un-ionized Ammonia(N) (mg/l)	N/A								
1375	Odor (TON)	1 L Amber	2	Unpres.		SM 2150	1	T.O.N	\$ 8.00	
1380	Oil & Grease (mg/l)	500 mL Amber	28	H2SO4		EPA 1664	2.55	mg/L	\$ 45.00	
1384	Organic matter (%)	16 oz jar	28	-		S-9.10 W.S	0.1	%	\$ 32.00	
1425	Oxygen Demand, biochemical BOD (mg/l)	Quart Poly	2	Unpres.		SM 5210 B	5	mg/L	\$ 28.00	
1430	Oxygen Demand, chemical (COD) (mg/l)	Quart Poly	28	H2SO4		SM 5220 D	10	mg/L	\$ 16.00	
1435	Oxygen, dissolved field conc (mg/l)	BOD Bottle	0.33	-		SM 4500 O C	0.1	mg/L	\$ 8.00	
1710	pH, lab (units)	Quart Poly	1	Unpres.		SM 4500 H+ B	1	pH units	\$ 8.00	
1460	Phenols (mg/l)	500 mL Poly	28	H2SO4		EPA 420.2	0.02	mg/L	\$ 24.00	
1465	Phosphate, ortho (PO4) (mg/l)	(see Ortho-P, lab can manually add a data flag with this conversion, if required)							---	Analyzed with Phosphorus, ortho
1475	Phosphorus, organic (P) (mg/l)	Quart Poly	28	H2SO4		SM 4500 P B E	0.05	mg/L	\$ 40.00	sum of reactive and hydrolyzable Phosphorus
1480	Phosphorus, ortho (P) (mg/l)	Quart Poly	2	Unpres.		SM 4500 P E	0.05	mg/L	\$ 12.00	
1485	Phosphorus, total (P) (mg/l)	Quart Poly	28	H2SO4	digest	SM 4500 P B E	0.05	mg/L	\$ 16.00	
1490	Phosphorus, total dissolved(P) (mg/l)	Quart Poly	28	H2SO4	filt, digest	SM 4500 P B E	0.05	mg/L	\$ 16.00	
1495	Phosphorus, total insoluble(P) (mg/l)	Quart Poly	28	H2SO4	-	SM 4500 P B E	0.05	mg/L	\$ 12.00	
1500	Potassium, total (mg/l)	500 mL Poly	180	HNO3	digest	EPA 200.7	1	mg/L	\$ 12.00	
----	Silicone	500 mL Poly	180	HNO3		EPA 200.7	0.5	mg/L	\$ 12.00	
1540	Sodium, total (mg/l)	500 mL Poly	180	HNO3	digest	EPA 200.7	1	mg/L	\$ 12.00	
1615	Solids, total (mg/l)	1 L Amber	7	Unpres.		SM 2540 B	10	mg/L	\$ 12.00	

Table 2. Non-Priority Pollutant Parameters that may be required.

Hydron No.	Parameter	container	holding time (days)	field preserv *	pre-treat	Analysis Method	Reporting Limit		Current cost	Comments
							Value	Units		
1616	Solids, total (%)	N/A	(convert from Solids, total (mg/l), if required)						---	convert from Solids, total, if req
1625	Solids, total dissolved(resdu) (mg/l)	Quart Poly	7	Unpres.	filt	SM 2540 C	10	mg/L	\$ 12.00	
1630	Solids, total suspended(resdu) (mg/l)	Quart Poly	7	Unpres.		SM 2540 D	5	mg/L	\$ 12.00	
1631	Solids, non filterable (%)	N/A	(convert from Solids, total suspended(resdu) (mg/l), if required)						---	convert from Solids, total suspended, if req
1640	Sulfate (SO4) (mg/l)	Quart Poly	28	Unpres.		EPA 300.0	0.5	mg/L	\$ 8.00	
1645	Sulfide (S-) (mg/l)	500 mL Poly	7	ZnAce/NaOH		SM 4500 S2 D	0.1	mg/L	\$ 8.00	
1675	Total Anions (me/l)	(sum of anions)				Calculation	0.05	me/L	---	no charge for calc only
1680	Total Cations (me/l)	(sum of cations)				Calculation	0.05	me/L	---	no charge for calc only
1686	Trichlorofluoromethane (ug/l)	VOA Vial	14	Na2S2O3		EPA 624	5	ug/L	---	Analyzed with EPA 624
1695	Turbidity, lab (NTU)	Quart Poly	2	Unpres.		SM 2130 B	0.2	NTU	\$ 8.00	
1697	Vanadium (mg/l)	500 mL Poly	180	HNO3	digest	EPA 200.8	10	ug/L	\$ 12.00	
2370	xylenes (m+p) (ug/l)	VOA Vial	14	Na2S2O3		EPA 624	0.5	ug/L	---	Analyzed with EPA 624
2375	xylenes (ortho) (ug/l)	VOA Vial	14	Na2S2O3		EPA 624	0.5	ug/L	---	Analyzed with EPA 624
---	Particle Size	16 oz jar	28	-		ASA 43-5	0.1	%	\$ 50.00	
1517	Sand (%)	(see Particle Size)							---	Measured as part of Particle Size
1532	Silt (%)	(see Particle Size)							---	Measured as part of Particle Size
1067	Soil Antimony, total (mg/Kg)	8 oz jar	180	-		EPA 6020	10	mg/Kg	\$ 24.00	All soils incl. digest charge
1072	Soil Arsenic, total (mg/Kg)	8 oz jar	180	-		EPA 6020	10	mg/Kg	\$ 24.00	
1089	Soil Barium, total (mg/Kg)	8 oz jar	180	-		EPA 6020	10	mg/Kg	\$ 24.00	
1091	Barium (mg/Kg)	8 oz jar	180	-		EPA 6020	10	mg/Kg	\$ 24.00	
1122	Soil Beryllium, total (mg/Kg)	8 oz jar	180	-		EPA 6020	5	mg/Kg	\$ 24.00	
1146	Cadmium (mg/Kg)	8 oz jar	180	-		EPA 6020	5	mg/Kg	\$ 24.00	
1147	Soil Cadmium, total (mg/Kg)	8 oz jar	180	-		EPA 6020	5	mg/Kg	\$ 24.00	
1192	Soil Cobalt, total (mg/Kg)	8 oz jar	180	-		EPA 6020	10	mg/Kg	\$ 24.00	

Table 2. Non-Priority Pollutant Parameters that may be required.

Hydion No.	Parameter	container	holding time (days)	field preserv *	pre-treat	Analysis Method	Reporting Limit		Current cost	Comments
							Value	Units		
1211	Copper (mg/Kg)	8 oz jar	180	-		EPA 6020	10	mg/Kg	\$ 24.00	
1212	Soil Copper, total (mg/Kg)	8 oz jar	180	-		EPA 6020	10	mg/Kg	\$ 24.00	
1288	Soil Lead, soluble (mg/l)	N/A							---	Analyzed with Soil Lead, total
1289	Soil Lead, total (mg/Kg)	8 oz jar	180	-		EPA 6020	10	mg/Kg	\$ 24.00	
1313	Soil Molybdenum, total (mg/Kg)	8 oz jar	180	-		EPA 6020	10	mg/Kg	\$ 24.00	
1321	Soil Nickel, soluble (mg/l)	N/A							---	Analyzed with Soil Nickel, total
1322	Soil Nickel, total (mg/Kg)	8 oz jar	180	-		EPA 6020	10	mg/Kg	\$ 24.00	
1550	Soil cadmium (mg/Kg)	8 oz jar	180	-		EPA 6020	5	mg/Kg	\$ 24.00	
1555	Soil chromium all valences (mg/Kg)	8 oz jar	180	-		EPA 6020	10	mg/Kg	\$ 24.00	
1560	Soil clay (%)	(see Particle Size)							---	Measured as part of Particle Size
1574	Soil Mercury, total (mg/Kg)	16 oz jar	28	-		EPA 7471A	0.2	mg/Kg	\$ 24.00	
1575	Soil mercury (mg/Kg)	16 oz jar	28	-		EPA 7471A	0.2	mg/Kg	\$ 24.00	
1586	Soil petroleum hydrocarbons (mg/Kg)	8 oz jar	28	-		EPA 418.1	10	mg/Kg	\$ 60.00	
1595	Soil selenium (mg/Kg)	8 oz jar	180	-		EPA 6020	5	mg/Kg	\$ 24.00	
1596	Soil Selenium, total (mg/Kg)	8 oz jar	180	-		EPA 6020	5	mg/Kg	\$ 24.00	
1604	Soil Silver, total (mg/Kg)	8 oz jar	180	-		EPA 6020	10	mg/Kg	\$ 24.00	
1605	Soil silver (mg/Kg)	8 oz jar	180	-		EPA 6020	10	mg/Kg	\$ 24.00	
1606	Soil thallium (mg/Kg)	8 oz jar	180	-		EPA 6020	50	mg/Kg	\$ 24.00	
1607	Soil Vanadium (mg/Kg)	8 oz jar	180	-		EPA 6020	10	mg/Kg	\$ 24.00	
1610	Soil zinc (mg/Kg)	8 oz jar	180	-		EPA 6020	10	mg/Kg	\$ 24.00	
1611	Soil Zinc, total (mg/Kg)	8 oz jar	180	-		EPA 6020	10	mg/Kg	\$ 24.00	

* Additional steps may need to be taken, such as dechlorination, contact lab

7 e + 40 = seven days to extraction, 40 days to analyze

Table 3. Water Column Toxicity Testing

Parameter	Hydron #	Analysis Method	Analysis Cost	Water Required
Ceriodaphnia dubia survival (acute, freshwater)	†		\$160	1 gal
Fathead Minnow larval survival (acute, freshwater)	1685	"Calif-WQCB"	\$550	1 gal
Selenastrum Capricornutum growth (chronic)	†		\$315	1 gal
Toxicity Identification Evaluation (Phase I)	†		\$4,000	5 gal
Toxicity Identification Evaluation (Phase II)	†		\$20,000+	Depends on the tests run

† Parameter not sampled in the past

APPENDIX A

WHITEWATER WATERSHED

APPENDIX B

SANTA ANA WATERSHED

1. INTRODUCTION

A MS4 Permit (Order No. R8-2002-0011, NPDES No. CAS618033) for the Santa Ana Watershed was adopted by the Santa Ana Regional Board on October 25, 2002. This permit establishes monitoring and reporting requirements for discharges from the MS4.

The development of the revised CMP was initiated following the adoption of the Order on October 25, 2002. To oversee this process, a Monitoring Subcommittee to the Santa Ana/Santa Margarita Technical Committee was established. The Monitoring Subcommittee was chaired by the District and included Co-Permittee representatives. Regional Board staff were noticed of each of these meetings.

The Order also required the development of an Interim Monitoring Program that focused on areas with elevated pollutant concentrations. In response, the Monitoring Subcommittee prepared an Interim Monitoring Program that proposed the removal of stations that did not serve the goals of an Urban Runoff monitoring program. The justifications for removal included:

- flows do not represent primarily urban land uses;
- flows consist primarily of produced water
- a majority of the drainage area and/or flow originates in another county;
- the station was sampled as part of a preliminary survey of the watershed and was never intended to be part of the CMP; and
- sediment samples were collected as part of a pilot program to test, remove, and properly dispose of sediment deposits accumulated in large detention and retention basins which may contain relatively high concentrations of pollutants.

Subsequent to submittal of the Interim Monitoring Program, the Monitoring Subcommittee continued to revise the CMP. A variety of information sources were utilized by the Monitoring Subcommittee, including land use, chemical and flow data from the District and other agencies, and comparison benchmarks. In addition, field inspections of existing and proposed monitoring station sites were conducted. All of this information was used in concert in selecting monitoring stations for inclusion in the Santa Ana Watershed element of the CMP.

The CMP, as well as this appendix, is intended to be a "living document," subject to revision based on changes in accessibility to the monitoring location, Permit requirements, and program guidance. Changes will undergo review by the Permittees and Regional Board staff before being incorporated into the CMP.

2. OBJECTIVES

According to the Urban Runoff Monitoring & Reporting Program (Appendix 3 of the MS4 Permit), the overall goal is to support the development of an effective Urban Runoff management program. The following are the major objectives (Section II of Appendix 3):

- To identify those Receiving Waters, which, without additional action to control Pollution from Urban Runoff, that cannot reasonably be expected to achieve or maintain applicable Water Quality Standards required to sustain the Beneficial Uses, the goals, and the objectives of the Basin Plan.
- To develop and support an effective MS4 management program.
- To identify significant water quality problems related to discharges of Urban Runoff within the Permit Area.

- To define water quality status, trends, and pollutants of concern associated with Urban discharges and their impact on the Beneficial Uses of the Receiving Waters.
- To analyze and interpret the collected data to determine the impact of Urban Runoff and/or validate any water quality models.
- To characterize pollutants associated with Urban Runoff, and to assess the influence of Urban land uses on Receiving Water quality and the beneficial uses of Receiving Waters.
- To identify other sources of Pollutants in storm water runoff to the maximum extent possible (e.g., including, but not limited to, atmospheric deposition, and contaminated sediments, other non-point sources, etc.)
- To identify and prohibit illicit connections and discharges.
- To verify and to identify sources of Urban Runoff pollutants.
- To evaluate the effectiveness of the DAMP and WQMPs, including an estimate of pollutant reductions achieved by the structural and nonstructural BMPs implemented by the Permittees.
- To conduct monitoring in cooperation with San Bernardino County for investigation of bacteriological impairments in the upper Santa Ana River due to Urban Runoff.
- To evaluate the costs and benefits of proposed Urban Runoff management programs to protect Receiving Water quality.

3. MONITORING PROGRAM REQUIREMENTS

The Monitoring Program has certain required elements, but there is flexibility in how the Permittees may implement them. The discussion that follows will present the Monitoring Program Requirements (Section III of Appendix 3) and will discuss how the CMP complies with the Requirement. For Program Requirements that are not part of the CMP, activities that will comply will be discussed.

- A. TMDL/303(d) Listed Waterbody Monitoring: The Permittees should continue to participate in the TMDL and Southern California Cooperative Storm Water Research/Monitoring programs as they relate to Urban Runoff. In addition, strategies shall be revised/developed to evaluate the impacts of Urban Runoff on identified impairments within the Santa Ana River watershed and other tributary 303(d) listed waterbodies.

The Permittees have been participating and will continue to participate in the San Jacinto River/Lake Elsinore Watersheds nutrient TMDL (Table B-2) and Chino Basin/Santa Ana River pathogen indicator TMDL (monitoring conducted by the City of Riverside). The Permittees also participate with the Southern California Stormwater Monitoring Coalition and have provided funds for specific studies, including a rapid microbiological indicator development, and a model Urban Runoff monitoring program to assist the SWRCB to partially fulfill SB72 requirements.

- B. 1. Mass Emissions Monitoring:

- a. An estimate of flow in cubic feet per second (cfs) from the outfall/stream at the time of sampling.

Flow is either estimated or measured when a sample is collected. The data are stored in the District's water quality database under parameter number 232 (water level) or 262 (discharge).

- b. Monitor mass emissions in Urban Runoff to: (a) estimate the total mass emissions from the MS4 to Receiving Waters; (b) assess trends in mass emissions associated with Urban Runoff over time; and (c) to determine if Urban Runoff is contributing to exceedences of Water Quality Objectives or Beneficial Uses in Receiving Waters by comparing results to the Basin Plan.

See Section 7.

- c. Representative samples from the first storm event and two more storm events shall be collected during the rainy season. A minimum of three dry-weather samples shall also be collected. Samples from the first rain event each year shall be analyzed for the entire suite of priority pollutants. All samples must be analyzed for metals, pH, TSS, TOC, pesticides/herbicides, and constituents that are known to have contributed to impairment of local receiving waters. Dry weather samples should also include an analysis for oil and grease. Sediments associated with mass emissions should be analyzed for constituents of concern identified in the water analyses.

See Sections 4.B.2) and 4.B.3).

Constituents of Concern, such as metals, that may be identified from the water quality data, will be analyzed in the sediments.

2. Microbial Monitoring: A monitoring program to determine the sources of bacteriological contamination in the Upper Santa Ana River, is being developed in collaboration with the MS4 Permittees in San Bernardino County. This program associated with Urban Runoff shall include wet and dry weather monitoring, as appropriate, for bacteriological constituents in the Santa Ana River and its tributaries.

On March 23, 2000, the Santa Ana Regional Board issued a 13267 directive for the Santa Ana Region Permittees to collaborate with the MS4 Permittees in San Bernardino County to develop a bacterial source identification study for the Santa Ana River. As a result, a draft study design was developed and monitoring was initiated at the stations identified in Table B-3. The San Bernardino County submitted the draft study design with to fulfill their MS4 Permit requirements, and the Riverside County Permittees intended to do the same in conjunction with this CMP.

On October 15, 2003, Riverside County Permittees were made aware of a study, to be conducted by Dr. Stanley Grant of UC Irvine, to evaluate the dynamics of point and non-point source fecal pollution in the Santa Ana River. The study is expected to produce:

- *Information on the sediment and water column ecology of fecal indicator bacteria (FIB) (specifically speciation and microbial diversity) in an Urban watershed under both dry and wet weather conditions.*
- *Information on the temporal variability of in-stream FIB concentrations and loading, and the effect of both local and external forcing.*
- *A mathematical model for predicting FIB concentrations (and loads) in Urban streams that captures the dominant ecological and transport phenomena identified during the field phase of the project.*

The study will be among the first to investigate how storm flows affect the ecology of FIB microbial populations in ephemeral watersheds.

Section XIV of the MS4 Permit (Page 52) allows "the Permittees to participate in regional, statewide, national or other monitoring and reporting programs in lieu of or in addition to" the Monitoring Program. In lieu of the Monitoring Program requirement, and in collaboration with San Bernardino County Permittees, the Riverside County Permittees will contribute funds to participate in Dr. Grant's study.

The details of the study are available in a separate document.

3. Water Column Toxicity Monitoring: Analyses for toxicity to aquatic species shall be performed on Receiving Water samples to determine the impacts of Urban Runoff on toxicity of Receiving Waters. *Ceriodaphnia dubia* fertilization, Fathead Minnow larval survival test, and Selenastrum Capricornutum growth test shall be used to evaluate toxicity on the sample from the first rain event, plus one other wet weather sample. In addition, where applicable collect two dry weather samples or propose equivalent procedures in the CMP. In addition, criteria shall be identified which will trigger the initiation of Toxicity Identification Evaluations (TIEs) and Toxicity Reduction Evaluations (TRES).

See Section 4.C. EPA freshwater toxicity guidance does not contain a protocol for Ceriodaphnia dubia fertilization. It does, however, contain a protocol for Ceriodaphnia dubia reproduction. Pursuant to an e-mail letter sent on December 3, 2003, by Regional Board staff to the Permittees, the reproduction test will be substituted.

4. Reconnaissance: The Permittees shall review and update their reconnaissance strategies to identify and prohibit illicit discharges. Where possible, the use of GIS to identify geographic areas with a high density of industries associated with gross pollution (e.g. electroplating industries, auto dismantlers) and/or locations subject to maximum sediment loss (e.g. new development) may be used to determine areas for intensive monitoring efforts. Additionally, the Permittees shall coordinate with the Regional Board to develop a comprehensive database to include enforcement actions for storm water violations and unauthorized, non-storm water discharges that can then be used to more effectively target reconnaissance efforts.

See Section 4.A.

5. Land Use Correlations: The Permittees shall develop and implement strategies for determining the effects of Urban land use on the quality of Receiving Waters. While it is recognized that a wide range of land uses exist across the region and within each sub-watershed, one relationship that may be determined is the impact of Urban development on sediment loading within Receiving Waters, since developed areas contribute relatively little sediment loading compared to areas under construction. Consequently, the Permittees shall, at a minimum, analyze the impacts of increasing development and the conversion of agricultural land to Urban land uses to the sediment loading of Canyon Lake, Lake Elsinore, and the Santa Ana River (Reaches 3 and 4).

See Section 7.

6. Sources of Data: Where possible and applicable, data shall be obtained from monitoring efforts of other public or private agencies/entities (e.g., Caltrans).

See Section 7.

7. Bioassessments: The development of an Index of Biological Integrity for Southern California. This shall include the selection and identification of appropriate bioassessment station locations, sampling scheme(s), and shall also be capable of attaining the objectives mentioned in Section II (of Permit, Section 2 of this Appendix), above. The Permittees may develop bioassessments in coordination or cooperation with other parties...

In lieu of developing an independent bioassessment program, the Permittees will be contributing \$25,000 towards a regional bioassessment study ("Building a Regionally Consistent and Integrated Freshwater Stream Bioassessment Monitoring Program") being spearheaded by SCCWRP and including the counties of Los Angeles, Orange, San Bernardino, San Diego, and Ventura, and the Santa Ana, San Diego, and Los Angeles Regional Boards.

- C. ...At a minimum, the CMP shall address the following and any requirements developed by the State Board in accordance with Water Code Section 13383.5:

1. Uniform guidelines for quality control, quality assurance, data collection and data analysis.

See Section 6.

2. A procedure for the collection, analysis, and interpretation of existing data from local, regional or national monitoring programs. These data sources may be utilized to characterize different sources of pollutants discharged to the MS4; to determine pollutant generation, transport and fate; to develop a relationship between land use, development size, storm size and the event mean concentration of pollutants; to determine spatial and temporal variances in Urban Runoff quality and seasonal and other bias in the collected data; and to identify any unique features of the Permit Area. The Permittees are encouraged to use data from similar studies, if available.

See Section 7.

3. A description of the CMP including:

- a. The number of monitoring stations;

See Table B-1 for Core CMP stations (7), Table B-2 for San Jacinto nutrient TMDL stations (14), and Table B-3 for current Santa Ana River bacterial indicator study stations (3). The bacterial indicator study will be changing (See B.2. above).

- b. Monitoring locations within MS4s, major outfalls, and Receiving Waters; Environmental indicators (e.g., ecosystem, flow, biological, habitat, chemical, sediment, stream health, etc.) chosen for monitoring;

See Tables B-1, B-2, and B-3.

- c. Total number of samples to be collected from each station, frequency of sampling during wet and dry weather, short duration or long duration storm events, type of samples (grab, 24-hour composite, etc.), justification for composite versus discrete sampling, type of sampling equipment, quality assurance/quality control procedures followed during sampling and analysis, analysis protocols to be followed (including sample preparation and maximum reporting limits), and qualifications of laboratories performing analyses;

See Table B-4.

- d. A procedure for analyzing the collected data and interpreting the results including an evaluation of the effectiveness of the management practices, and need for any refinement of the WQMPs or the DAMP.

See Section 7.

- e. Parameters selected for field screening and for laboratory work; and

See Section 4.A.2)

- f. A description of the responsibilities of all the participants in this program, including cost sharing.

The current Implementation Agreement is being reviewed and will be updated.

Table B-1. Core CMP Stations in the Santa Ana Watershed

Station Number	Station Name	Notes	Land Uses in Drainage Area			Gauge Costs
			Land Use	Acres	Percent	
040	Corona SD Line K (Will be relocated to Butterfield Storm Drain in Corona)	Line K has a small drainage area, and the drainage may start in the mountains. Butterfield Storm Drain may be a better Industrial Land Use location.	Agricultural Commercial Industrial Recreational Open Space Rural Urban Streets Undefined Total	There are two candi- dates for Butterfield Storm drain. A Land Use breakdown will be made once the final station location is determined.	Staff gauge \$100	
316	Sunnymead Channel Line B	Undergoing intense development, esp. Commercial & Industrial	Agricultural Commercial Industrial Recreational Open Space Rural Urban Streets Undefined Total	574 380 13 211 2786 1612 2305 1059 6 8946	6.4 4.2 0.1 2.4 31.1 18.0 25.8 11.8 0.1 100.0	Staff gauge \$100
318	Hemet Ch @ Sanderson (May be relocated to beyond its confluence with Stetson Channel)	Primarily Urban Land Use Also monitored as part of TMDL	Agricultural Commercial Industrial Recreational Open Space Rural Urban Streets Undefined Total	56 452 54 40 273 128 1092 532 90 2717	2.1 16.6 2.0 1.5 10.0 4.7 40.2 19.6 3.3 100.0	Gauge costs in Table B-2
364	Magnolia Center	There was more ag use in the past. Orange Co. discharges raw potable water flow down this channel; samples are not collected when this water is flowing	Agricultural Commercial Industrial Recreational Open Space Rural Urban	14 325 18 73 255 799 1491	0.4 8.2 0.5 1.8 6.4 20.2 37.7	Staff gauge \$100

Table B-1. Core CMP Stations in the Santa Ana Watershed

Station Number	Station Name	Notes	Land Uses in Drainage Area			Gauge Costs
			Land Use	Acres	Percent	
702	University Wash (Will be relocated to Springbrook Channel)	University Wash has been enclosed in a concrete box. Springbrook is an upstream accessible location.	Streets Undefined Total	746 236 3957	18.9 6.0 100.0	Staff gauge \$100
707	North Norco Channel (May relocate to Hammer Channel)	Both stations are still being evaluated.	Agricultural Commercial Industrial Recreational Open Space Rural Urban Streets Undefined Total	1423 774 719 54 3099 815 1171 972 1224 10251	13.9 7.6 7.0 0.5 30.2 8.0 11.4 9.5 11.9 100.0	Staff gauge \$100
752	Perris Line J, Sunset Ave. SD	Sandy soils, nonstorm tends to infiltrate rather than run off. Ag is mostly turf farms. Diurnal flows – irrigation water, e.g., lawns.	Agricultural Commercial Industrial Recreational Open Space Rural Urban Streets Undefined Total	11 95 42 0 983 244 530 370 58 2333	0.5 4.1 1.8 0.0 42.1 10.5 22.7 15.9 2.5 100.0	Staff gauge \$100

Table B-2. San Jacinto Watershed Nutrient TMDL Stations.

Station Number	Station Name	Notes	
318	Hemet Ch @ Sanderson	Urban Land Use Instrumented	O&M \$5000
325	Perris Valley Storm Drain @ Nuevo Rd	Mixed Land Use, including Dairy and very large upper watershed (e.g., Moreno Valley) Land Use-specific stations already located throughout watershed	O&M \$17,000
357	Four Corners Storm Drain	Mostly Urban Land Use Some Commercial Occasional ponding at station if Lake level rises above 1255'	O&M \$5000
712	Leach Canyon Channel	Small watershed area Mixed Land Use Canyon & Mountain drainage upstream Purpose of channel is to move mountain flows to Lake without property damage	O&M \$5,000
714	Ortega Canyon Channel	Small watershed area Mixed Land Use Canyon & Mountain drainage upstream Purpose of channel is to move mountain flows to Lake without property damage	O&M \$5,000
741	SJR @ Ramona Expressway	Primarily Ag & Dairy Land Use	O&M \$17,000
745	Salt Ck. @ Murrieta Rd.	Mixed Land Uses, incl. Ag, Dairy, Urban, and Open Space Used to calibrate P inputs to Canyon Lake	O&M \$17,000
759	SJR @ Goetz Rd.	Mixed Land Use, incl. Urban, Ag, & Open Space	O&M \$17,000
790	Canyon Lake Storm Drain @ Fair Weather Drive	High Density residential from Canyon Lake Canyon Lake residents monitor this station	O&M 5,000
792	SJR @ Cranston	TMDL Reference Station	O&M \$17,000
827	SJR @ Elsinore	Good indicator site for impacts to Lake Elsinore Includes Cottonwood Canyon Flows (10 sq mi watershed) & Canyon Lake	O&M \$17,000
834	Canyon Lake @ Sierra Park	Rural Residential Land Use Quail Valley area is on septic tanks Canyon Lake residents monitor this station	O&M \$5,000
836	Stream @ Ramona Expressway & Warren Rd	Dairy Land Use	O&M \$17,000
841	SJR @ Canyon Lake Spillway	Represents flows out of Canyon Lake	O&M \$5,000

Table B-3 – SAR Pathogen Indicator Study Stations

Station Number	Station Name
754	Santa Ana River at River Road
829	Santa Ana River at Market Street
830	Santa Ana River at Pueblo Street

Table B-4. Sampling Requirements

Parameter	Hydron #	Wet	Dry
General			
pH	1710	✓	✓
TSS	1630	✓	✓
TOC	1155	✓	✓
Oil & Grease	1380		✓
Metals			
Arsenic	1070	✓	✓
Barium	1090	✓	✓
Boron	1135	✓	✓
Cadmium	1145	✓	✓
Total Chromium	1180	✓	✓
Copper	1210	✓	✓
Lead	1290	✓	✓
Mercury	1310	✓	✓
Nickel	1320	✓	✓
Selenium	1520	✓	✓
Silver	1535	✓	✓
Zinc	1700	✓	✓
Pesticides			
Entire EPA Suite	n/a	✓	
Aldrin	1013	✓	✓
Dieldrin	1233	✓	✓
Lindane	1292	✓	✓
Methoxychlor	1306	✓	✓
Toxaphene	1681	✓	✓
4,4'-DDD	2135	✓	✓
4,4'-DDE	2140	✓	✓
4,4'-DDT	2145	✓	✓
α-BHC	2170	✓	✓
Arochlor 1016	2175	✓	✓
Arochlor 1221	2180	✓	✓
Arochlor 1232	2185	✓	✓
Arochlor 1242	2190	✓	✓
Arochlor 1248	2195	✓	✓
Arochlor 1254	2200	✓	✓
Arochlor 1260	2205	✓	✓
β-BHC	2210	✓	✓

Table B-4. Sampling Requirements

Parameter	Hydron #	Wet	Dry
Chlordane	2215	✓	✓
δ-BHC	2250	✓	✓
Endosulfan II	2265	✓	✓
Endosulfan I	2270	✓	✓
Endosulfan Sulfate	2275	✓	✓
Endrin Aldehyde	2280	✓	✓
Endrin	2285	✓	✓
Heptachlor Epoxide	2305	✓	✓
Heptachlor	2310	✓	✓
γ-BHC	2380	✓	✓
Herbicides			
Chlorpyrifos	1178	✓	✓
Diazinon	1227	✓	✓
Microbial			
Total Coliforms	1085	✓	✓
Fecal Coliforms	1075	✓	✓
Fecal Streptococcus	1080	✓	✓
E. Coli	1077	✓	✓

APPENDIX C

SANTA MARGARITA WATERSHED

APPENDIX D

WATER QUALITY PARAMETERS THAT MAY BE MONITORED

The following parameters may have a Basin Plan Objective (BPO) comparison benchmark. A description of the parameter's importance to Urban Runoff water quality and the types of industries likely to discharge it in their waste stream are also included. This information is largely taken from Water Quality Criteria, 2nd Edition. This list does not include all parameters on EPA's Priority Pollutant list.

Alkalinity, Total (CaCO₃) (Hydron #1035)

Alkalinity measures the ability of a solution to neutralize hydrogen ions and is expressed in terms of an equivalent amount of calcium carbonate. Alkalinity may indicate the presence of carbonates, bicarbonates, hydroxides, and to a lesser extent borates, silicates, phosphates, and organic substances. Waters with pH values between 7 and 8 and having a total alkalinity of 100 to 120 mg/L or more serves as a buffer to help prevent any sudden change in pH value, which could harm fish and other aquatic life. Some natural waters, especially those in the southwestern U.S., are highly alkaline. The alkalinity of streams can also be increased by the addition of municipal sewage and many industrial wastes.

Ambient Air Temperature (#1017, °C; #1018, °F)

Air temperature can affect water temperature, which can, in turn affect the concentration of dissolved oxygen. Drinking water standards for fluoride are based on maximum daily air temperatures.

Ammonia-nitrogen (#1051)

Ammonia may be found naturally in surface or ground waters from the decomposition of nitrogenous organic matter, being one of the constituents of the complex nitrogen cycle. Rivers known to be unpolluted have very low ammonia concentrations, generally less than 0.2 mg/L as N. Ammonia may be discharged in industrial wastes. Ammonia is also a component of fertilizer and urine, and its presence may indicate agricultural use or overapplication in domestic and recreational areas.

Antimony (#1065)

This silvery-white metal is seldom found in the pure state in nature. Antimony is used for alloys and other metallurgical purposes. The salts, primarily sulfides and oxides, are employed in the rubber, textile, fireworks, paint, ceramic, and glass industries.

Arsenic (#1070)

Elemental arsenic may be found to a small extent in nature mostly as the arsenides of true metals or pyrites. Its major use, however, is as a component of pesticides (insects, weeds, fungi) and as a wood preservative.

Bacteria; Fecal coliforms (#1075)

Bacteria; Total coliforms (#1085)

Coliform organisms originate in excretions from humans, mammals, amphibians, and birds. They are also found, primarily in the non-fecal forms on fibrous and vegetable matter in the water. More coliforms are discharged by healthy individuals than by sufferers of diarrhea.

Bacteria; Fecal streptococci (#1080)

Fecal streptococci is considered a useful indicator of potential pathogen contamination by intestinal wastes as this group of bacteria is characteristic of fecal pollution, they do not multiply in surface waters, and they rarely occur in surface soil or on vegetation (unless contaminated by sewage). Primary sources of bacteria include agricultural drainage, feeding pens, grazing areas, and sanitary sewer and septic tank leaks.

Barium (#1090)

Barium is not normally present in natural surface or ground waters. Industrial uses of barium and its salts include metallurgy, paint manufacturing, cement production (for mixtures designed to withstand salt water), and in ceramic and glass manufacturing.

Beryllium (#1120)

Beryllium is relatively rare and not likely to occur in natural waters. Industrial uses of beryllium include metallurgy, manufacturing of X-ray diffraction tubes and electrodes for neon signs, and nuclear reactors.

Bicarbonate (HCO₃) (#1125)

Bicarbonates contribute to the alkalinity of water, or the capacity of water to neutralize acids. Bicarbonates have many natural and industrial sources. Natural sources include absorption of carbon dioxide from the air and the decomposition of organic materials. Bicarbonates are one of the most commonly used salts in industry. Bicarbonates are not generally considered environmentally harmful, but can add to the salinity and total solids content of water.

Boron (#1135)

Boron in nature is found as sodium borate (borax) or as calcium borate (colemanite) in mineral deposits and natural waters of Southern California and in Italy. Industrial uses of boron, boron salts, or boric acid include metallurgy (to harden metals), weatherproofing of wood, fireproofing fabrics, glass and porcelain manufacturing, production of leather and carpets, cosmetics, photography, and artificial gems, and as a bactericide, fungicide, or detergent.

Cadmium (#1145)

Cadmium has many industrial uses, including metallurgy, electroplating, ceramics, pigmentation, photography, textile printing, and nuclear reactors. Cadmium salts are sometimes employed as insecticides and antihelminthics. Cadmium can concentrate in the liver, kidneys, pancreas, and thyroid of humans and animals, and tends to persist.

Calcium (#1150)

Calcium is typically found as a salt or in the ionic form. Natural sources include leaching from soil or decomposition of skeletal remains. They may also be found in sewage and many types of industrial wastes.

Carbon, total organic (TOC) (#1155)

Organic carbon is not in itself a pollutant, but is an indicator of pollution and benthic deposits. In the TOC test, the carbon in the sample is oxidized by dichromate or another strong oxidizing agent.

Carbonate (CO₃) (#1160)

Carbonate concentration in water is a function of temperature, pH, cations, and other dissolved salts. Carbonate salts may be removed from polluted waters by precipitation and adsorption

Chloride (#1165)

Natural sources of chlorides include dissolution from minerals or seawater intrusion. Industrial sources include agricultural use, human and animal sewage, paper manufacturing, galvanizing plants, water softening plants, oil wells, and petroleum refineries. Chlorine is a commonly-used disinfectant in water treatment.

Chlorpyrifos (#1178)

No info

Chromium, all valences (#1180)

Chromium wastes occur mostly in the hexavalent form. Industrial sources of hexavalent chromium include metal pickling and plating operations, aluminum anodizing, leather tanning, cooling water antifouling, and in the manufacture of paints, dyes, explosives, ceramics, and paper. Industrial sources of trivalent chromium salts include textile dyeing, ceramic and glass manufacturing, and in photography.

Color (#1195)

There are numerous natural sources of color in water including breakdown of minerals (especially those containing iron or manganese compounds) or vegetable matter, humus, peat, tannins, algae, weeds, and protozoa. Industrial sources include irrigation return water, nailworks, mining, refining, and manufacture of explosives, pulp and paper, and chemicals. It can be expected that waters flowing through erodible soils, such as those found in the Santa Margarita River Watershed, will have a detectable color concentration.

Conductance, specific (#1200, field; #1205, lab)

Specific conductance measures the ion concentration of water. Increased conductivity increases the osmotic pressure of water, which can be harmful to aquatic organisms. Natural inland waters usually contain small quantities of mineral salts in solution, but waters containing brine, chemical, and agricultural irrigation wastes may have excessive levels of specific conductance.

Copper (#1210)

Copper salts are not commonly found in natural surface waters. Industrial sources of copper include corrosion of copper and brass tubing, copper compounds used to control undesirable plankton organisms, alloy production, electrical wiring, pipes, roofing, and many purposes where its conductivity or corrosion resistance are important. Copper salts are used in textile processing, pigmentation, tanning, photography, engraving, electroplating, insecticides, fungicides, and many other industrial processes.

Cyanide, total (#1215)

Cyanides may be found in effluents from gas works and coke ovens, from the scrubbing of gases at steel plants, from metal cleaning and electroplating processes, and from chemical industries.

Detergent – MBAS (#1225)

Surface-active agents such as soaps, detergents, emulsifiers, wetting agents, and penetrants lower the surface tension or other interfacial properties of their solvents. This allows dirt to be removed from clothing and for greater absorption of pesticides into their target organisms.

Diazinon (#1227)

Diazinon is commonly-used insecticide.

Discharge (#262)

Also known as the flow rate, high discharge rates may cause erosion in an earthen channel. Used along with chemical concentration to calculate mass loading.

Electrochemical Balance (#1235) No BPO

If positive, there are more cations than anions in the sample, and if negative, there are more anions.

Fluoride (#1255)

Fluoride may be found in natural waters, its value in preventing tooth decay being based on observations that people living in areas with elevated levels had lower rates of tooth decay. Industrial sources of fluoride include insecticide manufacture and use, brewery apparatus disinfection, as a flux in steel manufacturing, wood and mucilage preservation, glass and enamel manufacturing, chemical industries,

and for water treatment. It not normally found in industrial wastes. Drinking water standards are based on maximum daily air temperatures.

Hardness, total (CaCO₃) (#1265)

Hardness in water may be caused by the natural accumulation of salts (primarily calcium and magnesium ions) from contact with soil and geological formations. Industrial sources include tannery wastes and irrigation return flows. Imported water may also be a source of elevated hardness levels, for example, Colorado River Water has an average hardness of 250-300 mg/L, which is considered hard water.

Hydrocarbons, total petroleum (#1270)

Industrial sources of petroleum hydrocarbons include those involved in the production, transportation, handling, and use of oil, such as oil wells, oil-loading points, refineries, railroads, civic dumps, salvage dumps, and garages.

Hydroxide (OH) (#1275)

Hydroxides contribute to the alkalinity of water. It is not present in to an appreciable degree in natural waters. Industrial sources of hydroxide includes tanneries, soda and sulfate pulping mills, and textile mills.

Iron (#1285)

Iron may be found naturally from the corrosion of iron in mineral deposits and iron-bearing ground water. Industrial sources include pickling operations, acid-mine drainage, and corrosion from iron pipes and other materials.

Lead (#1290)

Lead is a harmful substance that can lead to neurological damage. Natural sources of lead in water include leaching from mountain limestone and galena. Industrial sources of lead include mining effluents, use in solder in electronics and piping.

Level (# 232)

In a well-defined channel, the water level, along with the rating curve, can be used to calculate the flow rate.

Magnesium (#1300)

Magnesium ions are present in significant concentrations in natural waters, and along with calcium form the bulk of the hardness reaction. Industrial sources of magnesium include light alloy and other metallurgical production, and in the manufacture of electrical and optical apparatus.

Manganese (#1305)

Manganese ions are rarely found in natural surface waters above a concentration of 1.0 mg/L. Industrial sources of manganese include manufacture of steel alloys, dry-cell batteries, glass and ceramics, paints and varnished, inks and dyes, matches and fireworks, and in agriculture to enrich manganese-deficient soils.

Mercury (#1310)

Mercury can appear in the metallic state in some natural waters, but the ionic form is most harmful to aquatic life. Industrial sources of mercury include use in scientific and electrical instruments, in dentistry, in power generation, in solders, in the manufacture of lamps and batteries, and in the improper disposal of thermostat switches and old thermometers and manometers.

Nickel (#1320)

Nickel as a pure metal it is not a problem as it is not soluble in water. Many nickel salts, however, are highly soluble in water. Industrial uses of nickel salts include the metal-plating industry.

Nitrogen, Nitrate (N) (#1340)

Nitrates are an essential fertilizer for plant life, and are therefore rarely found in natural surface waters at high concentrations. Nitrates may also be present in groundwaters as a result of excessive application of fertilizer or cesspool or septic tank leachate. Industrial uses of nitrogen include chemical fertilizer production, field application of fertilizer, livestock sewage, and irrigated agriculture.

Nitrogen; Nitrite (N) (#1345)

Nitrites are usually quickly oxidized to nitrates by bacterial action in natural waters and are therefore seldom found at significant concentrations. The presence of nitrite alone does not always signify the presence of pollution, but in conjunction with ammonia and nitrate, often indicate pollution.

Nitrogen; Organic (N) (#1350)

No info

Nitrogen; Total (N) (#1355)

Nitrogen is present in natural and polluted waters as ammonia, organic nitrogen, nitrites, and nitrates. The total concentration of nitrogen is not as important as the form in which it exists. Organic nitrogen, amino acids, and ammonia may inhibit biological growth whereas nitrates stimulate phytoplankton. Industrial sources of the various components of total nitrogen are discussed under their proper headings.

Nitrogen; total inorganic (N) (#1365)

No info

Nitrogen; total Kjeldahl (N) (#1360)

No info

Nitrogen; un-ionized ammonia (N) (#1370)

No info

Odor (#1375)

Natural sources of odor in water include living microscopic organisms and decaying vegetation, including weeds, bacteria, fungi, actinomycetes, algae, and decaying organic matter. Industries that may generate odor-causing wastes include: pulp and paper; explosives; petroleum, gasoline, and rubber; wood distillation; coke and coal tar; gas; tanneries, meat-packing and glue; chemicals and dyes; and milk products, canneries, beet-sugar, distillation and other food products.

Odor is reported in terms of "threshold odor number" (TON) which is calculated from the amount of sample in the most diluted portion giving perceptible odor. The threshold odor number equals the volume of the dilution divided by the volume of the sample in the dilution.

It is frequently difficult, if not impossible, to identify the specific cause of an odor or taste, as many substances may cause what appears to be the same effect, or because mixtures of substances may be involved. Among the chemicals responsible for tastes and odors are halogens, sulfides, ammonia, turpentine, phenols and cresols, picrates, various hydrocarbons and unsaturated organic compounds, mercaptans, tar and tar oils, detergents, pesticides, and innumerable others, many of unknown identity. Hydrocarbons may be a major source of taste and odors in water.

Oil & Grease (#1380)

Oil and grease in water may coat aquatic life and create undesirable odors. Industrial sources of oil and grease include all aspects of the petroleum industry, packing plants, slaughter houses, rendering plants, cotton seed processing plants, textile mills, milk-processing plants, chemical works, machining operations, and garages.

Organic matter (%) (#1384)

No info

Organics; BNA extractible (625) (#1385)

No info

Organics; purgeable halocarbons (624) (#1410)

No info

Oxygen Demand, Biochemical (BOD) (#1425)

In itself, BOD is not a pollutant and does not directly cause environmental harm. When dissolved oxygen is depressed to harmful levels, BOD will indirectly exacerbate the effects of diminished oxygen. BOD does not indicate the presence of a single substance, but measures the effect of a combination of substances and conditions.

Oxygen Demand, Chemical (COD) (#1430)

The COD test measures the organic strength of domestic, agricultural, and industrial wastes, but it does not differentiate between the biologically oxidizable (could be taken up by fish and plants) and biologically inert organic matter.

Oxygen, dissolved (#1435)

Dissolved oxygen concentration is a function of the temperature and salinity of the water. Increasing temperature or salinity results in a decreasing oxygen-holding capacity of water. Dissolved oxygen is not constant in a natural system, as organisms, chemical reactions, and physical conditions use or generate oxygen at various rates. As dissolved oxygen levels decrease, aquatic life suffers or dies, and in the absence of oxygen, anaerobic decomposition may lead to unfavorable odors and colors in the water.

Oxygen; field saturation (#1445)

No info

pH (#1705, field; #1710, lab)

pH is not a pollutant in itself, but an indicator of pollution. Natural waters and treated sewage is usually neutral or slightly alkaline, but many industrial wastes are strongly acidic or alkaline. Acid wastes include tan liquors, acid dyes, coal-mine drainage, sulfite waste liquors, pickling liquors, and some brewery wastes. Alkaline wastes include soda- and sulfate-pulp rinse waters, laundry wastes, and bottle wash waters.

Phenols (#1460)

Phenols are widely used as disinfectants, in the manufacture of synthetic resins, medical, and industrial compounds, and as a reagent for chemical analyses. Sources of phenolic wastes include the distillation of wood, coke ovens, oil refineries, chemical plants, sheep dips, and human and animal refuse.

Phosphorus, organic (P) (#1475)

No info

Phosphorus, ortho (P) (#1480)

No info

Phosphorus, total (P) (#1485)

Phosphorus in nature is found in the form of phosphates in several minerals and it is a constituent of fertile soils, plants, and the protoplasm, nervous tissue and bones of animal life. It is an essential nutrient for plant and animal growth. Excessive phosphorus leads to an overabundance of algae growth.

Phosphorus, total dissolved (P) (#1490)

No info

Phosphorus, total insoluble (P) (#1495)

No info

Potassium (#1500)

Potassium is commonly found in fertilizers.

Redox Potential (mV) (#1515)

No info

Salinity (ppt) (#1518)

Inland waters typically contain low levels of dissolved mineral salts, but brines and various chemical wastes may increase salinity to levels harmful to living organisms because of the increase in osmotic pressure.

Selenium (#1520)

Selenium is found in some soils as ferric selenite or calcium selenate. It may also be found in decayed plant tissue. Industrial sources of selenium include pigmentation in paints, dyes, and glass production; as a component of rectifiers, semiconductors, photo-electrical cells, and other electrical apparatus; as a supplement to sulfur in the rubber industry; as a component of alloys; and for insecticide sprays. Selenium may also be found in the municipal sewage from industrial communities.

Silver (#1535)

Industrial sources of silver include manufacture of jewelry and silverware, in alloys, for electroplating, and in the processing of food and beverages. Silver nitrate is used in photography, ink manufacture, electroplating, coloring porcelain, and as an antiseptic.

Sodium (#1540)

Sodium salts are extensively found in nature and in industrial and agricultural wastes. As most sodium salts are extremely soluble in water, any sodium that is leached from soil or discharged to streams will remain in solution.

Solids, total (#1615, mg/l; #1616, %)

Solids in water are classified as either "dissolved" (capable of passing through a laboratory filter) or "suspended," (retained on the filter). Both dissolved and suspended solids may be differentiated further as "fixed" (inorganic) and "volatile" (organic or volatile material). It is the nature of the solids in water that may indicate a pollutant, not the presence of the solids themselves.

Solids, total dissolved (#1625)

In natural waters the dissolved solids consist mainly of carbonates, bicarbonates, chlorides, sulfates, phosphates, and possibly nitrates of calcium, magnesium, sodium, and potassium, with traces of iron,

manganese and other substances. Sources of dissolved solids include chemical wastes, dissolved salts, acids, alkalis, gas and oil-well brines, or drainage waters from irrigated land.

Solids, total suspended (#1630)

In natural waters, suspended solids consist normally of erosion silt, organic detritus, and plankton. Sources of suspended solids include industrial and domestic wastes, increased erosion from cleared or cultivated land, gravel washings and mine tailings, steel mill wastes, and dusts that are blown into streams.

Sulfate (SO₄) (#1640)

Sulfates occur in waters of the western United States as a result of leachings from gypsum and other common minerals. Other natural sources include oxidized organic matter. Industrial sources include agricultural runoff, tanneries, sulfate-pulp mills, textile mills, and other plants that use sulfates or sulfuric acid.

Sulfide (S⁻) (#1645)

Sulfides may be found in natural waters from anaerobic decomposition of organic matter. Sewage may also contribute sulfide. Industrial sources of sulfides include tanneries, paper mills, chemical plants, and gas works

Temperature, field (#1655, deg. C; #1660, deg. F)

Water temperature in natural waters is influenced by ambient temperature, vegetative cover, nature of bed material (*e.g.*, gravel vs. sand), and stream depth. Many industrial and agricultural wastes lead to raising of water temperatures, as does concrete-lining of streams. Increased water temperature may result in decreased oxygen capacity, generation of anaerobic zones, and fungal growth.

Thallium (#1665)

Thallium salts are used as poisons for rodents, as ant bait, and are used in dyes and pigments in fireworks, in optical glass, and as a depilatory.

Total Anions (#1675)

No info

Total Cations (#1680)

No info

Turbidity (#810; #1690, field; #1695, lab)

The turbidity of a water sample is a measure of the extent to which the intensity of light passing through is reduced by the suspended matter. Turbidity in water is attributable to suspended and colloidal matter, which diminishes light penetration. Increased turbidity may also indicate the presence of pathogens. Natural sources of turbidity include microorganisms or organic detritus; silica or other mineral substances including zinc, iron, and manganese compounds; and clay or silt. Erosion may also lead to increased turbidity as well as domestic sewage and industrial wastes, such as mining, dredging, logging, and pulp and paper manufacturing.

Zinc (#1700)

Industrial sources of zinc and zinc salts include galvanizing, alloy manufacture, for electrical purposes, in printing plates, dye manufacture and the dyeing process, paint pigments, cosmetics, pharmaceuticals, dyes, and insecticides.

APPENDIX E

GLOSSARY

Basin Plan - Water Quality Control Plan developed by a Regional Board..

CMP - Consolidated Program for Water Quality Monitoring

Conditions of Concern - Scour, erosion (sheet, rill and/or gully), aggradation (raising of a streambed from sediment deposition), changes in fluvial geomorphology, hydrology and changes in aquatic ecosystem.

Co-Permittees -

In the Whitewater Region: County of Riverside and the Cities of Banning, Cathedral City, Coachella, Desert Hot Springs, Indian Wells, Indio, La Quinta, Palm Desert, Palm Springs, Rancho Mirage, and the Coachella Valley Water District.

In the Santa Ana Region: County of Riverside and the Cities of Beaumont, Calimesa, Canyon Lake, Corona, Hemet, Lake Elsinore, Moreno Valley, Murrieta, Norco, Perris, Riverside, and San Jacinto.

In the Santa Margarita Region: County of Riverside and the Cities of Murrieta and Temecula.

County - County of Riverside, legal entity

CWA - Federal Clean Water Act

GIS - Geographical Information Systems.

"illegal discharge" - Illegal discharge means any disposal, either intentionally or unintentionally, of material or waste to land or MS4s that can pollute storm water or create a nuisance. The term illegal discharge includes any discharge to the MS4 that is not composed entirely of storm water, except discharges pursuant to an NPDES permit, discharges that are identified in the MS4 Permit, and discharges authorized by a Regional Board Executive Officer.

"illicit connection" - Illicit Connection means any connection to the storm drain system that is prohibited under local, state, or federal statutes, ordinances, codes, or regulations. The term illicit connection includes all non storm-water discharges and connections except discharges pursuant to an NPDES permit, discharges that are identified in the MS4 Permit, and discharges authorized by the Executive Officer.

Impaired Waterbody - Section 303(b) of the CWA requires each of California's Regional Water Quality Control Boards to routinely monitor and assess the quality of waters of their respective regions. If this assessment indicates that beneficial uses are not met, then that waterbody must be listed under Section 303(d) of the CWA as an impaired waterbody. The 1998 water quality assessment listed a number of waterbodies within the three Permit Areas as impaired pursuant to Section 303(d).

In the Whitewater Region:

Water Body Name	TMDL Priority	Estimated Size Affected	Unit	Pollutant_Stressor	Potential Sources	Proposed TMDL Completion
Coachella Valley Storm Channel	Medium	69	Miles	Pathogens	Source Unknown	

In the Santa Ana Region:

Water Body Name	TMDL Priority	Estimated Size Affected	Unit	Pollutant_Stressor	Potential Sources	Proposed TMDL Completion
Canyon Lake (Railroad Canyon Reservoir)	Low	453	Acres	Nutrients	Nonpoint Source	
Canyon Lake (Railroad Canyon Reservoir)	Low	453	Acres	Pathogens	Nonpoint Source	
Elsinore, Lake	High	2431	Acres	Unknown Toxicity	Unknown Nonpoint Source	2004
Elsinore, Lake	High	2431	Acres	Nutrients	Unknown Nonpoint Source	2003
Elsinore, Lake	High	2431	Acres	Sedimentation/Siltation	Urban Runoff/Storm Sewers	2003
Elsinore, Lake	High	2431	Acres	Organic Enrichment/Low Dissolved Oxygen	Unknown Nonpoint Source	2004
Santa Ana River, Reach 3	High	26	Miles	Pathogens	Dairies	2004
Santa Ana River, Reach 4	Low	14	Miles	Pathogens	Nonpoint Source	

In the Santa Margarita Region:

Water Body Name	TMDL Priority	Estimated Size Affected	Unit	Pollutant_Stressor	Potential Sources	Proposed TMDL Completion
Murrieta Creek	Low	12	Miles	Phosphorus	Urban Runoff/Storm Sewers	
Murrieta Creek	Low	12	Miles	Phosphorus	Unknown Nonpoint Source	
Murrieta Creek	Low	12	Miles	Phosphorus	Unknown point source	
Santa Margarita River (Upper)	Low	18	Miles	Phosphorus	Urban Runoff/Storm Sewers	
Santa Margarita River (Upper)	Low	18	Miles	Phosphorus	Unknown Nonpoint Source	
Santa Margarita River (Upper)	Low	18	Miles	Phosphorus	Unknown point source	

MS4 (Municipal Separate Storm Sewer System) – An MS4 is a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, natural drainage features or channels, modified natural channels, man-made channels, or storm drains): (i) Owned or operated by a State, city town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, 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 designated and approved management agency under section 208 of the CWA that discharges to Waters of the U.S.; (ii) Designated or used for collecting or conveying storm water; (iii) Which is not a combined sewer; (iv) Which is not part of the POTW as defined at 40 CFR 122.2.

Historic and current developments make use of natural drainage patterns and features as conveyances for Urban Runoff. Urban streams used in this manner are part of the municipalities MS4 regardless of whether they are natural, man-made, or partially modified features. In these cases, the urban stream is both an MS4 and a receiving water.

"non-point source" - Non-point source refers to diffuse, widespread sources of pollution. These sources may be large or small, but are generally numerous throughout a watershed. Non-point sources, include but are not limited to urban, agricultural or industrial area, roads, highways, construction sites, communities served by septic systems, recreational boating activities, timber harvesting, mining, livestock grazing, as

well as physical changes to stream channels, and habitat degradation. Non-point source pollution can occur year round any time rainfall, snowmelt, irrigation, or any other source of water runs over land or through the ground, picks up pollutants from these numerous, diffuse sources and deposits them into rivers, lakes and coastal waters or introduces them into ground water.

"non-storm water" – Non-storm water consists of all discharges to and from a storm water conveyance system that do not originate from precipitation events (i.e., all discharges from a conveyance system other than storm water). Non-storm water includes illicit discharges, non-prohibited discharges and NPDES permitted discharges. An illicit discharge is defined at 40 CFR 122.26(b)(2) as any discharge to a MS4 that is not composed entirely of storm water except discharges pursuant to a separate NPDES permit and discharges resulting from emergency fire fighting activities.

NPDES (National Pollutant Discharge Elimination System) – Permits issued under Section 402(p) of the CWA for regulating discharge of pollutants to Waters of the U.S.

"nuisance" – As defined in the Porter-Cologne Water Quality Control Act a nuisance is "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."

Order

In the Whitewater Region: Order No. 01-077 (NPDES No. CAS617002)

In the Santa Ana Region: Order No. R8-2002-0011 (NPDES No. CAS618033)

In the Santa Margarita Region: Order No. 98-02 (NPDES No. CAS0108766), currently in revision.

Permit Area -

In the Whitewater Region: "The urbanized areas that lie approximately between the San Gorgonio Pass area to the northwest and the Salton Sea to the southeast. The majority of this area is in the Coachella Valley. The generally northwest-southeast trending Coachella Valley is in the northern portion of a large low area in the Colorado Desert known as the Salton Basin with major drainage to the Salton Sea. The San Jacinto Mountains bound the Coachella Valley on the southwest, and the San Gorgonio Mountains, Indio Hills and Mecca Hills bound the Coachella Valley on the northeast side. Major drainage is through the Whitewater River, and its tributaries, which reach the northern end of the Salton Sea. The headwaters of the Whitewater River originate from Mt. San Gorgonio. The valley surface is characterized as wide, boulderly, alluvial fans and sand dunes."

In the Santa Ana Region: "The portion of the Santa Ana River Watershed that is within the County of Riverside and identified on Appendix 1 as 'Urban Area' and those portions of 'Agriculture' and 'Open Space', as identified on Appendix 1, that do convert to industrial, commercial, or residential use during the term of the Order."

In the Santa Margarita Region: "The permitted area is delineated by the Santa Ana RWQCB-SDRWQCB boundary line on the north, the SDRWQCB-Colorado River Basin RWQCB boundary line on the east, and the County of Riverside boundary line on the south and west."

Permittees - Co-Permittees and the Principal Permittee

"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.

"pollutant" – A pollutant is broadly defined as any agent that may cause or contribute to the degradation of water quality such that a condition of pollution or contamination is created or aggravated.

Pollutants of Concern – A list of potential pollutants to be analyzed for in the Monitoring and Reporting Program. In developing this list, consideration should be given to the chemicals and potential pollutants available for storm water to pick-up or transport to Receiving Waters, all pollutants for which a waterbody within the Permit Area that has been listed as impaired under CWA Section 303(d), the category of development and the type of pollutants associated with that development category.

"pollution" – As defined in the Porter-Cologne Water Quality Control Act, pollution is the alteration of the quality of the Waters of the U.S. by waste, to a degree that unreasonably affects either of the following: A) the waters for beneficial uses; or 2) facilities that serve these beneficial uses. Pollution may include contamination.

POTW – Publicly-Owned Treatment Works

Principal Permittee - Riverside County Flood Control and Water Conservation District.

Rainy Season – October 1 through May 31st of each year.

RCFC&WCD - Riverside County Flood Control and Water Conservation District

"receiving water(s)" – The Waters of the U.S. that includes surface and ground waters.

Receiving Water(s) - The receiving waters within the Permit Area

Receiving Water Limitations – Receiving Water Limitations are requirements included in Orders issued by a Regional Board to assure that the regulated discharges do not violate water quality standards established in the Basin Plan at the point of discharge to Waters of the U.S. Receiving Water Limitations are used to implement the requirement of CWA section 301(b)(1)(C) that NPDES permits must include any more stringent limitations necessary to meet water quality standards.

Receiving Water Quality Objectives - Water quality objectives specified in a Basin Plan for Receiving Waters.

Region

In the Whitewater Region: Whitewater River Watershed within Riverside County and within the Principal Permittee's jurisdiction.

In the Santa Ana Region: Santa Ana River Watershed within Riverside County

In the Santa Margarita Region: Santa Margarita River Watershed within Riverside County

Regional Board

In the Whitewater Region: California Regional Water Quality Control Board, Colorado River Region

In the Santa Ana Region: California Regional Water Quality Control Board, Santa Ana Region

In the Santa Margarita Region: California Regional Water Quality Control Board, San Diego Region

Riverside County - Territory within the geographical boundaries of the County.

"sediment" – Soil, sand, and minerals washed from land into water. Sediment resulting from anthropogenic sources (i.e. human induced land disturbance activities) is considered a pollutant. This Order regulates only the discharges of sediment from anthropogenic sources and does not regulate naturally occurring sources of sediment. Sediment can destroy fish-nesting areas, clog animal habitats, and cloud waters so that sunlight does not reach aquatic plants.

"source control BMPs" – In general, activities or programs to educate the public or provide low cost non-physical solutions, as well as facility design or practices aimed to limit the contact between pollutant sources and stormwater or authorized non-storm water. Examples include: activity schedules, prohibitions of practices, street sweeping, facility maintenance, detection and elimination of illicit connections and illegal dumping, and other non-structural measures. Facility design examples include providing attached lids to trash containers, or roof or awning over material and trash storage areas to prevent direct contact between water and pollutants. Additional examples are provided in Section 4 of Supplement A to the DAMP dated April 1996.

State Board - California State Water Resources Control Board

"storm water" – Runoff from urban, open space, and agricultural areas consisting only of those discharges that originates from precipitation events. Storm water is that portion of precipitation that flows across a surface to the MS4 or receiving waters. Examples of this phenomenon include: the water that flows off a building's roof when it rains (runoff from an impervious surface); the water that flows into streams when snow on the ground begins to melt (runoff from a semi-pervious surface); and the water that flows from a vegetated surface when rainfall is in excess of the rate at which it can infiltrate into the underlying soil (runoff from a pervious surface). During precipitation events in urban areas, rain water picks up and transports pollutants through storm water conveyance systems, and ultimately to Waters of the U.S.

TDS - Total dissolved solids.

TMDL (Total Maximum Daily Load) – TMDL is the maximum amount of a pollutant that can be discharged into a water body from all sources (point and non-point) and still maintain water quality standards. Under CWA Section 303(d), TMDLs must be developed for all water bodies that do not meet water quality standards after application of technology-based controls.

"toxicity" – Adverse responses of organisms to chemicals or physical agents ranging from mortality to physiological responses such as impaired reproduction or growth anomalies.

TSS - Total suspended solids.

Urban Runoff – Urban Runoff includes those discharges from residential, commercial, industrial, and construction areas within the Permit Area and excludes discharges from feedlots, dairies, farms, and open space. Urban Runoff discharges consist of storm water and non-storm water surface runoff from drainage sub-areas with various, often mixed, land uses within all of the hydrologic drainage areas that discharge into the Waters of the U. S. In addition to Urban Runoff, the MS4s regulated by this Order receive flows from agricultural activities, open space, state and federal properties and other non-urban land uses not under the control of the Permittees. The quality of the discharges from the MS4s varies considerably and is affected by, among other things, past and present land use activities, basin hydrology, geography and geology, season, the frequency and duration of storm events, and the presence of past or present illegal and allowed disposal practices and illicit connections.

The Permittees lack legal jurisdiction over storm water discharges into their respective MS4s from agricultural activities, California and federal facilities, utilities and special districts, Native American tribal lands, wastewater management agencies and other point and non-point source discharges otherwise permitted by or under the jurisdiction of the Regional Board. The Regional Board recognizes that the Permittees should not be held responsible for such facilities and/or discharges. Similarly, certain activities that generate pollutants present in Urban Runoff are beyond the ability of the Permittees to eliminate. Examples of these include operation of internal combustion engines, atmospheric deposition, brake pad wear, tire wear, residues from lawful application of pesticides, nutrient runoff from agricultural activities, and leaching of naturally occurring minerals from local geography.

USEPA - United States Environmental Protection Agency

Waste Discharge Requirements – As defined in Section 13374 of the California Water Code, the term "waste discharge requirements" is the equivalent of the term "permits" as used in the Federal Water Pollution Control Act, as amended. The Regional Board usually reserves reference to the term "permit" to Waste Discharge Requirements for discharges to surface Waters of the U.S.

Water Code - California Water Code

Waters of the U.S. – Waters of the U.S. can be broadly defined as navigable surface waters and all tributary surface waters to navigable surface waters. Groundwater is not considered to be a Waters of the U.S. As defined in 40 CFR 122.2, the Waters of the U.S. are defined as: (a) All waters, which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; (b) All interstate waters, including interstate "wetlands;" (c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, "wetlands," sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation or destruction of which would affect or could affect interstate or foreign commerce including any such waters: (1) Which are or could be used by interstate or foreign travelers for recreational or other purposes; (2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or (3) Which are used or could be used for industrial purposes by industries in interstate commerce; (d) All impoundments of waters otherwise defined as Waters of the U.S. under this definition; (e) Tributaries of waters identified in paragraphs (a) through (d) of this definition; (f) The territorial seas; and (g) "Wetlands" adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition. Waters of the U.S. do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with the USEPA.

"water quality objectives" – Numerical or narrative limits on constituents or characteristics of water designated to protect designated beneficial uses of the water [California Water Code Section 13050 (h)]. California's water quality objectives are established by the State/Regional Water Boards in the Water Quality Control Plans.

As stated in the Porter-Cologne requirements for discharge (CWC 13263): "(Waste discharge) 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 objectives reasonably required for that purpose, other waste discharges, the need to prevent nuisance, and the provisions of Section 13241."

Numeric or narrative limits for pollutants or characteristics of water designed to protect the beneficial uses of the water. In other words, a water quality objective is the maximum concentration of a pollutant that can exist in a Receiving Water and still generally ensure that the beneficial uses of the Receiving Water remain protected (i.e., not impaired). Since water quality objectives are designed specifically to protect the beneficial uses, when the objectives are violated the beneficial uses are, by definition, no longer protected and become impaired. This is a fundamental concept under the Porter Cologne Act. Equally fundamental is Porter Cologne's definition of pollution. A condition of pollution exists when the water quality needed to support designated beneficial uses has become unreasonably affected or impaired; in other words, when the water quality objectives have been violated. These underlying definitions (regarding beneficial use protection) are the reason why all waste discharge requirements implementing the federal NPDES regulations require compliance with water quality objectives. (Water quality objectives are also called water quality criteria in the CWA.)

"water quality standards" – are defined as the water quality goals of a waterbody (or a portion of the waterbody) designating beneficial uses (e.g., swimming, fishing, municipal drinking water supply, etc.,) to be made of the water and the water quality objectives or criteria necessary to protect those uses.

"watershed" – That geographical area which drains to a specified point on a watercourse, usually a confluence of streams or rivers (also known as drainage area, catchments, or river basin).

APPENDIX F

REFERENCES

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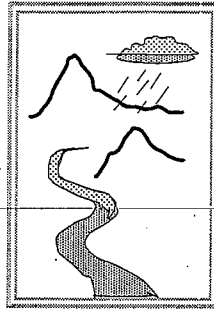
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ATTACHMENT 52



2006-2007 ANNUAL PROGRESS REPORT

**TO THE
SANTA ANA REGIONAL WATER QUALITY CONTROL BOARD**

**SARWQCB ORDER NO. R8-2002-0011
NPDES NO. CAS 618033**

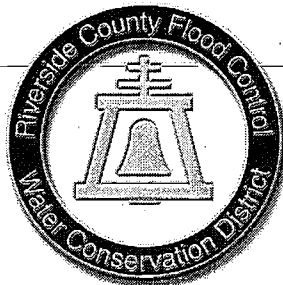
(Volume 1 of 4)

NOVEMBER 30, 2007

**BY THE RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT,
COUNTY OF RIVERSIDE, AND CITIES OF RIVERSIDE COUNTY (SANTA ANA REGION)**

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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.

Signed: _____

Stephen E. Stump
Chief of Regulatory Division
Riverside County Flood Control
And Water Conservation District

Litter Management Best Management Plan Evaluation

The Riverside County NPDES MS4 Permit Technical Advisory Committee (TAC) has assessed the relative efficiency and cost effectiveness of anthropogenic litter management best management practices (BMPs). This assessment included available BMPs and the BMPs currently implemented for the control of anthropogenic litter including street sweeping, catch basin cleaning, deployment of trash receptacles, public education, and MS4 maintenance. The Permittees also augment the litter management program through employee/contractor training, industrial/commercial activity inspections, recycling programs including bulk-item collection, participation in watershed clean-up efforts, and illegal dumping retrieval.

The BMP assessment included a review of visual observation information collected by the Permittees regarding the materials collected from the MS4 (e.g., paper, plastic, wood, glass, vegetative litter and other similar debris) and descriptions of the main sources (e.g., office, residential, commercial and industrial waste) and problem areas. Based on this assessment, recommendations are provided for improving the effectiveness of the currently implemented measures and other appropriate BMPs to control anthropogenic litter in Urban Runoff.

Visual Observation Procedures

The Permittees recorded visual observations of anthropogenic litter removed from streets, storm drain inlets and the MS4 during the 2004-2005 fiscal year. The purpose of these visual observations was to collect information regarding the types of anthropogenic litter and their relative sources. A Visual Observation Form (attached) was developed by the TAC to record field observations of sources and types of litter found in the MS4. The Visual Observation Form was used by Permittee maintenance crews to record visual observations during catch basin cleaning and channel maintenance.

Training on making the visual observations and completing the Visual Observation Form was provided to the maintenance crews by the maintenance supervisors and guidelines were also listed on the back of the form. One form was filled out per catch basin or other inlet structure when the structure was maintained and when anthropogenic sources of litter were collected from the system. The amount of each type of litter was calculated based on visual estimates of the total weight of the litter and the estimated percentage of each type of litter present. The total percentage of litter had to equal 100%. The surrounding land use observed in the field was also checked on the form to correlate the type of litter with the surrounding land use. Visual observation data is provided in the Permittee Annual Report submittals.

Review of Results of Visual Observations

Materials Collected from the MS4 and Sources of Litter

The majority of litter appears to originate from residential sources, with the remaining attributed to commercial activities. Litter associated with residential activities included common household waste including newspapers, cardboard, cans, glass, plastic bottles and landscaping wastes. Larger items collected consisted of building lumber, discarded propane tanks, signs and wooden

posts, children's toys, furniture, and household appliances. Another noteworthy finding was the presence of larger quantities of litter in catch basins located near freeway interchanges and along commercial corridors.

Preliminary findings of the visual observations indicate that on a weight basis, paper was the most prevalent type of litter. Paper was found to be distributed equally in residential and commercial areas and slightly less in industrial areas. The second most prevalent litter type was plastic. Plastic litter was found to be distributed equally amongst residential, commercial and industrial sources. Vegetative litter was not found in industrial areas, however wood and other types of litter (such as cement, plaster, Styrofoam, and brick) were found to be predominant in industrial areas.

BMP Evaluation

The Permittees intend to utilize the information collected in this study to identify areas where street sweeping or catch basin cleaning may need to be intensified. Some conclusions can also be drawn based on the type of pollutants found (or not found) in land uses, which can be useful in developing targeted BMP programs. Street sweeping is performed on a regular basis and has been found to be adequate. Maintenance departments also include newly developed areas in sweeping and catch basin cleaning. Sweeping is typically increased as needed to address specific problem areas, seasonal (leaf season) or storm event considerations, or special public events.

Recommendations for Improving the Effectiveness of Litter Management based on Survey Results

Based on the litter assessment, the TAC has determined that anthropogenic litter is not evenly distributed throughout the Permit area. To more effectively manage litter, the priority for implementation of litter BMPs should be in those locations with heaviest and most frequent litter accumulations. These areas vary and are known by Permittee maintenance staff. Examples of recommended improvements to litter management include the following:

- streets are swept at higher frequencies in those areas that have higher accumulations of litter,
- catch basins that are known to accumulate more litter are cleaned on a more frequent basis,
- portions of the MS4 that accumulate more litter are cleaned more frequently, and
- consideration of parking controls or sweeping notices in residential areas where vehicles parked along the street prevent the sweeper from clearing trash and debris.

ATTACHMENT 53



This document is one chapter from the EPA "Handbook for Developing Watershed Plans to Restore and Protect Our Waters," published in March 2008. The reference number is EPA 841-B-08-002. You can find the entire document http://www.epa.gov/owow/nps/watershed_handbook.

Handbook for Developing Watershed Plans to Restore and Protect Our Waters

Chapter 7. Analyze Data to Characterize the Watershed and Pollutant Sources

March 2008

Handbook Road Map

- 1 Introduction
- 2 Overview of Watershed Planning Process
- 3 Build Partnerships
- 4 Define Scope of Watershed Planning Effort
- 5 Gather Existing Data and Create an Inventory
- 6 Identify Data Gaps and Collect Additional Data If Needed
- 7 Analyze Data to Characterize the Watershed and Pollutant Sources
- 8 Estimate Pollutant Loads
- 9 Set Goals and Identify Load Reductions
- 10 Identify Possible Management Strategies
- 11 Evaluate Options and Select Final Management Strategies
- 12 Design Implementation Program and Assemble Watershed Plan
- 13 Implement Watershed Plan and Measure Progress

7. Analyze Data to Characterize the Watershed and Pollutant Sources

Chapter Highlights

- Identifying locations of impairments and problems
- Determining timing of impairments and problems
- Identifying potential sources
- Determining areas for quantifying source loads

Read this chapter if...

- You want to satisfy element a of the section 319 guidelines—identification of causes and sources that need to be controlled
- You want to characterize the general environmental conditions in your watershed
- You're not sure what types of data analyses you should use
- You want to conduct a visual assessment as part of your data analysis
- You want to link your analysis results with the causes and sources of pollutants in the watershed
- You want to identify critical areas in the watershed that will need management measures to achieve watershed goals

7.1 Analyze Data to Identify Pollutant Sources

Chapter 5 discussed the first step of the watershed characterization process—identifying and gathering available data and information to assess the watershed and create a data inventory. Chapter 6 discussed the next step—conducting a preliminary data review, identifying any data gaps, and then collecting additional data if needed. All of this information will now be used in the next step—data analysis to characterize the watershed. This analysis supports the identification of watershed pollutant sources and causes of impairment, which is essential to defining watershed management needs. This chapter highlights the types of data analyses commonly used to characterize water quality and waterbody conditions and to identify watershed sources contributing to impairments and problems.

⑨ This phase of the watershed planning process should result in the first of the nine elements that EPA requires in a section 319-funded watershed plan. Element *a* is “*Identification of causes and sources or groups of similar sources that need to be controlled to achieve load reductions, and any other goals identified in the watershed plan.*”

Remember that data gathering and analysis is an ongoing, iterative process. Data examined in this phase will continue to be used in subsequent activities, such as identifying and evaluating management measures and tracking implementation efforts.

7.1.1 Focus Your Analysis Efforts

© Although many techniques are described in this chapter, you will likely choose only a selected combination of the techniques in your watershed. The process of conducting data analyses to characterize your watershed and its pollutant sources begins with broad assessments such as evaluating the averages, minimums, and maximums of measured parameters at all watershed stations. The analyses are then systematically narrowed, with each step building on the results of the previous analysis. Through careful analysis you’ll obtain a better understanding of the major pollutant sources, the behavior of the sources, and their impacts on the waterbodies. An understanding of the watershed conditions and sources is also the basis for determining the appropriate method for quantifying the pollutant loads.

In addition, the kinds of data analyses you perform will be determined by the amount of available data. For example, if you have data for several stations in a watershed, you’ll be able to evaluate geographic variations in water quality throughout the watershed—an analysis you could not do with data for only one station.

Table 7-1 provides examples of data analysis activities and the tools used in various steps of the watershed planning process. It gives you an idea of how the parameter or analytical techniques might vary depending on where you are in the process and your reasons for analysis.

7.1.2 Use a Combination of Analysis Types

Because data analysis techniques are used to support a variety of goals and involve multiple types of data, a combination of techniques is usually used. Less-detailed analyses, such as evaluating summary statistics, might be conducted for certain pollutants, whereas more detailed analyses might be conducted for others, depending on the goals of the plan and the pollutants of concern. Data analysis is typically an iterative process that is adapted as results are interpreted and additional information is gathered.

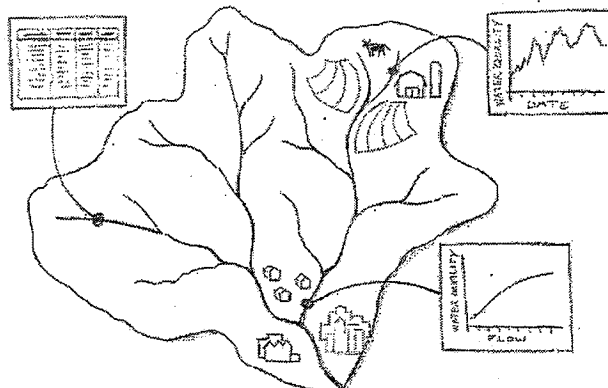
Table 7-1. Examples of the Types of Data-related Activities Conducted throughout the Watershed Planning Process

Watershed Planning Step	Type of Data	Goal of Data Analysis	Example Activity
Characterize Watershed	<ul style="list-style-type: none"> Previously conducted studies (e.g., TMDLs, 305(b) report, USGS water quality reports, university studies) 	Generally characterize the watershed and identify the most important problems for further analysis.	<ul style="list-style-type: none"> Review available reports and assessments.
	<ul style="list-style-type: none"> Watershed data (e.g., land use, soils, habitat) Chemical instream data Biological instream data Physical data Habitat data 	Perform targeted analysis of available data to characterize the waterbody and watershed. Examples: <ul style="list-style-type: none"> Identify sources Characterize the impairment Evaluate spatial trends Evaluate temporal trends Identify data gaps 	<ul style="list-style-type: none"> Compare data to water quality standards to identify timing and magnitude of impairment. Review monthly statistics to identify seasonal variations. Use GIS at watershed stations to identify spatial variations in water quality and potential sources of pollutants.
Set Goals and Identify Solutions	<ul style="list-style-type: none"> Watershed data (e.g., land use, soils, population, habitat) Chemical instream data Biological instream data Physical data Meteorological data Habitat data 	Appropriately represent watershed and waterbody in the model for the most accurate simulation of watershed loads.	<ul style="list-style-type: none"> Use data to establish a non-modeling analysis (e.g., use observed data to establish a spreadsheet mass balance calculation). Use data for model setup (e.g., identify appropriate model parameter values, establish watershed characteristics such as land use and soils). Compare observed data to model output for calibration and validation.
Implement and Evaluate	Instream monitoring data for the parameters of concern (e.g., nutrients)	Evaluate the effectiveness of management measures and track the progress of water quality improvement.	<ul style="list-style-type: none"> Compare data collected upstream and downstream of management practices. Compare data collected before and after implementation of management practices to track water quality improvement.

Note: TMDL = Total Maximum Daily Load; USGS = U.S. Geological Survey; GIS = geographic information system.

7.1.3 Consider Geographic Variations

The kinds of analyses and the level of detail used in your data analysis will vary within the watershed depending on the pollutants of concern. For example, if bacteria loading from livestock operations is a primary concern in the watershed, detailed land use analysis might be necessary to identify pasturelands and evaluate proximity to streams and water access for livestock, as well as to identify and characterize areas of cropland that receive manure applications. In addition, detailed water quality analyses might be needed for the areas that contain livestock to evaluate the timing and magnitude of impacts as related to livestock grazing schedules and access to waterbodies. For other areas of the watershed, general water quality characterization will be sufficient, and low-level evaluations of stream characteristics, watershed soils, and other types of data will be acceptable given the focus of the data analysis.



7.1.4 Incorporate Stakeholders' Concerns and Observations

Stakeholder concerns and goals will also help to determine what kinds of analyses are needed. If the stakeholders and the earlier characterization identified bacteria- and metals-associated impacts from developed areas as a primary concern, the data analysis will focus on characterizing those parameters and the locations, types, or timing of pollutant loading from urban and residential sources in the watershed. If a specific source is expected to be contributing to water quality problems, more detailed analyses might be conducted on data collected upstream and downstream of that source, or smaller time scales (e.g., daily concentrations) might be evaluated. Data analysis in the remainder of the watershed would be more coarse, identifying simple summary statistics (e.g., monthly minimum, maximum, average) sufficient for general characterization of identified subwatersheds. Table 7-2 illustrates this concept with examples of different levels of effort for the various types of data used in watershed characterization. Other factors to consider regarding level of detail include relative costs of remediation, risks to human health and aquatic life, and level of disagreement among stakeholders—all of which would likely increase the level of detail needed.

Table 7-2. Examples of the Level of Detail and Effort for Typical Types of Data




Type of Data	Increasing level of complexity		
	Low	Moderate	High
Instream (e.g., water quality, flow)	Summary statistics (e.g., minimum, average, maximum) for watershed stations	Spatial analysis of water quality using instream water quality data and GIS coverages	Spatial and temporal analysis of multiple instream parameters and GIS mapping data (often combined with modeling and supplemental monitoring)
Land use	General distribution of land use types throughout the watershed, using broad categories (e.g., agriculture, urban)	Specific identification of land use areas by subwatershed, including more detailed categories (e.g., cropland, pasture, residential, commercial)	Statistical analysis of land use areas in relation to water quality conditions (e.g., regression analysis between amount of impervious area and average flow or water quality)
Soils	General distribution of soil types based on available information	GIS analysis of the locations and types of soil series	Detailed analysis of soil distribution, including identification of proximity to streams, erosion potential, and other soil characteristics affecting soil erosion and transport
Habitat	General distribution of habitats based on available data	Mapping of critical habitats and their buffers	Landscape pattern measurement near critical habitat areas with GIS modeling


Once the focus of the data analysis has been identified, the relevant data are compiled and analyses are conducted. The following sections discuss the typical types of data analyses used to support watershed characterization and the primary data analysis techniques available to evaluate the watershed and identify causes and sources.

7.2 Analyze Instream and Watershed Data

Data analysis helps to evaluate spatial, temporal, and other identifiable trends and relationships in water quality. Analysis of instream data is needed to identify the location, timing, or behavior of potential watershed sources and their effect on watershed functions such as

hydrology, water quality, and aquatic habitat. Analysis of habitat data is needed to identify areas that need to be restored or protected. You developed a preliminary assessment of the watershed during the first and second phases of watershed characterization. Now, with a more comprehensive dataset, you can perform a more detailed and definitive analysis.

One way to organize and focus the data analysis is to consider the specific watershed characteristics and the questions that need to be answered before an appropriate management strategy can be developed. Use  Worksheet 7-1 to help determine the types of analyses you might need to conduct for water quality. Use  Worksheet 7-2 to help determine the types of analyses you might need to conduct for habitat assessment and protection.  Blank copies are provided in appendix B.


 **Worksheet 7-1** *What Data Analysis Do We Need to Conduct for Water Quality?*

Questions to help determine what kinds of data analyses are needed

Question	Section to refer to for assistance
1. Are water quality standards being met? If so, are they maintaining existing levels?	7.2.1 (Confirm Impairments) 7.2.2 (Summary Statistics)
2. Is water quality threatened?	7.2.1 (Confirm Impairments) 7.2.2 (Summary Statistics)
3. Is water quality impaired?	7.2.1 (Confirm Impairments) 7.2.2 (Summary Statistics)
4. Are there known or expected sources causing impairment?	7.2.7 (Visual Assessment)
5. Where do impairments occur?	7.2.3 (Spatial Analysis)
6. When do the impairments occur? Are they affected by seasonal variations?	7.2.4 (Temporal Analysis)
7. Under what conditions (e.g., flow, weather) are the impairments observed?	7.2.4 (Temporal Analysis) 7.2.5 (Other Trends and Patterns)
8. Do multiple impairments (e.g., nutrients and bacteria) coexist?	7.2.5 (Other Trends and Patterns)
9. Are there other impairments that are not measured by water quality standards?	7.2.6 (Stressor Identification)

Questions to answer based on the results of the data analysis:

1. What beneficial uses for the waterbodies are being impaired? What pollutants are impairing them?
2. What are the potential sources, nonpoint and point, that contribute to the impairment?
3. When do sources contribute pollutant loads?
4. How do pollutants enter the waterbody (e.g., runoff, point sources, contaminated ground water, land uses, ineffective point source treatment, pipe failures)?
5. What characteristics of the waterbody, the watershed, or both could be affecting the impairment (e.g., current or future growth, increased industrial areas, future NPDES permits, seasonal use of septic systems)?
6. Revisit the conceptual model showing the watershed processes and sources, and revise it if necessary

 **Worksheet 7-2** *What Data Analysis Do We Need to Conduct for Habitat Assessment and Protection?*

1. Where are critical habitats (e.g., headwaters, wetlands, forests, springs and seeps) and their buffers located?
2. What is their conservation status?
3. What is their condition?
4. Are they threatened?
5. Are there opportunities to protect or restore buffers or fill a habitat connectivity gap to reduce fragmentation and protect source water?
6. How does spatial hierarchy (e.g., site, subwatershed, watershed, basin, and region) factor into habitat protection and restoration goals?
7. What are the current and future development projections and how will they affect habitats and their buffers?

Typical analyses used to address these questions include statistical analysis, spatial analysis, temporal analysis, trends and relationships, and flow and load duration curves. It's important to note that most of the analyses discussed in this section focus on water quality monitoring data because many watershed goals can be directly or indirectly linked to instream water quality conditions. In addition, water quality is an indicator of the general watershed conditions and pollutant source types, locations, and behavior. However, you should also broaden the evaluation of watershed conditions by incorporating additional data types (e.g., land use, weather, and stream morphology) discussed in chapter 5, as necessary or appropriate for your watershed. Further, to meet watershed conservation, protection, and restoration goals and management measures, you should analyze habitat data and use assessment tools to identify priority habitats and their buffers, their configuration in a watershed, and the key habitat conditions and habitat-forming processes. A summary of the various types of analyses used in a watershed characterization is provided below.

7.2.1 Confirm Impairments and Identify Problems

The first step in characterizing your watershed involves understanding the water quality impairments and designated use impacts occurring in the watershed. The following reports and databases are available to support this activity:

- **305(b) report (as part of the Integrated Report)**—summarizes designated use support status for waters in the state
- **303(d) lists (as part of the Integrated Report)**—identify waters not meeting water quality standards
- **EPA's Assessment Database (ADB)**—includes data used in 305(b) and 303(d) assessments
- **TMDL Tracking System (stand-alone or through WATERS)**—includes locations of 303(d)-listed waterbodies and provides downloadable geographic information system (GIS) coverages

Although these references provide the necessary information to *identify* the types of water quality problems occurring in your watershed, it's likely that you'll have to analyze the

available monitoring data yourself to fully *characterize and understand* the problems. This analysis typically involves comparing available monitoring data to water quality standards, but in a way that goes beyond the assessment already completed by the state for section 303(d) and 305(b) assessments. When identifying impaired waterbodies for the 303(d) list, states usually compare available monitoring data to applicable water quality criteria and, on the basis of their listing guidelines and criteria (e.g., percentage of samples above the criteria), determine which waters don't meet the criteria. In evaluating impairments in your watershed, you don't want to simply duplicate the state's efforts. ☹ Instead, use the 305(b) and 303(d) information to target your analyses—to identify which waterbodies are impaired or threatened—and begin your analysis there. (You should also include in your analysis those waterbodies identified by stakeholders as degraded but not included in the state assessments.)

EPA's Assessment Database

EPA's new Assessment Database (ADB) application provides a framework for managing water quality assessment data. The ADB is designed to serve the needs of states, tribes, and other water quality reporting agencies for a range of water quality programs (e.g., CWA sections 305(b), 303(d), and 314). The ADB stores assessment results related to water quality standards designated use attainment, the pollution associated with use impairments, and documentation of probable pollution sources. The ADB can be used to generate several pre-formatted reports, as well as conventional data tables and lists. ☹ For more information on using the ADB, go to www.epa.gov/waters/adb. The most recent EPA Integrated Report guidance includes an increased emphasis on using the ADB to meet reporting requirements.

It's a good idea to do a general analysis (e.g., summary statistics) of all the waterbodies and associated data in your watershed, but you can focus the more in-depth evaluation of impairment on those waterbodies known to have problems. To better understand the watershed impairments, you can analyze the water quality and instream data in a variety of ways. The first likely analysis is simply the magnitude of the impairment—how bad is the problem? Identifying the percentage of samples that violate standards provides insight into the level of impairment in the watershed, or at a particular location. Using a graphical display of water quality data compared to applicable criteria is also an easy way to generally illustrate the frequency and magnitude of standards violations, as shown in figure 7-1. A temporal analysis of water quality versus standards can be used to identify the times of year, season, month, and even day when the impairment is occurring or is the worst. Temporal and other analyses are discussed further in this section. These analyses are used to understand the general watershed conditions and to support identification of pollutant sources, but they also provide information specific to the distribution, timing, and magnitude of water quality impairment.

7.2.2 Summary Statistics

Statistical analyses are essential tools for describing environmental data and evaluating relationships among different types of data. You might not need to conduct in-depth statistical testing to characterize your watershed, but it's often useful to develop summary statistics to summarize your available datasets, to help in preliminary analysis, and to communicate your results to stakeholders and the public. Summary statistics include such characteristics as range (e.g., minimum, maxi-

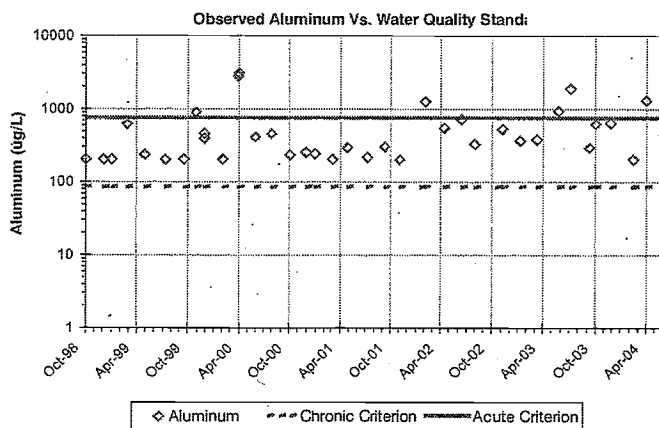


Figure 7-1. Example Graph of Observed Aluminum Concentrations Compared to Water Quality Criteria

More on Statistics

This section discusses the typical types of data analyses used to support watershed characterization and identification of pollutant sources. Each analysis can be conducted with varying degrees of detail and complexity. In addition, it might be useful to perform more detailed statistical tests. For example, a Mann-Kendall test can be applied to long-term datasets to indicate whether there is a statistically significant increasing or decreasing trend in the water quality data. Available references with information on statistical analysis of environmental data include

Helsel, D.R., and R.M. Hirsch. 2002. Statistical Methods in Water Resources. Chapter A3 in Book 4, Hydrologic Analysis and Interpretation, of Techniques of Water-Resources Investigations of the United States Geological Survey.

↳ <http://water.usgs.gov/pubs/twri/twri4a3>.

NRCS (Natural Resources Conservation Service). 1997. *National Handbook of Water Quality Monitoring*. 450-vi-NHWQM. National Water and Climate Center, Portland, Oregon.

mum), central tendency (e.g., mean, median), and variability (standard deviation, coefficient of variation). Figure 7-2 defines many of the commonly used statistical terms. Summary statistics should be computed for all stations and relevant data (e.g., pollutants of concern) as one of the first steps in your data analysis. Microsoft Excel and other spreadsheet programs make developing summary statistics simple. The program can automatically calculate any of the statistical functions based on the dataset. In addition, you can create Pivot tables in Excel that calculate several statistical functions for any combination of the data at once (e.g., by pollutant by station). It is useful to also calculate the number or percentage of samples violating water quality criteria to include in your summary statistics for each station.

Measures of Range: Identify the span of the data from low to high.

Minimum: The lowest data value recorded during the period of record.

Maximum: The highest data value recorded during the period of record.

Measures of Central Tendency: Identify the general center of a dataset.

Mean: The sum of all data values divided by the sample size (number of samples). Strongly influenced by outlier samples (i.e., samples of extreme highs or lows); one outlier sample can shift the mean significantly higher or lower.

Median ($P_{0.50}$): The 50th percentile data point; the central value of the dataset when ranked in order of magnitude. The median is more resistant to outliers than the mean and is only minimally affected by individual observations.

Measures of Spread: Measure the variability of the dataset.

Sample variance (s^2) and its square root, standard deviation (s): The most common measures of the spread (dispersion) of a set of data. These statistics are computed using the squares of the difference between each data value and the mean, and therefore outliers influence their magnitudes dramatically. In datasets with major outliers, the variance and standard deviation might suggest much greater spread than exists for most of the data.

Interquartile range (IQR): The difference between the 25th and 75th percentile of the data. Because the IQR measures the range of the central 50 percent of the data and is not influenced by the 25 percent on either end, it is less sensitive to extremes or outliers than the sample variance and standard deviation.

Measures of Skewness: Measures whether a dataset is asymmetric around the mean or median and suggests how far the distribution of the data differs from a normal distribution.

Coefficient of skewness (g): Most commonly used measure of skewness. Influenced by the presence of outliers because it is calculated using the mean and standard deviation.

Quartile skew coefficient (qs): Measures the difference in distances of the upper and lower quartiles (upper and lower 25 percent of data) from the median. More resistant to outliers because, like the IQR, uses the central 50 percent of the data.

Figure 7-2. Commonly Used Summary Statistics

7.2.3 Spatial Analysis

If evaluation of the summary statistics for the water quality stations in your watershed indicates noticeable differences in water quality throughout the watershed, you should do a more focused analysis of spatial variation in water quality and other waterbody monitoring data.

Spatial analysis of available waterbody data can be useful to

- Determine the general distribution of water quality or habitat conditions
- Identify the locations of areas of concern or potential major sources
- Determine the impact of a specific source
- Identify the effect of a management practice or control effort

The spatial distribution of water quality conditions in the watershed might indicate the location of “hot spots” and sources potentially affecting impairment. Spatial analysis of data is also useful in evaluating the potential impacts of specific sources, when sufficient data are available. Evaluating the difference in paired observations from stations upstream and downstream of a potential source can indicate the impact of the source on instream conditions. Similar data analysis can be conducted on data available upstream and downstream of a management practice to evaluate the effectiveness of the management practice in reducing pollutant loads to the waterbody.

Simply reviewing a table of summary statistics for each station in the watershed can identify areas of varying water quality. When dealing with a large watershed with multiple stations, however, a GIS can be used to effectively present and evaluate spatial variations in water quality conditions, as shown in the example map in figure 7-3. Presenting water quality summaries by station throughout a watershed in GIS also allows for identification of corresponding watershed conditions or sources that might be causing the spatial variations, such as land use distribution and location of point sources. This information is important for identifying the potential sources that might be causing the watershed problems and impairments.

Even if sufficient monitoring data are not available to adequately evaluate spatial variation in water quality, you should still evaluate other available watershed data to understand the spatial distribution of characteristics that are likely influencing waterbody conditions, such as land use, soils, and location of permitted sources. GIS is a very useful tool for displaying and evaluating these kinds of data.

7.2.4 Temporal Analysis

Another important analysis is the evaluation of temporal trends in water quality conditions. Evaluating temporal patterns can assist in identifying potential sources in the watershed, seasonal variations, and declining or improving water quality trends. Temporal analyses can include long-term trend analysis to identify generally increasing or decreasing trends in data and more focused analysis of monthly, seasonal, and even daily and hourly variations.

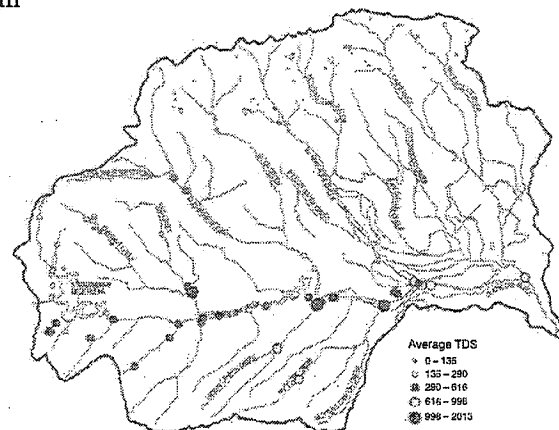


Figure 7-3. Example Map of Average Total Dissolved Solids Concentration Throughout a Watershed

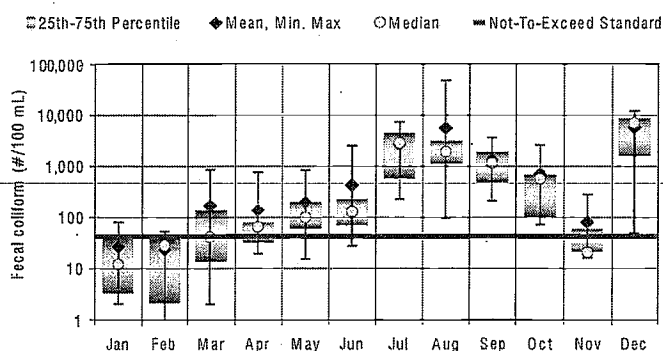


Figure 7-4. Example Graph of Monthly Statistics for Fecal Coliform Bacteria

Degraded water quality during certain months or seasons can indicate the occurrence of a source that is active only during those times. For example, elevated concentrations of nutrients or bacteria during the summer months (figure 7-4) might indicate increased source activity, such as livestock grazing, during those months. It might also indicate a need for further analysis of other watershed conditions (e.g., weather, flow) that can exacerbate the impairment during the summer months. For example, warmer temperatures during the summer might increase the productivity of algae, leading to greater decreases in dissolved oxygen.

7.2.5 Other Trends or Patterns

It is often beneficial to evaluate relationships and trends in the available data other than spatial and temporal trends. Important examples include

- Evaluating the relationship between flow and instream water quality (see chapter 5 for data sources)
- Documenting the relationship between related pollutants
- Evaluating the relationship of instream conditions to other watershed factors (e.g., land use, source activity)

Flow Versus Water Quality

An identifiable relationship between flow and instream water quality concentrations can indicate what types of pollutant sources dominate the instream impairment and can help to identify critical conditions surrounding the impairment. For example, runoff-driven non-point sources typically dominate instream water quality conditions during periods of high flow resulting from rainfall/runoff events, whereas point sources that provide relatively constant discharges to receiving waters usually dominate water quality during low flow, when there is less water to dilute effluent inputs.

Using Duration Curves to Connect the Pieces

America's Clean Water Foundation published an article discussing duration curves and their use in developing TMDLs (Cleland 2002). The duration curves act as an indicator of relevant watershed processes affecting impairment, important contributing areas, and key delivery mechanisms. To read the full article and get more information on the use of duration curves to diagnose seasonal impacts and potential sources, go to www.tmdl.net/tipstools/docs/BottomUp.pdf.

There are several options for evaluating the relationship between flow and a water quality parameter, including visually evaluating time series data, developing a regression plot, calculating flow-weighted averages, evaluating monthly averages, and developing a flow duration curve.

A flow duration curve can be a useful diagnostic tool for evaluating critical conditions for watershed problems and the types of sources that could be influencing waterbody conditions. Flow duration curves graph flows based on their occurrence over the period of record. Flows are ordered according to magnitude, and then a percent frequency is assigned to each, representing the percentage of flows that are less than that flow. For example, a flow percentile of zero corresponds to the lowest flow, which exceeds none of the flows in that

record. The percentage of 100 corresponds to the highest flow, which exceeds all the flows in that record. The flow duration is often plotted with corresponding pollutant concentrations to evaluate the relationship between water quality and flow. To do this, you should isolate matching flow and water quality and plot the flow and concentration data as a function of flow percentile.

A variation of the flow duration curve is the load duration curve, which plots observed pollutant loads as a function of flow percentile. Matching water quality and flow (measured on the same day) are used to calculate observed loads, by multiplying flow by pollutant concentration and an appropriate conversion factor. The loads are then plotted along with the flow in order of flow percentile. The load duration curve provides information on when loading occurs.

As shown in the example load duration curve (figure 7-5), the total dissolved solids (TDS) concentrations tend to follow a pattern similar to the flow, with lower concentrations occurring during lower flows and elevated concentrations during higher flows. This indicates that surface runoff (nonpoint source runoff or stormwater discharges) is likely the source of elevated TDS rather than point source discharges. The flow duration method does not allow you to identify specific sources (e.g., residential versus agricultural), but it provides useful information on the conditions under which problems occur and the general types of sources affecting the waterbody.

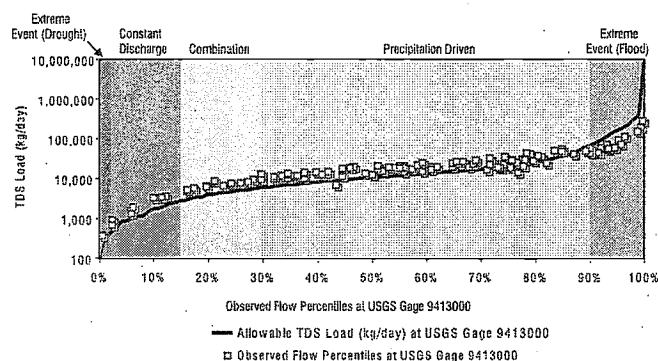


Figure 7-5. Example Load Duration Curve

Relationships between Pollutants

It's also important to evaluate the correlation of instream concentrations (and loading) of pollutants of concern to other parameters that represent the same impairment or are likely being contributed by similar sources. For example, metals often attach to sediments, resulting in increased metals loading during times of high sediment erosion and runoff. Establishing a correlation between instream sediment and metal concentrations can indicate that metals loading in the watershed is sediment-related. Understanding these relationships will be important when establishing load reductions and selecting appropriate management activities.

Using the Correlation of Phosphorus, pH, and Chlorophyll a to Understand Instream Conditions and Focus Management Efforts

The Vandalia Lake, Illinois, TMDL establishes load reduction goals for total phosphorus to address impairments from both phosphorus and pH. Fluctuations in pH can be correlated to photosynthesis from algae. Chlorophyll a indicates the presence of excessive algal or aquatic plant growth, which is a typical response to excess phosphorus loading. Reducing total phosphorus is expected to reduce algal growth, thus resulting in attainment of the pH standard. Available monitoring data for the lake were used to evaluate the relationship between pH, chlorophyll a, and total phosphorus. The general relationships suggested that controlling total phosphorus will decrease chlorophyll a concentrations, which will in turn reduce pH into the range required for compliance with water quality standards. For more information, go to www.epa.state.il.us/water/tmdl/report/vandalia/vandalia.pdf.

Waterbody Conditions Versus Watershed Characteristics

Evaluating relationships between instream conditions and watershed features or conditions will also facilitate identifying sources and establishing successful management goals and focused implementation efforts. For example, performing statistical analyses on instream data and watershed features, such as weather patterns, land use (e.g., percent impervious, area of urban), or soils (e.g., erodibility), can establish a quantitative link between watershed conditions and the resulting instream conditions. It might also be appropriate to divide data into separate datasets representing certain time periods or conditions for evaluation (e.g., storm event versus base flow, irrigation season, grazing season).

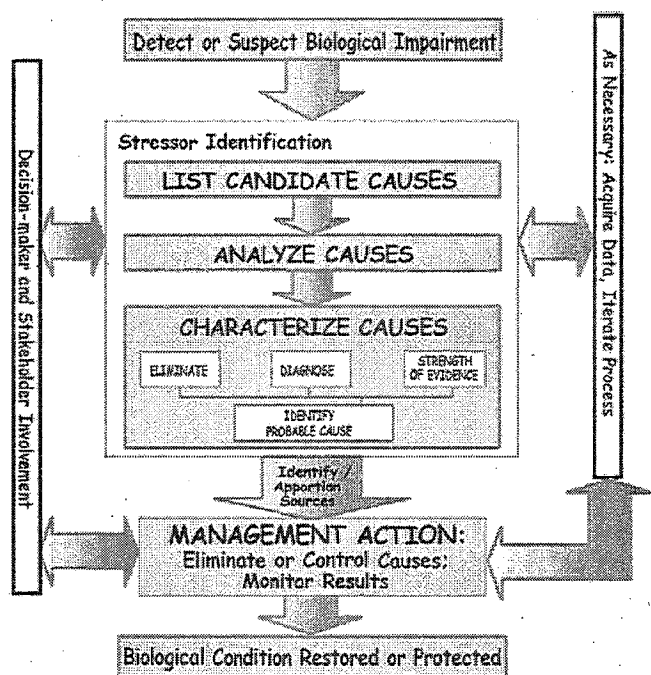


Figure 7-6. Stressor Identification Process

7.2.6 Stressor Identification

When waterbodies experience biological impairment due to unknown causes, stressor identification is used to identify the most likely causes of the impairment (figure 7-6). This formal method of causal evaluation can be used in a number of ways:

- To increase confidence that costly remedial or restoration efforts are targeted at factors that can truly improve biological condition
- To identify causal relationships that are otherwise not immediately apparent
- To prevent biases or lapses of logic that might not be apparent until a formal method is applied

↳ For a detailed description of the stressor identification process, see EPA's *Stressor Identification Guidance Document* (USEPA 2000b; www.epa.gov/waterscience/biocriteria/stressors/stressorid.html). In addition, two stressor identification modules originally developed as part of EPA's 2003 National Biocriteria Workshop are available online. ↳ The SI 101 course contains several presentations on the principles of the stressor identification process: www.epa.gov/waterscience/biocriteria/modules/#si101.

EPA recently released the Causal Analysis/Diagnosis Decision Information System (CADDIS) to support determination of causes of biological impairment. CADDIS is an online tool that helps investigators in the regions, states, and tribes to find, access, organize, use, and share information to produce causal evaluations of aquatic systems. It is based on the EPA's stressor identification process. Current features of CADDIS include

- Step-by-step guide to conducting a causal analysis
- Downloadable worksheets and examples
- Library of conceptual models
- Links to helpful information

Go to the CADDIS Web site at <http://cfpub.epa.gov/caddis/home.cfm> to access CADDIS and obtain more information.

Ecological Risk Assessment

EPA has developed a wide range of tools that consider place-based, multimedia approaches to environmental management. Watershed ecological risk assessments provide resource managers with predictions of what ecological changes will occur from the stressors associated with existing conditions and alternative management decisions. For more information, go to www.epa.gov/waterscience/biocriteria/watershed/waterrisk.html.

7.2.7 Visual Assessments and Local Knowledge

It's important to remember that monitoring and GIS data can provide only a representation of your watershed. Depending on the frequency of monitoring, the data might not reflect chronic conditions but rather provide a snapshot of conditions unique to the time of sampling, especially when dealing with parameters that are highly variable and sensitive to localized impacts (e.g., bacteria counts). To make the most of your data analysis, it's important to analyze the data with an understanding of the real world. Use the data analysis to support what you already know about the watershed from the people that live and work there.

As discussed in sections 4.3.2 and 6.5.1, visual assessments (e.g., streamwalks, windshield surveys) are useful for identifying and connecting potential sources of impairment and watershed conditions and should be used to guide and support data analysis for identifying watershed sources. In watersheds with limited monitoring data, visual assessments are especially important, providing the basis for source identification.

Not only are visual assessments useful for identifying potential pollutant sources and areas on which to focus your data analysis, but they can also answer questions raised by your data analysis. For example, if your data analysis shows a dramatic decrease in water quality in a portion of your watershed, but the land use and other watershed coverages don't indicate any major sources in that area, it's a good idea to walk the stream or drive through the area to identify any possible reasons for the change. For example, your data might indicate sharp increases in sediment measures (e.g., turbidity, total suspended solids) between two monitoring stations. However, reviewing the land use maps does not suggest any activities that would account for such a dramatic increase. When you drive through the watershed, you might find a source that you would never know about without surveying the area, such as a severely eroding streambank or livestock or wildlife watering in the stream and causing resuspension of streambed sediments.

Examples of Sources You Might Miss without a Watershed Tour

- Streambank erosion
- Pipe outfalls
- Livestock (near or with access to streams)
- Wildlife (e.g., waterfowl populations on lakes and open streams)

In addition to visual inspection of the watershed, local knowledge and anecdotal information from stakeholders are often very important to successfully analyzing and interpreting your watershed data. They, too, can provide useful insight to support or guide data analysis, especially if they provide historical information that would not be identified through a present-day visual assessment. A data analysis conducted for Lake Creek, Idaho, provides an example of stakeholder anecdotal information's being crucial to identifying a watershed source. The data analysis indicated an unexplained increase in turbidity and sediment between two stations in the stream (figure 7-7). Discussing the data analyses with

stakeholders allowed TMDL developers to understand that the increase was the result of localized logging that had occurred near the stream several years earlier. Knowing that the logging had occurred explained why the turbidity levels had dramatically and quickly increased at the downstream station and were now still recovering. Without this knowledge, the TMDL might have inappropriately targeted areas that were not affecting the stream.

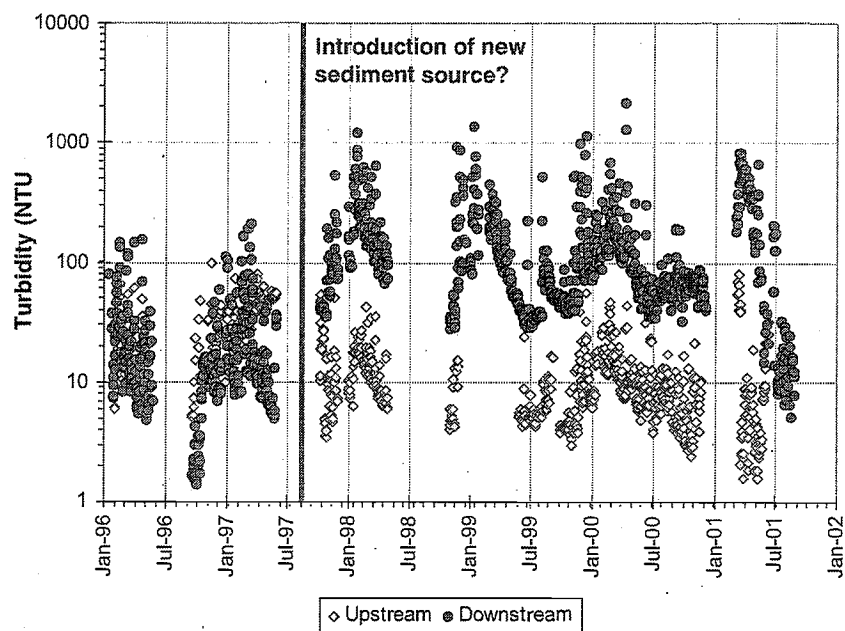


Figure 7-7. Long-term Turbidity Levels at Two Stations in Lake Creek, Idaho

7.3 Evaluate Data Analysis Results to Identify Causes and Sources

Together with the input from stakeholders and your local knowledge of the watershed, analyzing your data should lead you to an understanding of where and when problems occur in your watershed and what could be causing the problems. Ideally the data analysis phase will progress in such a manner that each analysis leads to greater understanding of the problems, causes, and sources. Suppose, for example, that you started your analysis with a calculation of summary statistics for bacteria at all the stations in your watershed. In doing so, you noticed that stations in the upstream portion of the watershed had higher averages, maximums, and minimums than the rest of the watershed. Focusing on those stations, you began to evaluate temporal variations, noting that bacteria levels were consistently higher during the spring and summer. From there you began to look at other factors that might change seasonally, including weather, flow, and surrounding land activities. You discovered that although rainfall and flow are higher during the spring, possibly delivering higher bacteria loads, they are lower during the summer. Also, rainfall and flow are higher throughout the watershed, not in only this “problem area.” So, what else might be causing the higher levels during those two seasons? By evaluating land use data for the surrounding area, you realize there are some concentrated pockets of agricultural land in the area. After talking to stakeholders and driving the watershed, you identify several acres of pastureland used for horse and cattle grazing

Watershed Assessment of River Stability and Sediment Supply

EPA provided support for the development of a three-phase technical framework of methods for assessing suspended and bedload sediment in rivers and streams. The *Watershed Assessment of River Stability and Sediment Supply* (WARSSS) tool focuses on natural variability in sediment dynamics, geologic versus anthropogenic sediment sources, erosional and depositional processes, prediction of sediment loads, streamflow changes, and stream-channel stability and departure from reference conditions. WARSSS was developed by Dr. David L. Rosgen to help watershed managers analyze known or suspected sediment problems, develop sediment remediation and management components of watershed plans, and develop sediment TMDLs, and for other uses. This Web-based assessment tool was designed for scientists that need to assess sediment-impaired waters in planning for their restoration. For more information, go to www.epa.gov/warsss/.

during the spring and summer. Much of the pastureland is in close proximity to the streams with elevated observed bacteria, and in some of the pastures animals have direct access to the streams. Such a combination of focused data analyses, visual assessments, and local knowledge is critical to identifying and understanding watershed sources.

In addition, the data analysis will identify on which sources you'll need to focus during the loading analysis discussed in chapter 8. Some sources will be expected to have a greater impact on watershed problems than others and might require more detailed analysis. For example, if runoff from developed areas is expected to be the primary cause of elevated metals in watershed streams, it might not be necessary to evaluate subcategories of agricultural or other undeveloped lands in the loading analysis. You can likely group those land uses or sources and focus on the developed areas, possibly even breaking them into more detailed categories (e.g., suburban, commercial).

7.3.1 Grouping Sources for Further Assessment

Once you understand the potential causes and sources of the watershed problems, you should decide at what level you want to characterize those sources. The next step of the process is to quantify the watershed sources—to estimate the pollutant loads contributed by the sources (chapter 8). Therefore, you should identify the sources you want to quantify. The level of detail in estimating the source loads can vary widely and will depend largely on the results of your data analysis. The analysis should give you an understanding of the sources that are affecting watershed and waterbody conditions, providing a guide for which sources need to be controlled. Therefore, it's important to identify sources at a level that will result in effective control and improvement. For example, if you have identified specific pastures in one portion of the watershed as dominating the bacteria levels in your watershed during the summer, it would not be appropriate to quantify agricultural or even pastureland sources as an annual gross load for the *entire* watershed.

Example Categories for Grouping Pollutant Sources

- Source type (e.g., nonpoint, point)
- Location (e.g., subwatershed)
- Land use type
- Source behavior (e.g., direct discharge, runoff, seasonal activities)

To facilitate estimation of source loads, and later source control, sources should be grouped into logical categories that help to prioritize and address certain pollutants, sources, or locations for more efficient and effective management. Consider the following factors and methods when grouping sources for assessment. You can combine many of the methods to create various groupings and layers of sources, relevant to the needs and priorities of the watershed plan.

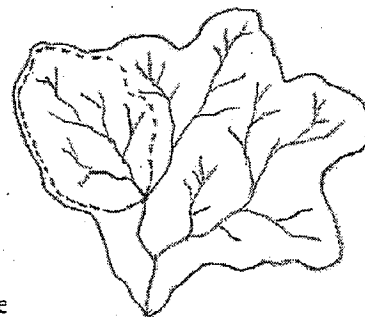
Nonpoint Source Versus Point Source

Although watershed plans typically focus on nonpoint sources, they should consider and integrate point sources for effective watershed protection. You should separate nonpoint

sources from point sources for assessment for both technical and programmatic reasons. Nonpoint and point sources typically behave differently and affect the receiving waters under different conditions. For example, nonpoint sources usually contribute pollutant loads that are washed off and transported during precipitation events, affecting waterbody conditions during times of higher surface runoff and, therefore, higher flow. Point sources usually discharge constant loads to receiving waters, affecting waterbody conditions during times of low flow when there is less water to dilute incoming effluents. Not only do point and nonpoint sources behave and affect waterbodies differently, but their management and control mechanisms are also different. Grouping them separately when considering future implementation of control measures is logical.

Spatial Distribution and Location

Grouping sources by location facilitates their assessment by dividing the area of concern into smaller, more focused areas, and it often supports future implementation. Spatially grouping sources helps to identify priority regions or locations that should be targeted for control. The method of grouping sources typically involves creating subwatersheds within the larger watershed of concern and also prioritizing sources within the subwatershed by some other methodology (e.g., proximity to a stream, land use).



Land Use Distribution

Sources are often specific to certain land uses, making it logical to group them by land use. For example, sources of nutrients such as livestock grazing and fertilizer application, which occur in conjunction with agricultural land use, would not likely contribute the same loads as other land uses such as urban or forest uses. Likewise, urban land uses typically have a set of pollutants of concern (e.g., metals, oil, sediment) different from those of rural land uses based on the active sources. Although it is difficult to isolate inputs from individual sources within a land use, assessing them as land use inputs can still support evaluation of loading and identification of future controls. Sources can be grouped and characterized by land use at a large scale, such as all agricultural lands, or at a very detailed level, such as specific crop type. In some cases, subcategories of nonpoint sources should be used to estimate the source contribution. For example, a land use like agriculture would often be further broken down into grazing or cropland, allowing a more accurate estimate of the sources coming from each subcategory and the ability to choose the most effective management practices for each subcategory.

Grouping sources according to their land use also facilitates identification of future implementation efforts because certain management practices are most effective when applied to a certain land use.

Delivery Pathway and Behavior

Nonpoint sources, depending on their behavior, can contribute pollutants to receiving waters through different delivery pathways. The nature of the delivery might support separate assessment of the source. For example, grazing cattle might be treated as a separate source depending on the activity or location of the cattle. Livestock on rangeland can contribute pollutants to the land that are picked up in runoff, whereas livestock in streams deposit nutrient and bacteria loads directly to the streams. Different methods might be required to

evaluate the effect of each group on waterbody conditions. Another example is failing septic systems that might be contributing pollutant loads to waterbodies. Because loads from the septic systems can be delivered through ground water and also through surface breakouts, you might decide to conduct separate analyses to estimate their loads.

Other Factors

Additional factors that can influence the grouping of sources include the following:

- **Social and economic factors.** Certain sources and their impact might be of higher priority to the affected public because they are more visible than other sources or because they could have negative impacts on the local economy. Public buy-in and priorities can influence the evaluation and grouping of sources, as well as subsequent source control.
- **Political jurisdictions.** Because source control can ultimately fall to different jurisdictions (e.g., counties), it might be necessary to evaluate sources based in part on jurisdictional boundaries. In some cases, the sources might even be subject to different laws and control options, depending on where they're located.

7.3.2 Time Frame for Source Assessment

Another important consideration when deciding how to quantify your sources is the time frame you want to capture. Your data analysis should provide insight into the timing of watershed problems and, therefore, into the temporal scale you need to evaluate sources. For example, instream dissolved oxygen might decrease only during summer months because of increased nutrient loading, higher temperatures, and lower flows. Therefore, it will be important to characterize and quantify sources on a time scale that allows for evaluation during the summer months. It would not be appropriate to evaluate annual loading for a problem that occurs only during the summer.

7.4 Summarize Causes and Sources

⑨ On the basis of your data analysis, you should now be able to identify the key sources you will quantify in the next step of the watershed planning process (elements a and b). You should identify the source type, locations, and timing for load estimation (↪ chapter 8). It might be helpful to identify the areas for evaluation on a watershed map to determine the key locations for conducting the loading analysis and which sources will be included in the analysis. You should also develop a brief report summarizing your data analyses and their results and describing the watershed sources, including their location, associated pollutants, timing, and impact on the waterbody.

⑨ In identifying your sources and grouping them for load estimation, you'll also begin to identify the critical areas needed for implementing management measures, as required as element c of the nine minimum elements. Element c is "*A description of the nonpoint source management measures that will need to be implemented to achieve load reductions and a description of the critical areas in which those measures will be needed to implement this plan.*" At this step, you have identified the recommended source groupings and priorities and you'll continue to refine the groupings as you conduct your loading analysis (↪ chapter 8) and target your management measures (↪ chapters 10 and 11). You'll identify the final critical areas when you select the management strategies for implementing your plan (↪ chapter 11), but the sources and associated groupings and characteristics you have identified at this stage will provide the basis and groundwork for identifying those critical areas.

ATTACHMENT 54

Chapter 5 Stormwater Management Approaches

A fundamental component of the U.S. Environmental Protection Agency's (EPA) Stormwater Program, for municipalities as well as industries and construction, is the creation of stormwater pollution prevention plans. These plans invariably document the stormwater control measures that will be used to prevent the permittee's stormwater discharges from degrading local waterbodies. Thus, a consideration of these measures—their effectiveness in meeting different goals, their cost, and how they are coordinated with one another—is central to any evaluation of the Stormwater Program. This report uses the term stormwater control measure (SCM) instead of the term best management practice (BMP) because the latter is poorly defined and not specific to the field of stormwater.

The committee's statement of task asks for an evaluation of the relationship between different levels of stormwater pollution prevention plan implementation and in-stream water quality. As discussed in the last two chapters, the state of the science has yet to reveal the mechanistic links that would allow for a full assessment of that relationship. However, enough is known to design systems of SCMs, on a site scale or local watershed scale, to lessen many of the effects of urbanization. Also, for many regulated entities the current approach to stormwater management consists of choosing one or more SCMs from a preapproved list. Both of these facts argue for the more comprehensive discussion of SCMs found in this chapter, including information on their characteristics, applicability, goals, effectiveness, and cost. In addition, a multitude of case studies illustrate the use of SCMs in specific settings and demonstrate that a particular SCM can have a measurable positive effect on water quality or a biological metric. The discussion of SCMs is organized along the gradient from the rooftop to the stream. Thus, pollutant and runoff prevention are discussed first, followed by runoff reduction and finally pollutant reduction.

HISTORICAL PERSPECTIVE ON STORMWATER CONTROL MEASURES

Over the centuries, SCMs have met different needs for cities around the world. Cities in the Mesopotamian Empire during the second millennium BC had practices for flood control, to convey waste, and to store rain water for household and irrigation uses (Manor, 1966) (see Figure 5-1). Today, SCMs are considered a vital part of managing flooding and drainage problems in a city. What is relatively new is an emphasis on using the practices to remove pollutants from stormwater and selecting practices capable of providing groundwater recharge. These recent expectations for SCMs are not readily accepted and require an increased commitment to the proper design and maintenance of the practices.

With the help of a method for estimating peak flows (the Rational Method, see Chapter 4), the modern urban drainage system came into being soon after World War II. This generally consisted of a system of catch basins and pipes to prevent flooding and drainage problems by efficiently delivering runoff water to the nearest waterbody. However, it was soon realized that delivering the water too quickly caused severe downstream flooding and bank erosion in the receiving water. To prevent bank erosion and provide more space for flood waters, some stream channels were enlarged and lined with concrete (see Figure 5-2). But while hardening and



FIGURE 5-1 Cistern tank, Kamiros, Rhodes (ancient Greece, 7th century BC). SOURCE: Robert Pitt.



FIGURE 5-2 Concrete channel in Lincoln Creek, Milwaukee, Wisconsin. SOURCE: Roger Bannerman.

enlarging natural channels is a cost-effective solution to erosion and flooding, the modified channel increases downstream peak flows and it does not provide habitat to support a healthy aquatic ecosystem.

Some way was needed to control the quantity of water reaching the end of pipes during a runoff event, and on-site detention (Figure 5-3) became the standard for accomplishing this. Ordinances started appearing in the early 1970s, requiring developers to reduce the peaks of different size storms, such as the 10-year, 24-hour storm. The ordinances were usually intended to prevent future problems with peak flows by requiring the installation of flow control structures, such as detention basins, in new developments. Detention basins can control peak flows directly below the point of discharge and at the property boundary. However, when designed on a site-by-site basis without taking other basins into account, they can lead to downstream flooding problems because volume is not reduced (McCuen, 1979; Ferguson, 1991; Traver and Chadderton, 1992; EPA, 2005d). In addition, out of concerns for clogging, openings in the outlet structure of most basins are generally too large to hold back flows from smaller, more frequent storms. Furthermore, low-flow channels have been constructed or the basins have been graded to move the runoff through the structure without delay to prevent wet areas and to make it easier to mow and maintain the detention basin.

Because of the limitations of on-site detention, infiltration of urban runoff to control its volume has become a recent goal of stormwater management. Without stormwater infiltration, municipalities in wetter regions of the country can expect drops in local groundwater levels, declining stream base flows (Wang et al., 2003a), and flows diminished or stopped altogether from springs feeding wetlands and lakes (Leopold, 1968; Ferguson, 1994).

The need to provide volume control marked the beginning of low-impact development (LID) and conservation design (Arendt, 1996; Prince George's County, 2000), which were founded on the seminal work of landscape architect Ian McHarg and associates decades earlier (McHarg and Sutton, 1975; McHarg and Steiner, 1998). The goal of LID is to allow for development of a site while maintaining as much of its natural hydrology as possible, such as infiltration, frequency and volume of discharges, and groundwater recharge. This is accomplished with infiltration practices, functional grading, open channels, disconnection of

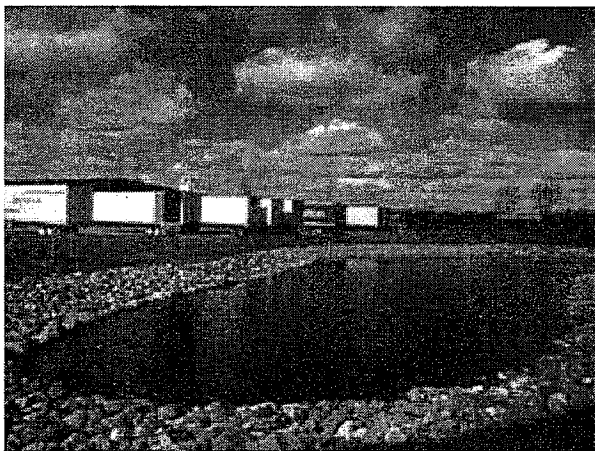


FIGURE 5-3. On-site detention. SOURCE: Tom Schueler.

impervious areas, and the use of fewer impervious surfaces. Much of the LID focus is to manage the stormwater as close as possible to its source—that is, on each individual lot rather than conveying the runoff to a larger regional SCM. Individual practices include rain gardens (see Figure 5-4), disconnected roof drains, porous pavement, narrower streets, and grass swales. In some cases, LID site plans still have to include a method for passing the larger storms safely, such as a regional infiltration or detention basin or by increasing the capacity of grass swales.

Infiltration has been practiced in a few scattered locations for a long time. For example, on Long Island, New York, infiltration basins were built starting in 1930 to reduce the need for a storm sewer system and to recharge the aquifer, which was the only source of drinking water (Ferguson, 1998). The Cities of Fresno, California, and El Paso, Texas, which faced rapidly dropping groundwater tables, began comprehensive infiltration efforts in the 1960s and 1970s. In the 1980s Maryland took the lead on the east coast by creating an ambitious statewide infiltration program. The number of states embracing elements of LID, especially infiltration, has increased during the 1990s and into the new century and includes California, Florida, Minnesota, New Jersey, Vermont, Washington, and Wisconsin.

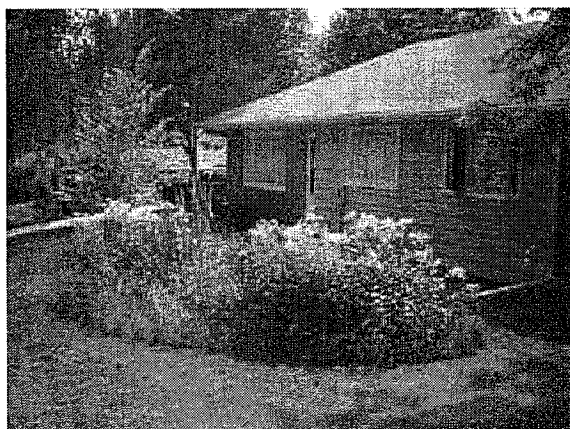


FIGURE 5-4 Rain Garden in Madison, Wisconsin. SOURCE: Roger Bannerman.

Evidence gathered in the 1970s and 1980s suggested that pollutants be added to the list of things needing control in stormwater (EPA, 1983). Damages caused by elevated flows, such as stream habitat destruction and floods, were relatively easy to document with something as simple as photographs. Documentation of elevated concentrations of conventional pollutants and potentially toxic pollutants, however, required intensive collection of water quality samples during runoff events. Samples collected from storm sewer pipes and urban streams in the Menomonee River watershed in the late 1970s clearly showed the concentrations of many pollutants, such as heavy metals and sediment, were elevated in urban runoff (Bannerman et al., 1979). Levels of heavy metals were especially high in industrial-site runoff, and construction-site erosion was calculated to be a large source of sediment in the watershed. This study was followed by the National Urban Runoff Program, which added more evidence about the high levels of some pollutants found in urban runoff (Athayde et al., 1983; Bannerman et al., 1983).

PREPUBLICATION

With new development rapidly adding to the environmental impacts of existing urban areas, the need to develop good stormwater management programs is more urgent than ever. For a variety of reasons, the greatest potential for stormwater management to reduce the footprint of urbanization is in the suburbs. These areas are experiencing the fastest rates of growth, they are more amenable to stormwater management because buildings and infrastructure are not yet in place, and costs for stormwater management can be borne by the developer rather than by taxpayers. Indeed, most structural SCMs are applied to new development rather than existing urban areas. Many of the most innovative stormwater programs around the country are found in the suburbs of large cities such as Seattle, Austin, and Washington, D.C. When stormwater management in ultra-urban areas is required, it entails the retrofitting of detention basins and other flow control structures or the introduction of innovative below-ground structures characterized by greater technical constraints and higher costs, most of which are charged to local taxpayers.

Current-day SCMs represent a radical departure from past practices, which focused on dealing with extreme flood events via large detention basins designed to reduce peak flows at the downstream property line. As defined in this chapter, SCMs now include practices intended to meet broad watershed goals of protecting the biology and geomorphology of receiving waters in addition to flood peak protection. The term encompasses such diverse actions as using more conventional practices like basins and wetland to installing stream buffers, reducing impervious surfaces, and educating the public.

REVIEW OF STORMWATER CONTROL MEASURES

Stormwater control measures refer to what is defined by EPA (1999) as “a technique, measure, or structural control that is used for a given set of conditions to manage the quantity and improve the quality of stormwater runoff in the most cost-effective manner.” SCMs are designed to mitigate the changes to both the quantity and quality of stormwater runoff that are caused by urbanization. Some SCMs are engineered or constructed facilities, such as a stormwater wetland or infiltration basin, that reduce pollutant loading and modify volumes and flow. Other SCMs are preventative, including such activities as education and better site design to limit the generation of stormwater runoff or pollutants.

Stormwater Management Goals

It is impossible to discuss SCMs without first considering the goals that they are expected to meet. A broadly stated goal for stormwater management is to reduce pollutant loads to waterbodies and maintain, as much as possible, the natural hydrology of a watershed. On a practical level, these goals must be made specific to the region of concern and embedded in the strategy for that region. Depending on the designated uses of the receiving waters, climate, geomorphology, and historical development, a given area may be more or less sensitive to both pollutants and hydrologic modifications. For example, goals for groundwater recharge might be higher in an area with sandy soils as compared to one with mostly clayey soils; watersheds in the coastal zone may not require hydrologic controls. Ideally, the goals of stormwater management should be linked to the water quality standards for a given state's receiving waters. However,

because of the substantial knowledge gap about the effect of a particular stormwater discharge on a particular receiving water (see Chapter 3 conclusions), surrogate goals are often used by state stormwater programs in lieu of water quality standards. Examples include credit systems, mandating the use of specific SCMs, or achieving stormwater volume reduction. Credit systems might be used for practices that are known to be productive but are difficult to quantify, such as planting trees. Specific SCMs might be assumed to remove a percent of pollutants, for example 85 percent removal of total suspended solids (TSS) within a stormwater wetland. Reducing the volume of runoff from impervious surfaces (e.g., using an infiltration device) might be assumed to capture the first flush of pollutants during a storm event. Before discussing specific state goals, it is worth understanding the broader context in which goals are set.

Trade-offs Between Stormwater Control Goals and Costs

The potentially substantial costs of implementing SCMs raise a number of fundamental social choices concerning land-use decisions, designated uses, and priority setting for urban waters. To illustrate some of these choices, consider a hypothetical urban watershed with three possible land-cover scenarios: 25, 50, and 75 percent impervious surface. A number of different beneficial uses could be selected for the streams in this watershed. At a minimum, the goal may be to establish low-level standards to protect public health and safety. To achieve this, sufficient and appropriate SCMs might be applied to protect residents from flooding and achieve water quality conditions consistent with secondary human contact. Alternatively, the designated use could be to achieve the physical, chemical, and/or biological conditions sufficient to provide exceptional aquatic habitat (e.g., a high-quality recreational fishery). The physical, biological, and chemical conditions supportive of this use might be similar to a reference stream located in a much less disturbed watershed. Achieving this particular designated use would require substantially greater resources and effort than achieving a secondary human contact use. Intermediate designated uses could also be imagined, including improving ambient water quality conditions that would make the water safe for full-body emersion (primary human contact) or habitat conditions for more tolerant aquatic species.

Figure 5-5 sketches what the marginal (incremental) SCM costs (opportunity costs) might be to achieve different designated uses given different amounts of impervious surface in the watershed. The horizontal axis orders potential designated uses in terms of least difficult to most difficult to achieve. The three conceptual curves represent the SCM costs under three different impervious surface scenarios. The relative positions of the cost curves indicate that achieving any specific designated use will be more costly in situations with a higher percentage of the watershed in impervious cover. All cost curves are upward sloping, reflecting the fact that incremental improvements in designated uses will be increasingly costly to achieve. The cost curves are purely conceptual, but nonetheless might reasonably reflect the relative costs and direction of change associated with achieving specific designated uses in different watershed conditions.

The locations of the cost curves suggest that in certain circumstances not all designated uses can be achieved or can be achieved only at an extremely high cost. For example, the attainment of exceptional aquatic uses may be unachievable in areas with 50 percent impervious surface even with maximum application of SCMs. In this illustration, the cost of achieving even secondary human contact use is high for areas with 75 percent impervious surfaces. In such

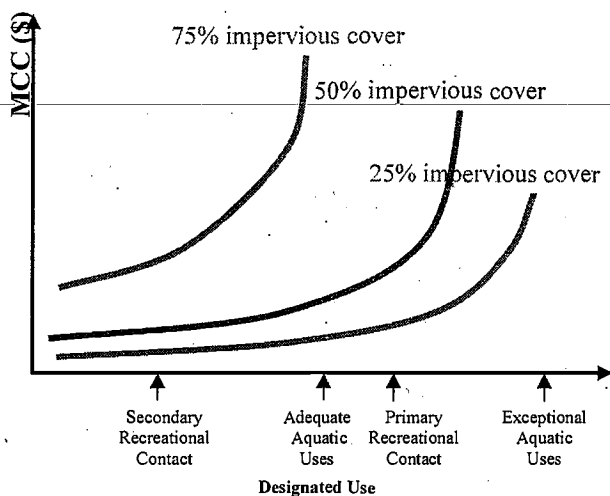


FIGURE 5-5 Cost of achieving designated uses in a hypothetical urban watershed. MCC is the marginal control cost, which represents the incremental costs to achieve successive expansion of designated uses through SCMs. The curves are constructed on the assumption that the lowest cost combination of SCMs would be implemented at each point on the curve.

highly urbanized settings, achievement of only adequate levels of aquatic uses could be exceedingly high and strain the limits of what is technically achievable. Finally, the existing and likely expected future land-use conditions have significant implications for what is achievable and at what cost. Clearly land-use decisions have an impact on the cost and whether a use can be achieved, and thus they need to be included in the decision process. The trade-off between costs and achieving specific designated uses can change substantially given different development patterns.

The purpose of Figure 5-5 is not to identify the precise location of the cost curves or to identify thresholds for achieving specific designated uses. Rather, these concepts are used to illustrate some fundamental trade-offs that confront public and private investment and regulatory decisions concerning stormwater management. The general relationships shown in Figure 5-5 suggest the need for establishing priorities for investments in stormwater management and controls, and connecting land usage and watershed goals. Setting overly ambitious or costly goals for urban streams may result in the perverse consequence of causing more waters to fail to meet designated uses. For example, consider efforts to secure ambitious designated uses in highly developed areas or in an area slated for future high-density development. Regulatory requirements and investments to limit stormwater quantity and quality through open-space requirements, areas set aside for infiltration and water detention, and strict application of maximum extent practicable controls have the effect of both increasing development costs and diminishing land available for residential and commercial properties. Policies designed to achieve exceedingly costly or infeasible designated uses in urban or urbanizing areas could have the net consequence of shifting development (and associated impervious surface) out into neighboring areas and watersheds. The end result might be minimal improvements in “within-watershed” ambient conditions but a decrease in designated uses (more impairments) elsewhere.

In such a case, it might be sound water quality policy to accept higher levels of impervious surface in targeted locations, more stormwater-related impacts, and less ambitious designated uses in urban watersheds in order to preserve and protect designated uses in other watersheds.

Setting unrealistic or unachievable water quality objectives in urban areas can also pose political risks for stormwater management. The cost and difficulty of achieving ambitious water quality standards for urban stream goals may be understood by program managers but pursued nonetheless in efforts to demonstrate public commitment to achieving high-quality urban waters. Yet, promising what cannot be realistically achieved may act to undermine public support for urban stormwater programs. Increasing costs without significant observable improvements in ambient water conditions or achievement of water quality standards could ultimately reduce public commitment to the program. Thus, there are risks of “setting the bar” too high, or not coordinating land use and designated stream uses.

The cost of setting the bar too low can also be significant. Stormwater requirements that result in ineffective stormwater management will not achieve or maintain the desired water uses and can result in impairments. Loss of property, degraded waters, and failed infrastructure are tangible costs to the public (Johnston et al., 2006). Streambank rehabilitation costs can be severe, and loss of confidence in the ability to meet stormwater goals can result.

The above should not be construed as an argument for or against devoting resources to SCMs; rather, such decisions should be made with an open and transparent acknowledgment and understanding of the costs and consequences involved in those decisions.

Common State Stormwater Goals

Most states do not and have never had an overriding water quality objective in their stormwater program, but rather have used engineering criteria for SCM performance to guide stormwater management. These criteria can be loosely categorized as

- Erosion and sedimentation control,
- Recharge/base flow,
- Water quality,
- Channel protection, and
- Flooding events.

The SCMs used to address these goals work by minimizing or eliminating increases in stormwater runoff volume, peak flows, and/or the pollutant load carried by stormwater.

The criteria chosen by any given state usually integrate state, federal, and regional laws and regulations. Areas of differing climates may emphasize one goal over another, and the levels of control may vary drastically. Contrast a desert region where rainwater harvesting is extremely important versus a coastal region subject to hurricanes. Some areas like Seattle have frequent smaller volume rainfalls—the direct opposite of Austin, Texas—such that small volume controls would be much more effective in Seattle than Austin. Regional geology (karst) or the presence of Brownfields may affect the chosen criteria as well.

The committee’s survey of State Stormwater Programs (Appendix C) reflects a wide variation in program goals as reflected in the criteria found in their SCM manuals. Some states have no specific criteria because they do not produce SCM manuals, while others have manuals that address every category of criteria from flooding events to groundwater recharge. Some states rely upon EPA or other states’ or transportation agencies’ manuals. In general, soil and

erosion control criteria are the most common and often exist in the absence of any other state criteria. This wide variation reflects the difficulties that states face in keeping up with rapidly changing information about SCM design and performance.

The criteria are ordered below (after the section on erosion and sediment control) according to the size of the storm they address, from smallest to most extreme. The criteria can be expressed in a variety of ways, from a simple requirement to control a certain volume of rainfall or runoff (expressed as a depth) to the size of a design storm to more esoteric requirements, such as limiting the time that flow can be above a certain threshold. The volumes of rainfall or runoff are based on statistics of a region's daily rainfall, and they approximate one another as the percentage of impervious cover increases. Design storms for larger events that address channel protection and flooding are usually based on extreme event statistics and tend to represent a temporal pattern of rainfall over a set period, usually a day. Finally, it should be noted that the categories are not mutually exclusive; for example, recharge of groundwater may enhance water quality via pollutant removal during the infiltration process.

Erosion and Sedimentation Control. This criterion refers to the prevention of erosion and sedimentation of sites during construction and is focused at the site level. Criteria usually include a barrier plan to prevent sedimentation from leaving the site (e.g., silt fences), practices to minimize the potential erosion (phased construction), and facilities to capture and remove sediment from the runoff (detention). Because these measures are considered temporary, smaller extreme events are designated as the design storm than what typically would be used if flood control were the goal.

Recharge/Base Flow. This criterion is focused on sustaining the preconstruction hydrology of a site as it relates to base flow and recharge of groundwater supplies. It may also include consideration of water usage of the property owners and return through septic tanks and tile fields. The criterion, expressed as a volume requirement, is usually to capture around 0.5 to 1.0 inch of runoff from impervious surfaces depending on the climate and soil type of the region. (For this range of rainfall, very little runoff occurs from grass or forested areas, which is why runoff from impervious surfaces is used as the criterion.)

Water Quality. Criteria for water quality are the most widespread, and are usually crafted as specific percent removal for pollutants in stormwater discharge. Generally, a water quality criterion is based on a set volume of stormwater being treated by the SCM. The size of the storm can run from the first inch of rainfall off impervious surfaces to the runoff from the one-year, 24-hour extreme storm event. It should be noted that the term "water quality" covers a wide range of groundwater and surface water pollutants, including water temperature and emerging contaminants.

Many of the water quality criteria are surrogates for more meaningful parameters that are difficult to quantify or cannot be quantified, or they reflect situations where the science is not developed enough to set more explicit goals. For example, the Wisconsin state requirement of an 80 percent reduction in TSS in stormwater discharge does not apply to receiving waters themselves. However, it presumes that there will be some water quality benefits in receiving waters; that is, phosphorus and fecal coliform might be captured by the TSS requirement. Similarly water quality criteria may be expressed as credits for good practices, such as using LID, street sweeping, or stream buffers.

Channel Protection. This criterion refers to protecting channels from accelerated erosion during storm events due to the increased runoff. It is tied to either the presumed “channel-forming event”—what geomorphologists once believed was the storm size that created the channel due to erosion and deposition—or to the minimum flow that accomplishes any degree of sediment transport. It is generally defined as somewhere between the one- and five-year, 24-hour storm event or a discharge level typically exceeded once to several times per year. Some states require a reduction in runoff volume for these events to match preconstruction levels. Others may require that the average annual duration of flows that are large enough to erode the streambank be held the same on an annual basis under pre- and postdevelopment conditions.

It is not uncommon to find states where a channel protection goal will be written poorly, such that it does not actually prevent channel widening. For example, MacRae (1997) presented a review of the common “zero runoff increase” discharge criterion, which is commonly met by using ponds designed to detain the two-year, 24-hour storm. MacRae showed that stream bed and bank erosion occur during much lower events, namely mid-depth flows that generally occur more often than once a year, not just during bank-full conditions (approximated by the two-year event). This finding is entirely consistent with the well-established geomorphological literature (e.g., Pickup and Warner, 1976; Andrews, 1984; Carling, 1988; Sidle, 1988). During monitoring near Toronto, MacRae found that the duration of the geomorphically significant predevelopment mid-bankfull flows increased by more than four-fold after 34 percent of the basin had been urbanized. The channel had responded by increasing in cross-sectional area by as much as three times in some areas, and was still expanding.

Flooding Events. This criterion addresses public safety and the protection of property and is applicable to storm events that exceed the channel capacity. The 10- through the 100-year storm is generally used as the standard. Volume-reduction SCMs can aid or meet this criterion depending on the density of development, but usually assistance is needed in the form of detention SCMs. In some areas, it may be necessary to reduce the peak flow to below preconstruction levels in order to avoid the combined effects of increased volume, altered timing, and a changed hydrograph. It should be noted that some states do not consider the larger storms (100-year) to be a stormwater issue and have separate flood control requirements.

Each state develops a framework of goals, and the corresponding SCMs used to meet them, which will depend on the scale and focus of the stormwater management strategy. A few states have opted to express stormwater goals within the context of watershed plans for regions of the state. However, the setting of goals on a watershed basis is time-consuming and requires study of the watersheds in question. The more common approach has been to set generic or minimal controls for a region that are not based on a watershed plan. This has been done in Maryland, Wisconsin (see Box 5-1), and Pennsylvania (see Box 5-2). This strategy has the advantage of more rapid implementation of some SCMs because watershed management plans are not required. In order to be applicable to all watersheds in the state, the goals must target common pollutants or flow modification factors where the processes are well known. It must also be possible for these goals to be stated in National Pollutant Discharge Elimination System (NPDES) permits. Many states have selected TSS reduction, volume reduction, and peak flow control as generic goals. A generic goal is not usually based on potentially toxic pollutants, such as heavy metals, due to the complexity of their interaction in the environment, the dependence on

BOX 5-1

Wisconsin Statewide Goal of TSS Reduction for Stormwater Management

To measure the success of stormwater management, Wisconsin has statewide goals for sediment and flow (Wisconsin DNR, 2002). A lot is known about the impacts of sediment on receiving waters, and any reduction is thought to be beneficial. Flow can be a good indicator of other factors; for example, reducing peak flows will prevent bank erosion.

Developing areas in Wisconsin are required to reduce the annual TSS load by 80 percent compared to no controls (Wisconsin DNR, 2002). Two flow-rated requirements for developing areas are in the administrative rules. One is that the site must maintain the peak flow for the two-year, 24-hour rainfall event. Second, the annual infiltration volume for postdevelopment must be within 90 percent of the predevelopment volumes for residential land uses; the number for non-residential is 60 percent. Both of these flow control goals are thought to also have water quality benefits.

The goal for existing urban areas is an annual reduction in TSS loads. Municipalities must reduce their annual TSS loads by 20 percent, compared to no controls, by 2008. This number is increased to 40 percent by 2013. All of these goals were partially selected to be reasonable based on cost and technical feasibility.

BOX 5-2

Volume-Based Stormwater Goals in Pennsylvania

Pennsylvania has developed a stormwater *Best Management Practices* manual to support the Commonwealth's Storm Water Management Act. This manual and an accompanying sample ordinance advocates two methods for stormwater control based on volume, termed Control Guidance (CG) 1 and 2. The first (CG-1) requires that the runoff volume be maintained at the two-year, 24-hour storm level (which corresponds to approximately 3.5 inches of rainfall in this region) through infiltration, evapotranspiration, or reuse. This criterion addresses recharge/base flow, water quality, and channel protection, as well as helping to meet flooding requirements.

The second method (CG-2) requires capture and removal of the first inch of runoff from paved areas, with infiltration strongly recommended to address recharge and water quality issues. Additionally, to meet channel protection criteria, the second inch is required to be held for 24 hours, which should reduce the channel-forming flows. (This is an unusual criterion in that it is expressed as what an SCM can accomplish, not as the flow that the channel can handle.) Peak flows for larger events are required to be at preconstruction levels or less if the need is established by a watershed plan. These criteria are the starting point for watershed or regional plans, to reduce the effort of plan development. Some credits are available for tree planting, and other nonstructural practices are advocated for dissolved solids mitigation. See <http://www.dep.state.pa.us/dep/deputate/watermgt/wc/subjects/stormwatermanagement/default.htm>.

the existing baseline conditions, and the need for more understanding on what are acceptable levels. The difficulty with the generic approach is that specific watershed issues are not addressed, and the beneficial uses of waters are not guaranteed.

One potential drawback of a strategy based on a generic goal coupled to the permit process is that the implementation of the goal is usually on a site-by-site basis, especially for developing areas. Generic goals may be appropriate for certain ubiquitous watershed processes and are clearly better than having no goals at all. However, they do not incorporate the effects of differences in past development and any unique watershed characteristics; they should be considered just a good starting point for setting watershed-based goals.

Role of SCMs in Achieving Stormwater Management Goals

One important fundamental change in SCM design philosophy has come about because of the recent understanding of the roles of smaller storms and of impervious surfaces. This is demonstrated by Box 3-4, which shows that for the Milwaukee area more than 50 percent of the rainfall by volume occurs in storms that have a depth of less than 0.75 inch. If extreme events are the only design criteria for SCMs, the vast majority of the annual rainfall will go untreated or uncontrolled, as it is smaller than the minimum extreme event. This relationship is not the same in all regions. For example, in Austin, Texas, the total yearly rainfall is smaller than in Milwaukee, but a large part of the volume occurs during larger storm events, with long dry periods in between.

The upshot is that the design strategy for stormwater management, including drainage systems and SCMs, should take a region's rainfall and associated runoff conditions into account. For example, an SCM chosen to capture the majority of the suspended solids, recharge the baseflow, reduce streambank erosion, and reduce downstream flooding in Pennsylvania or Seattle (which have moderate and regular rainfall) would likely not be as effective in Texas, where storms are infrequent and larger. In some areas, a reduction in runoff volume may not be sufficient to control streambank erosion and flooding, such that a second SCM like an extended detention stormwater wetland may be needed to meet management goals.

Finally, as discussed in greater detail in a subsequent section, SCMs are most effective from the perspective of both efficiency and cost when stormwater management is incorporated in the early planning stages of a community. Retrofitting existing development with SCMs is much more technically difficult and costly because the space may not be available, other infrastructure is already installed, or utilities may interfere. Furthermore, if the property is on private land or dedicated as an easement to a homeowners association, there may be regulatory limitations to what can be done. Because of these barriers, retrofitting existing urban areas often depends on engineered or manufactured SCMs, which are more expensive in both construction and operation.

Stormwater Control Measures

SCMs reduce or mitigate the generation of stormwater runoff and associated pollutants. These practices include both "structural" or engineered devices as well as more "nonstructural measures" such as land-use planning, site design, land conservation, education, and stewardship practices. Structural practices may be defined as any facility constructed to mitigate the adverse impacts of stormwater and urban runoff pollution. Nonstructural practices, which tend to be longer-term and lower-maintenance solutions, can greatly reduce the need for or increase the effectiveness of structural SCMs. For example, product substitution and land-use planning may be key to the successful implementation of an infiltration SCM. Preserving wooded areas and reducing street widths can allow the size of detention basins in the area to be reduced.

Table 5-1 presents the expansive list of SCMs that are described in this chapter. For most of the SCMs, each listed item represents a class of related practices, with individual methods discussed in greater detail later in the chapter. There are nearly 20 different broad categories of SCMs that can be applied, often in combination, to treat the quality and quantity of stormwater runoff. A primary difference among the SCMs relates to which stage of the development cycle

they are applied, where in the watershed they are installed, and who is responsible for implementing them.

The development cycle extends from broad planning and zoning to site design, construction, occupancy, retrofitting, and redevelopment. As can be seen, SCMs are applied throughout the entire cycle. The scale at which the SCM is applied also varies considerably. While many SCMs are installed at individual sites as part of development or redevelopment applications, many are also applied at the scale of the stream corridor or the watershed or to existing municipal stormwater infrastructure. The final column in Table 5-1 suggests who would implement the SCM. In general, the responsibility for implementing SCMs primarily resides with developers and local stormwater agencies, but planning agencies, landowners, existing industry, regulatory agencies, and municipal separate storm sewer system (MS4) permittees can also be responsible for implementing many key SCMs.

In Table 5-1, the SCMs are ordered in such a way as to mimic natural systems as rain travels from the roof to the stream through combined application of a series of practices throughout the entire development site. This order is upheld throughout the chapter, with the implication that no SCM should be chosen without first considering those that precede it on the list.

Given that there are 20 different SCM groups and a much larger number of individual design variations or practices within each group, it is difficult to authoritatively define the specific performance or effectiveness of SCMs. In addition, our understanding of their performance is rapidly changing to reflect new research, testing, field experience, and maintenance history. The translation of these new data into design and implementation guidance is accelerating as well. What is possible is to describe their basic hydrologic and water quality objectives and make a general comparative assessment of what is known about their design, performance, and maintenance as of mid-2008. This broad technology assessment is provided in Table 5-2, which reflects the committee's collective understanding about the SCMs from three broad perspectives:

- Is widely accepted design or implementation guidance available for the SCM and has it been widely disseminated to the user community?
- Have enough research studies been published to accurately characterize the expected hydrologic or pollutant removal performance of the SCM in most regions of the country?
- Is there enough experience with the SCM to adequately define the type and scope of maintenance needed to ensure its longevity over several decades?

Affirmative answers to these three questions are needed to be able to reliably quantify or model the ability of the SCM, which is an important element in defining whether the SCM can be linked to improvements in receiving water quality. As will be discussed in subsequent sections of this chapter, there are many SCMs for which there is only a limited understanding, particularly those that are nonstructural in nature.

The columns in Table 5-2 summarize several important factors about each SCM, including the ability of the SCM to meet hydrologic control objectives and water quality objectives, the availability of design guidance, the availability of performance studies, and whether there are maintenance protocols. The hydrologic control objectives range from complete prevention of stormwater flow to reduction in runoff volume and reduction in peak flows. The column on water quality objectives describes whether the SCM can prevent the generation of, or remove, contaminants of concern in stormwater.

TABLE 5-1 Summary of Stormwater Control Measures—When, Where, and Who

Stormwater Control Measure	When	Where	Who
<i>Product Substitution</i>	Continuous	National, state, regional	Regulatory agencies
<i>Watershed and Land-Use Planning</i>	Planning stage	Watershed	Local planning agencies
<i>Conservation of Natural Areas</i>	Site and watershed planning stage	Site, watershed	Developer, local planning agency
<i>Impervious Cover Minimization</i>	Site planning stage	Site	Developer, local review authority
<i>Earthwork Minimization</i>	Grading plan	Site	Developer, local review authority
Erosion and Sediment Control	Construction	Site	Developer, local review authority
<i>Reforestation and Soil Conservation</i>	Site planning and construction	Site	Developer, local review authority
<i>Pollution Prevention SCMs for Stormwater Hotspots</i>	Post-construction or retrofit	Site	Operators and local and state permitting agencies
Runoff Volume Reduction—Rainwater harvesting	Post-construction or retrofit	Rooftop	Developer, local planning agency and review authority
Runoff Volume Reduction—Vegetated	Post-construction or retrofit	Site	Developer, local planning agency and review authority
Runoff Volume Reduction—Subsurface	Post-construction or retrofit	Site	Developer, local planning agency and review authority
Peak Reduction and Runoff Treatment	Post-construction or retrofit	Site	Developer, local planning agency and review authority
Runoff Treatment	Post-construction or retrofit	Site	Developer, local planning agency and review authority
<i>Aquatic Buffers and Managed Floodplains</i>	Planning, construction and post-construction	Stream corridor	Developer, local planning agency and review authority, landowners
Stream Rehabilitation	Postdevelopment	Stream corridor	Local planning agency and review authority
<i>Municipal Housekeeping</i>	Postdevelopment	Streets and stormwater infrastructure	MS4 Permittee
<i>Illicit Discharge Detection and Elimination</i>	Postdevelopment	Stormwater infrastructure	MS4 Permittee
<i>Stormwater Education</i>	Postdevelopment	Stormwater infrastructure	MS4 Permittee
<i>Residential Stewardship</i>	Postdevelopment	Stormwater infrastructure	MS4 Permittee

Note: Nonstructural SCMs are in italics.

The availability of design guidance tends to be greatest for the structural practices. Some but not all nonstructural practices are of recent origin, and communities lack available design guidance to include them as an integral element of local stormwater solutions. Where design guidance is available, it may not yet have been disseminated to the full population of Phase II MS4 communities.

The column on the availability of performance data is divided into those SCMs where enough studies have been done to adequately define performance, those SCMs where limited work has been done and the results are variable, and those SCMs where only a handful of studies are available. A large and growing number of performance studies are available that report the efficiencies of structural SCMs in reducing flows and pollutant loading (Strecker et al., 2004; ASCE, 2007; Schueler et al., 2007; Selbig and Bannerman, 2008). Many of these are compiled in the Center for Watershed Protection's National Pollutant Removal Performance Database for Stormwater Treatment Practices (http://www.cwp.org/Resource_Library/Center_Docs/SW/bmpwriteup_092007_v3.pdf), in the International Stormwater BMP Database (<http://www.bmpdatabase.org/Docs/Performance%20Summary%20June%202008.pdf>), and by the Water Environment Research Foundation (WERF, 2008). In cases where there is incomplete understanding of their performance, often information can be gleaned from other fields including agronomy, forestry, petroleum exploration, and sanitary engineering. Current research suggests that it is not a question if whether structural SCMs "work" but more of a question of to what degree and with what longevity (Heasom et al., 2006; Davis et al., 2008; Emerson and Traver, 2008). There is considerably less known about the performance of nonstructural practices for stormwater treatment, partly because their application has been uneven around the country and it remains fairly low in comparison to structural stormwater practices.

Finally, defined maintenance protocols for SCMs can be nonexistent, emerging, or fully available. SCMs differ widely in the extent to which they can be considered permanent solutions. For those SCMs that work on the individual site scale on private property, such as rain gardens, local stormwater managers may be reluctant to adopt such practices due to concerns about their ability to enforce private landowners to conduct maintenance over time. Similarly, those SCMs that involve local government decisions (such as education, residential stewardship practices, zoning, or street sweeping) may be less attractive because governments are likely to change over time.

The following sections contain more detailed information about the individual SCMs listed in Tables 5-1 and 5-2, including the operating unit processes, the pollutants treated, the typical performance for both runoff and pollutant reduction, the strengths and weaknesses, maintenance and inspection requirements, and the largest sources of variability and uncertainty.

TABLE 5-2 Current Understanding of Stormwater Control Measure Capabilities

SCM	Hydrologic Control Objectives	Water Quality Objectives	Available Design Guidance	Performance Studies Available	Defined Maintenance Protocols
<i>Product Substitution</i>	NA	Prevention	NA	Limited	NA
<i>Watershed and Land-Use Planning</i>	All objectives	Prevention	Available	Limited	Yes
<i>Conservation of Natural Areas</i>	Prevention	Prevention	Available	None	Yes
<i>Impervious Cover Minimization</i>	Prevention and reduction	Prevention	Available	Limited	No
<i>Earthwork Minimization</i>	Prevention	Prevention	Emerging	Limited	Yes
Erosion and Sediment Control	Prevention and reduction	Prevention and removal	Available	Limited	Yes
<i>Reforestation and Soil Conservation</i>	Prevention and reduction	Prevention and removal	Emerging	None	No
<i>Pollution Prevention SCMs for Hotspots</i>	NA	Prevention	Emerging	Very few	No
Runoff Volume Reduction—Rainwater harvesting	Reduction	NA	Emerging	Limited	Yes
Runoff Volume Reduction—Vegetated (Green Roofs, Bioretention, Bioinfiltration, Bioswales)	Reduction and some peak attenuation	Removal	Available	Limited	Emerging
Runoff Volume Reduction—Subsurface (Infiltration Trenches, Pervious Pavements)	Reduction and some peak attenuation	Removal	Available	Limited	Yes
Peak Reduction and Runoff Treatment (Stormwater Wetlands, Dry/Wet Ponds)	Peak attenuation	Removal	Available	Adequate	Yes
Runoff Treatment (Sand Filters, Manufactured Devices)	None	Removal	Emerging	Adequate—sand filters Limited—manufactured devices	Yes
<i>Aquatic Buffers and Managed Floodplains</i>	NA	Prevention and removal	Available	Very few	Emerging
Stream Rehabilitation	NA	Prevention and removal	Emerging	Limited	Unknown
<i>Municipal Housekeeping (Street Sweeping/Storm-Drain Cleanouts)</i>	NA	Removal	Emerging	Limited	Emerging
<i>Illicit Discharge Detection/Elimination</i>	NA	Prevention and removal	Available	Very few	No
<i>Stormwater Education</i>	Prevention	Prevention	Available	Very few	Emerging
<i>Residential Stewardship</i>	Prevention	Prevention	Emerging	Very few	No

Note: Nonstructural SCMs are in italics.

Key:		
Hydrologic Objective	Water Quality Objective	Available Design Guidance?
Prevention: Prevents generation of runoff Reduction: Reduces volume of runoff Treatment: Delays runoff delivery	Prevention: Prevents generation, accumulation, or wash-off of pollutants and/or reduces runoff volume	Available: Basic design or implementation guidance is available in most areas of the country are readily available
Peak Attenuation: Reduction of peak flows through detention	Removal: Reduces pollutant concentrations in runoff by physical, chemical, or biological means	Emerging: Design guidance is still under development, is missing in many parts of the country, or requires more performance data
Performance Data Available?	Defined Maintenance Protocol?	Notes:
Very Few: Handful of studies, not enough data to generalize about SCM performance Limited: Numerous studies have been done, but results are variable or inconsistent Adequate: Enough studies have been done to adequately define performance	No: Extremely limited understanding of procedures to maintain SCM in the future Emerging: Still learning about how to maintain the SCM Yes: Solid understanding of maintenance for future SCM needs	NA: Not applicable for the SCM

Product Substitution

Product substitution refers to the classic pollution prevention approach of reducing the emissions of pollutants available for future wash-off into stormwater runoff. The most notable example is the introduction of unleaded gasoline, which resulted in an order-of-magnitude reduction of lead levels in stormwater runoff in a decade (Pitt et al., 2004a,b). Similar reductions are expected with the phase-out of methyl tert-butyl ether (MTBE) additives in gasoline. Other examples of product substitution are the ban on coal-tar sealants during parking lot renovation that has reduced PAH runoff (Van Metre et al., 2006), phosphorus-free fertilizers that have measurably reduced phosphorus runoff to Minnesota lakes (Barten and Johnson, 2007), the painting of galvanized metal surfaces, and alternative rooftop surfaces (Clark et al., 2005). Given the importance of coal power plant emissions in the atmospheric deposition of nitrogen and mercury, it is possible that future emissions reductions for such plants may result in lower stormwater runoff concentrations for these two pollutants.

The level of control afforded by product substitution is quite high if major reductions in emissions or deposition can be achieved. The difficulty is that these reductions require action in another environmental regulatory arena, such as air quality, hazardous waste, or pesticide regulations, which may not see stormwater quality as a core part of their mission.

Watershed and Land-Use Planning

Communities can address stormwater problems by making land-use decisions that change the location or quantity of impervious cover created by new development. This can be accomplished through zoning, watershed plans, comprehensive land-use plans, or Smart Growth incentives.

The unit process that is managed is the amount of impervious cover, which is strongly related to various residential and commercial zoning categories (Cappiella and Brown, 2000). Numerous techniques exist to forecast future watershed impervious cover and its probable impact on the quality of aquatic resources (see the discussion of the Impervious Cover Model in Chapter 3; CWP, 1998a; MD DNR, 2005). Using these techniques and simple or complex simulation models, planners can estimate stormwater flows and pollutant loads through the watershed planning process and alter the location or intensity of development to reduce them.

The level of control that can be achieved by watershed and land-use planning is theoretically high, but relatively few communities have aggressively exercised it. The most common application of downzoning has been applied to watersheds that drain to drinking water reservoirs (Kitchell, 2002). The strength of this practice is that it has the potential to directly address the underlying causes of the stormwater problem rather than just treating its numerous symptoms. The weakness is that local decisions on zoning and Smart Growth are reversible and often driven by other community concerns such as economic development, adequate infrastructure, and transportation. In addition, powerful consumer and market forces often have promoted low-density sprawl development. Communities that use watershed-based zoning often require a compelling local environmental goal, since state and federal regulatory authorities have traditionally been extremely reluctant to interfere with the local land-use and zoning powers.

Conservation of Natural Areas

Natural-area conservation protects natural features and environmental resources that help maintain the predevelopment hydrology of a site by reducing runoff, promoting infiltration, and preventing soil erosion. Natural areas are protected by a permanent conservation easement prescribing allowable uses and activities on the parcel and preventing future development. Examples include any areas of undisturbed vegetation preserved at the development site, including forests, wetlands, native grasslands, floodplains and riparian areas, zero-order stream channels, spring and seeps, ridge tops or steep slopes, and stream, wetland, or shoreline buffers. In general, conservation should maximize contiguous area and avoid habitat fragmentation.

While natural areas are conserved at many development sites, most of these requirements are prompted by other local, state, and federal habitat protections, and are not explicitly designed or intended to provide runoff reduction and stormwater treatment. To date, there are virtually no data to quantify the runoff reduction and/or pollutant removal capability of specific types of natural area conservation, or the ability to explicitly link them to site design.

Impervious Cover Reduction

A variety of practices, some of which fall under the broader term "better site design," can be used to minimize the creation of new impervious cover and disconnect or make more permeable the hard surfaces that are needed (Nichols et al., 1997; Richman, 1997; CWP, 1998a). A list of some common impervious cover reduction practices for both residential and commercial areas is provided below.

Elements of Better Site Design: Single-Family Residential

- Maximum residential street width
- Maximum street right-of-way width
- Swales and other stormwater practices can be located within the right-of-way
- Maximum cul-de-sac radius with a bioretention island in the center
- Alternative turnaround options such as hammerheads are acceptable if they reduce impervious cover
- Narrow sidewalks on one side of the street (or move pedestrian pathways away from the street entirely)
- Disconnect rooftops from the storm-drain systems
- Minimize driveway length and width and utilize permeable surfaces
- Allow for cluster or open-space designs that reduce lot size or setbacks in exchange for conservation of natural areas
- Permeable pavement in parking areas, driveways, sidewalks, walkways, and patios

Elements of Better Site Design: Multi-Family Residential and Commercial

- Design buildings and parking to have multiple levels
- Store rooftop runoff in green roofs, foundation planters, bioretention areas, or cisterns
- Reduce parking lot size by reducing parking demand ratios and stall dimensions
- Use landscaping areas, tree pits, and planters for stormwater treatment
- Use permeable pavement over parking areas, plazas, and courtyards

CWP (1998a) recommends minimum or maximum geometric dimensions for subdivisions, individual lots, streets, sidewalks, cul-de-sacs, and parking lots that minimize the generation of needless impervious cover, based on a national roundtable of fire safety, planning, transportation and zoning experts. Specific changes in local development codes can be made using these criteria, but it is often important to engage as many municipal agencies that are involved in development as possible in order to gain consensus on code changes.

At the present time, there is little research available to define the runoff reduction benefits of these practices. However, modeling studies consistently show a 10 to 45 percent reduction in runoff compared to conventional development (CWP, 1998b,c, 2002). Several monitoring studies have documented a major reduction in stormwater runoff from development sites that employ various forms of impervious cover reduction and LID in the United States and Australia (Coombes et al., 2000; Philips et al., 2003; Cheng et al., 2005) compared to those that do not.

Unfortunately, better site design has been slowly adopted by local planners, developers, designers, and public works officials. For example, although the project pictured in Figure 5-6 has been very successful in terms of controlling stormwater, the better-site-design principles used have not been widely adopted in the Seattle area. Existing local development codes may discourage or even prohibit the application of environmental site design practices, and many engineers and plan reviewers are hesitant to embrace them. Impervious cover reduction must be incorporated at the earliest stage of site layout and design to be effective, but outdated development codes in many communities can greatly restrict the scope of impervious cover reduction (see Chapter 2). Finally, the performance and longevity of impervious cover reduction are dependent on the infiltration capability of local soils, the intensity of development, and the future management actions of landowners.

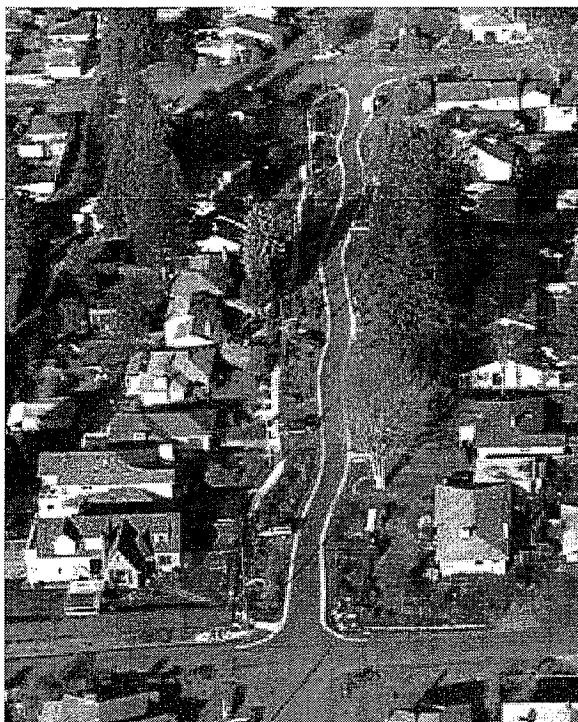


FIGURE 5-6 110th Street, Seattle, part of the Natural Drainage Systems Project. This location exhibits several elements of impervious cover reduction. In particular, vegetated swales were installed and curbs and gutters removed. There are sidewalks on only one side of the street, and they are separated from the road by the swales. The residences' rooftops have been disconnected from the storm-drain systems and are redirected into the swales. SOURCE: Seattle Public Utilities.

Earthwork Minimization

This source control measure seeks to limit the degree of clearing and grading on a development site in order to prevent soil compaction, conserve soils, prevent erosion from steep slopes, and protect zero-order streams. This is accomplished by (1) identifying key soils, drainage features, and slopes to protect and then (2) establishing a limit of disturbance where construction equipment is excluded. This element is an important, but often under-utilized component of local erosion and sediment control plans.

Numerous researchers have documented the impact of mass grading, clearing, and the passage of construction equipment on the compaction of soils, as measured by increase in bulk density, declines in soil permeability, and increases in the runoff coefficient (Lichter and Lindsey, 1994; Legg et al., 1996; Schueler, 2001a,b; Gregory et al., 2006). Another goal of earthwork minimization is to protect zero-order streams, which are channels with defined banks that emanate from a hollow or ravine with convergent contour lines (Gomi et al., 2002). They represent the uppermost definable channels that possess temporary or intermittent flow. Functioning zero-order channels provide major watershed functions, including groundwater recharge and discharge (Schollen et al., 2006; Winter, 2007), important nutrient storage and transformation functions (Bernot and Dodds, 2005; Groffman et al., 2005), storage and retention

of eroded hill-slope sediments (Meyers, 2003), and delivery of leaf inputs and large woody debris. Compared to high-order network streams, zero-order streams are disproportionately disturbed by mass grading, enclosure, or channelization (Gomi et al., 2002; Meyer, 2003).

The practice of earthwork minimization is not widely applied across the country. This is partly due to the limited performance data available to quantify its benefits, and the absence of local or national design guidance or performance benchmarks for the practice.

Erosion and Sediment Control

Erosion and sediment control predates much of the NPDES stormwater permitting program. It consists of the temporary installation and operation of a series of structural and nonstructural practices throughout the entire construction process to minimize soil erosion and prevent off-site delivery of sediment. Because construction is expected to last for a finite and short period of time, the design standards are usually smaller and thus riskier (25-year versus the 100-year storm). By phasing construction, thereby limiting the exposure of bare earth at any one time, the risk to the environment is reduced significantly.

The basic practices include clearing limits, dikes, berms, temporary buffers, protection of drainage-ways, soil stabilization through hydroseeding or mulching, perimeter controls, and various types of sediment traps and basins. All plans have some component that requires filtration of runoff crossing construction areas to prevent sediment from leaving the site. This usually requires a sediment collection system including, but not limited to, conventional settling ponds and advanced sediment collection devices such as polymer-assisted sedimentation and advanced sand filtration. Silt fences are commonly specified to filter distributed flows, and they require maintenance and replacement after storms as shown in Figure 5-7. Filter systems are added to inlets until the streets are paved and the surrounding area has a cover of vegetation (Figure 5-8). Sedimentation basins (Figure 5-9) are constructed to filter out sediments through rock filters, or are equipped with floating skimmers or chemical treatment to settle out pollutants. Other common erosion and sediment control measures include temporary seeding and rock or rigged entrances to construction sites to remove dirt from vehicle tires (see Figure 5-10).

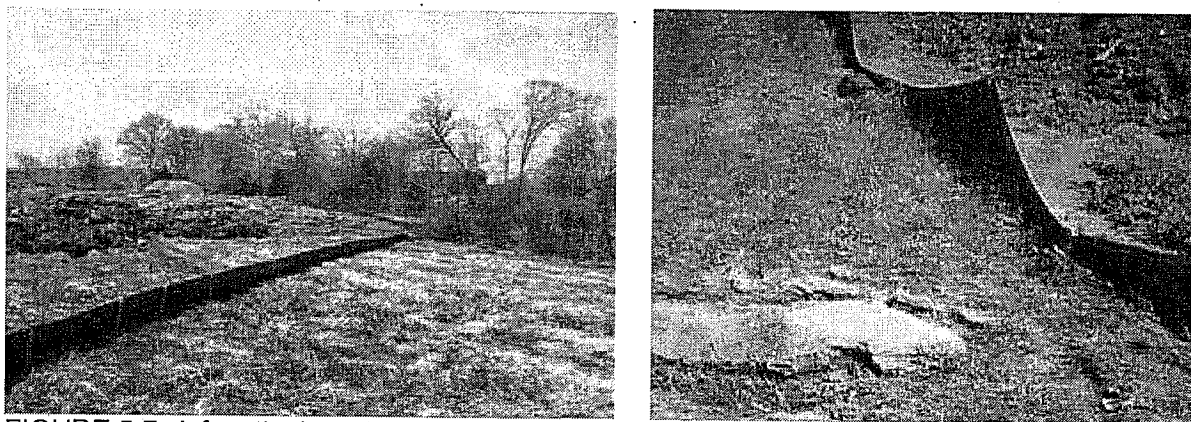


FIGURE 5-7 A functioning silt fence (left) and an improperly maintained silt fence (right).
SOURCES: EPA NPDES Menu of BMPs and Robert Traver.

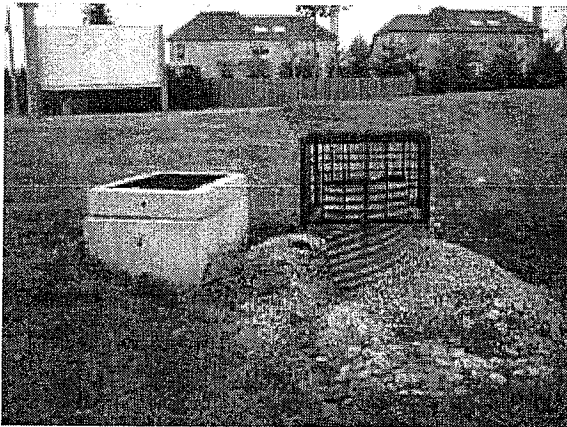
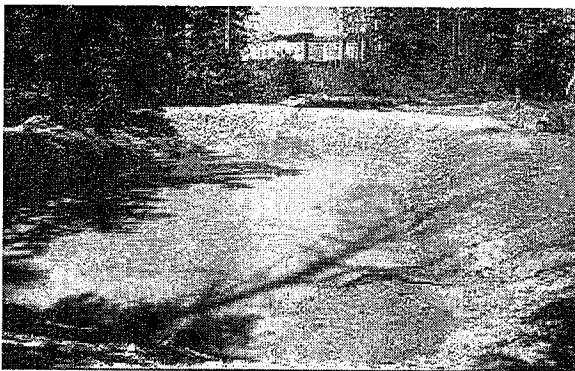


FIGURE 5-8 Sediment filter left in place after construction. SOURCE: Robert Traver.



Sediment basins are used to trap sediments and temporarily detain runoff on larger construction sites

FIGURE 5-9 Sediment basin. SOURCE: EPA NPDES Menu of BMPs.



FIGURE 5-10 Rumble strips to remove dirt from vehicle tires. SOURCE: Laura Ehlers.

Control of the runoff's erosive potential is a critical element. Most erosion and sediment control manuals provide design guidance on the capacity and ability of swales to handle runoff without eroding, on the design of flow paths to transport runoff at non-erosive velocities, and on the dissipation of energy at pipe outlets. Examples include rock energy dissipaters, level spreaders (see Figure 5-11), and other devices.

Box 5-3 provides a comprehensive list of recommended construction SCMs. The reader is directed to reviews by Brown and Caraco (1997) and Shaver et al. (2007) for more information. Although erosion and sediment control practices are temporary, they require constant operation and maintenance during the complicated sequence of construction and after major storm events. It is exceptionally important to ensure that practices are frequently inspected and repaired and that sediments are cleaned out. Erosion and sediment control are widely applied in many communities, and most states have some level of design guidance or standards and specifications. Nonetheless, few communities have quantified the effectiveness of a series of construction SCMs applied to an individual site, nor have they clearly defined performance benchmarks for individual practices or their collective effect at the site. In general, there has been little monitoring in the past few decades to characterize the performance of construction SCMs, although a few notable studies have been recently published (e.g., Line and White, 2007). Box 5-4 describes the effectiveness of filter fences and filter fences plus grass buffers to reduce sediment loadings from construction activities and the resulting biological impacts.

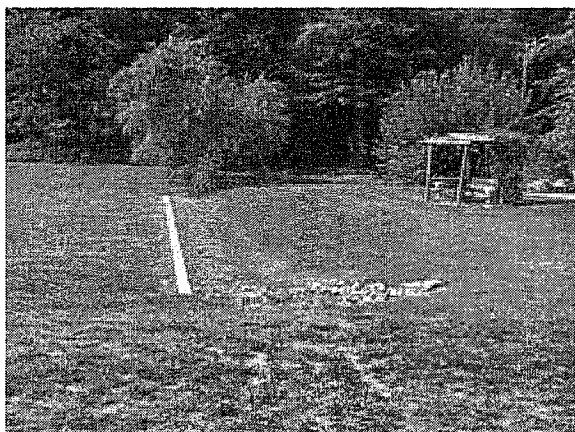


FIGURE 5-11 Level spreader. SOURCE: Robert Traver.

BOX 5-3

Recommended Construction Stormwater Control Measures

1. As the top priority, emphasize construction management SCMs as follows:
 - Maintain existing vegetation cover, if it exists, as long as possible.
 - Perform ground-disturbing work in the season with smaller risk of erosion, and work off disturbed ground in the higher risk season.
 - Limit ground disturbance to the amount that can be effectively controlled in the event of rain.
 - Use natural depressions and planning excavation to drain runoff internally and isolate areas of potential sediment and other pollutant generation from draining off the site, so long as safe in large storms.
 - Schedule and coordinate rough grading, finish grading, and erosion control application to be completed in the shortest possible time overall and with the shortest possible lag between these work activities.
2. Stabilize with cover appropriate to site conditions, season, and future work plans. For example:
 - Rapidly stabilize disturbed areas that could drain off the site, and that will not be worked again, with permanent vegetation supplemented with highly effective temporary erosion controls until achievement of at least 90 percent vegetative soil cover.
 - Rapidly stabilize disturbed areas that could drain off the site, and that will not be worked again for more than three days, with highly effective temporary erosion controls.
 - If at least 0.1 inch of rain is predicted with a probability of 40 percent or more, before rain falls stabilize or isolate disturbed areas that could drain off the site, and that are being actively worked or will be within three days, with measures that will prevent or minimize transport of sediment off the property.
3. As backup for cases where all of the above measures are used to the maximum extent possible but sediments still could be released from the site, consider the need for sediment collection systems including, but not limited to, conventional settling ponds and advanced sediment collection devices such as polymer-assisted sedimentation and advanced sand filtration.
4. Specify emergency stabilization and/or runoff collection (e.g., using temporary depressions) procedures for areas of active work when rain is forecast.
5. If runoff can enter storm drains, use a perimeter control strategy as backup where some soil exposure will still occur, even with the best possible erosion control (above measures) or when there is discharge to a sensitive waterbody.
6. Specify flow control SCMs to prevent or minimize to the extent possible:
 - Flow of relatively clean off-site water over bare soil or potentially contaminated areas;
 - Flow of relatively clean intercepted groundwater over bare soil or potentially contaminated areas;
 - High velocities of flow over relatively steep and/or long slopes, in excess of what erosion control coverings can withstand; and
 - Erosion of channels by concentrated flows, by using channel lining, velocity control, or both.
7. Specify stabilization of construction entrance and exit areas, provision of a nearby tire and chassis wash for dirty vehicles leaving the site with a wash water sediment trap, and a sweeping plan.
8. Specify construction road stabilization.
9. Specify wind erosion control.
10. Prevent contact between rainfall or runoff and potentially polluting construction materials, processes, wastes, and vehicle and equipment fluids by such measures as enclosures, covers, and containments, as well as berming to direct runoff.

BOX 5-4

Receiving Water Impacts Associated with Construction Site Discharges

The following is a summary of a recent research project that investigated in-stream biological conditions downstream of construction sites having varying levels of erosion controls (none, the use of filter fences, and filter fences plus grass buffers) for comparison. The project title is *Studies to Evaluate the Effectiveness of Current BMPs in Controlling Stormwater Discharges from Small Construction Sites* and was conducted for the Alabama Water Resources Research Institute, Project 2001AL4121B, by Drs. Robert Angus, Ken Marion, and Melinda Lalor of the University of Alabama at Birmingham. The initial phase of the project, described below, was completed in 2002. While this case study is felt to be representative of many sites across the United States, there are other examples of where silt fences have been observed to be more effective (e.g., Barrett et al., 1998).

Methods

This study was conducted in the upper Cahaba River watershed in north central Alabama, near Birmingham. The study areas had the following characteristics. (1) Topography and soil types representative of the upland physiographic regions in the Southeast (i.e., southern Appalachian and foothill areas); thus, findings from this study should be relevant to a large portion of the Southeast. (2) The rainfall amounts and intensities in this region are representative of many areas of the Southeast and (3) the expanding suburbs of the Birmingham metropolitan area are rapidly encroaching upon the upper Cahaba River and its tributaries. Stormwater runoff samples were manually collected from sheet flows above silt fences, and from points below the fence within the vegetated buffer. Water was sampled during "intense" (≥ 1 inch/hour) rain events. The runoff samples were analyzed for turbidity, particle size distribution (using a Coulter Counter Multi-Sizer IIe), and total solids (dissolved solids plus suspended/non-filterable solids). Sampling was only carried out on sites with properly installed and well-maintained silt fences, located immediately upgrate from areas with good vegetative cover.

Six tributary or upper mainstream sites were studied to investigate the effects of sedimentation from construction sites on both habitat quality and the biological "health" of the aquatic ecosystem (using benthic macroinvertebrates and fish). EPA's Revision to Rapid Bioassessment Protocols for Use in Streams and Rivers was used to assess the habitat quality at the study sites. Each site was assessed in the spring to evaluate immediate effects of the sediment, and again during the following late summer or early fall to evaluate delayed effects.

Results

Effectiveness of Silt Fences. Silt fences were found to be better than no control measures at all, but not substantially. The mean counts of small particles ($< 5 \mu\text{m}$) below the silt fences were about 50 percent less than that from areas with no erosion control measures, even though the fences appeared to be properly installed and in good order. However, the variabilities were large and the difference between the means was not statistically significant. For every variable measured, the mean values of samples taken below silt fences were significantly higher ($p < 0.001$) than samples collected from undisturbed vegetated control sites collected nearby and at the same time. These data therefore indicate that silt fences are only marginally effective at reducing soil particulates in runoff water.

Effectiveness of Filter Fences with Vegetated Buffers. Runoff samples were also collected immediately below filter fences, and below filter fences after flow over buffers having 5, 10, and 15 feet of dense (intact) vegetation. Mean total solids in samples collected below silt fences and a 15-foot-wide vegetated buffer zone were about 20 percent lower, on average, than those samples collected only below the silt fence. The installation of filter fences above an intact, good vegetated buffer removes sediment from construction site runoff more effectively than with the use of filter fences alone.

continues next page

BOX 5-4 Continued

Biological Metrics Sensitive to Sedimentation Effects (Fish). Analysis of the fish biota indicates that various metrics used to evaluate the biological integrity of the fish community also are affected by highly sedimented streams. As shown in Figure 5-12, the overall composition of the population, as quantified by the Index of Biotic Integrity (IBI) is lower; the proportion and biomass of darters, a disturbance-sensitive group, is lower; the proportion and biomass of sunfish is higher; the Shannon-Weiner diversity index is lower; and the number of disturbance-tolerant species is higher as mean sediment depth increases.

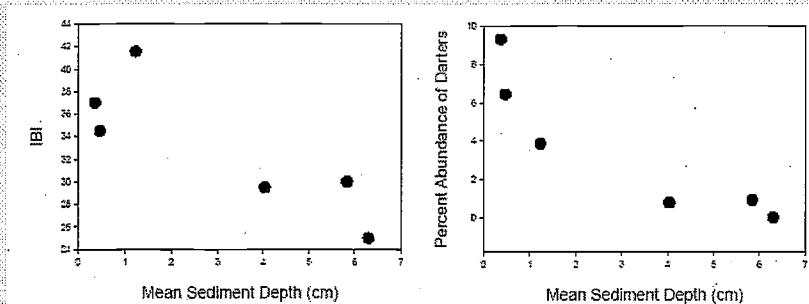


FIGURE 5-12 Association between two fish metrics and amount of stream sediment. NOTE: The IBI is based on numerous characteristics of the fish population. The percent relative abundance of darters is the percentage of darters to all the fish collected at a site. SOURCE: Alabama WRRI.

Benthic Macroinvertebrates. A number of stream benthic macroinvertebrate community characteristics were also found to be sensitive to sedimentation. Metrics based on these characteristics differ greatly between sediment-impacted and control sites (Figure 5-13). Some of the metrics that appear to reflect sediment-associated stresses include the Hilsenhoff Biotic Index (HBI), a variation of the EPT index (percent EPT minus Baetis), and the Sorensen Index of Similarity to a reference site. The HBI is a weighted mean tolerance value; high HBI values indicate sites dominated by disturbance-tolerant macroinvertebrate taxa. The EPT% index is the percent of the collection represented by organisms in the generally disturbance-sensitive orders *Ephemeroptera*, *Plecoptera*, and *Trichoptera*. Specimens of the genus *Baetis* were not included in the index as they are relatively disturbance-tolerant. The HBI and the EPT indices also show positive correlations to several other measures of disturbance, such as percent of the watershed altered by development.

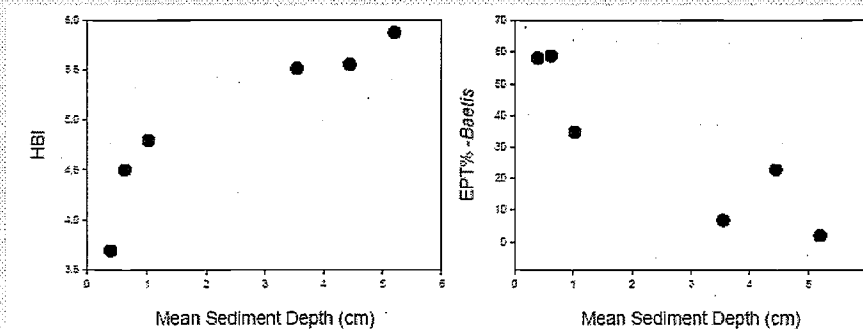


FIGURE 5-13 Associations between two macroinvertebrate metrics and the amount of stream sediment. SOURCE: Alabama WRRI.

Reforestation and Soil Compost Amendments

This set of practices seeks to improve the quality of native vegetation and soils present at the site. Depending on the ecoregion, this may involve forest, prairie, or chaparral plantings, tilling, and amending compacted soils to improve their hydrologic properties.

The goal is to maintain as much predevelopment hydrologic function at a development site as possible by retaining canopy interception, duff/soil layer interception, evapotranspiration, and surface infiltration. The basic methods to implement this practice are described in Cappiella et al. (2006), Pitt et al. (2005), Chollak and Rosenfeld (1998), and Balusek (2003).

At this time, there are few monitoring data to assess the degree to which land reforestation or soil amendments can improve the quality of stormwater runoff at a particular development site, apart from the presumptive watershed research that has shown that forests with undisturbed soils have very low rates of surface runoff and extremely low levels of pollutants in runoff (Singer and Rust, 1975; Johnson et al., 2000; Chang, 2006). More data are needed on the hydrologic properties of urban forests and soils whose ecological functions are stressed or degraded by the urbanization process (Pouyat et al., 1995, 2007).

Pollution Prevention SCMs for Stormwater Hotspots

Certain classes of municipal and industrial operations are required to maintain a series of pollution prevention practices to prevent or minimize contact of pollutants with rainfall and runoff. Pollution prevention practices involve a wide range of operational practices at a site related to vehicle repairs, fueling, washing and storage, loading and unloading areas, outdoor storage of materials, spill prevention and response, building repair and maintenance, landscape and turf management, and other activities that can introduce pollutants into the stormwater system (CWP, 2005). Training of personnel at the affected area is needed to ensure that industrial and municipal managers and employees understand and implement the correct stormwater pollution prevention practices needed for their site or operation.

Examples of municipal operations that may need pollution prevention plans include public works yards, landfills, wastewater treatment plants, recycling and solid waste transfer stations, maintenance depots, school bus and fleet storage and maintenance areas, public golf courses, and ongoing highway maintenance operations. The major industrial categories that require stormwater pollution prevention plans were described in Table 2-3. Both industrial and municipal operations must develop a detailed stormwater pollution prevention plan, train employees, and submit reports to regulators. Compliance has been a significant issue with this program in the past, particularly for small businesses (Duke and Augustenberg, 2006; Cross and Duke, 2008). Recently filed investigations of stormwater hotspots indicate many of these operations are not fully implementing their stormwater pollution prevention plans, and a recent GAO report (2007) indicates that state inspections and enforcement actions are extremely rare.

The goal of pollution prevention is to prevent contact of rainfall or stormwater runoff with pollutants, and it is an important element of the post-construction stormwater plan. However, with the exception of a few industries such as auto salvage yards (Swamikannu, 1994), basic research is lacking on how much greater event mean concentrations are at municipal and industrial stormwater hotspots compared to other urban land uses. In addition, little is presently

known about whether aggressive implementation of stormwater pollution prevention plans actually can reduce stormwater pollutant concentrations at hot spots.

Runoff Volume Reduction—Rainwater Harvesting

A primary goal of stormwater management is to reduce the volume of runoff from impervious surfaces. There are several classes of SCMs that can achieve this goal, including rainwater harvesting systems, vegetated SCMs that evapotranspire part of the volume, and infiltration SCMs. For all of these measures, the amount of runoff volume to be captured depends on watershed goals, site conditions including climate, upstream nonstructural practices employed, and whether the chosen SCM is the sole management measure or part of a treatment train. Generally, runoff-volume-reduction SCMs are designed to handle at least the first flush from impervious surfaces (1 inch of rainfall). In Pennsylvania, control of the 24-hour, two-year storm volume (about 8 cm) is considered the standard necessary to protect stream-channel geomorphology, while base flow recharge and the first flush can be addressed by capturing a much smaller volume of rain (1–3 cm). Where both goals must be met, the designer is permitted to either oversize the volume reduction device to control the larger volume, or build a smaller device and use it in series with an extended detention basin to protect the stream geomorphology (PaDEP, 2006). Some designers have reported that in areas with medium to lower percentage impervious surfaces they are able to control up to the 100-year storm by enlarging runoff-volume-reduction SCMs and using the entire site. In retrofit situations, capture amounts as small as 1 cm are a distinct improvement. It should be noted that there are important, although indirect, water quality benefits of all runoff-volume-reduction SCMs—(1) the reduction in runoff will reduce streambank erosion downstream and the concomitant increases in sediment load, and (2) volume reductions lead to pollutant load reductions, even if pollutant concentrations in stormwater are not decreased.

Rainwater harvesting systems refer to use of captured runoff from roof tops in rain barrels, tanks, or cisterns (Figures 5-14 and 5-15). This SCM treats runoff as a resource and is one of the few SCMs that can provide a tangible economic benefit through the reduction of treated water usage. Rainwater harvesting systems have substantial potential as retrofits via the use of rain barrels or cisterns that can replace lawn or garden sprinkling systems. Use of this SCM to provide gray water within buildings (e.g., for toilet flushing) is considerably more complicated due to the need to construct new plumbing and obtain the necessary permits.

The greatest challenge with these systems is the need to use the stored water and avoid full tanks, since these cannot be responsive in the event of a storm. That is, these SCMs are effective only if the captured runoff can be regularly used for some grey water usage, like car washing, toilet flushing, or irrigation systems (golf courses, landscaping, nurseries). In some areas it might be possible to use the water for drinking, showering, or washing, but treatment to potable water quality would be required. Sizing of the required storage is dependent on the climate patterns, the amount of impervious cover, and the frequency of water use. Areas with frequent rainfall events require less storage as long as the water is used regularly, while areas with cold weather will not be able to utilize the systems for irrigation in the winter and thus require larger storage.



FIGURE 5-14 Rainwater harvesting tanks at a Starbucks in Austin, Texas. SOURCE: Laura Ehlers.

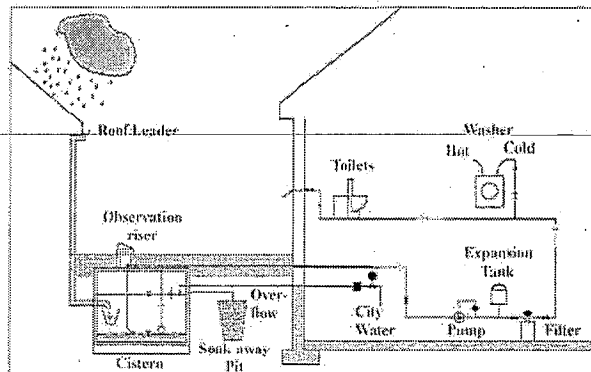


FIGURE 5-15 A Schematic of rainwater harvesting . SOURCE: PaDEP (2006).

One substantial advantage of these systems is their ability to reduce water costs for the user and the ability to share needs. An example of this interaction is the Pelican Hill development in Irvine, California, where excess runoff from the streets and houses is collected in enormous cisterns and used for watering of a nearby golf course. Furthermore, compared to other SCMs, the construction of rainwater harvesting facilities provide a long-term benefit with minimal maintenance cost, although they do require an upfront investment for piping and storage tanks.

Coombes et al. (2000) found that rainwater harvesting achieved a 60 to 90 percent reduction in runoff volume; in general, few studies have been conducted to determine the performance of these SCMs. It should be noted that rainwater harvesting systems do collect airborne deposition and acid rain.

Runoff Volume Reduction—Vegetated

A large and very promising class of SCMs includes those that use infiltration and evapotranspiration via vegetation to reduce the volume of runoff. These SCMs also directly address water quality of both surface water and groundwater by reducing streambank erosion, capturing suspended solids, and removing other pollutants from stormwater during filtration through the soil (although the extent to which pollutants are removed depends on the specific pollutant and the local soil chemistry). Depending on their design, these SCMs can also reduce peak flows and recharge groundwater (if they infiltrate). These SCMs can often be added as retrofits to developed areas by installing them into existing lawns, rights of way, or traffic islands. They can add beauty and property value.

Flow volume is addressed by this SCM group by first capturing runoff, creating a temporary holding area, and then removing the stored volume through infiltration and evapotranspiration. Examples include bioswales, bioretention, rain gardens, green roofs, and bioinfiltration. Swales refer to grassy areas on the side of the road that convey drainage. These were first designed to move runoff away from paved areas, but can now be designed to achieve a certain contact time with runoff so as to promote infiltration and pollutant removal (see Figure 5-

16). Bioretention generally refers to a constructed sand filter with soil and vegetation growing on top to which stormwater runoff from impervious surfaces is directed (Figure 5-17). The original rain garden or bioretention facilities were constructed with a fabric at the bottom of the prepared soil to prevent infiltration and instead had a low-level outflow at the bottom. Green roofs (Figure 5-18) are very similar to bioretention SCMs. They tend to be populated with a light expanded shale-type soil and succulent plants chosen to survive wet and dry periods. Finally, bioinfiltration is similar to bioretention but is better engineered to achieve greater infiltration (Figure 5-19). All of these devices are usually at the upper end of a treatment train and designed for smaller storms, which minimizes their footprint and allows for incorporation within existing infrastructure (such as traffic control devices and median strips). This allows for distributed treatment of the smaller volumes and distributed volume reduction.

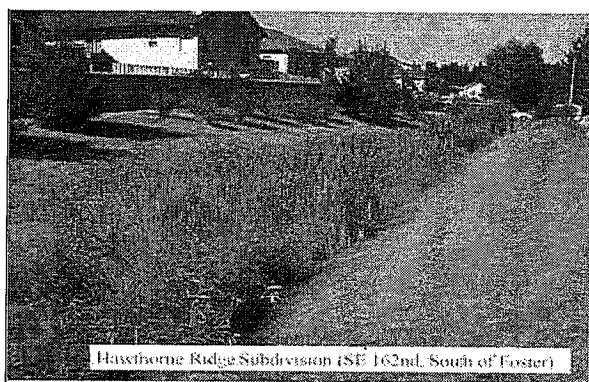


FIGURE 5-16 Vegetated swale.
SOURCE: PaDEP (2006).



FIGURE 5-17 Bioretention during a storm event at the University of Maryland.
SOURCE: Reprinted, with permission, from Davis et al. (2008). Copyright 2008 by the American Society of Civil Engineers.

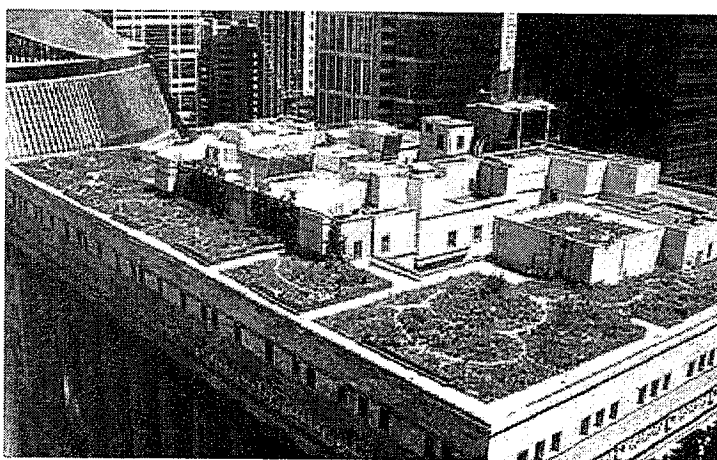


FIGURE 5-18 City Hall in the center of Chicago's downtown was retrofitted with a green roof to reduce the heat island effect, remove airborne pollutants, and attenuate stormwater flows as a demonstration of innovative stormwater management in an ultra-urban setting. SOURCE: Conservation Design Forum.

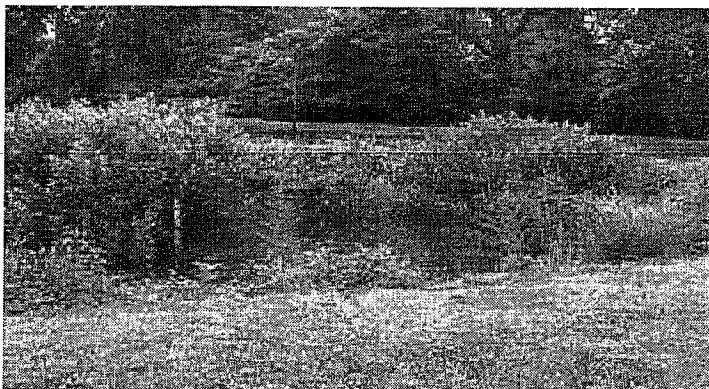


FIGURE 5-19 Retrofit bioinfiltration at Villanova University immediately following a storm event.
SOURCE: Robert Traver.

These SCMs work by capturing water in a vegetated area, which then infiltrates into the soil below. They are primarily designed to use plant material and soil to evapotranspire the runoff over several days. A shallow depth of ponding is required, since the inflows may exceed the possible infiltration ability of the native soil. This ponding is maintained above an engineered sandy soil mixture and is a surface-controlled process (Hillel, 1998). Early in the storm, the soil moisture potential creates a suction process that helps draw water into the SCM. This then changes to a steady rate that is “practically equal to the saturated hydraulic conductivity” of the subsurface (Hillel, 1998). The hydrologic design goal should be to maximize the volume of water that can be held in the soil, which necessitates consideration of the soil hydraulic conductivity (which varies with temperature), climate, depth to groundwater, and time to drain. Usually these devices are designed to empty between 24 and 72 hours after a storm event. In some cases (usually bioretention), these SCMs have an underdrain.

The choice of vegetation is an important part of the design of these SCMs. Many sites where infiltration is desirable have highly sandy soils, and the vegetation has to be able to endure both wet and dry periods. Long root growths are desired to promote infiltration (Barr Engineering Co., 2001), and plants that attract birds can reduce the insect population. Bioretention cells may be wet for longer periods than bioinfiltration sites, requiring different plants. Denser plantings or “thorns” may be needed to avoid the destruction caused by humans and animals taking shortcuts through the beds.

The pollutant removal mechanism operating for volume-reduction SCMs are different for each pollutant type, soil type, and volume-reduction mechanism. For bioretention and SCMs using infiltration, the sedimentation and filtration of suspended solids in the top layers of the soil are extremely efficient. Several studies have shown that the upper layers of the soil capture metals, particulate nutrients, and carbon (Pitt, 1996; Deschesne et al., 2005; Davis et al., 2008). The removal of dissolved nutrients from stormwater is not as straightforward. While ammonia is caught by the top organic layer, nitrate is mobile in the soil column. Some bioretention systems have been built to hold water in the soil for longer periods in order to create anaerobic conditions that would promote denitrification (Hunt and Lord, 2006a). Phosphorus removal is related to the amount of phosphorus in the original soil. Some studies have shown that bioretention cells built with agricultural soils increased the amount of phosphorus released. Chlorides pass through the system unchecked (Ermilio and Traver, 2006), while oils and greases are easily removed by the

organic layer. Hunt et al. (2008) have reported in studies in North Carolina that the drying cycle appears to kill off bacteria. Temperature is not usually a concern as most storms do not overflow these devices. Green roofs collect airborne deposition and acid rain and may export nutrients when they overflow. However, this must be tempered by the fact that in larger storms, most natural lands would produce nutrients.

A group of new research studies from North America and Australia have demonstrated the value of many of these runoff-volume-reduction practices to replicate predevelopment hydrology at the site. The results from 11 recent studies are given in Table 5-3, which shows the runoff reduction capability of bioretention. As can be seen, the reduction in runoff volume achieved by these practices is impressive—ranging from 20 to 99 percent with a median reduction of about 75 percent. Box 5-5 discusses the excellent performance of the bioswales installed during Seattle’s natural drainage systems project (see also Horner et al., 2003; Jefferies, 2004; Stagge, 2006). Bioinfiltration has been less studied, but one field study concluded that close to 30 percent of the storm volume was able to be removed by bioinfiltration (Sharkey, 2006). A very recent case study of bioinfiltration is provided in Box 5-6, which demonstrates that the capture of small storms through these SCMs is extremely effective in areas where the majority of the rainfall falls in smaller storms.

TABLE 5-3 Volumetric Runoff Reduction Achieved by Bioretention

Bioretention Design	Location	Runoff Reduction	Reference
Infiltration	CT	99%	Dietz and Clausen (2006)
	PA	86%	Ermilio and Traver (2006)
	FL	98%	Rushton (2002)
	AUS	73%	Lloyd et al. (2002)
Underdrain	ONT	40%	Van Seters et al. (2006)
	Model	30%	Perez-Perdini et al. (2005)
	NC	40 to 60%	Smith and Hunt (2007)
	NC	20 to 29%	Sharkey (2006)
	NC	52 to 56%	Hunt et al. (2008)
	NC	20 to 50%	Passeport et al. (2008)
	MD	52 to 65%	Davis et al. (2008)

**BOX 5-5
 Bioswale Case Study
 100th Street Cascade, Seattle, Washington**

A recent example of the ability of SCMs to accomplish a variety of goals was illustrated for water quality swales in Seattle, Washington. As part of its Natural Drainage Systems Project, the City of Seattle retrofitted several blocks of an urban residential neighborhood with curbside vegetated swales. On NW 110th Street, the two-block-long system was developed as a cascade, due to the steep slope (6 percent). Twelve stepped, in-series biofilters were installed between properties and the road, each of which contains a storage area and an overflow weir. During rain events, the cells were designed to fill before emptying into the cell downstream. The soils in the bottom of each cell were over one foot thick and consisted of river rocks overlain by a swale mix. Native plants were chosen to vegetate the sides of the swale.

Extensive flow and water quality sampling occurred during 2003–2006 at the inflow and outflow of the biofilters as well as at reference points elsewhere in the neighborhood that are not served by the new SCMs. Perhaps the most profound observation was that almost 50 percent of all rainfall flowing into the cascade was infiltrated, resulting in a corresponding reduction in runoff. Indeed, the cascade discharged measurable flow only during 49 of 235 storm events during the period. Depending on preceding conditions, the cascade was able to retain all of the flow for storms up to 1 inch in magnitude. In addition to the reduction in runoff affected by the swales, they also achieved significant peak flow reduction, as shown in Figure 5-20. Many peak flow rates were entirely dampened, even those where the inflow peak rate was as high as 0.7 cfs.

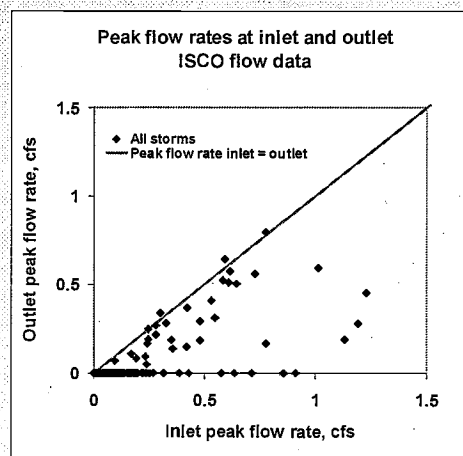
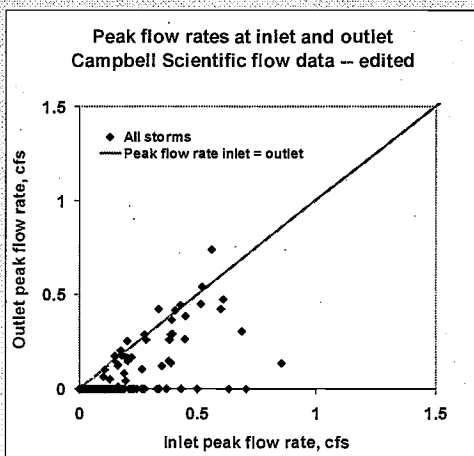
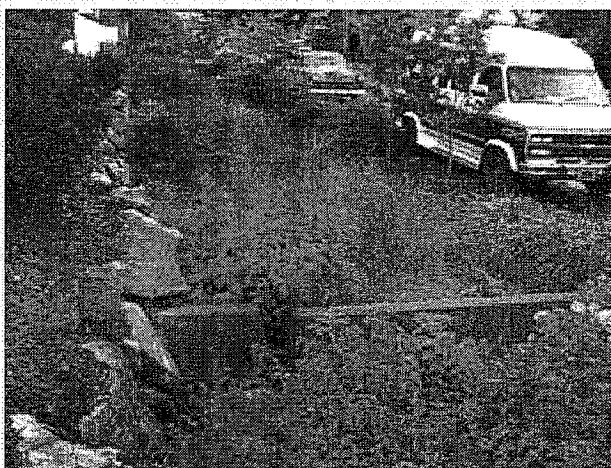


FIGURE 5-20 Peak flow rates at the inlet and outlet of the cascade, as measured by two different devices: Campbell Scientific (left) and ISCO (right). SOURCE: Horner and Chapman (2007).

continues next page

BOX 5-5 Continued

Water quality data were also extremely encouraging, as shown in Table 5-4. For total suspended solids, influent concentration of 94 mg/L decreased to 29 mg/L at the outlet of the cascade. Similar percent removals were observed for total copper, total phosphorus, total zinc, and total lead (see Table 5-4). Soluble phosphorus concentrations tended to increase from the inflow of the cascade to the outflow.

TABLE 5-4 Typical Outflow Quality from the 100th Street Cascade. Permission pending.

Pollutant	Range (mg/L)
Total Suspended Solids	10–40
Total Nitrogen	0.6–1.4
Total Phosphorus	0.09–0.23
Soluble Reactive Phosphorus	0.02–0.05
Total Copper	0.004–0.008
Dissolved Copper	0.002–0.005
Total Zinc	0.04–0.11
Dissolved Zinc	0.02–0.06
Total Lead	0.002–0.007
Dissolved Lead	<0.001
Motor Oil	0.11–0.33

SOURCE: Horner and Chapman (2007).

Taking both measured concentrations and volume reduction into account, the cascade reduced the mass loadings for the contaminants by 60 percent to greater than 90 percent. As shown in Table 5-5, pollutants associated with sediments were reduced to the greatest extent, while dissolved pollutants were less readily removed.

TABLE 5-5 Pollutant Mass Loading Reductions at 100th Street Cascade. Permission pending.

Pollutant	Percent Reduction (90% Confidence Interval)
Total Suspended Solids	84 (72–92)
Total Nitrogen	63 (53–74)
Total Phosphorus	63 (49–74)
Total Copper	83 (77–88)
Dissolved Copper	67 (50–78)
Total Zinc	76 (46–85)
Dissolved Zinc	55 (21–70)
Total Lead	90 (84–94)
Motor Oil	92 (86–97)

SOURCE: Horner and Chapman (2007).

This level of performance was compared to other parts of the neighborhood treated with conventional ditch and pipe systems. The concentrations of almost all pollutants at the outlet of the 100th Cascade was significantly lower than a corresponding outlet at 120th Street. Furthermore, the ability of this SCM to attenuate peak flows and reduce runoff was remarkable.

BOX 5-6
SCM Evaluation Through Monitoring:
Villanova Bioinfiltration SCM

The Bioinfiltration Traffic Island located on the campus of Villanova University in Southeastern Pennsylvania is part of the Villanova Urban Stormwater Partnership (VUSP) BMP Demonstration Park (see Figure 5-21). Originally funded through the Pennsylvania Growing Greener Program, and now through the State's 319 nonpoint source monitoring program, the site has been monitored continuously since soon after it was constructed in 2001. This monitoring has led to a wealth of information about the performance and monitoring needs of infiltration SCMs.

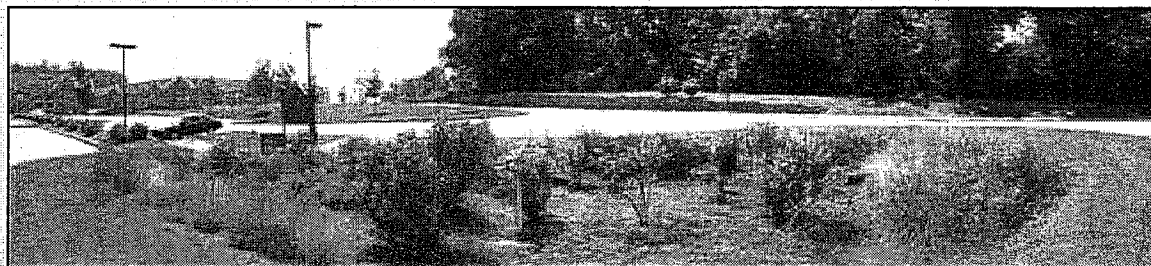


FIGURE 5-21 Villanova Bioinfiltration Traffic Island SCM. SOURCE : Reprinted, with permission, from VUSP. Copyright by Villanova Urban Stormwater Partnership.

The SCM is a retrofit of an existing curb-enclosed traffic island in the parking lot of a university dormitory complex. The original grass area was dug out to approximately six feet. The soil removed during the excavation was then mixed with sand onsite to create a 50 percent sand-soil mixture. This soil mixture was then placed back into the excavation to a depth of approximately four feet, leaving a surface depression that is an average of two feet deep. Care was taken during construction to prevent any compaction of either the soil mixture or the undisturbed soil below. Placement of the mixed soil is shown in Figure 5-22.

During construction two curb cuts were created to direct runoff into the SCM. Creation of one of the cuts entailed filling and paving over an existing stormwater inlet to redirect the runoff that previously entered the stormwater drainage system of the parking lot. Another existing inlet was used to collect and redirect runoff into the SCM. Plants were chosen based on their ability to thrive in both extreme wet and dry conditions; the species chosen are commonly found on sand dunes where similar wet/dry conditions may exist.

The contributing watershed is approximately 50,000 square feet and is 52 percent impervious surfaces. The design goal of the SCM was for it to temporarily store the first inch of runoff. The one-inch capture depth is based on an analysis of local historical rainfall data showing that capture of the first inch of each storm would account for approximately 96 percent of the annual rainfall. This capture depth would therefore also account for the majority of the annual pollutant load coming from the drainage area.

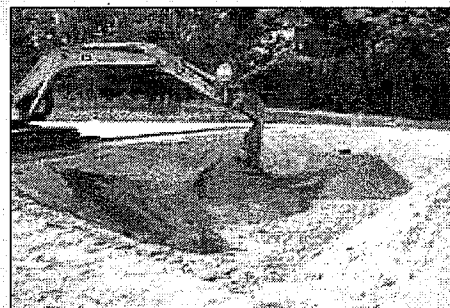


FIGURE 5-22 Placement of the mixed soil in the basin. Notice the construction equipment being kept away from the basin to avoid potential compaction of the sub-base. SOURCE : Reprinted, with permission, from VUSP. Copyright by Villanova Urban Stormwater Partnership.

continues next page

BOX 5-6 Continued

Continuous monitoring over multiple years has increased our understanding of how this type of structure operates and its benefits. For example, Heasom et al. (2006) was able to produce a continuous hydrologic flow model of the site based on season. Figure 5-23 shows the variability of the infiltration rate on a seasonal basis, and the relationship between infiltration and temperature (Emerson and Traver, 2008). This work has also shown no statistical change in performance over the five-year monitoring period.

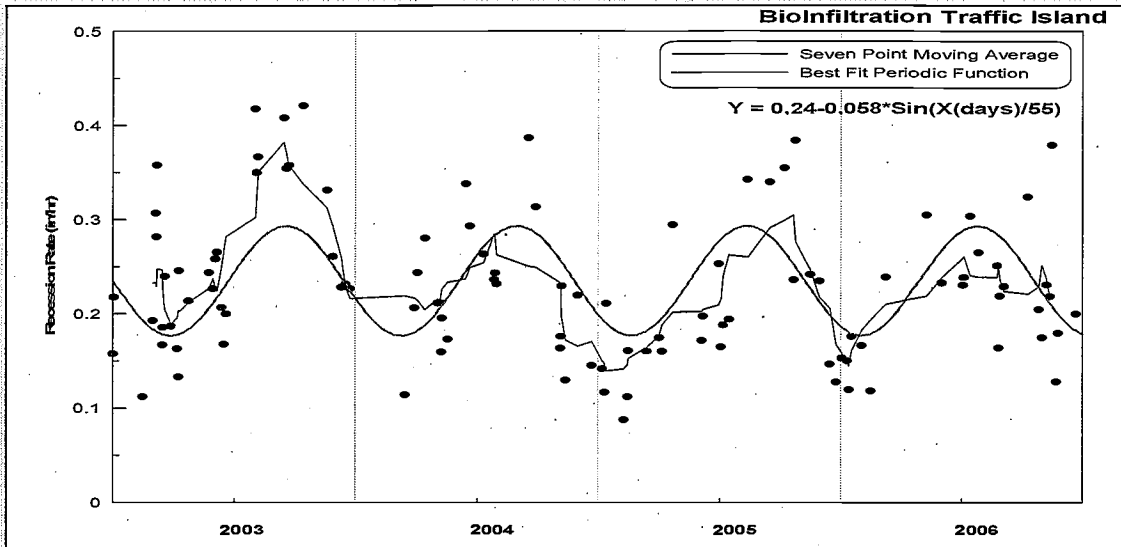


FIGURE 5-23 Seasonal Infiltration Rate. SOURCE: Reprinted, with permission, from Emerson and Traver (2008). Copyright 2008 by Journal of Irrigation and Drainage Engineering.

When examining the yearly performance of the site from a surface water standpoint, it is easily shown that on a regular basis approximately 50 to 60 percent of the runoff that reaches the site is removed from the surface waters, and 80 to 85 percent of the rainfall is infiltrated (Figure 5-24).

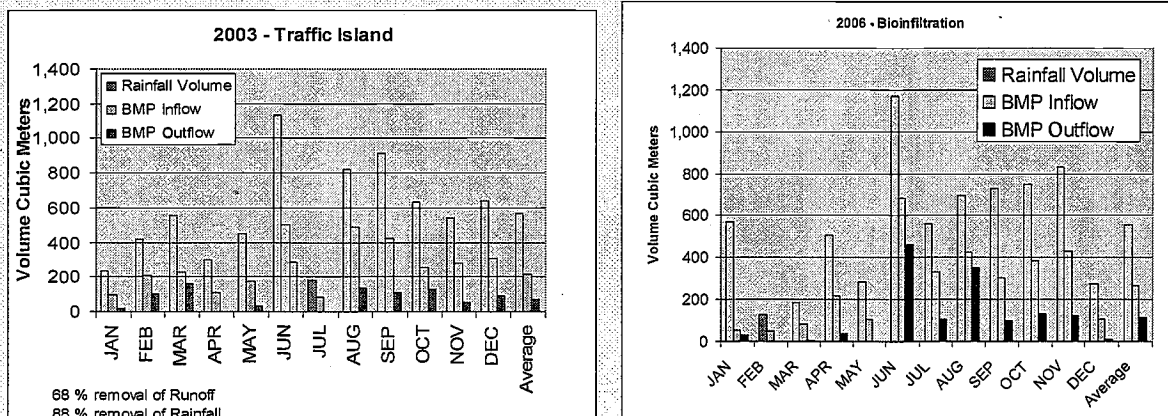


FIGURE 5-24 2003 Performance and 2006 Performance. SOURCE: Reprinted, with permission, from VUSP. Copyright by Villanova Urban Stormwater Partnership.

The performance of the SCM during individual storm events was examined in 2005. Out of 77 rainfall events, overflow was recorded for only seven events. Generally overflow did not occur for rainfalls less than 1.95 inches except for one occasion. As the bowl volume is much less than this value, substantial infiltration must be occurring during the storm event. When one extreme 6-inch storm was recorded (Figure 5-25), it was surprising to note that infiltration occurred all during the storm event, as did some unexpected peak flow reduction. What is even more impressive is to examine the reduction in the duration of flows, which is directly related to downstream channel erosion (Figure 5-26). Clearly the bioinfiltration SCM exceeded its design goals.

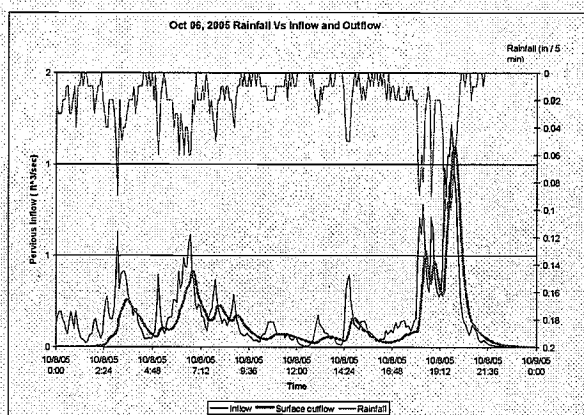


FIGURE 5-25 October 2005 extreme storm event. SOURCE: Reprinted, with permission, from VUSP. Copyright by Villanova Urban Stormwater Partnership.

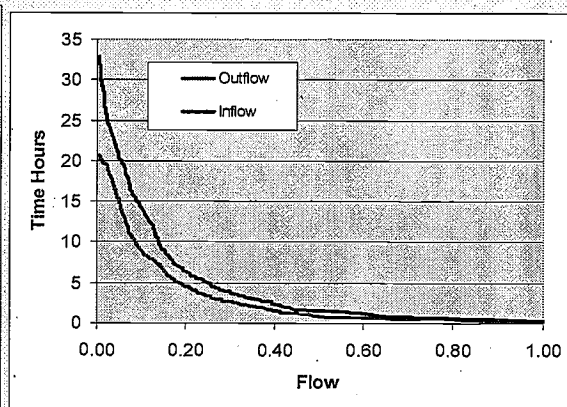


FIGURE 5-26 Flow duration curves, October 2005. SOURCE: Reprinted, with permission, from VUSP. Copyright by Villanova Urban Stormwater Partnership.

Research on this site is currently examining water quality benefits and groundwater interactions. When evaluating the pollutant removal of bioinfiltration, it is critical to consider flow volumes and pollutant levels together. For example, during many of the overflow events, there were higher nutrient levels leaving the SCM than entering due to the plants contained within the SCM. However, when the runoff volume reduction is considered, the total nitrogen and phosphorus removed from the influent is impressive (Davis et al., 2008). Water quality studies of the infiltrated water are still incomplete but generally show some conversion of nitrate to nitrite, and high chlorides from snow melt chemicals moving through the system. Nutrient levels are relatively low in the samples at the 8-foot depth.

The strengths of vegetated runoff-volume-reduction SCMs include the flexibility to utilize the drainage system as part of the treatment train. For example, bioswales can replace drainage pipes, green roofs can be installed on buildings, and bioretention can replace parking borders (Figure 5-27), thereby reducing the footprint of the stormwater system. Also, through the use of swales and reducing pipes and inlets, costs can be offset. Vegetated systems are more tolerant of the TSS collected, and their growth cycle maintains pathways for infiltration and prevents clogging. Freeze-thaw cycles also contribute to pathway maintenance. The aesthetic appeal of vegetated SCMs is also a significant strength.

Weaknesses include the dependence of these SCMs on native soil infiltration and the need to understand groundwater levels and karst geology, particularly for those SCMs designed to infiltrate. For bioinfiltration and bioretention, most failures occur early on and are caused by sedimentation and construction errors that reduce infiltration capacity, such as stripping off the topsoil and compacting the subsurface. Once a good grass cover is established in the contributing area, the danger of sedimentation is reduced. Nonetheless, the need to prevent sediment from overwhelming these structures is critical. The longevity of these SCMs and their vulnerability to toxic spills are a concern (Emerson and Traver, 2008), as is their failure to reduce chlorides. Finally, in areas where the land use is a hot spot, or where the SCM could potentially contaminate the groundwater supply, bioretention, non-infiltrating bioswales, and green roofs may be more suitable than infiltration SCMs.

The role of infiltration SCMs in promoting groundwater recharge deserves additional consideration. Although this is a benefit of infiltration SCMs in regions where groundwater levels are dropping, it may be undesirable in a few limited scenarios. For example, in the arid southwest contributions to base flow from irrigation have turned some dry ephemeral stream systems into perennial streams that support the growth of dense vegetation, which may be less desirable habitat for certain riparian species (like the Arroyo toad in Southern California). Infiltration SCMs could contribute to changing the flow regime in cases such as these. In most urban areas, there is so much impervious cover that it would be difficult to “overinfiltrate.” Nonetheless, the use of infiltration SCMs will change local subsurface hydrology, and the ramifications of this—good and bad—should be considered prior to their installation.



FIGURE 5-27 North Carolina Retrofit Bioretention SCMs. SOURCE: Traver.

Maintenance of vegetated runoff-volume-reduction SCMs is relatively simple. A visit after a rainstorm to check for plant health, to check sediment buildup, and to see if the water is ponded can answer many questions. Maintenance includes trash pickup and seasonal removal of dead grasses and weeds. Sediment removal from pretreatment devices is required. Depending on the pollutant concentrations in the influent, the upper layer of organic matter may need to be removed infrequently to maintain infiltration and to prevent metal and nutrient buildup.

At the site level, the chief factors that lead to uncertainty are the infiltration performance of the soil, particular for the limiting subsoil layer, and how to predict the extent of pollutant removal. Traditional percolation tests are not effective to estimate the infiltration performance; rather, testing hydraulic conductivity is required. Furthermore, the infiltration rate varies depending on temperature and season (Emerson and Traver, 2008). Basing measurements on percent removal of pollutants is extremely misleading, since every site and storm generates different levels of pollutants. The extent of pollutant removal depends on land use, time between storms, seasons, and so forth. These factors should be part of the design philosophy for the site. Finally, it should also be pointed out that climate is a factor determining the effectiveness of some of these SCMs. For example, green roofs are more likely to succeed in areas having smaller, more frequent storms (like the Pacific Northwest) compared to areas subjected to less frequent, more intense storms (like Texas).

Runoff Volume Reduction—Subsurface

Infiltration is the primary runoff-volume-reduction mechanism for subsurface SCMs, such that much of the previous discussion is relevant here. Thus, like vegetated SCMs, these SCMs provide benefits for groundwater recharge, water quality, stream channel protection, peak flow reduction, capture of the suspended solids load, and filtration through the soil (Ferguson, 2002). Because these systems can be built in conjunction with paved surfaces (i.e., they are often buried under parking lots), the amount of water captured, and thus stream protection, may be higher than for vegetated systems. They also have lower land requirements than vegetated systems, which can be an enormous advantage when using these SCMs during retrofitting, as long as the soil is conducive to infiltration.

Similar to vegetated SCMs, this SCM group works primarily by first capturing runoff and then removing the stored volume through infiltration. The temporary holding area is made either of stone or using manufactured vaults. Examples include pervious pavement, infiltration trenches, and seepage pits (see Figures 5-28, 5-29, 5-30, 5-31, and 5-32). As with vegetated SCMs, a shallow depth of ponding is required, since the inflows may exceed the possible infiltration ability of the native soil. In this case, the ponding is maintained within a rock bed under a porous pavement or in an infiltration trench. These devices are usually designed to empty between 24 and 72 hours after the storm event.

The infiltration processes operating for these subsurface SCMs are similar to those for the vegetated devices previously discussed. Thus, much like for vegetated systems, the level of control achieved depends on the infiltration ability of the native soils, the percent of impervious surface area in the contributing watershed, land use contributing to the pollutant loadings, and climate. A large number of recent studies have found that permeable pavement can reduce runoff volume by anywhere from 50 percent (Rushton, 2002; Jefferies, 2004; Bean et al., 2007)

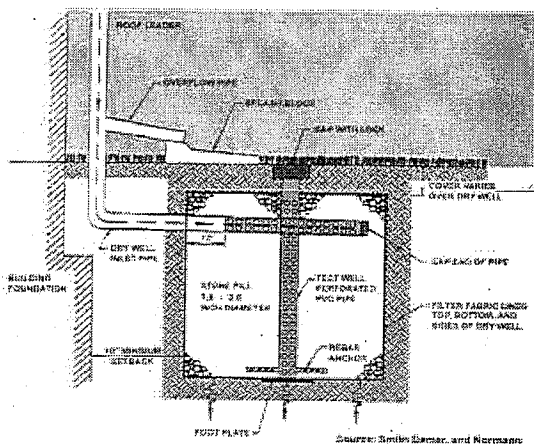


FIGURE 5-28 Schematic of a seepage pit. PaDEP.

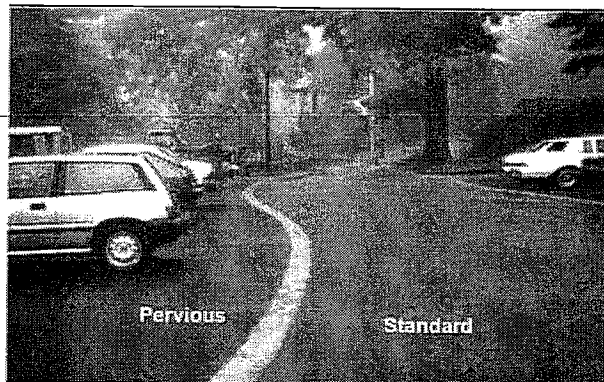


FIGURE 5-29 Porous asphalt. SOURCE: SOURCE: PaDEP.

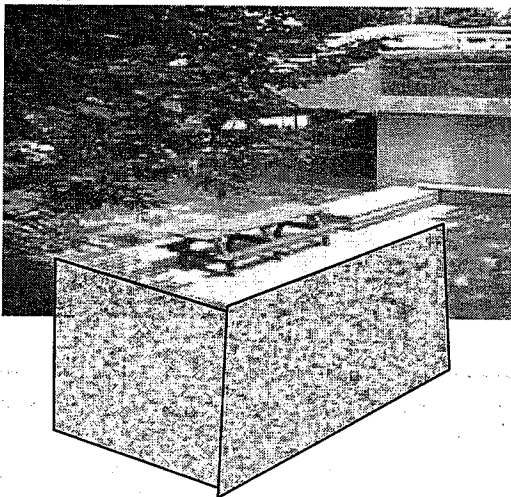


FIGURE 5-30 A retrofitted infiltration trench at Villanova University. SOURCE: Reprinted, with permission, from VUSP. Copyright by VUSP.

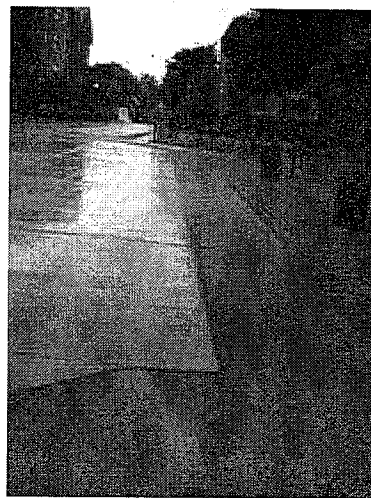


FIGURE 5-31 Pervious concrete at Villanova University. SOURCE: Reprinted, with permission from VUSP. Copyright by VUSP.



FIGURE 5-32 A small office building conversion at the edge of downtown Denver included the replacement of a portion of the site's parking with modular block porous pavement underlain by an 18-inch layer of crushed rock. Rainfall on the porous pavement and roof runoff for most storm events are contained in the reservoir created by the crushed rock. The pavement infiltrates runoff from most storm events for one-third of the impervious area on the half-acre site.

to as much as 95 percent or greater (van Seters et al., 2006; Kwiatkowski et al., 2007). Box 5-7 describes the success of a recent retrofitting of asphalt with pervious pavement at Villanova University.

The strengths of subsurface runoff-volume-reduction SCMs are similar to those of their vegetated counterparts. Additional attributes include their ability to be installed under parking areas and to manage larger volumes of rainfall. These SCMs typically have few problems with safety or vector-borne diseases because of their subsurface location and storage capacity, and they can be very aesthetically pleasing. The potential of permeable pavement could be particularly far-reaching if one considers the amount of impervious surface in urban areas that is comprised of roads, driveways, and parking lots.

The weaknesses of these SCMs are also similar to those of vegetated systems, including their dependence on native soil infiltration and the need to understand groundwater levels and karst geology. Simply estimating the soil hydraulic conductivity can have an error rate of an order of magnitude. Specifically for subsurface systems that use geotextiles (not permeable pavement), there is a danger of TSS being compressed against the bottom of the geotextile, preventing infiltration. There are no freeze-thaw cycles or vegetated processes that can reopen pathways, so the control of TSS is even more critical to their life span. In most cases (permeable pavement is an exception), pretreatment is required, except for the cleanest of sources (like a slate roof). Typically, manufactured devices, sediment forebays, or grass strips are part of the design of subsurface SCMs to capture the larger sediment particles.

The maintenance of subsurface runoff-volume-reduction SCMs is relatively simple but critical. If inspection wells are installed, a visit after a rainstorm will check that the volume is captured, and later that it has infiltrated. Porous surfaces should undergo periodic vacuum street sweeping when a sediment source is present. Pretreatment devices require sediment removal. The difficulty with this class of SCMs is that, if a toxic spill occurs or maintenance is not proactive, there are no easy corrective measures other than replacement.

Low-Impact Development. LID refers primarily to the use of small, engineered, on-site stormwater practices to treat the quality and quantity of runoff at its source. It is discussed here because the SCMs that are thought of as LID—particularly vegetated swales, green roofs, permeable pavement, and rain gardens—are all runoff-volume-reduction SCMs. They are designed to capture the first portion of a rainfall event and to treat the runoff from a few hundred square meters of impervious cover.

As discussed earlier, several studies have measured the runoff volume reduction of individual LID practices. Fewer studies are available on whether multiple LID practices, when used together, have a cumulative benefit at the neighborhood or catchment scale. Four monitoring studies have clearly documented a major reduction in runoff from developments that employ LID and Better Site Design (see Box 5-8) compared to those that do not. In addition, six studies have documented the runoff reduction benefits of LID at the catchment or watershed scale using a modeling approach (Alexander and Heaney, 2002; Stephens et al., 2002; Holman-Dodds et al., 2003; Coombes, 2004; Hardy et al., 2004; Huber et al., 2006).

BOX 5-7
Evaluation Through Monitoring: Villanova Pervious Concrete SCM

Villanova University's Stormwater Research and Demonstration Park is home to a pervious concrete infiltration site (Figure 5-33). The site, formerly a standard asphalt paved area, is located between two dormitories. The area was reconstructed in the summer of 2002 and outfitted with three infiltration beds overlain with pervious concrete. Usage of the site consists primarily of pedestrian traffic with some light automobile traffic. The pervious concrete site is designed to infiltrate small-volume storms (1 to 2 inches). Roof top runoff is directly piped to the rock bed under the concrete. For these smaller events, there is essentially no runoff from the site.

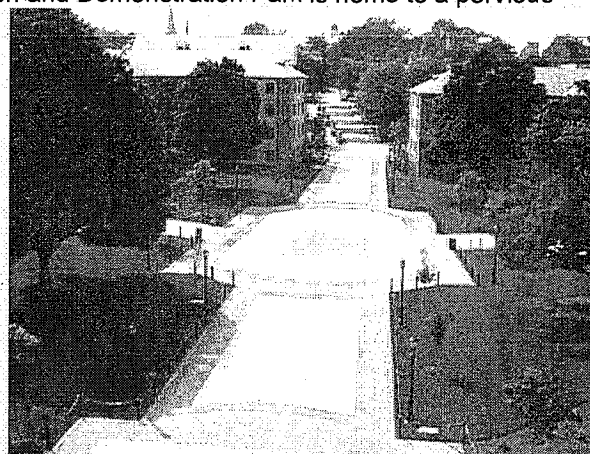


Figure 5-33 Villanova University pervious concrete retrofit site. SOURCE: Reprinted, with permission, from VUSP. Copyright by VUSP.

The pervious concrete is outlined with decorative pavers that divide the pervious concrete into three separate sections as seen in Figure 5-33. Underneath these three sections are individual storage beds. Since the site lies on a significant slope it was necessary to create earthen dams that isolate each storage area. At the top of each dam there is an overflow pipe which connects the storage area with the next one downstream. The final storage bed has an overflow that connects to the existing storm sewer. The beds are approximately 4 feet deep and are filled with stone, producing about 40 percent void space within the beds. A geotextile pervious liner was laid down to separate the storage beds from the undisturbed soil below (Figure 5-34). The primary idea was to avoid any upward migration of the in-situ soil, which could possibly reduce the capacity of the beds over time.

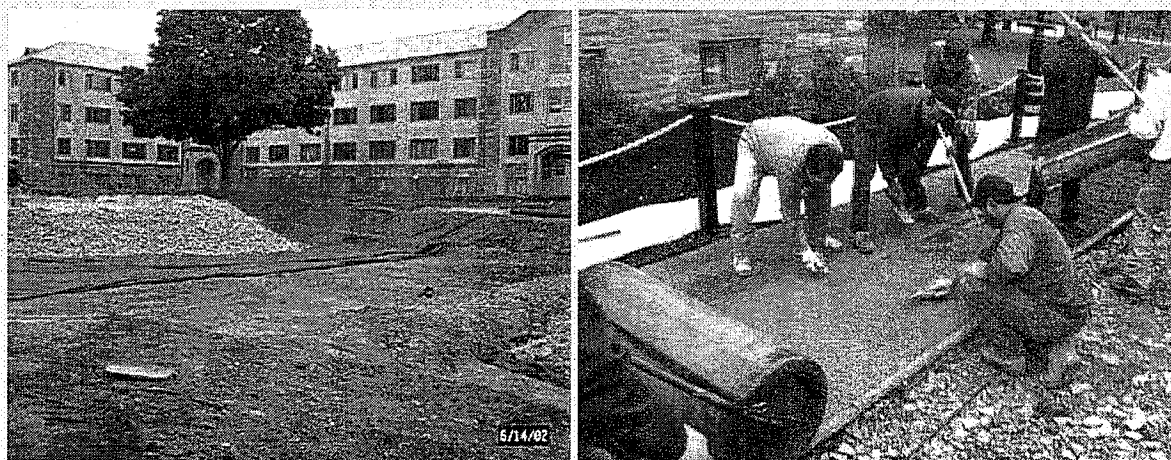
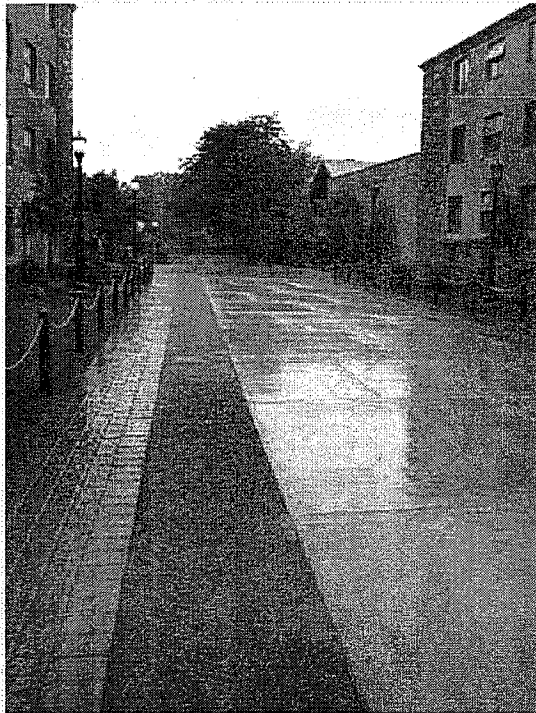


FIGURE 5-34 Infiltration bed under construction. Pervious concrete has functionality and workability similar to that of regular concrete. However, the pervious concrete mix lacks the sand and other fine particles found in regular concrete. This creates a significant amount of void space which allows water to flow relatively unobstructed through the concrete. This site was the first attempt at creating a pervious concrete SCM in the area, and there were construction and material problems. Since that time the industry has matured, and a second site on campus constructed in 2007 has not had any significant difficulties. SOURCE: Reprinted, with permission, from VUSP. Copyright by VUSP.

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Note the runoff from impervious concrete spilling over to the pervious concrete

Continuous monitoring of the site over a number of years has considerably increased our understanding of infiltration. Similar to the bioinfiltration site (Box 5-6), the infiltration rate of permeable concrete does vary as a function of temperature (Braga et al., 2007; Emerson and Traver, 2008), and the SCM volume reduction is impressive. As shown in Figure 5-35, over 95 percent of the yearly rainfall was infiltrated with minimal overflow. Besides hydrologic plots, water quality plots also show the benefits of permeable concrete (Kwiatkowski et al., 2007). Because over 95 percent of the runoff is infiltrated, well over 95 percent of the pollutant mass is also removed. Figure 5-36 shows the level of copper extracted from lysimeters buried under the rock bed and surrounding grass. The plot is arranged in quartiles, with readings in milligrams per liter. Lysimeter samples from under the surrounding grass and one foot and four feet under the infiltration bed all report almost no copper, compared to samples taken from the port in the rock bed and from the gutters draining the roof tops.

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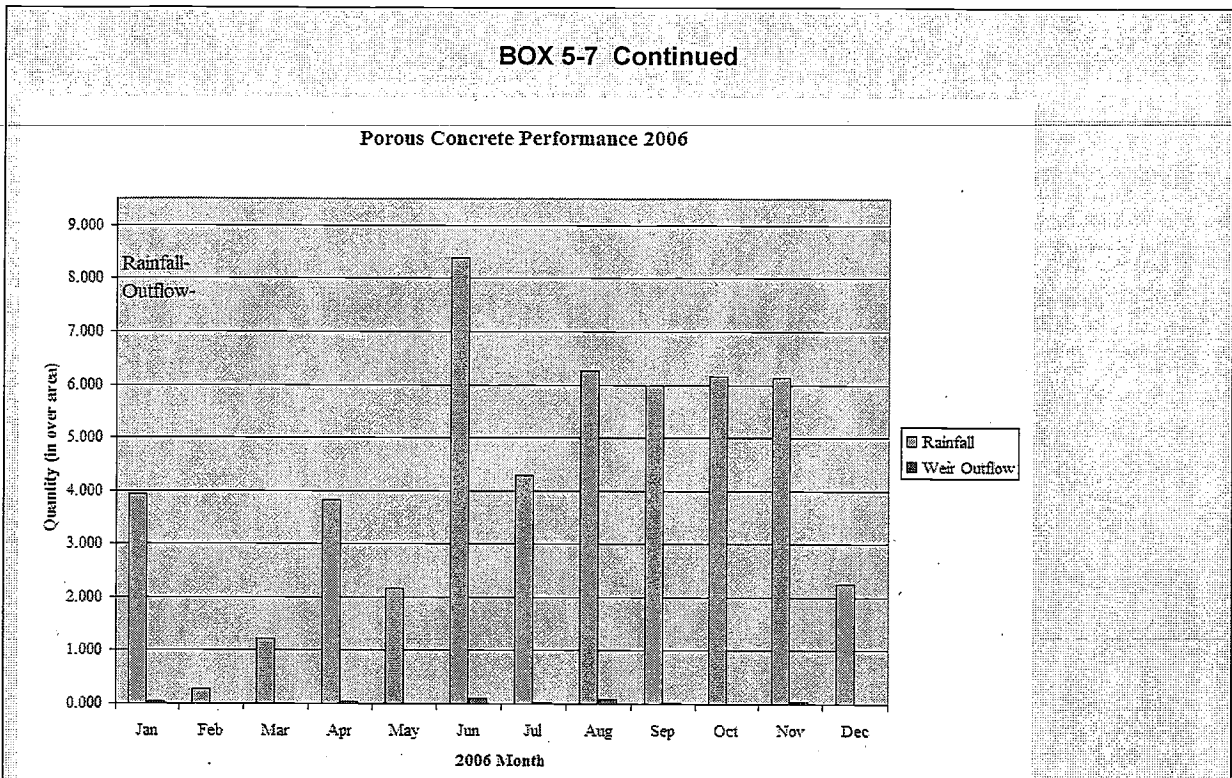


FIGURE 5-35 Rainfall and corresponding outflow from the weir of the SCM. SOURCE: Reprinted, with permission, from VUSP. Copyright by VUSP.

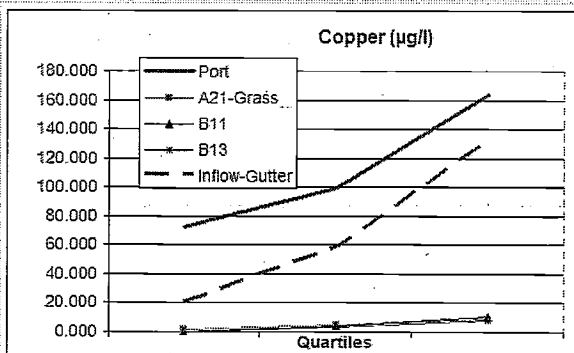


FIGURE 5-36 Copper measured at various locations. The three quartiles correspond to the 25th, 50th, and 75th percentile value of all data collected. A21 is a lysimeter location under the surrounding grass, while B11 and B13 refer to locations that are one foot and four feet under the infiltration bed, respectively. SOURCE: Reprinted, with permission, from VUSP. Copyright by VUSP.

**BOX 5-8
 Jordan Cove—An LID Watershed Project**

LID refers to the use of a system of small, on-site SCMs to counteract increases in flow and pollution following development and to control smaller runoff events. Although some studies are available that measure the runoff volume reduction of individual LID practices, fewer studies are available on whether multiple LID practices, when used together, have a cumulative benefit at the neighborhood or catchment scale. Of those listed in Table 5-6, Jordan Cove is the most extensively studied, as it was monitored for ten years as part of a paired watershed study that included a site with no SCMs and a site with traditional (detention) SCMs. The watersheds were monitored during calibration, construction, and post-construction periods. The project consisted of 12 lots, and the SCMs used were bioretention, porous pavements, no-mow areas, and education for the homeowners (Figure 5-37).

TABLE 5-6 Review of Recent LID Monitoring Research on a Catchment Scale

Location	Practices	Runoff Reduction
Jordan Cove, USA Dietz and Clausen (2008)	Permeable pavers, bioretention, grass swales, education	84%
Somerset Heights, USA Cheng et al. (2005)	Grass swale, bioretention, and rooftop disconnection	45%
Figtree Place, Australia Coombes et al. (2000)	Rain tanks, infiltration trenches, swales	100%

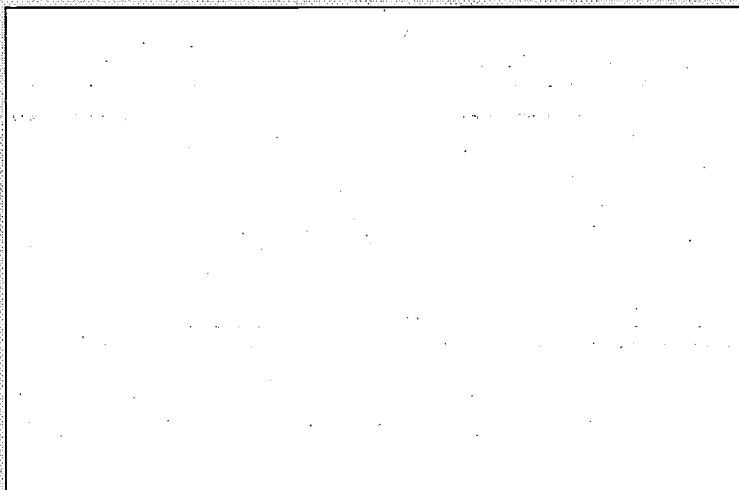


FIGURE 5-37 Jordan Cove LID subdivision. Permission pending

continues next page

BOX 5-8 Continued

Figure 5-38 (right panel) displays the hydrograph from a post-construction storm comparing the LID, traditional, and control watersheds. Note that the traditional watershed shows the delay and peak reduction from the detention basins, while the LID watershed has almost no runoff. The LID watershed was found to reduce runoff volume by 74 percent by increasing infiltration over preconstruction levels.

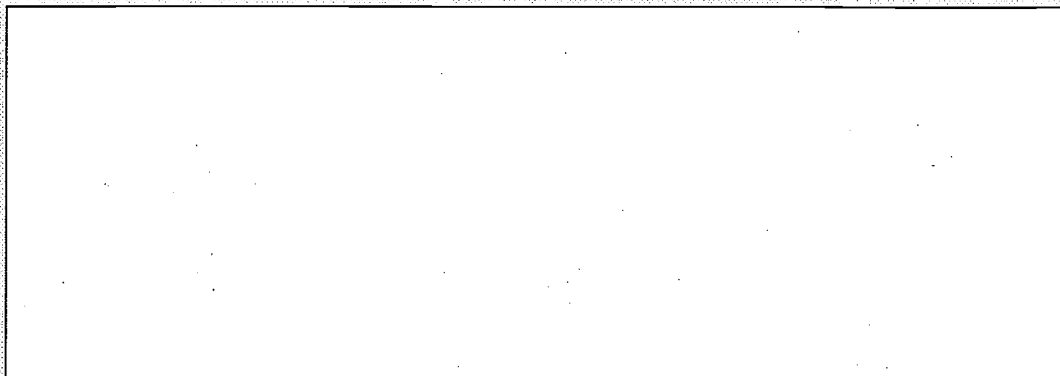


FIGURE 5-38. Significant changes in runoff volume (m^3 /week), runoff depth (cm/week) and peak discharge (m^3 /sec/week) after construction was completed (left panel). Hydrograph of all three subdivisions in the project, showing the larger volume and rate of runoff from the traditional and control subdivisions, as compared to the LID (right panel). Permission pending.

Comparisons of nutrient and metal concentrations and total export in the surface water shows the value of the LID approach as well as the significance of the reduction in runoff volume. Figure 5-39 shows the changes in pollutant concentration and mass export before and after construction for the traditional and LID subdivisions. Note that concentrations of TSS and nutrients are increased in the LID subdivision (left-hand panel); this is because swales and natural systems are used in place of piping as a "green" drainage system and because only larger storms leave the site. The right-hand panel shows how the large reduction in runoff achieved through infiltration can dramatically reduce the net export of pollutants from the LID watershed.

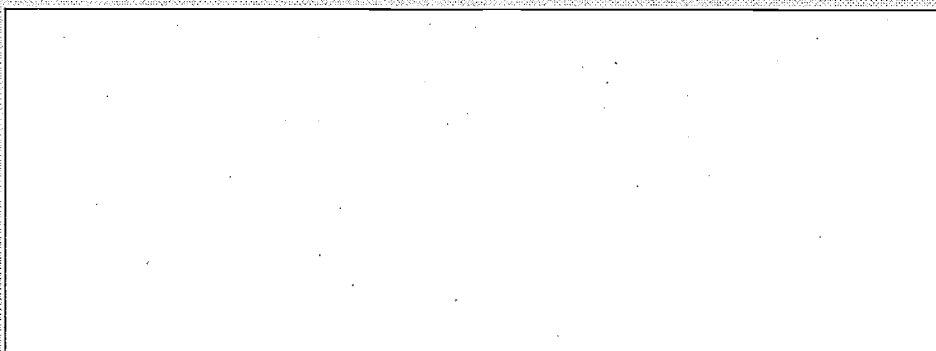


FIGURE 5-39 Significant changes in pollutant concentration, after construction was completed (left). Units are mg/L for NO_3 -N, NH_3 -N, TKN, TP, and BOD, and μ g/L for Cu, Pb, and Zn. Significant changes in mass export (kg/ha/year) after construction was completed (right). Permission pending

SOURCE: Clausen (2007).

Peak Flow Reduction and Runoff Treatment

After efforts are made to prevent the generation of pollutants and to reduce the volume of runoff that reaches stormwater systems, stormwater management focuses on the reduction of peak flows and associated treatment of polluted runoff. The main class of SCMs used to accomplish this is extended detention basins, versions of which have dominated stormwater management for decades. These include a wide variety of ponds and wetlands, including wet ponds (also known as retention basins), dry extended detention ponds (as known as detention basins), and constructed wetlands. By holding a volume of stormwater runoff for an extended period of time, extended detention SCMs can achieve both water quality improvement and reduced peak flows. Generally the goal is to hold the flows for 24 hours at a minimum to maximize the opportunity of settling, adsorption, and transformation of pollutants (based on past pollutant removal studies) (Rea and Traver, 2005). For smaller storm events (one- to two-year storms), this added holding time also greatly reduces the outflows from the SCM to a level that the stream channel can handle. Most wet ponds and stormwater wetlands can hold a “water quality” volume, such that the flows leaving in smaller storms have been held and “treated” for multiple days. Extended detention dry ponds greatly reduce the outflow peaks to achieve the required residence times.

Usually extended detention devices are lower in the treatment train of SCMs, if not at the end. This is both due to their function (they are designed for larger events) and because the required water sources and less permeable soils needed for these SCMs are more likely to be found at the lower areas of the site. Some opportunities exist to naturalize dry ponds or to retrofit wet ponds into stormwater wetlands but it depends on their site configuration and hydrology. Stormwater wetlands are shown in Figures 5-40 and 5-41. A wet pond and a dry extended detention basin are shown in Figures 5-42 and 5-43.

Simple ponds are little more than a hole in the ground, in which stormwater is piped in and out. Dry ponds are meant to be dry between storms, whereas wet ponds have a permanent pool throughout the year. Detention basins reduce peak flows by restricting the outflows and creating a storage area. Depending on the detention time, outflows can be reduced to levels that do not accelerate erosion, that protect the stream channel, and that reduce flooding.

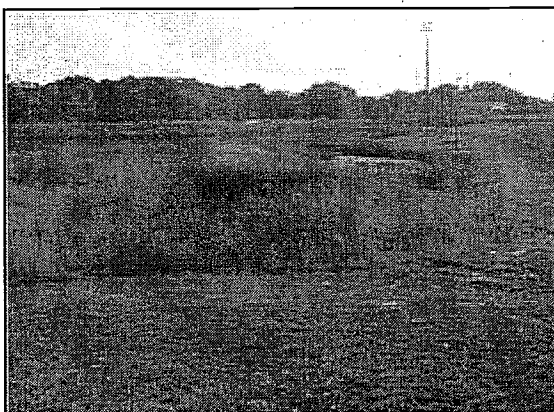


FIGURE 5-40 Constructed wetland at
SOURCE: PaDEP (2006).

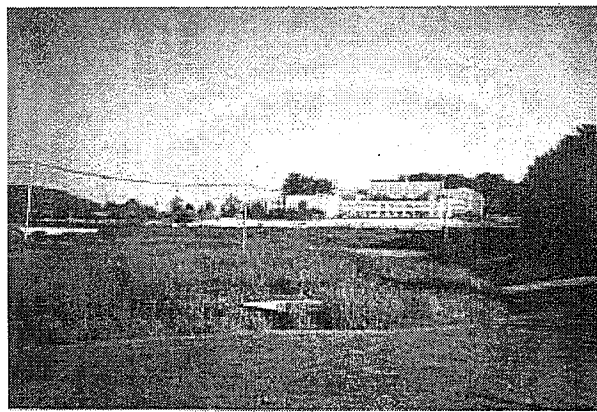


FIGURE 5-41 Retrofitted stormwater wetland.
SOURCE: Reprinted, with permission, from
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The flow normally enters the structure through a sediment forebay (Figure 5-44), which is included to capture incoming sediment, remove the larger particles through settling, and allow for easier maintenance. Then a meandering path or cell structure is built to “extend” and slow down the flows. The main basin is a large storage area (sometimes over the meandering flow paths). Finally, the runoff exits through an outflow control structure built to retard flow.

Wet ponds, stormwater wetlands, and (to a lesser extent) dry extended detention ponds provide treatment. The first step in treatment is the settling of larger particles in the sediment forebay. Next, for wet ponds a permanent pool of water is maintained so that, for smaller storms, the new flows push out a volume that has had a chance to interact with vegetation and be “treated.” This volume is equivalent to an inch of rain over the impervious surfaces in the drainage area. Thus, what exits the SCM during smaller storm events is baseflow contributions and runoff that entered during previous events. For dry extended detention ponds, there is no permanent pool and the outlet is instead greatly restricted. For all of these devices, vegetation is considered crucial to pollutant removal. Indeed, wet ponds are designed with an aquatic bench around the edges to promote contact with plants. The vegetation aids in reduction of flow velocities, provides growth surfaces for microbes, takes up pollutants, and provides filtering (Braskerud, 2001).



FIGURE 5-42 Wet pond. SOURCE: PaDEP (2006).

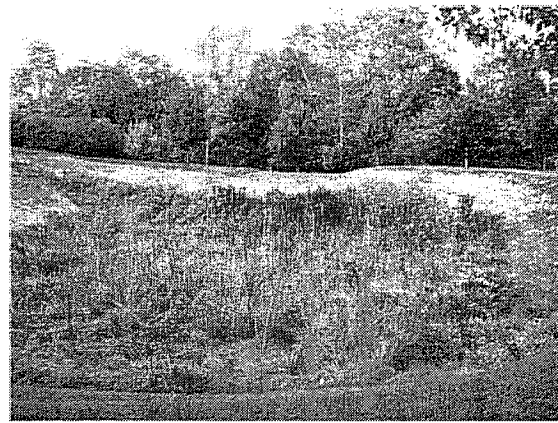


FIGURE 5-43 Dry extended detention pond. SOURCE: PaDEP (2006).

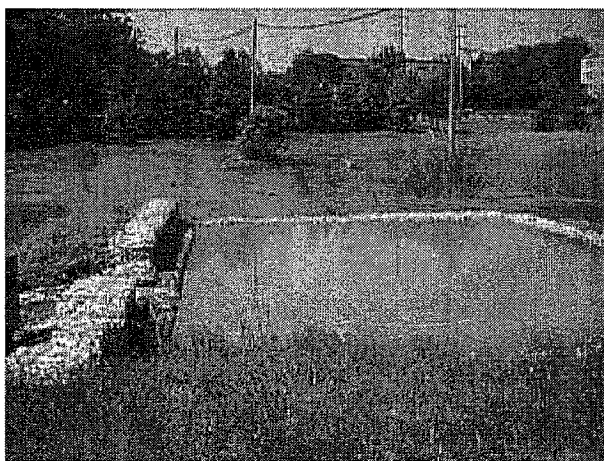


FIGURE 5-44 Villanova University sediment forebay. SOURCE: Reprinted, with permission, from VUSP. Copyright by VUSP002E

The ability of detention structures to achieve a certain level of control is size related—that is, the more peak flow reduction or pollutant removal required, the more volume and surface area are needed in the basin. Because it is not simply the peak flows that are important, but also the duration of the flows that cause damage to the stream channels (McCuen, 1979; Loucks et al., 2005), some detention basins are currently sized and installed in series with runoff-volume-reduction SCMs.

The strength of extended detention devices is the opportunity to create habitats or picturesque settings during stormwater management. The weaknesses of these measures include large land requirements, chloride buildup, possible temperature effects, and the creation of habitat for undesirable species in urban areas. There is a perception that these devices promote mosquitoes, but that has not been found to be a problem when a healthy biological habitat is created (Greenway et al., 2003). Another drawback of this class of SCMs is that they often have limited treatment capacity, in that they can reduce pollutants in stormwater only to a certain level. These so-called irreducible effluent concentrations have been documented mainly for ponds and stormwater wetlands, as well as sand filters and grass channels (Schueler, 1998). Finally, it should be noted that either a larger watershed (10–25 acres; CWP, 2004) or a continuous water source is needed to sustain wet ponds and stormwater wetlands.

Maintenance requirements for extended detention basins and wetlands include the removal of built-up sediment from the sediment forebay, harvesting of grasses to remove accumulated nutrients, and repair of berms and structures after storm events. Inspection items relate to the maintenance of the berm and sediment forebay.

While the basic hydrologic function of extended detention devices is well known, their performance on a watershed basis is not. Because they do not significantly reduce runoff volume and are designed on a site-by-site basis using synthetic storm patterns, their exclusive use as a flood reduction strategy at the watershed scale is uncertain (McCuen, 1979; Traver and Chadderton, 1992). Much of this variability is reduced when they are coupled with volume reduction SCMs at the watershed level. Pollutant removal is effected by climate, short-circuiting, and by the schedule of sediment removal and plant harvesting. Extreme events can resuspend captured sediments, thus reintroducing them into the environment. Although there is debate, it seems likely that plants will need to be harvested to accomplish nutrient removal (Reed et al., 1998).

Runoff Treatment

As mentioned above, many SCMs associated with runoff volume reduction and extended detention provide a water quality benefit. There are also some SCMs that focus primarily on water quality with little peak flow or volume effect. Designed for smaller storms, these are usually based on filtration, hydrodynamic separation, or small-scale bioretention systems that drain to a subsequent receiving water or other device. Thus, often these SCMs are used in conjunction with other devices in a treatment train or as retrofits under parking lots. They can be very effective as pretreatment devices when used “higher up” in the watershed than infiltration structures. Finally, in some cases these SCMs are specifically designed to reduce peak flows in addition to providing water quality benefits by introducing elements that make them similar to detention basins; this is particularly the case for sand filters.

The sand filter is relied on as a treatment technology in many regions, particular those where stream geomorphology is less of a concern and thus peak flow control and runoff volume reduction are not the primary goals. These devices can be effective at removing suspended sediments and can extend the longevity and performance of runoff-volume-reduction SCMs. They are also one of the few urban retrofits available, due to the ability to implement them within traditional culvert systems. Figures 5-45 and 5-46 show designs for the Austin sand filter and the Delaware sand filter.

Filters use sand, peat, or compost to remove particulates, similar to the processes used in drinking water plants. Sand filters primarily remove suspended solids and ammonia nitrogen. Biological material such as peat or compost provides adsorption of contaminants such as dissolved metals, hydrocarbons, and other organic chemicals. Hydrodynamic devices use rotational forces to separate the solids from the flow, allowing the solids to settle out of the flow stream. There is a recent class of bioretention-like manufactured devices that combine inlets with planters. In these systems, small volumes are directed to a soil planter area, with larger flows bypassing and continuing down the storm sewer system. In any event, for manufactured items the user needs to look to the manufacturer's published and reviewed data to understand how the device should be applied.

The level of control that can be achieved with these SCMs depends entirely on sizing of the device based on the incoming flow and pollutant loads. Each unit has a certified removal rate depending on inflow to the SCM. Also all units have a maximum volume or rate of flow they can treat, such that higher flows are bypassed with no treatment. Thus, the user has to determine what size unit is needed and the number to use based on the area's hydrologic cycle and what criteria are to be met.

With the exception of some types of sand filters, the strengths of water quality SCMs are that they can be placed within existing infrastructure or under parking lots, and thus do not take up land that may be used for other purposes. They make excellent choices for retrofit situations. For filters, there is a wealth of experience from the water treatment community on their operations. For all manufactured devices there are several testing protocols that have been set up to validate the performance of the manufactured devices (the sufficiency of which is discussed in Box 5-9). Weaknesses of these devices include their cost and maintenance requirements.



FIGURE 5-45 Austin sand filter. SOURCE: Robert Traver.



FIGURE 5-46 Delaware sand filter. SOURCE: Tom Schueler.

BOX 5-9

Insufficient Testing of Proprietary Stormwater Control Measures

Manufacturers of proprietary SCMs offer a service that can save municipalities time and money. Time is saved by the ability of the manufactures to quickly select a model matching the needs of the site. A city can minimize the cost of buying the product by requiring the different manufacturers to submit bids for the site. All the benefits of the service will have no meaning, however, if the cities cannot trust the performance claims of the different products. Because the United States does not have, at this time, a national program to verify the performance of proprietary SCMs, interested municipalities face a high amount of uncertainty when they select a product. Money could be wasted on products that might have the lowest bid, but do not achieve the water quality goals of the city or state.

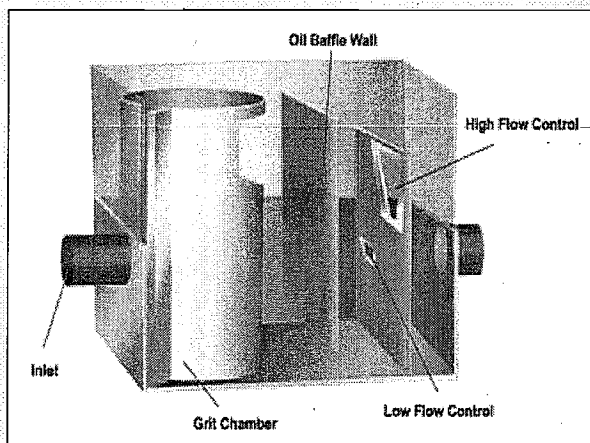
The EPA's Environmental Technology Verification (ETV) program was created to facilitate the deployment of innovative or improved environmental technologies through performance verification and dissemination of information. The Wet Weather Flow Technologies Pilot was established as part of the ETV program to verify commercially available technologies used in the abatement and control of urban stormwater runoff, combined sewer overflows, and sanitary sewer overflows. Ten proprietary SCMs were tested under the ETV program (see Figure 5-47), and the results of the monitoring are available on the National Sanitation Foundation International website. Unfortunately, the funding for the ETV program was discontinued before all the stormwater products could be tested. Without a national testing program some states have taken a more regional approach to verifying the performance of proprietary practices, while most states do not have any type of verification or approval program.

The Washington Department of Ecology has supported a testing protocol called Technology Assessment Protocol-Ecology that describes a process for evaluating and reporting on the performance and appropriate uses of emerging SCMs. California, Massachusetts, Maryland, New Jersey, Pennsylvania, and Virginia have sponsored a testing program called Technology Acceptance and Reciprocity Partnership (TARP), and a number of products are being tested in the field. The State of Wisconsin has prepared a draft technical standard (1006) describing methods for predicting the site-specific reduction efficiency of proprietary sedimentation devices. To meet the criteria in the standard the manufacturers can either use a model to predict the performance of the practice or complete a laboratory protocol designed to develop efficiency curves for each product. Although none of these state or federal verification efforts have produced enough information to sufficiently reduce the uncertainty in selection and sizing of proprietary SCMs, many proprietary practices are being installed around the country, because of the perceived advantage of the service being provided by the manufacturers and the sometimes overly optimistic performance claims.

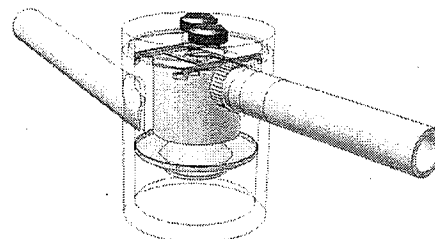
All those involved in stormwater management, including the manufacturers, will have a much better chance of implementing a cost-effective stormwater program in their cities if the barriers to a national testing program for proprietary SCMs are eliminated. Two of the barriers to the ETV program were high cost and the transferability of the results. Also, the ETV testing did not produce results that could be used in developing efficiency curves for the product. A new national testing program could reduce the cost by using laboratory testing instead of field testing. Each manufacturer would only have to do one series of tests in the lab and the results would be applicable to the entire country. The laboratory protocol in the Wisconsin Technical Standard 1006 provides a good example of what should be included to evaluate each practice over a range of particle sizes and flows. These types of laboratory data could also be used to produce efficiency curves for each practice. It would be relatively easy for state and local agencies to review the benefits of each installation if the efficiency curves were incorporated into urban runoff models, such as WinSLAMM or P8.

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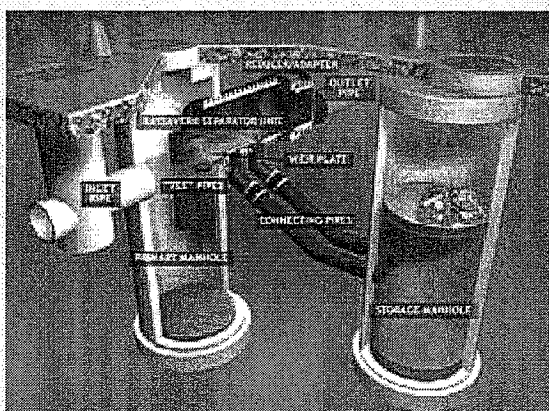
BOX 5-9 Continued



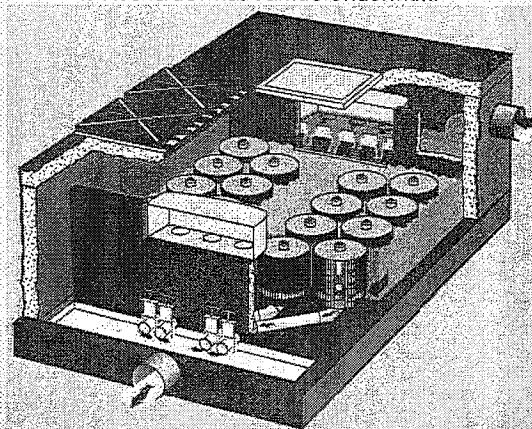
Stormwater 360 Hydrodynamic Separator.
SOURCE: EPA (2005c)



Downstream Defender. SOURCE: Available online
at <http://epa.gov/Region1/assistance/ceitts/stormwater/techs/downstreamdefender.html>



Bay Separator. SOURCE: EPA (2005a).



Stormfilter. SOURCE: EPA (2005b).

FIGURE 5-47 Proprietary Manufactured Devices tested by the ETV Program.

Regular maintenance and inspection at a high level are required to remove captured pollutants, to replace mulch, or to rake and remove the surface layer to prevent clogging. In some cases specialized equipment (vacuum trucks) is required to remove built-up sediment. Although the underground placement of these devices has many benefits, it makes it easy to neglect their maintenance because there are no signs of reduced performance on the surface. Because these devices are manufactured, the unit construction cost is usually higher than for other SCMs. Finally, the numerous testing protocols are confusing and prevent more widespread applications.

The chief uncertainty with these SCMs is due to the lack of certification of some manufactured devices. There is also concern about which pollutants are removed by which class

of device. For example, hydrodynamic devices and sand filters do not address dissolved nutrients, and in some cases convert suspended pollutants to their dissolved form. Both issues are related to the false perception that a single SCM must be found that will comprehensively treat stormwater. Such pressures often put vendors in a position of trying to certify that their devices can remove all pollutants. Most often, these devices can serve effectively as part of a treatment train, and should be valued for their incremental contributions to water quality treatment. For example, a filter that removes sediment upstream of a bioinfiltration SCM can greatly prolong the life of the infiltration device.

Aquatic Buffers and Managed Floodplains

Aquatic buffers, sometimes also known as stream buffers or riparian buffers, involve reserving a vegetated zone adjacent to streams, shorelines, or wetlands as part of development regulations or as an ordinance. In most regions of the country, the buffer is managed as forest, although in arid or semi-arid regions it may be managed as prairie, chaparral, or other cover. When properly designed, buffers can both reduce runoff volumes and provide water quality treatment to stormwater.

The performance of urban stream buffers cannot be predicted from studies of buffers installed to remove sediment and nutrients from agricultural areas (Lowrance and Sheridan, 2005). Agricultural buffers have been reported to have high sediment and nutrient removal because they intercept sheet flow or shallow groundwater flow in the riparian zone. By contrast, urban stream buffers often receive concentrated surface runoff or may even have a storm-drain pipe that short-circuits the buffer and directly discharges into the stream. Consequently, the pollutant removal capability of urban stream buffers is limited, unless they are specifically designed to distribute and treat stormwater runoff (NRC, 2000). This involves the use of level spreaders, grass filters, and berms to transform concentrated flows into sheet flow (Hathaway and Hunt, 2006). Such designed urban stream buffers have been applied widely in the Neuse River basin to reduce urban stormwater nutrient inputs to this nitrogen-sensitive waterbody.

The primary benefit of buffers is to help maintain aquatic biodiversity within the stream. Numerous researchers have evaluated the relative impact of riparian forest cover and impervious cover on stream geomorphology, aquatic insects, fish assemblages, and various indexes of biotic integrity. As a group, the studies suggest that indicator values for urban stream health increase when riparian forest cover is retained over at least 50 to 75 percent of the length of the upstream network (Goetz et al., 2003; Wang et al., 2003b; McBride and Booth, 2005; Moore and Palmer, 2005). The width of the buffer is also important for enhancing its stream protection benefits, and it ranges from 25 to 200 feet depending on stream order, protection objectives, and community ordinances. At the present time, there are no data to support an optimum width for water quality purposes. The beneficial impact of riparian forest cover is less detectable when watershed impervious cover exceeds 15 percent, at which point degradation by stormwater runoff overwhelms the benefits of the riparian forest (Roy et al., 2005, 2006; Walsh et al., 2007).

Maintenance, inspection, and compliance for buffers can be a problem. In most communities, urban stream buffers are simply a line on a map and are not managed in any significant way after construction is over. As such, urban stream buffers are prone to residential encroachment and clearing, and to colonization by invasive plants. Another important practice is to protect, preserve, or otherwise manage the ultimate 100-year floodplain so that vulnerable property and infrastructure are not damaged during extreme floods. Federal Emergency

Management Agency (FEMA), state, and local requirements often restrict or control development on land within the floodway or floodplain. In larger streams, the floodway and aquatic buffer can be integrated together to achieve multiple social objectives.

Stream Rehabilitation

While not traditionally considered an SCM, certain stream rehabilitation practices or approaches can be effective at recreating stream physical habitat and ecosystem function lost during urbanization. When combined with effective SCMs in upland areas, stream rehabilitation practices can be an important component of a larger strategy to address stormwater. From the standpoint of mitigating stormwater impacts, four types of urban stream rehabilitation are common:

- Practices that stabilize streambanks and/or prevent channel incision/enlargement can reduce downstream delivery of sediments and attached nutrients (see Figure 5-48). Although the magnitude of sediment delivery from urban-induced stream-channel enlargement is well documented, there are very few published data to quantify the potential reduction in sediment or nutrients from subsequent channel stabilization.
- Streams can be hydrologically reconnected to their floodplains by building up the profile of incised urban streams using grade controls so that the channel and floodplain interact to a greater degree. Urban stream reaches that have been so rehabilitated have increased nutrient uptake and processing rates, and in particular increased denitrification rates, compared to degraded urban streams prior to treatment (Bukavecas, 2007; Kaushal et al., 2008). This suggests that urban stream rehabilitation may be one of many elements that can be considered to help decrease loads in nutrient-sensitive watersheds.
- Practices that enhance in-stream habitat for aquatic life can improve the expected level of stream biodiversity. However, Konrad (2003) notes that improvement of biological diversity of urban streams should still be considered an experiment, since it is not always clear what hydrologic, water quality, or habitat stressors are limiting. Larson et al. (2001) found that physical habitat improvements can result in no biological improvement at all. In addition, many of the biological processes in urban stream ecosystems remain poorly understood, such as carbon processing and nutrient uptake.
- Some stream rehabilitation practices can indirectly increase stream biodiversity (such as riparian reforestation, which could reduce stream temperatures, and the removal of barriers to fish migration).

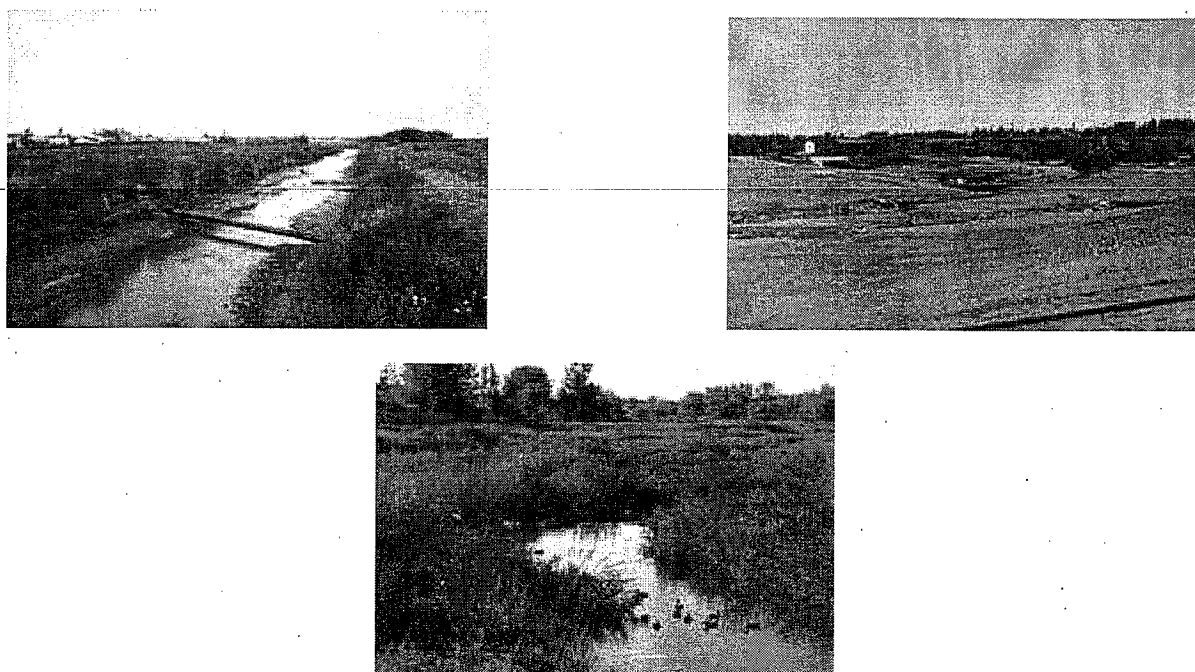


FIGURE 5-48 Three photographs illustrate stream rehabilitation in Denver. The top left picture is a creek that has eroded in its bed due to urbanization. The top right picture shows a portion of the stabilized creek immediately after construction. Check structures, which keep the creek from cutting its bed, are visible in the middle distance. The bottom image shows the creek just upstream of one of the check structures two years after stabilization. The thickets of willows established themselves naturally. The only revegetation performed was to seed the area for erosion control.

It should be noted that the majority of urban stream rehabilitation projects undertaken in the United States are designed for purposes other than mitigating the impacts of stormwater or enhancing stream biodiversity or ecosystem function (Bernhardt et al., 2005). Most stream rehabilitation projects have a much narrower design focus, and are intended to protect threatened infrastructure, naturalize the stream corridor, achieve a stable channel, or maintain local bank stability (Schueler and Brown, 2004). Improvements in either biological health or the quality of stormwater runoff have rarely been documented.

Unique design models and methods are required for urban streams, compared to their natural or rural counterparts, given the profound changes in hydrologic and sediment regime and stream–floodplain interaction that they experience (Konrad, 2003). While a great deal of design guidance on urban stream rehabilitation has been released in recent years (FISRWG, 2000; Doll and Jennings, 2003; Schueler and Brown, 2004), most of the available guidance has not yet been tailored to produce specific outcomes for stormwater mitigation, such as reduced sediment delivery, increased nutrient processing, or enhanced stream biodiversity. Indeed, several researchers have noted that many urban stream rehabilitation projects fail to achieve even their narrow design objectives, for a wide range of reasons (Bernhardt and Palmer, 2007; Sudduth et al., 2007). This is not surprising given that urban stream rehabilitation is relatively new and rarely addresses the full range of in-stream alteration generated by watershed-scale changes.

This shortfall suggests that much more research and testing are needed to ensure urban stream habilitation can meet its promise as an emerging SCM.

Municipal Housekeeping (Street Sweeping and Storm-Drain Cleanouts)

Phase II NPDES stormwater permits specifically require municipal good housekeeping as one of the six minimum management measures for MS4s. Although EPA has not presented definitive guidance on what constitutes “good housekeeping”, CWP (2008) outlines ten municipal operations where housekeeping actions can improve the quality of stormwater, including the following:

- municipal hotspot facility management,
- municipal construction project management,
- road maintenance,
- street sweeping,
- storm-drain maintenance,
- stormwater hotline response,
- landscape and park maintenance ,
- SCM maintenance, and
- employee training.

The overarching theme is that good housekeeping practices at municipal operations provide source treatment of pollutants before they enter the storm-drain system. The most frequently applied practices are street sweeping (Figure 5-49) and sediment cleanouts of sumps and storm-drain inlets. Most communities conduct both operations at some frequency for safety and aesthetic reasons, although not specifically for the sake of improving stormwater quality (Law et al., 2008).

Numerous performance monitoring studies have been conducted to evaluate the effect of street sweeping on the concentration of stormwater pollutants in downstream storm-drain pipes (see Pitt, 1979; Bender and Terstriep, 1994; Brinkman and Tobin, 2001; Zarrielo et al., 2002; Chang et al., 2005; USGS, 2005; Law et al., 2008). The basic finding is that regular street sweeping has a low or limited impact on stormwater quality, depending on street conditions, sweeping frequency, sweeper technology, operator training, and on-street parking. Sweeping will always have a limited removal capability because rainfall events frequently wash off pollutants before the sweeper passes through, and only some surfaces are accessible to the sweeper, thus excluding sidewalk, driveways, and landscaped areas. Frequent sweeping (i.e., weekly or monthly) has a moderate capability to remove sediment, trash and debris, coarse solids, and organic matter.

Fewer studies have been conducted on the pollutant removal capability of frequent sediment cleanout of storm-drain inlets, most in regions with arid climates (Lager et al., 1977; Mineart and Singh, 1994; Morgan et al., 2005). These studies have shown some moderate pollutant removal if cleanouts are done on a monthly or quarterly basis. Most communities, however, report that they clean out storm drains on an annual basis or in response to problems or drainage complaints (Law, 2006).



FIGURE 5-49 Vacuum street sweeper at Villanova University. SOURCE: Robert Traver.

Frequent sweeping and cleanouts conducted on the dirtiest streets and storm drains appear to be the most effective way to include these operations in the stormwater treatment train. However, given the uncertainty associated with the expected pollutant removal for these practices, street sweeping and storm-drain cleanout cannot be relied on as the sole SCMs for an urban area.

Illicit Discharge Detection and Elimination

MS4 communities must develop a program to detect and eliminate illicit discharges to their storm-drain system as a stormwater NPDES permit condition. Illicit discharges can involve illegal cross-connections of sewage or washwater into the storm-drain system or various intermittent or transitory discharges due to spills, leaks, dumping, or other activities that introduce pollutants into the storm-drain system during dry weather. National guidance on the methods to find and fix illicit discharges was developed by Brown et al. (2004). Local illicit discharge detection and elimination (IDDE) programs represent an ongoing and perpetual effort to monitor the network of pipes and ditches to prevent pollution discharges.

The water quality significance of illicit discharges has been difficult to define since they occur episodically in different parts of a municipal storm drain system. Field experience in conducting outfall surveys does indicate that illicit discharges may be present at 2 to 5 percent of all outfalls at any given time. Given that pollutants are being introduced into the receiving water during dry weather, illicit discharges may have an amplified effect on water quality and biological diversity.

Many communities indicate that they employ a citizen hotline to report illicit discharges and other water quality problems (Brown et al., 2004), which sharply increases the number of illicit discharge problems observed.

Stormwater Education

Like IDDE, stormwater education is one of the six minimum management measures that MS4 communities must address in their stormwater NPDES permits. Stormwater education involves municipal efforts to make sure individuals understand how their daily actions can positively or negatively influence water quality and work to change specific behaviors linked to specific pollutants of concern (Schueler, 2001c). Targeted behaviors include lawn fertilization, littering, car fluid recycling, car washing, pesticide use, septic system maintenance, and pet waste pickup. Communities may utilize a wide variety of messages to make the public aware of the behavior and more desirable alternatives through radio, television, newspaper ads, flyers, workshops, or door-to-door outreach. Several communities have performed before-and-after surveys to assess both the penetration rate for these campaigns and their ability to induce changes in actual behaviors. Significant changes in behaviors have been recorded (see Schueler, 2002), although few studies are available to link specific stormwater quality improvements to the educational campaigns (but see Turner, 2005; CASQA, 2007).

Residential Stewardship

This SCM involves municipal programs to enhance residential stewardship to improve stormwater quality. Residents can undertake a wide range of activities and practices that can reduce the volume or quality of runoff produced on their property or in their neighborhood as a whole. This may include installing rain barrels or rain gardens, planting trees, xeriscaping, downspout disconnection, storm-drain marking, household hazardous waste pickups, and yard waste composting (CWP, 2005). This expands on stormwater education in that a municipality provides a convenient delivery service to enable residents to engage in positive watershed behavior. The effectiveness of residential stewardship is enhanced when carrots are provided to encourage the desired behavior, such as subsidies, recognition, discounts, and technical assistance (CWP, 2005). Consequently, communities need to develop a targeted program to educate residents and help them engage in the desired behavior.

SCM Performance Monitoring and Modeling

Stormwater is characterized by widely fluctuating flows. In addition, inflow pollutant concentrations vary over the course of a storm and can be a function of time since the last storm, watershed, size and intensity of rainfall, season, amount of imperviousness, pollutant of interest, and so forth. This variability of the inflow to SCMs along with the very nature of SCMs makes performance monitoring a complex task. Most SCMs are built to manage stormwater, not to enable flow and water quality monitoring. Furthermore, they are incorporated into the collection system and spread throughout developments. Measurement of multiple inflows, outflows, evapotranspiration, and infiltration are simply not feasible for most sites. Many factors, such as temperature and climate, play a role in how well SCMs function. Infiltration rates can vary by an order of magnitude as a function of temperature (Braga et al., 2007; Emerson and Traver, 2008), such that a reading in late summer might be twice that of a winter reading. Determining performance can be further complicated because, e.g., at the start of a storm a detention basin

could still be partially full from a previous storm, and removal rates for wetlands are a function of the growing season, not to mention snowmelt events.

Monitoring of SCMs is usually performed for one of two purposes: functionality or more intensive performance monitoring. Monitoring of functionality is primarily to establish that the SCM is functioning as designed. Performance monitoring is focused on determining what level of performance is achieved by the SCM.

Functionality Monitoring

Functionality monitoring, in a broad sense, involves checking to see whether the SCM is functioning and screening it for potential problems. Both the federal and several state industrial and construction stormwater general permits have standard requirements for visual inspections following a major storm event. Visual observations of an SCM by themselves do not provide information on runoff reduction or pollutant removal, but rather only that the device is functioning as designed. Adding some grab samples for laboratory analysis can act as a screening tool to determine if a more complex analysis is required.

The first step of functionality monitoring for any SCM is to examine the physical condition of the device (piping, pervious surfaces, outlet structure, etc.). Visual inspection of sediments, eroded berms, clogged outlets, and other problems are good indications of the SCM's functionality (see Figure 5-50). For infiltration devices, visiting after a storm event will show whether or not the device is functioning. A simple staff gauge (Figure 5-51) or a stilling well in pervious pavement can be used to measure the amount of water-level change over several days to estimate infiltration rates. Minnesota suggests the use of fire equipment or hydrants to fill infiltration sites with a set volume of water to measure the rate of infiltration. For sites that are designed to capture a set volume, for example a green roof, a visit could be coordinated with a rainfall event of the appropriate size to determine whether there is overflow during the event. If so, then clearly further investigation is required.

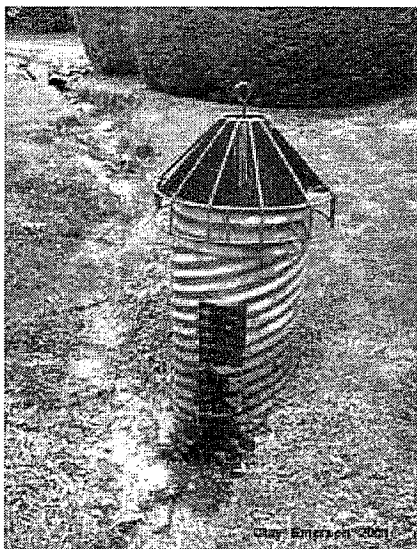


FIGURE 5-50 Rusted outlet structure. SOURCE: Reprinted, with permission, from Emerson. Copyright by Clay Emerson.



FIGURE 5-51 Staff gauge attached to ultrasonic sensor after a storm. SOURCE: VUSP.

For extended detention and stormwater wetlands, the depth of water during an event is an indicator of how well the SCM is functioning. Usually high-water marks are easy to determine due to debris or mud marks on the banks or the structures. If the size of the storm event is known, the depths can be compared to what was expected for the structure. Other indicators of problems would include erosion downstream of the SCM, algal blooms, invasive species, poor water clarity, and odor.

For water quality and manufactured devices, visual inspections after a storm event can determine whether the SCM is functioning properly. Standing water over a sand or other media filter 48 hours after a storm is a sign of problems. Odor and lack of flow clarity could be a sign of filter breakthrough or other problems. For manufactured devices, literature about the device should specify inspection and maintenance procedures.

Monitoring of nonstructural SCMs is almost exclusively limited to visual observation due to the difficulty in applying numerical value to their benefits. Visual inspection can identify eroded stream buffers, additional paved areas, or denuded conservation areas (see Figure 5-52).

Performance Monitoring

Performance monitoring is an extremely intensive effort to determine the performance of an SCM over either an individual storm event or over a series of storms. It requires integration of flow and water quality data creating both a hydrograph and a polutograph for a storm event as shown in Figure 5-53. The creation of these graphs requires continuous monitoring of the hydrology of the site and multiple water quality samples of the SCM inflow and outflow, the vadose zone, and groundwater. Event mean concentrations can then be determined from these data. There should be clear criteria for the number and type of storms to be sampled and for the conditions preceding a storm. For example, for most SCMs it would be improper to sample a second storm event in series, as the inflow may be free of pollutants and the soil moisture filled, resulting in a poor or negative performance. (Extended detention basins are an exception because the outflow during a storm event may include inflows from previous events.) The size of the sampled storm is also important. If the water quality goal is focused on smaller events, the 100-year storm would not give a proper picture of the performance because the occurrence is so rare that it is not a water quality priority.

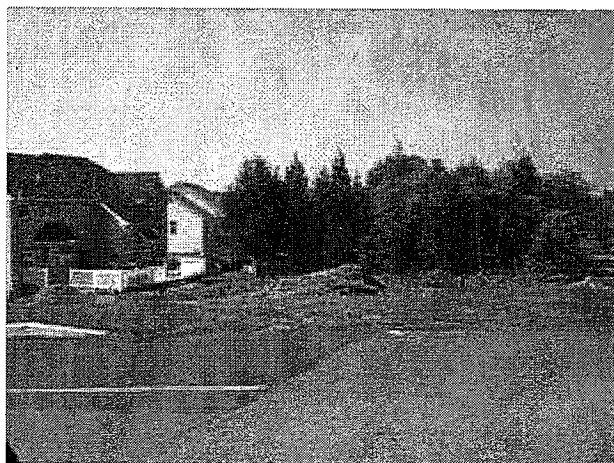


FIGURE 5-52 Wooded conservation area stripped of trees. Note pile of sawdust. SOURCE: Robert Traver.

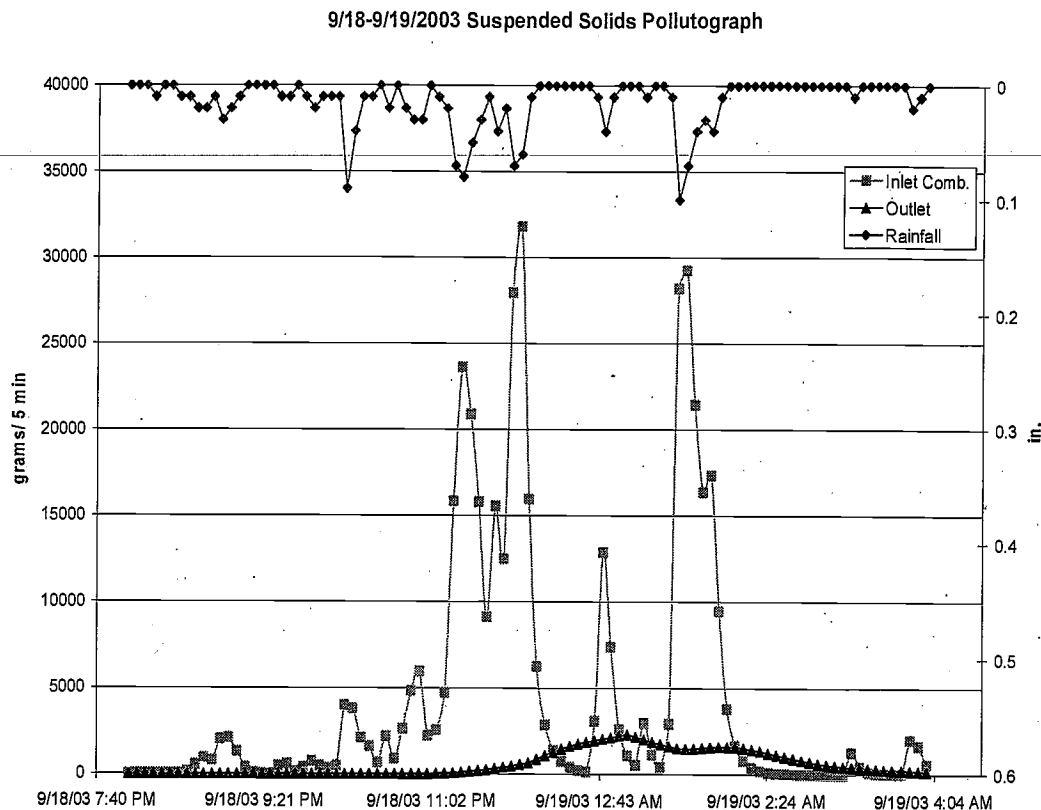


FIGURE 5-53 Example polutograph that displays inflow and outflow TSS during a storm event from the Villanova wetland stormwater SCM. SOURCE: Reprinted, with permission, Rea and Traver (2005). Copyright 2005 by the American Society of Civil Engineers.

For runoff-volume-reduction SCMs, performance monitoring can be extremely difficult because these systems are spread over the project site. The monitoring program must consider multiple-size storms because these SCMs are designed to remove perhaps the first inch of runoff. Therefore, for storms of less than an inch, there is no surface water release, so the treatment is 100 percent effective for surface discharges. During larger events, a bioretention SCM or green roof may export pollutants. When viewed over the entire spectrum of storms, these devices are an outstanding success; however, this may not be evident during a hurricane.

Through the use of manufactured weirs (Figure 5-54), it is possible to develop flow-depth criteria based on hydraulic principles for surface flows entering or leaving the SCM. Where this is not practical, various manufacturers have Doppler velocity sensors that, combined with geometry and depth, provide a reasonable continuous record of flow. Measurement of depth within a device can be accomplished through use of pressure transducers, bubblers, float gauges, and ultrasonic sensors. Other common measures would include rainfall and temperature. One advantage of these data recording systems is that they can be connected to water quality probes and automated samplers to provide a flow-weighted sample of the event for subsequent laboratory analysis. Field calibration and monitoring of these systems is required.

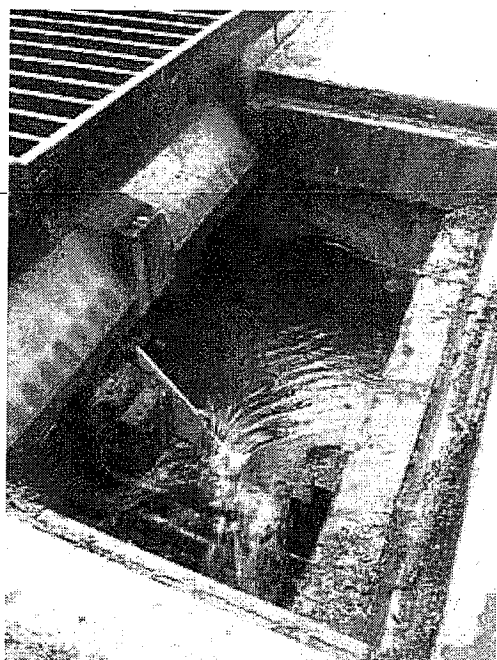


FIGURE 5-54 Weir flow used to measure flow rate. Courtesy of Robert Traver.

Groundwater sampling for infiltration SCMs is a challenge. Although the rate of change in water depth can indicate volume moving into the soil mantle, it is difficult to establish whether this flow is evapotranspired or ends up as baseflow or deep groundwater input. Sampling in the vadose zone can be established through the use of lysimeters that, through a vacuum, draw out water from the soil matrix. Soil moisture probes can give a rough estimation of the soil moisture content, and weighing lysimeters can establish evapotranspiration rates. Finally groundwater wells can be used to establish the effect of the SCM on the groundwater depth and quality during and after storm events.

Performance monitoring of extended detention SCMs is difficult because the inflows and outflows are variable and may extend over multiple days. Hydrologic monitoring can be accomplished using weirs (Figure 5-54), flow meters, and level detectors. The new generation of temperature, dissolved oxygen, and conductivity probes allows for automated monitoring. (It should be noted that in many cases the conductivity probes are observing chlorides, which are not generally removed by SCMs.) In many cases monitoring of the downstream stream-channel geomorphology and stream habitat may be more useful than performance monitoring when assessing the effect of the SCM.

The performance monitoring of treatment devices is straightforward and involves determining the pollutant mass inflows and outflows. Performance monitoring of manufactured SCMs has been established through several protocols. An example is TARP, used by multiple states (<http://www.dep.state.pa.us/dep/deputate/pollprev/techservices/tarp/>). This requires the manufacturer to test their units according to a set protocol of lab or field experiments to set performance criteria. Several TARP member and other states have published revised protocols for their use. These and other similar criteria are evolving and the subject of considerable effort by industry organizations that include the American Society of Civil Engineers.

Finally, much needs to be done to determine the performance of nonstructural SCMs, for which little to no monitoring data are available (see Table 5-2). Currently most practitioners expand upon current hydrologic modeling techniques to simulate these techniques. For example, disconnection of impervious surfaces is often modeled by adding the runoff from the roof or parking area as distributed "rainfall" on the pervious area. Experiments and long-term monitoring are needed for these SCMs.

More information on SCM monitoring is available through the International Stormwater BMP Database (<http://www.bmpdatabase.org>).

Modeling of SCM performance

Modeling of SCMs is required to understand their individual performance and their effect on the overall watershed. The dispersed nature of their implementation, the wide variety of possible SCM types and goals, and the wide range of rainfall events they are designed for makes modeling of SCMs extremely challenging. For example, to model multiple SCMs on a single site may require simulation of many hydrologic and environmental processes for each SCM in series. Modeling these effects over large watersheds by simulating each SCM is not only impractical, but the noise in the modeling may make the simulation results suspect. Thus, it is critical to understand the model's purpose, limitations, and applicability.

As discussed in Chapter 4, one approach to simulating SCM performance is through mathematical representation of the unit processes. The large volumes of data needed for process-based models generally restrict their use to smaller-scale modeling. For flow this would start with the hydrograph entering the SCM and include infiltration, evapotranspiration, routing through the system, or whatever flow paths were applicable. The environmental processes that would need to be represented could include settling, adsorption, biological transformation, and soil physics. Currently there are no environmental process models that work across the range of SCMs. Rather, the state of art is to use general removal efficiencies from publications such as the International Stormwater BMP Database (<http://www.bmpdatabase.org>) and the Center for Watershed Protection's National Pollutant Removal Database (CWP, 2000b, 2007b). Unfortunately, this approach has many limitations. The percent removal used on a site and storm basis does not include storm intensity, period between the storms, land use, temperature, management practices, whether other SCMs are upstream, and so forth. It also should be noted that percent removals are a surface water statistic and do not address groundwater issues or include any biogeochemistry.

Mechanistic simulation of the hydrologic processes within an SCM is much advanced compared to environmental simulation, but from a modeling scale it is still evolving. Indeed, models such as the Prince George's County Decision Support System are greatly improved in that the hydrologic simulation of the SCM includes infiltration, but they still do not incorporate the more rigorous soil physics and groundwater interactions. Some models, such as the Stormwater Management Model (SWMM), have the capability to incorporate mechanistic descriptions of the hydrologic processes occurring inside an SCM.

At larger scales, simulation of SCMs is done primarily using lumped models that do not explicitly represent the unit processes but rather the overall effects. For example, the goal may be to model the removal of 2 cm of rainfall from every storm from bioinfiltration SCMs. Thus, all that would be needed is how many SCMs are present and their configuration and what their capabilities are within your watershed. What is critical for these models is to represent the

interrelated processes correctly and to include seasonal effects. Again, the pollutant removal capability of the SCM is represented with removal efficiencies derived from publications.

Regardless of the scale of the model, or the extent to which it is mechanistic or not, nonstructural SCMs are a challenge. Limiting impervious surface or maintenance of forest cover have been modeled because they can be represented as the maintenance of certain land uses.

However, aquatic buffers, disconnected impervious surfaces, stormwater education, municipal housekeeping, and most other nonstructural SCMs are problematic. Another challenge from a watershed perspective is determining what volume of pollutants comes from streambank erosion during elevated flows versus from nonpoint source pollution. Most hydrologic models do not include or represent in-stream processes.

In order to move forward with modeling of SCMs, it will be necessary to better understand the unit processes of the different SCMs, and how they differ for hydrology versus transformations. Research is needed to gather performance numbers for the nonstructural SCMs. Until such information is available, it will be virtually impossible to predict that an individual SCM can accomplish a certain level of treatment and thus prevent a nearby receiving water from violating its water quality standard.

DESIGNING SYSTEMS OF STORMWATER CONTROL MEASURES ON A WATERSHED SCALE

Most communities have traditionally relied on stormwater management approaches that result in the design and installation of SCMs on a site-by-site basis. This has created a large number of individual stormwater systems and SCMs that are widely distributed and have become a substantial part of the contemporary urban and suburban landscape. Typically, traditional stormwater infrastructure was designed on a subdivision basis to reduce peak storm flow rates to predevelopment levels for large flood events (> 10-year return period). The problem with the traditional approach is that (1) the majority of storms throughout the year are small and therefore pass through the detention facilities uncontrolled, (2) the criterion of reducing storm flow does not address the need for reducing total storm volume, and (3) the facilities are not designed to work as a system on a watershed scale. In many cases, the site-by-site approach has exacerbated downstream flooding and channel erosion problems as a watershed is gradually built out. For example, McCuen (1979) and Emerson et al. (2005) showed that an unplanned system of site-based SCMs can actually increase flooding on a watershed scale owing to the effect of many facilities discharging into a receiving waterbody in an uncoordinated fashion—causing the very flooding problem the individual basins were built to solve.

With the relatively recent recognition of unacceptable downstream impacts and the regulation of urban stormwater quality has come a rethinking of the design of traditional stormwater systems. It is becoming rapidly understood that stormwater management should occur on a watershed scale to prevent flow control problems from occurring or reducing the chances that they might become worse. In this context, the “watershed scale” refers to the small local watershed to which the individual site drains (i.e., a few square miles within a single municipality). Together, the developer, designer, plan reviewer, owners, and the municipality jointly install and operate a linked and shared system of distributed practices across multiple sites that achieve small watershed objectives. Many metropolitan areas around the country have institutions, such as the Southeast Wisconsin Regional Planning Commission and the Milwaukee

Metropolitan Sewage District, that are doing stormwater master planning to reduce flooding, bank erosion, and water quality problems on a watershed scale.

Designing stormwater management on a watershed scale creates the opportunity to evaluate a system of SCMs and maximize overall effectiveness based on multiple criteria, such as the incremental costs to development beyond traditional stormwater infrastructure, the limitations imposed on land area required for site planning, the effectiveness at improving water quality or attenuating discharges, and aesthetics. Because the benefits that accrue with improved water quality are generally not realized by those entities required to implement SCMs, greater value must be created beyond the functional aspects of the facility if there is to be wide acceptance of SCMs as part of the urban landscape. Stormwater systems designed on a watershed basis are more likely to be seen as a multi-functional resource that can contribute to the overall quality of the urban environment. Potential even exists to make the stormwater system a primary component of the civic framework of the community—elements of the public realm that serve to enhance a community's quality of life like public spaces and parks. For example, in central Minneapolis, redevelopment of a 100-acre area called Heritage Park as a mixed-density residential neighborhood was organized around two parks linked by a parkway that served dual functions of recreation and stormwater management.

Key elements of the watershed approach to designing systems of SCMs are discussed in detail below. They include the following:

1. Forecasting the current and future development types.
2. Forecasting the scale of current and future development.
3. Choosing among on-site, distributed SCMs and larger, consolidated SCMs.
4. Defining stressors of concern.
5. Determining goals for the receiving water.
6. Noting the physical constraints.
7. Developing SCM guidance and performance criteria for the local watershed.
8. Establishing a trading system.
9. Ensuring the safe performance of the drainage network, streams, and floodplains.
10. Establishing community objectives for the publically owned elements of stormwater infrastructure.
11. Establishing a maintenance plan.

Forecasting the Current and Future Development Types

Forecasting the type of current and future development within the local watershed will guide or shape how individual practices and SCMs are generally assembled at each individual site. The development types that are generally thought of include Greenfield development (small and large scales), redevelopment within established communities and on Brownfield sites, and retrofitting of existing urban areas. These development types range roughly from lower density to higher density impervious cover. Box 5-10 explains how the type of development can dictate stormwater management, discussing two main categories—*Greenfield* development and *redevelopment* of existing areas. The former refers to development that changes pristine or agricultural land to urban or suburban land uses, frequently low-density residential housing. Redevelopment refers to changing from an existing urban land use to another, usually of higher

BOX 5-10

Development Types and their Relationship to the Stormwater System

Development falls into two basic types. Greenfield development requires new infrastructure designed according to contemporary design standards for roads, utilities, and related infrastructure. Redevelopment refers to developed areas undergoing land-use change. In contrast to Greenfields, infrastructure in previously developed areas is often in poor condition, was not built to current design standards, and is inadequate for the new land uses proposed. The stormwater management scenarios common to these types of development are described below.

Greenfield Development

At the largest scale, Greenfield development refers to planned communities at the developing edge of metropolitan areas. Communities of this type often vary from several hundred acres to very large projects that encompassed tens of thousands of acres requiring buildout over decades. They often include the trunk or primary stormwater system as well as open stream and river corridors. The most progressive communities of this type incorporate a significant portion of the area to stormwater systems that exist as surface elements. Such stormwater system elements are typically at the subwatershed scale and provide for consolidated conveyance, detention, and water quality treatment. These elements of the infrastructure can be multi-functional in nature, providing for wildlife habitat, trail corridors, and open-space amenities.

Greenfield development can also occur on a small scale—neighborhoods or individual sites within newly developing areas that are served by the secondary public and tertiary stormwater systems. This smaller-scale, incremental expansion of existing urban patterns is a more typical way for cities to grow. A more limited range of SCMs and innovative stormwater management practices are available on smaller projects of this type, including LID practices.

Redevelopment of Existing Areas

Redevelopment within established communities is typically at the scale of individual sites and occasionally the scale of a small district. The area is usually served by private, on-site systems that convey larger storm events into preexisting stormwater systems that were developed decades ago, either in historic city centers or in "first ring," post-World War II suburbs adjacent to historic city centers. Redevelopment in these areas is typically much denser than the original use. The resulting increase in impervious area, and typically the inadequacy of existing stormwater infrastructure serving the site often results in significant development costs for on-site detention and water quality treatment. Elaborate vaults or related structures, or land area that could be utilized for development, must often be committed to on-site stormwater management to comply with current stormwater regulations.

Brownfields are redevelopments of industrial and often contaminated property at the scale of an individual site, neighborhood, or district. Secondary public systems and private stormwater systems on individual sites typically serve these areas. In many cases, especially in outdated industrial areas, little or no stormwater infrastructure exists, or it is so inadequate as to require replacement. Water quality treatment on contaminated sites may also be necessary. For these reasons, stormwater management in such developments presents special challenges. As an example, the most common methods of remediation of contaminated sites involve capping of contaminated soils or treatment of contaminants in situ, especially where removal of contaminated soils from a site is cost prohibitive. Given that contaminants are still often in place on redeveloped Brownfield sites and must not be disturbed, certain SCMs such as infiltration of stormwater into site soils, or excavation for stormwater piping and other utilities, present special challenges.

density, such as from single-family housing to multi-family housing. Finally, *retrofitting* as used in this report is not a development type but rather the upgrading of stormwater management within an existing land use to meet higher standards.

Table 5-7 shows which SCMs are best suited for Greenfield development (particularly low-density residential), redevelopment of urban areas, and intense industrial redevelopment. The last category is broken out because the suite of SCMs needed is substantially different than for urban redevelopment. Each type of development has a different footprint, impervious cover, open space, land cost, and existing stormwater infrastructure. Consequently, SCMs that are ideally suited for one type of development may be impractical or infeasible for another. One of the main points to be made is that there are more options during Greenfield development than during redevelopment because of existing infrastructure, limited land area, and higher costs in the latter case.

TABLE 5-7 Applicability of Stormwater Control Measures by Type of Development

Stormwater Control Measure	Low-Density Greenfield Residential	Urban Redevelopment	Intense Industrial Redevelopment
Product Substitution	○	●	●
Watershed and Land-Use Planning	■	■	○
Conservation of Natural Areas	■	◆	○
Impervious Cover Minimization	■	◆	◆
Earthwork Minimization	■	◆	◆
Erosion and Sediment Control	■	■	■
Reforestation and Soil Conservation	■	●	●
Pollution Prevention SCMs	◆	●	■
Runoff Volume Reduction—Rainwater Harvesting	■	■	●
Runoff Reduction—Vegetated	■	○	●
Runoff Reduction—Subsurface	■	○	◆
Peak Reduction and Runoff Treatment	■	◆	○
Runoff Treatment	●	●	■
Aquatic Buffers and Managed Floodplains	●	◆	○
Stream Rehabilitation	○	◆	◆
Municipal Housekeeping	○	○	NA
IDDE	○	○	○
Stormwater Education	●	●	●
Residential Stewardship	■	●	NA

NOTE: ■, always; ●, often; ○, sometimes; ◆, rarely; NA, not applicable.

Forecasting the Scale of Current and Future Development

The choice of what SCMs to use depends on the area that needs to be serviced. It turns out that some SCMs work best over a few acres, whereas others require several dozen acres or more; some are highly effective only for the smallest sites, while others work best at the stream corridor or subwatershed level. Table 5-1 includes a column that is related the scale at which individual SCMs can be applied ("where" column). The SCMs mainly applied at the site scale include runoff volume reduction—rainwater harvesting, runoff treatment like filtering, and pollution prevention SCMs for hotspots. As one goes up in scale, SCMs like runoff volume reduction—vegetated and subsurface, earthwork minimization, and erosion and sediment control take on more of a role. At the largest scales, watershed and land-use planning, conservation of natural areas, reforestation and soil conservation, peak flow reduction, buffers and managed floodplains, stream rehabilitation, municipal housekeeping, IDDE, stormwater education, and residential stewardship play a more important role. Some SCMs are useful at all scales, such as product substitution and impervious cover minimization.

Choosing Among On-Site, Distributed SCMs and Larger, Consolidated SCMs

There are distinct advantages and disadvantages to consider when choosing to use a system of larger, consolidated SCMs versus smaller-scale, on-site SCMs that go beyond their ability to achieve water quality or urban stream health. Smaller, on-site facilities that serve to meet the requirements for residential, commercial, and office developments tend to be privately owned. Typically, flows are directed to porous landscape detention areas or similar SCMs, such that volume and pollutants in stormwater are removed at or near their source. Quite often, these SCMs are relegated to the perimeter project, incorporated into detention ponds, or, at best, developed as landscape infiltration and parking islands and buffers. On-site infiltration of frequent storm events can also reduce the erosive impacts of stormwater volumes on downstream receiving waters. Maintenance is performed by the individual landowner, which is both an advantage because the responsibility and costs for cleanup of pollutants generated by individual properties are equitably distributed, and a disadvantage because ongoing maintenance incurs a significant expense on the part of individual property owners and enforcement of properties not in compliance with required maintenance is difficult. On the negative side, individual SCMs often require additional land, which increases development costs and can encourage sprawl. Monitoring of thousands of SCMs in perpetuity in a typical city creates a significant ongoing public expense, and special training and staffing may be required to maintain SCM effectiveness (especially for subgrade or in-building vaults used in ultra-urban environments). Finally, given that as much as 30 percent of the urban landscape is comprised of public streets and rights-of-way, there are limited opportunities to treat runoff from streets through individual on-site private SCMs. (Notable exceptions are subsurface runoff-volume-reduction SCMs like permeable pavement that require no additional land and promote full development density within a given land parcel because they use the soil areas below roads and the development site for infiltration.)

In contrast, publicly owned, consolidated SCMs are usually constructed as part of larger Greenfield and infill development projects in areas where there is little or no existing infrastructure. This type of facility—usually an infiltration basin, detention basin, wet/dry pond, or stormwater wetland—tends to be significantly larger, serving multiple individual properties.

Ownership is usually by the municipality, but may be a privately managed, quasi-public special district. There must be adequate land available to accommodate the facility and a means of up-front financing to construct the facility. An equitable means of allocating costs for ongoing maintenance must also be identified. However, the advantage of these facilities is that consolidation requires less overall land area, and treatment of public streets and rights-of-way can be addressed. Monitoring and maintenance are typically the responsibility of one organization, allowing for effective ongoing operations to maintain the original function of the facility. If that entity is public, this ensures that the facility will be maintained in perpetuity, allowing for the potential to permanently reduce stormwater volumes and for reduction in the size of downstream stormwater infrastructure. Because consolidated facilities are typically larger than on-site SCMs, mechanized maintenance equipment allows for greater efficiency and lower costs. Finally, consolidated SCMs have great potential for multifunctional uses because wildlife habitat, recreational, and open-space amenities can be integrated to their design. Box 5-11 describes sites of various scales where either consolidated or distributed SCMs were chosen.

Defining Stressors of Concern

The primary pollutants or stressors of concern (and the primary source areas or stormwater hotspots within the watershed likely to produce them) should be carefully defined for the watershed. Although this community decision is made only infrequently, it is critical to ensuring that SCMs are designed to prevent or reduce the maximum load of the pollutants of greatest concern. This choice may be guided by regional water quality priorities (such as nutrient reduction in the Chesapeake Bay or Neuse River watersheds) or may be an outgrowth of the total maximum daily load process where there is known water quality impairment or a listed pollutant. The choice of a pollutant of concern is paramount, since individual SCMs have been shown to have highly variable capabilities to prevent or reduce specific pollutants (see WERF, 2006; ASCE, 2007; CWP, 2007b). In some cases, the capability of SCMs to reduce a specific pollutant may be uncertain or unknown.

Determining Goals for the Receiving Waters

It is important to set biological and public health goals for the receiving water that are achievable given the ultimate impervious cover intended for the local watershed (see the Impervious Cover Model in Box 3-10). If the receiving water is too sensitive to meet these goals, one should consider adjustments to zoning and development codes to reduce the amount of impervious cover. The biological goals may involve a keystone species, such as salmon or trout, a desired state of biological integrity in a stream, or a maximum level of eutrophication in a lake. In other communities, stormwater goals may be driven by the need to protect a sole-source drinking water supply (e.g., New York watersheds) or to maintain water contact recreation at a beach, lake, or river. Once again, the watershed goals that are selected have a strong influence on the assembly of SCMs needed to meet them, since individual SCMs vary greatly in their ability to achieve different biological or public health outcomes.

BOX 5-11
Examples of Communities Using Consolidated versus Distributed SCMs

Stapleton Airport New Community

This is a mixed-use, mixed-density New Urbanist community that has been under development for the past 15 years on the 4,500-acre former Stapleton Airport site in central Denver. As shown in Figures 5-55 and 5-56, the stormwater system emphasizes surface conveyance and treatment on individual sites, as well as in consolidated regional facilities.

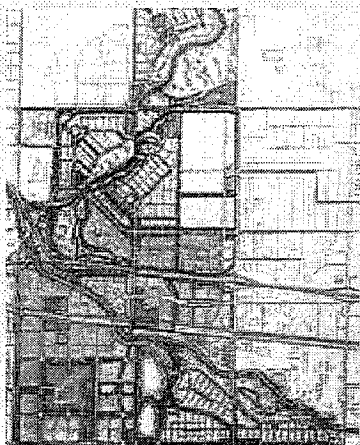


FIGURE 5-55 The community plan, shown on the left, is organized around two day lighted creeks, formerly buried under airport runways, and a series of secondary conveyances which provide recreational open space within neighborhoods. The image on the right illustrates one of the multi-functional creek corridors. Consolidated stormwater treatment areas and surface conveyances define more traditional park recreation and play areas. Courtesy of Stapleton Redevelopment Foundation.

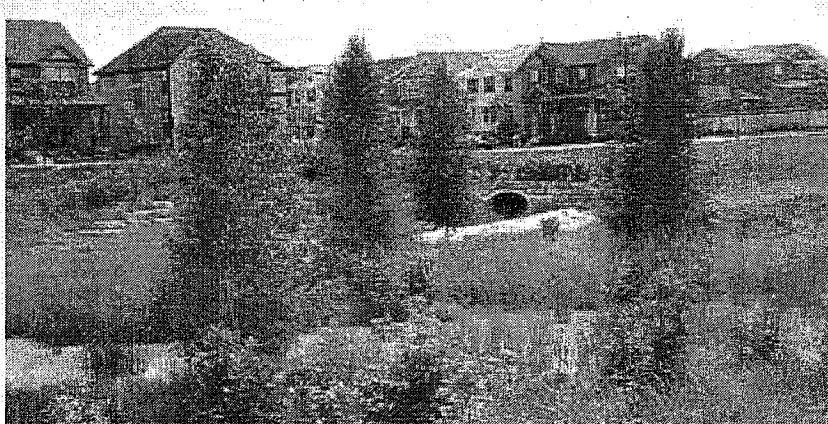


FIGURE 5-56 A consolidated treatment area adjacent to one of several neighborhoods that have been constructed as part of the project's build-out.

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Heritage Park Neighborhood Redevelopment

A failed public housing project adjacent to downtown Minneapolis, Minnesota, has been replaced by a mixed-density residential neighborhood. Over 1,200 rental, affordable, and market-rate single- and multi-family housing units have been provided in the 100-acre project area. The neighborhood is organized around two neighborhood parks and a parkway that serve dual functions as neighborhood recreation space and as surface stormwater conveyance and a consolidated treatment system (see Figure 5-57). Water quality treatment is being provided for a combined area of over 660 acres that includes the 100-acre project area and over 500 acres of adjacent neighborhoods. Existing stormwater pipes have been routed through treatment areas with treatment levels ranging from 50 to 85 percent TSS removal, depending on the available land area.



FIGURE 5-57 View of a sediment trap and porous landscape detention area in the central parkway spine of Heritage Park. The sediment trap in the center left of the photo was designed for ease of maintenance access by city crews with standard city maintenance equipment. Courtesy of SRF Consulting Group, Inc.

The High Point Neighborhood

This Seattle project is the largest example of the city's Natural Drainage Systems Project and it illustrates the incorporation of individual SCMs into street rights-of-way as well as a consolidated facility. The on-site, distributed SCMs in this 600-acre neighborhood are swales, permeable pavement, and disconnected downspouts. A large detention pond services the entire region that is much smaller than it would have been had the other SCMs not been built. Both types of SCMs are shown in Figure 5-58.

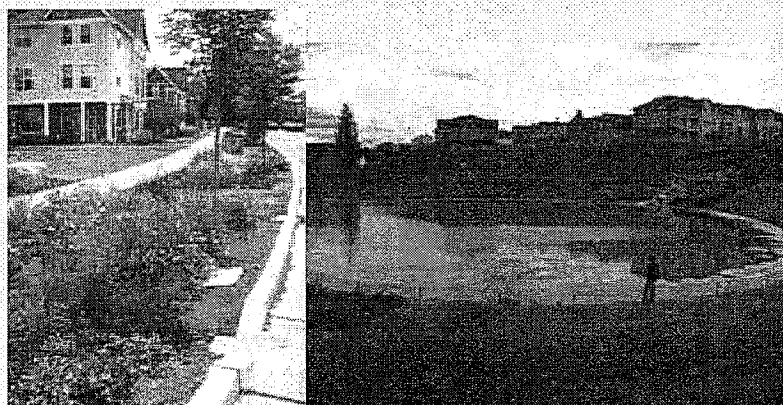


FIGURE 5-58 Natural drainage system methods have been applied to a 34-block, 1,600-unit mixed-income housing redevelopment project called High Point. Vegetated swales, porous concrete sidewalks, and frontyard rain gardens convey and treat stormwater on-site. On the right is the detention pond for the development.

continues next page

BOX 5-11 Continued

Potsdammer Platz

This project, in the heart of Berlin, Germany, illustrates the potential for stormwater treatment in the densest urban environments by incorporating treatment into building systems and architectural pools that are the centerpiece of a series of urban plazas. As shown in Figure 5-59, on-site, individual SCMs are used to collect stormwater and use it for sanitary purposes.

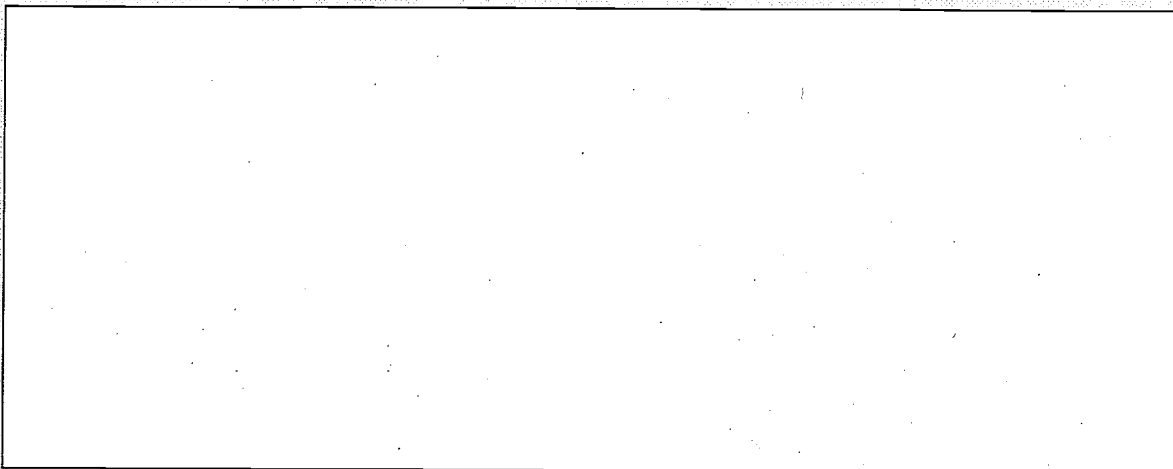


FIGURE 5-59 Stormwater is collected and stored on-site in a series of vaults. Water is circulated through a series of biofiltration areas and used for toilets and other mechanical systems in the building complex. Large storms overflow into an adjacent canal. Permission pending.

Menomonee Valley Redevelopment, Wisconsin

The 140-acre redevelopment of abandoned railyards illustrates how a Brownfield site within an existing floodplain can be redeveloped using both on-site and consolidated treatment. As shown in Figure 5-60, consolidated treatment is incorporated into park areas which provide recreation for adjacent neighborhoods and serve as a centerpiece for a developing light industrial area that provides jobs to surrounding neighborhoods. Treatment on individual privately owned parcels is limited to the removal of larger sediments and debris only, making more land available for development. The volume of water that, by regulation, must be captured and treated on individual sites is conveyed through a conventional subsurface system for treatment in park areas.

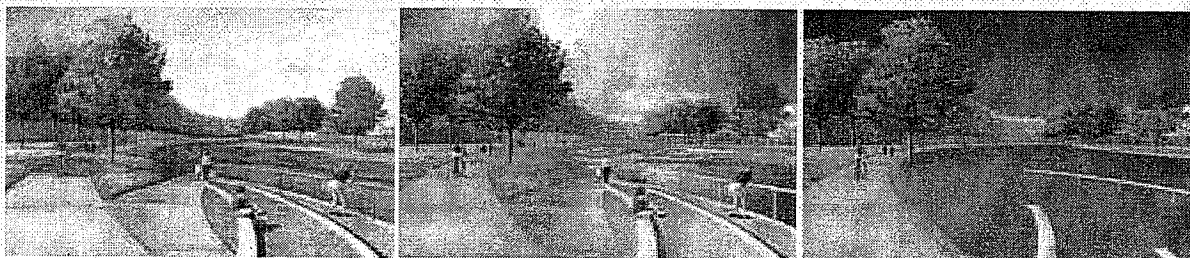


FIGURE 5-60 Illustrations show consolidated treatment areas in proposed parks. The image on the left illustrates the fair weather condition, the center image the water quality capture volume, and the image on the right the 100-year storm event. Construction was completed in spring 2007.

Noting the Physical Constraints

The specific physical constraints of the watershed terrain and the development pattern will influence the selection and assembly of SCMs. The application of SCMs must be customized in every watershed to reflect its unique terrain, such as karst, high water tables, low or high slopes, freeze-thaw depth, soil types, and underlying geology. Each SCM has different restrictions or constraints associated with these terrain factors. Consequently, the SCM prescription changes as one moves from one physiographic region to another (e.g., the flat coastal plain, the rolling Piedmont, the ridge and valley, and mountainous headwaters).

Developing SCM Guidance and Performance Criteria for the Local Watershed

Based on the foregoing factors, the community should establish specific sizing, selection, and design requirements for SCMs. These SCM performance criteria may be established in a local, regional, or state stormwater design manual, or by reference in a local watershed plan. The Minnesota Stormwater Steering Committee (MSSC, 2005) provides a good example of how SCM guidance can be customized to protect specific types of receiving waters (e.g., high-quality lakes, trout streams, drinking water reservoirs, and impaired waters). In general, the watershed- or receiving water-based criteria are more specific and detailed than would be found in a regional or statewide stormwater manual. For example, the local stormwater guidance criteria may be more prescriptive with respect to runoff reduction and SCM sizing requirements, outline a preferred sequence for SCMs, and indicate where SCMs should (or should not) be located in the watershed. Like the identification of stressors or pollutants of concerns, this step is rarely taken under current paradigms of stormwater management.

Establishing a Trading System

A stormwater trading or offset system is critical to situations when on-site SCMs are not feasible or desirable in the watershed. Communities may choose to establish some kind of stormwater trading or mitigation system in the event that full compliance is not possible due to physical constraints or because it is more cost effective or equitable to achieve pollutant reduction elsewhere in the local watershed. The most common example is providing an offset fee based on the cost to remove an equivalent amount of pollutants (such as phosphorus in the Maryland Critical Area—MD DNR, 2003). This kind of trading can provide for greater cost equity between low-cost Greenfield sites and higher-cost ultra-urban sites.

Ensuring the Safe and Effective Performance of the Drainage Network, Streams, and Floodplains

The urban water system is not solely designed to manage the quality of runoff. It also must be capable of safely handling flooding from extreme storms to protect life and property. Consequently, communities need to ensure that their stormwater infrastructure can prevent increased flooding caused by development (and possibly exacerbated future climate change). In

addition, many SCMs must be designed to safely pass extreme storms when they do occur. This usually requires a watershed approach to stormwater management to ensure that quality and quantity control are integrated together, with an emphasis on the connection and effective use of conveyance channels, streams, riparian buffers, and floodplains.

Establishing Community Objectives for the Publicly Owned Elements of Stormwater Infrastructure

The stormwater infrastructure in a community normally occupies a considerable surface area of the landscape once all the SCMs, drainage easements, buffers, and floodplains are added together. Consequently, communities may require that individual SCM elements are designed to achieve multiple objectives, such as landscaping, parks, recreation, greenways, trails, habitat, sustainability, and other community amenities (as discussed extensively above). In other cases, communities may want to ensure that SCMs do not cause safety or vector problems and that they look attractive. The best way to maximize community benefits is to provide clear guidance in local SCM criteria at the site level and to ensure that local watershed plans provide an overall context for their implementation.

Establishing an Inspection and Maintenance Plan

The long-term performance of any SCM is fundamentally linked to the frequency of inspections and maintenance. As a result, NPDES stormwater permit conditions for industrial, construction, and municipal permittees specify that pollution prevention, construction, and post-construction SCMs be adequately maintained. MS4 communities are also required under NPDES stormwater permits to track, inspect, and ensure the maintenance of the collective system of SCMs and stormwater infrastructure within their jurisdiction. In larger communities, this can involve hundreds or even thousands of individual SCMs located on either public or private property. In these situations, communities need to devise a workable model that will be used to operate, inspect, and maintain the stormwater infrastructure across their local watershed. Communities have the lead responsibility in their MS4 permits to assure that SCMs are maintained properly to ensure their continued function and performance over time. They can elect to assign the responsibility to the public sector, the private sector (e.g., property owners and homeowners association), or a hybrid of the two, but under their MS4 permits they have ultimate responsibility to ensure that SCM maintenance actually occurs. This entails assigning legal and financial responsibilities to the owners of each SCM element in the watershed, as well as maintaining a tracking and enforcement system to ensure compliance.

Summary

Taking all of the elements above into consideration, the emerging goal of stormwater management is to mimic, as much as possible, the hydrological and water quality processes of natural systems as rain travels from the roof to the stream through combined application of a series of practices throughout the entire development site and extending to the stream corridor.

The series of SCMs incrementally reduces the volume of stormwater on its way to the stream, thereby reducing the amount of conventional stormwater infrastructure required.

There is no single SCM prescription that can be applied to each kind of development; rather, a combination of interacting practices must be used for full and effective treatment. For a low-density residential Greenfield setting, a combination of SCMs that might be implemented is illustrated in Table 5-8. There are many successful examples of SCMs in this context and at different scales. By contrast, Tables 5-9 and 5-10 outline how the general “roof-to-stream” stormwater approach is adapted for intense industrial operations and urban redevelopment sites, respectively. As can be seen, these development situations require a differ combination of SCMs and practices to address the unique design challenges of dense urban environments. The tables are meant to be illustrative of certain situations; other scenarios, such as commercial development, would likely require additional tables.

TABLE 5-8 From the Roof to the Stream: SCMs in a Residential Greenfield

SCM	What it Is	What it Replaces	How it Works
Land-Use Planning	Early site assessment	Doing SWM design after site layout	Map and plan submitted at earliest stage of development review showing environmental, drainage, and soil features
Conservation of Natural Areas	Maximize forest canopy	Mass clearing	Preservation of priority forests and reforestation of turf areas to intercept rainfall
Earthwork Minimization	Conserve soils and contours	Mass grading and soil compaction	Construction practices to conserve soil structure and only disturb a small site footprint
Impervious Cover Minimization	Better site design	Large streets, lots and cul-de-sacs	Narrower streets, permeable driveways, clustering lots, and other actions to reduce site IC
Runoff Volume Reduction—Rainwater Harvesting	Utilize rooftop runoff	Direct connected roof leaders	A series of practices to capture, disconnect, store, infiltrate, or harvest rooftop runoff
Runoff Volume Reduction—Vegetated	Frontyard bioretention	Positive drainage from roof to road	Grading frontyard to treat roof, lawn, and driveway runoff using shallow bioretention
	Dry swales	Curb/gutter and storm drain pipes	Shallow, well-drained bioretention swales located in the street right-of-way
Peak Reduction and Runoff Treatment	Linear wetlands	Large detention ponds	Long, multi-cell, forested wetlands located in the stormwater conveyance system
Aquatic Buffers and Managed Floodplains	Stream buffer management	Unmanaged stream buffers	Active reforestation of buffers and restoration of degraded streams

Note: SCMs are applied in a series, although all of the above may not be needed at a given residential site. This “roof-to-stream” approach works best for low- to medium-density residential development.

In summary, a watershed approach for organizing site-based stormwater decisions is generally superior to making site-based decisions in isolation. Communities that adopt the preceding watershed elements not only can maximize the performance of the entire system of SCMs to meet local watershed objectives, but also can maximize other urban functions, reduce total costs, and reduce future maintenance burdens.

TABLE 5-9 From the Roof to the Outfall: SCMs in an Industrial Context

SCM Category	What it Is	What it Replaces	How it Works
Pollution Prevention	Drainage mapping	No map	Analysis of the locations and connections of the stormwater and wastewater infrastructure from the site
	Hotspot site investigation	Visual inspection	Systematic assessment of runoff problems and pollution prevention opportunities at the site
	Rooftop management	Uncontrolled rooftop runoff	Use of alternative roof surfaces or coatings to reduce metal runoff, and disconnection of roof runoff for stormwater treatment
	Exterior maintenance practices	Routine plant maintenance	Special practices to reduce discharges during painting, powerwashing, cleaning, sealcoating and sandplasting
	Extending roofs for no exposure	Exposed hotspot operations	Extending covers over susceptible loading/unloading, fueling, outdoor storage, and waste management operations
	Vehicular pollution prevention	Uncontrolled vehicle operations	Pollution prevention practices applied to vehicle repair, washing, fueling, and parking operations
	Outdoor pollution prevention practices	Outdoor materials storage	Prevent rainwater from contact with potential pollutants by covering, secondary containment, or diversion from storm-drain system
	Waste management practices	Exposed dumpster or waste streams	Improved dumpster location, management, and treatment to prevent contact with rainwater or runoff
	Spill control plan and response	No plan	Develop and test response to spills to the storm-drain system, train employees, and have spill control kits available on-site
	Greenscaping	Routine landscape and turf maintenance	Reduce use of pesticides, fertilization, and irrigation in pervious areas, and conversion of turf to forest
	Employee stewardship	Lack of stormwater awareness	Regular ongoing training of employees on stormwater problems and pollution prevention practices
Site housekeeping and stormwater maintenance	Dirty site and unmaintained infrastructure	Regular sweeping, storm-drain cleanouts, litter pickup, and maintenance of stormwater infrastructure	
Runoff Treatment	Stormwater retrofitting	No stormwater treatment	Filtering retrofits to remove pollutants from most severe hotspot areas
IDDE	Outfall analysis	No monitoring	Monitoring of outfall quality to measure effectiveness

Note: While many SCMs are used at each individual industrial site, the exact combination depends on the specific configuration, operations, and footprint of each site.

TABLE 5-10 From the Roof to the Street: SCMs in a Redevelopment Context

SCM Category	What it Is	What it Replaces	How it Works
Impervious Cover Minimization	Site design to prevent pollution	Conventional site design	Designing redevelopment footprint to restore natural area remnants, minimize needless impervious cover, and reduce hotspot potential
Runoff Volume Reduction—Rainwater Harvesting and Vegetated	Treatment on the roof	Traditional rooftops	Use of green rooftops to reduce runoff generated from roof surfaces
	Rooftop runoff treatment	Directly connected roof leaders	Use of rain tanks, cisterns, and rooftop disconnection to capture, store, and treat runoff
	Runoff treatment in landscaping	Traditional landscaping	Use of foundation planters and bioretention areas to treat runoff from parking lots and rooftops
Soil Conservation and Reforestation	Runoff reduction in pervious areas	Impervious or compacted soils	Reducing runoff from compacted soils through tilling and compost amendments, and in some cases, removal of unneeded impervious cover
	Increase urban tree canopy	Turf or landscaping	Providing adequate rooting volume to develop mature tree canopy to intercept rainfall
Runoff Reduction—Subsurface	Increase permeability of impervious cover	Hard asphalt or concrete	Use of permeable pavers, porous concrete, and similar products to decrease runoff generation from parking lots and other hard surfaces.
Runoff Reduction—Vegetated	Runoff treatment in the street	Sidewalks, curb and gutter, and storm drains	Use of expanded tree pits, dry swales and street bioretention cells to further treat runoff in the street, or its right-of-way
Runoff Treatment	Underground treatment	Catch basins and storm-drain pipes	Use of underground sand filters and other practices to treat hotspot runoff quality at the site
Municipal Housekeeping	Street cleaning	Unswep streets	Targeted street cleaning on priority streets to remove trash and gross solids
Watershed Planning	Off-site stormwater treatment or mitigation	On-site waivers	Stormwater retrofits or restoration projects elsewhere in the watershed to compensate for stormwater requirements that cannot be met onsite

Note: SCMs are applied in a series, although all of the above may not be needed at a given redevelopment site.

COST, FINANCE OPTIONS, AND INCENTIVES

Municipal Stormwater Financing

To be financially sustainable, stormwater programs must develop a stable long-term funding source. The activities common to most municipal stormwater programs (such as education, development design review, inspection, and enforcement) are funded through general tax revenues, most commonly property taxes and sales taxes (NAFSMA, 2006), which is problematic for several reasons. First, stormwater management financed through general tax receipts does not link or attempt to link financial obligation with services received. The absence of such links can reduce the ability of a municipality to adequately plan and meet basic stormwater management obligations. Second, when funded through general tax revenues, stormwater programs must compete with other municipal programs and funding obligations. Finally, in programs funded by general tax revenue, responsibilities for stormwater management tend to be distributed into the work responsibilities of existing and multiple departments (e.g., public works, planning, etc.). One recent survey conducted in the Charles River watershed in Massachusetts found that three-quarters of local stormwater management programs did not have staff dedicated exclusively for stormwater management (Charles River Watershed Association, 2007).

Increasingly, many municipalities are establishing stormwater utilities to manage stormwater (Kaspersen, 2000). Most stormwater utilities are created as a separate organizational entity with a dedicated, self-sustaining source of funding. The typical stormwater utility generates the large majority of revenue through user fees (Florida Stormwater Association, 2003; Black and Veatch, 2005; NAFSMA, 2006). User fees are established and set so as to have a close nexus to the cost of providing the service and, thus, are most commonly based on the amount of impervious surface, frequently measured in terms of equivalent residential unit. For example, an average single-family residence may create 3,000 square feet of impervious surface (roof and driveway area). A per-unit charge is then assigned to this "equivalent runoff unit." To simplify program administration, utilities typically assign a flat rate for residential properties (customer class average) (NAFSMA, 2006). Nonresidential properties are then charged individually based on the total amount of impervious surface (square feet or equivalent runoff units) of the parcel. Fees are sometimes also based on gross area (total area of a parcel) or some combination of gross area and a development intensity measure (Duncan, 2004; NAFSMA, 2006).

Municipalities have the legal authority to create stormwater utilities in most states (Lehner et al., 1999). In addition to creating the utility, a municipality will generally establish the utility rate structure in a separate ordinance. Separating the ordinances allows the municipality flexibility to change the rate structure without revising the ordinance governing the entire utility (Lehner et al., 1999). While municipalities generally have the authority to collect fees, some states have legal restrictions on the ability of local governments to levy taxes (Lehner et al., 1999; NAFSMA, 2006). The legal distinction between a tax and a fee is the most common legal challenge to a stormwater utility. For example, stormwater fees have been subject to litigation in at least 17 states (NAFSMA, 2006). To avoid legal challenges, care must be taken to meet a number of legal tests that distinguish a fee for a specific service and a general tax.

Stormwater utilities typically bill monthly, and fees range widely. A recent survey of U.S. stormwater utilities reported that fees for residential households range from \$1 to \$14 per month, but a typical residential household rate is in the range of \$3 to \$6 (Black and Veatch, 2005). Despite the dedicated funding source, the majority of stormwater utilities responding to a recent survey (55 percent) indicated that current funding levels were either inadequate or just adequate to meet their most urgent needs (Black and Veatch, 2005).

Both municipal and state programs can finance administrative programming costs through stormwater permitting fees. Municipal stormwater programs can use separate fees to finance inspection activities. For instance, inspection fees can be charged to cover the costs of ensuring that SCMs are adequately planned, installed, or maintained (Debo and Reese, 2003). Stormwater management programs can also ensure adequate funding for installation and maintenance of SCMs by requiring responsible parties to post financial assurances. Performance bonds, letters of credit, and cash escrow are all examples of financial assurances that require up-front financial payments to ensure that longer-term actions or activities are successfully carried out. North Carolina's model stormwater ordinance recommends that the amount of a maintenance performance security (bond, cash escrow, etc.) be based on the present value of an annuity based on both inspection costs and operation and maintenance costs (Whisnant, 2007).

In addition to fees or taxes, exactions such as impact fees can also be used as a way to finance municipal stormwater infrastructure investments (Debo and Reese, 2003). An impact fee is a one-time charge levied on new development. The fee is based on the costs to finance the infrastructure needed to service the new development. The ability to levy impact fees varies between states. Municipalities that use impact fees are also required to show a close nexus between the size of the fee and the level of benefits provided by the fee; a failure to do so exposes local government to law suits (Keller, 2003). Compared to other funding sources, impact fees also exhibit greater variability in revenue flows because the amount of funds collected is dependent on development growth.

Bonds and grants can supplement the funding sources identified above. Bonds and loans tend to smooth payments over time for large up-front stormwater investments. For example, state and federal loan programs (state revolving funds) provide long-term, low-interest loans to local governments or capital investments (Keller, 2003). In addition, grant opportunities are sometimes available from state and federal sources to help pay for specific elements of local stormwater management programs.

Municipalities require funds to meet federal and state stormwater requirements. Understanding of the municipal costs incurred by implementing stormwater regulations under the Phase I and II stormwater rules, however, is incomplete (GAO, 2007). Of the six minimum measures of a municipal stormwater program (public education, public involvement, illicit discharge detection and elimination, construction site runoff control, post-construction stormwater management, and pollution prevention/good housekeeping—see Chapter 2), a recent study of six California municipalities found that pollution prevention activities (primarily street sweeping) accounted for over 60 percent of all municipal stormwater management costs in these communities (Currier et al., 2005). Annual per-household costs ranged from \$18 to \$46.

Stormwater Cost Review

Conceptually, the costs of providing SCMs are all opportunity costs (EPA, 2000). Opportunity costs are the value of alternatives (next best) given up by society to achieve a particular outcome. In the case of stormwater control, opportunity costs include direct costs necessary to control and treat runoff such as capital and construction costs and the present value of annual operation and maintenance costs. Initial installation costs should also include the value of foregone opportunities on the land used for stormwater control, typically measured as land acquisition (land price).

Costs also include public and private resources incurred in the administration of the stormwater management program. Private-sector costs might include time and administrative costs associated with permitting programs. Public costs include agency monitoring and enforcement costs.

Opportunity costs also include other values that might be given up as a consequence of stormwater management. For example, the creation of a wet pond in a residential area might be opposed because of perceived safety, aesthetic, or nuisance concerns (undesirable insect or animal species). In this case, the diminished satisfaction of nearby property owners is an opportunity cost associated with the wet pond. On the other hand, if SCMs are considered a neighborhood amenity (e.g., a constructed wetland in a park setting), opportunity costs may decrease. In addition, costs of a given practice may be reduced by reducing costs elsewhere. For example, increasing on-site infiltration rates can reduce off-site storage costs by reducing the volume and slowing the release of runoff.

In general the cost of SCMs is incompletely understood and significant gaps exist in the literature. More systematic research has been conducted on the cost of conventional stormwater SCMs (wet ponds, detention basins, etc.), with less research applied to more recent, smaller-scale, on-site infiltration practices. Cost research is challenging given that stormwater treatment exhibits considerable site-specific variation resulting from different soil, topography, climatic conditions, local economic conditions, and regulatory requirements (Lambe et al., 2005).

The literature on stormwater costs tend to be oriented around construction costs of particular types of SCMs (Wiegand et al., 1986; SWRPC, 1991; Brown and Schueler, 1997; Heaney et al., 2002; Sample et al., 2003; Wossink and Hunt, 2003; Caltrans, 2004; Narayanan and Pitt, 2006; DeWoody, 2007). In many of these studies, construction cost functions are estimated statistically based on a sample of recently installed SCMs and the observed total construction costs. Observed costs are then related statistically to characteristics that influence cost such as practice size. Other studies estimate costs by identifying the individual components of a construction project (pipes, excavation, materials, labor, etc.), estimating unit costs of each component, and then summing all project components. These studies generally find that construction costs decrease on a per-unit basis as the overall size (expressed in volume or drainage area) of the SCM increases (Lambe et al., 2005). These within-practice economies of scale are found across certain SCMs including wet ponds, detention ponds, and constructed wetlands. Several empirical studies, however, failed to find evidence of economies of scale for bioretention practices (Brown and Schueler, 1997; Wossink and Hunt, 2003).

Increasing attention has been paid to small-scale practices, including efforts to increase infiltration and retain water through such means as green roofs, permeable pavements, rain barrels, and rain gardens (under the label of LID). The costs of these practices are less well studied compared to the other stormwater practices identified above. In general, per-unit

construction and design costs exceed larger-scale SCMs (Low Impact Development Center, 2007). Higher construction costs, however, may be offset to various degrees by reducing the investments in stormwater conveyance and storage infrastructure (i.e., less storage volume is needed) (CWP, 1998a, 2000a; Low Impact Development Center, 2007). Others have suggested that per-unit costs to reduce runoff may be less for these small-scale distributed practices because of higher infiltration rates and retention rates (MacMullan and Reich, 2007).

Compared to construction costs, less is known about the operation and maintenance costs of SCMs (Wossink and Hunt, 2003; Lambe et al., 2005; MacMullan and Reich, 2007). Most stormwater practices are not maintenance free and can create financial and long-term management obligations for responsible parties (Hager, 2003). Cost-estimation programs and procedures have been developed to estimate operation and maintenance costs as well as construction costs (SWRPC, 1991; Lambe et al., 2005; Narayanan and Pitt, 2006), but examination of observed maintenance costs is less common. Based on estimates from Wossink and Hunt (2003), the total present value of maintenance costs over 20 years can range from 15 to 70 percent of total capital construction costs for wet ponds and constructed wetlands and appear generally consistent with percentages reported in EPA (1999). Operation and maintenance costs were also reported to be a substantial percentage of construction costs of infiltration pits and bioretention areas in Southern California (DeWoody, 2007). Others estimate that over the life of many SCMs, maintenance costs may equal construction costs (CWP, 2000a). In general, maintenance costs tend to decrease as a percentage of total SCM cost as the total size of the SCM increases (Wossink and Hunt, 2003).

Very few quantifiable estimates are available for public and private regulatory compliance costs. Compliance costs could include both initial permitting costs (labor and time delays) of gaining regulatory approval for a particular stormwater design to post-construction compliance costs (administration, inspection monitoring, and enforcement). Compliance monitoring is a particular concern if a stormwater management program relies on widespread use of small-scale distributed on-site practices (Hager, 2003). Unlike larger-scale or regional stormwater facilities that might be located on public lands or on private lands with an active stormwater management plan, a multitude of smaller SCMs would increase monitoring and inspection times by increasing the number of SCMs. Furthermore, municipal governments may be reluctant to undertake enforcement actions against citizens with SCMs located on private land.

Land costs tend to be site specific and exhibit a great deal of spatial variation. Some types of SCMs, such as constructed wetlands, are more land intensive than others. In highly urban areas, land costs may be the single biggest cost outlay of land-intensive SCMs (Wossink and Hunt, 2003).

In general, cost analyses generally find that the cost to treat a given acreage or volume of water is less for regional SCMs than for smaller-scale SCMs (Brown and Schueler, 1997; EPA, 1999; Wossink and Hunt, 2003). For example, considering maintenance, capital construction, and land costs, recent estimates for North Carolina indicate that annual costs for wet ponds and constructed wetlands range between \$100 and \$3,000 per treated acre (typically less than \$1,000). Per-acre annual costs for bioretention and sand filters typically ranged between \$300 and \$3,500, and between \$4,500 and 8,500, respectively. However, if SCMs face space constraints, bioretention areas can become more cost effective. Furthermore, other classes of small, on-site practices, such as grass swales and filter strips, can sometimes be implemented for relatively low cost.

There are exceptions to the general conclusion that larger-scale stormwater practices tend to be less costly on a per-unit basis than more numerous and distributed on-site practices. For instance, in Sun Valley, California, a recent study indicates that installing small distributed practices (infiltration practices, porous pavement, rain gardens) was more cost effective than centralized approaches for a retrofit program (Cutter et al., 2008). In this particular setting, the difference tended to revolve around the high land costs in the urbanized setting. Small-scale practices can be placed on low-valued land or integrated into existing landscaping, reducing land costs. Centralized stormwater facilities require substantial purchases of high-priced urban properties. Similarly, small distributed practices (porous pavement, green roofs, rain gardens, and constructed wetlands) can also provide a more cost-effective approach to reducing combined sewer overflow (CSO) discharges in a highly urban setting than large structural CSO controls (storage tanks) (Montalto et al., 2007).

SCMs are now a part of most development processes and consequently will increase the cost of the development. Randolph et al. (2006) report on the cost of complying with stormwater and sediment and erosion control regulations for six developments in the Washington, D.C., metropolitan area. These costs include primarily stormwater facility construction and land costs. The findings from these case studies indicate that stormwater and erosion and sediment control comprised about 60 percent of all environmental-related compliance costs for the residential developments studied and added about \$5,000 to the average price of a home. Nationwide, stormwater and erosion and sediment controls are estimated to add \$1,500 to \$9,000 to the cost of a new residential dwelling unit (Randolph et al., 2006).

As a means to control targeted chemical constituents, SCMs may be an expensive control option relative to other control alternatives. For example, nutrients from anthropogenic sources are an increasing water quality concern for many fresh and marine waters. Some states (e.g., Virginia, Maryland, and North Carolina) require stormwater programs to achieve specific nutrient (nitrogen or phosphorus) stormwater standards. The construction, maintenance, and land costs of reducing nitrogen discharge from residential developments using bioretention areas, wet ponds, constructed wetlands, or sand filters range from \$60 to \$2,500 per pound (Aultman, 2007). These control costs can be an order of magnitude higher than nitrogen control costs from point sources or agricultural nonpoint sources. The high per-pound removal costs are due in part to the relatively low mass load of nutrients carried in stormwater runoff. These estimates, however, assume that all costs are allocated exclusively to nitrogen removal. The high per-pound removal costs from the control of single pollutants highlight the importance of achieving ancillary and offsetting benefits associated with stormwater control (e.g., removal of other pollutants of concern, stream-channel protection from volume reduction, and enhancement of neighborhood amenities).

It should also be noted that installing SCMs in an existing built environment tends to be significantly more expensive than new construction. Construction costs for retrofitted extended detention ponds, wet ponds, and constructed wetlands were estimated to be two to seven times more costly than new SCMs (Schueler et al., 2007). Retrofit costs can be higher for a variety of reasons, including the need to upgrade existing infrastructure (culverts, drainage channels, etc.) to meet contemporary engineering and regulatory requirements. Retrofitting a single existing residential city block in Seattle with a new stormwater drainage system that included reduced street widths, biofiltration practices, and enhanced vegetation cost an estimated \$850,000 (see Box 5-5; Seattle Public Utilities, 2007). Estimates suggested that the costs might have been even

higher using more conventional stormwater piping/drainage systems (Chris May, personal communication, August 2007; EPA, 2007).

As discussed earlier in the chapter, stormwater runoff can be reduced and managed through better site design to reduce impervious cover. Low- to medium-density developments can reduce impervious cover through cluster development patterns that preserve open space and reduce lot sizes. Impervious surfaces and infiltration rates could be altered by any number of site-design characteristics such as reduction in street widths, reduction in the number of cul-de-sacs, and different setback requirements (CWP, 2000a). Finally, impervious surface per capita could be substantially reduced by increasing the population per dwelling unit.

Quantifying the cost of many of these design features is more challenging, and the literature is much less developed or conclusive than the literature on conventional SCM costs. Many design features described above (clustering, reduced setbacks, narrower streets, less curb and gutter) can significantly lower construction and infrastructure costs (CWP, 2001; EPA, 2007). Such features may reduce the capital cost of subdivision development by 10 to 33 percent (CWP, 2000a).

On the other hand, the evidence is unclear whether consumers are willing to pay for these design features. If consumers prefer features typically associated with conventional developments (large suburban lot, for example), then some aspects of alternative development designs/patterns could impose an opportunity cost on builders and buyers alike in the form of reduced housing value. For example, most statistical studies in the U.S. housing market find that consumers prefer homes with larger lots and are willing to pay premiums for homes located on cul-de-sacs, presumably for privacy and safety reasons (Dubin, 1998; Fina and Shabman, 1999; Song and Knapp, 2003). These effects, however, might be partly or completely offset by the higher value consumers might place on the proximity of open space to their homes (Palmquist, 1980; Cheshire and Sheppard, 1995; Qiu et al., 2006). Anecdotal evidence indicates that residents feel that Seattle's Street Edge Alternative program (the natural drainage system retrofit program that combines swales, bioretention and reduced impervious surfaces) increased their property values (City of Seattle, undated). Studies that have attempted to assess the net change in costs are limited, but some evidence suggests that the amenity values of lower-impact designs may match or outweigh the disamenities (Song and Knapp, 2003).

Incentives for Stormwater Management

The dominant policy approach to controlling effluent discharge under the Clean Water Act is through the application of technology-based effluent standards or the requirements to install particular technologies or practices. Some note that this general policy approach may not provide the regulated community with (1) incentives to invest in pollution prevention activities beyond what is required in the standard or with (2) sufficient opportunities or flexibility to lower overall compliance costs (Parikh et al., 2005).

A loosely grouped set of policies, called here "incentive-based,"¹ aim to create financial incentives to manage effluent or volume discharge. Such policies tend to be classified into two groups: price- and quantity-based mechanisms (Stavins, 2000; Parikh et al., 2005). Price-based mechanisms are created when government creates a charge (tax, fee, etc.) or subsidy (payment)

¹ These policies are sometimes called "market-based" policies, but that term will not be used here because many of the incentive-based policies discussed fail to contain features characteristic of a market system.

on an outcome that government wants to either discourage or encourage. Ideally, the price would be placed on a target outcome (effluents discharged, volume of water released, etc.) and not on the means to achieve that outcome end (such as a tax or subsidy to adopt specific technologies or practices).² Quantity-based policies require government to establish some binding limit or cap on an outcome (e.g., mass load of effluent, volume of runoff, etc.) for an identified group of dischargers, but then allow the regulated parties to “trade” responsibilities for meeting that limit or cap. The opportunity to trade creates the financial incentive. The trading concept is discussed in greater detail in Chapter 6, while this section focuses on price-based incentives.

Some stormwater utilities offer reductions in stormwater fees to landowners who voluntarily undertake activities to reduce runoff from their parcels (Doll and Lindsey, 1999; Keller, 2003). The reduction in tax obligations, called credits, can be interpreted as a financial subsidy or payment for implementing on-site runoff controls. Credit payments are typically made based on the volume of water detained. For example, as part of Portland, Oregon’s Clean River Rewards program, residents and commercial property owners can reduce their stormwater utility fee by as much as 35 percent by reducing stormwater runoff from existing developed properties (Portland Bureau of Environmental Services, 2008a). Residential and commercial property owners are given a number of ways to reduce runoff to receive this financial benefit. In addition, Portland has a downspout disconnection program that aims to reduce discharge into CSOs in targeted areas in the city. Property owners may be reimbursed up to \$53 per eligible downspout (Portland Bureau of Environmental Services, 2008b).

Alternatively, stormwater utilities could (where allowed) also use fee revenue to provide private incentives for stormwater control through a competitive bidding process. Such a bidding process (“reverse auction”) would request proposals for stormwater reduction projects and fund projects that reduce volume at the least cost. Proposed investments that can meet the program objectives at the lowest per unit cost would receive payments. Such a program creates private incentives to search for low-cost stormwater investments by creating a price for runoff volume reduction. The bidding program could also be used to identify cost-effective stormwater investments in areas targeted for enhanced levels of restoration. A bidding program has been proposed as a way to lower overall costs of a stormwater program in Southern California (Cutter et al., 2008). Revenue to fund such a competitive bid program could come from a variety of sources including stormwater utility fees or fees paid into an in lieu fee program.

Finally, impact fees on new developments can be structured in a way to create incentives to reduce stormwater runoff volumes. Charges based on runoff volume (or a surrogate measure like impervious surface) can provide an incentive for developers to reduce the volume of new runoff created.

² The literature on what level to set the price (tax or subsidy) is vast, complex, and controversial. Parikh et al. (2005) seem to wander into this debate (perhaps unwittingly) by making a distinction between taxes based on some optimality rule (marginal damage costs equal to marginal control costs) and those based on some other sort of decision rule. Without getting into the specifics of this debate here, this discussion will simply assert more generally that price-based incentive policies structure taxes and subsidies to induce desirable behavioral change (rather than simply to raise revenue).

CHALLENGES TO IMPLEMENTATION OF WATERSHED-BASED MANAGEMENT AND STORMWATER CONTROL MEASURES

The implementation of SCMs has seen variable success. Environmental awareness, threats to potable water sources or to habitat for threatened and endangered species, problems with combined sewer overflows, and other environmental factors have caused cities such as Portland, Oregon; Seattle, Washington; Chicago, Illinois; and Austin, Texas to aggressively pursue widespread implementation of a broad range of SCMs. In contrast, other cities have been slow to implement recommended practices, for many reasons. This is particularly true for nonstructural SCMs, despite their popularity among planners and regulators for the past two decades. A host of real and perceived concerns about individual nonstructural SCMs are often raised regarding development costs, market acceptance, fire safety, emergency access, traffic and parking congestion, basement seepage, pedestrian safety, backyard flooding, nuisance conditions, maintenance, and winter snow removal operations. While most of these concerns are unfounded, they contribute to a culture of inertia when it comes to code change (CWP, 1998a, 2000a). As a result, some nonstructural SCMs are discouraged or even prohibited by local development codes. Very few communities make the consideration of nonstructural practices a required element of stormwater plan review, nor do they require that they be considered early in the site layout and design process when their effectiveness would be maximized. Finally, many engineers and planners feel they can fully comply with existing stormwater criteria without resorting to nonstructural SCMs.

Cost Issues

There are numerous cost issues that have proven to be significant barriers to the use of innovative SCMs. Special construction techniques required for the proper design and function of SCMs, specially formulated manufactured soils, expensive subsurface vaults, and increased land area requirements as a result of increased stormwater storage requirements can significantly increase site development costs. For smaller projects in highly urbanized areas where land costs are high, there can be a disproportionately large expense to comply with stormwater regulations, causing developers to seek, and often receive, exemption from requirements.

Sediment removal and related maintenance activities required to ensure the proper ongoing functioning of SCMs are activities that are not a part of normal building maintenance. Data on maintenance costs of SCMs on privately owned facilities are limited, and management companies responsible for commercial and office building maintenance have yet to provide SCM maintenance as part of their services.

Additional costs are incurred when development review periods by public agencies get extended because of an increased level of design review required to evaluate the compliance of SCMs with city ordinances. Additional review increases development costs and extends the design process. Even with specialized training for city staff to evaluate SCM submittals, deviation from the most basic type of SCM design seems to require extended review and documentation.

Cost concerns are partly responsible for the markedly slow implementation of the stormwater program. The federal deadlines for permit coverage have long passed; in fact more than 14 years have lapsed for medium and large municipalities. A good part of the delay can be

explained by the resistance of states and local governments to the unknown cost burden. Cities contend that the permit requirements are unreasonable, expensive, and unrealistic to achieve. Many local government officials view some permit provisions such as LID or better site design as intrusion into the land-use authority of local governments.

As discussed in Chapter 2, the U.S. Congress provided no start-up or upgrade financial assistance, unlike what it did for municipally owned and operated wastewater treatment plants after the promulgation of the NPDES permit program under the Clean Water Act in 1972. Local governments have been reluctant to tax residents or create stormwater utilities. States like California and Michigan even have laws that require voter approval in order for local governments to assess new fees. Thus, to implement the NPDES stormwater program, states have had to largely rely on stormwater permit fees collected to support a skeletal to modest staff for program oversight. In Denver, and presumably in other cities, there is no reduction in stormwater fees when impervious area is reduced because of construction of on-site SCMs. This amounts to a disincentive to do the "right thing." Meanwhile, the overall federal budget for the NPDES program, including stormwater, has been declining.

Long-Term Maintenance of Stormwater Control Measures

One of the weakest parts of most stormwater management programs is the lack of information about, and funding to support, the long-term maintenance of SCMs. If SCMs are not inspected and maintained on a regular basis, the stormwater management program is likely to fail. This also negatively impacts the design process—if there is no inspection program and no accountability for maintenance, the designer has no incentive to build better, more maintenance-friendly SCMs. Finally, without an accurate assessment of the maintenance needs of an SCM, land owners and other responsible parties cannot anticipate their total costs over the lifetime of the device.

Almost all SCMs require active long-term maintenance in order to continue to provide volume and water quality benefits (Hoyt and Brown, 2005; Hunt and Lord, 2006b). Furthermore, a typical municipality may contain hundreds or thousands of individual SCMs within its jurisdiction. Thus, the long-term obligations for maintenance are considerable. For example, the annual maintenance cost of 100 medium-sized wet ponds (one-half acre to 2 acres) is estimated to be a quarter of a million dollars (Hunt and Lord, 2006c). Currently, the majority of municipal stormwater programs do not have adequate plans or resources in place for the long-term maintenance of SCMs (GAO, 2007).

A number of issues confront the long-term maintenance of SCMs. First, legal and financial responsibility for maintenance must be assigned. Historically stormwater ownership and responsibility have been poorly defined and implemented (Reese and Presler, 2005). If a party is an industrial facility that is required to obtain a permit, then responsibility for maintaining SCMs rests with the permittee. Other instances are more ambiguous. For residential developments, the responsibility for long-term maintenance could be assigned to the developer (e.g., establishing long-term financial accounts for maintenance), individual landowners, homeowners associations, or the municipality itself. Some cities, like Austin and Seattle, assume responsibility for long-term maintenance of SCMs in residential areas. Concerns over assigning responsibility to individual residential landowners or homeowners associations include insufficient technical and financial resources to conduct consistent maintenance and a

lack of inspection to require maintenance. A recent survey of municipal stormwater programs found that less than one-third perform regular maintenance on stormwater detention ponds or water quality SCMs in general residential areas (Reese and Presler, 2005). To ensure that adequate maintenance will occur, municipalities can require performance securities (performance bonds, escrow accounts, letter of credit, etc.) that ensure adequate funds are available for maintenance and repair in the event of failure to maintain the SCM by the responsible party.

An effective maintenance program also requires a system to inventory and track SCMs, inspection/monitoring, and enforcement against noncompliance. The large number of SCMs to track and manage creates management challenges. Municipal stormwater programs must administer their regulatory programs, perform inspection and enforcement activities, and maintain SCMs in public lands/rights-of-way and sometimes in residential areas. Municipal programs often do not have adequate staff to ensure that these maintenance responsibilities are adequately carried out. The lack of adequate staff for inspection and an inadequate system for prioritizing inspections have been repeatedly pointed out (Duke and Beswick, 1997; Duke, 2007; GAO, 2007).

Tracking and monitoring costs may also create disincentives for municipalities to adopt or encourage smaller-scale SCMs. For example, residential-scale rain gardens, porous driveways, rain barrels, and grass swales all have the potential to increase the cost and complexity of compliance monitoring because of the multitude of small infiltration devices that are located on private property as opposed to having fewer SCMs located in public rights-of-way or public lands. Small-scale distributed SCMs located on private property raise concerns of municipal willingness to inspect and enforce against noncompliance. Indeed, some municipalities have banned innovative SCMs like pervious pavement because the municipalities have no means to ensure their maintenance and continued operation.

Finally, there is concern that there is inadequate funding to maintain the growing number of SCMs on the landscape. The long-term funding obligation for maintenance has been difficult to assess (GAO, 2007), partly because many stormwater programs frequently do not have adequate accounting practices to define capital value and depreciation, maintenance, operation, or management programs (Reese and Presler, 2005). The problem is compounded because the long-term maintenance cost associated with various types of SCMs is not well understood. Additional research and information are needed on the costs of maintaining the performance of SCMs as experienced in the field (rather than ex ante estimates based on design plans). Research into long-term maintenance costs should include not only routine operation and maintenance costs but also costs for inspection and enforcement and remediation costs associated with SCM performance failures. Such research is critical to understanding the long-term cost obligation that is being assumed by municipal stormwater programs that are responsible for managing a growing number of SCMs.

At the present time, the maintenance schedule for many of the proprietary and non-proprietary SCMs is poorly defined. It will vary with the type of drainage area and the activities that are occurring within it and with the efficiency of the SCM. (For example, the city of Austin, Texas, has determined that the average lifespan of their sand filters ranges from 5 to 15 years, but can be as little as one year if there is construction in the drainage area.) In order to establish a maintenance schedule, an assessment protocol needs to be adopted by municipalities. The protocol, which is specific to the type of SCM, could consist of the following: each year municipalities would be required to collect data from a subset of their SCMs on public and private property, and then over a period of years these data could be used to determine

maintenance schedules, predict performance based on age and sediment loading, and identify failed systems. A measurement of the depth of deposited sediment might be the only test needed for settling devices, such as hydrodynamic devices and wet detention ponds. Two levels of analysis could be performed for infiltration devices—one based on simple visual observations and the other using an instrument to check infiltration rates. These assessment methods for infiltration devices have been tested at the University of Minnesota (Gulliver and Anderson, 2007). Without an assessment protocol for SCMs, the chances for poor maintenance and outright failure are greatly increased, it is difficult if not impossible to determine the actual performance of an SCM, and there will be insufficient data to reduce the uncertainty in future SCM design.

Lack of Design Guidance on Important SCMs and Lack of Training

Progress in implementing SCMs is often handicapped by the lack of local or national design guidance on important SCMs, and by the lack of training among the many players in the land development community (planners, designers, plan reviewers, public works staff, regulators, and contractors) on how to properly implement them on the ground. For example, design guidance is lacking or just emerging for many of the non-traditional SCMs, such as conservation of natural areas, earthwork minimization, product substitution, reforestation, soil restoration, impervious cover reduction, municipal housekeeping, stormwater education, and residential stewardship. Some LID techniques are better covered, such as the standards for pervious concrete from the American Concrete Institute and the National Ready Mixed Concrete Association. Design guidance for traditional SCMs such as erosion and sediment control may exist but is often incomplete, outdated, or lacking key implementation details to ensure proper on-the-ground implementation. In other cases, design guidance is available, but has not been disseminated to the full population of Phase II MS4 communities. For example, in an unpublished survey of state manuals used to develop national post-construction stormwater guidance, Hirschman and Kosco (2008) found that less than 25 percent provided sizing criteria, detailed engineering design specifications, or maintenance criteria. Nationwide guidance on SCM design and implementation may not be advisable or applicable to all physiographic, climatic, and ecoregions of the country. Rather, EPA and the states should encourage the development of regional design guidance that can be readily adapted and adopted by municipal and industrial permittees. Improvement of SCM design guidance should incorporate more direct consideration of the parameters of concern, how they move across the landscape, and the issues in receiving waters—a strategy both espoused in this report (page 351) and in recent publications on this topic (Strecker et al., 2005, 2007).

The second key issue relates to how to train and possibly certify the hundreds of thousands of individuals that are responsible for land development and stormwater infrastructure at the local and state level. New stormwater methods and practices cannot be effectively implemented until local planners, engineers, and landscape architects fully understand them and are confident on how to apply them to real-world sites. Currently, stormwater design is not a major component of the already crowded curriculum of undergraduate or graduate planning engineering or landscape architecture programs. Most stormwater professionals acquire their skills on the job. Given the rapid development of new stormwater technologies, there is a critical need for implementation of regional or statewide training programs to ensure that stormwater

professionals are equipped with the latest knowledge and skills. The training programs should ultimately lead to formal certification for stormwater designers, inspectors, and plan reviewers.

Different Standards in Different Jurisdictions That Are Within the Same Watershed

Governmental and watershed boundaries rarely coincide, with the result that most watersheds are made up of many municipal bodies regulating stormwater management. Unfortunately in most cases there is no overarching stormwater regulatory structure that is based upon a watershed analysis. This can result in many unfortunate conflicts, where approval of a stormwater facility does not affect the community issuing the permit. It is often said that the most effective stormwater management for an area high in the watershed is to speed the water downstream, thus saving the upstream community but severely damaging the downstream rivers. While this may be an exaggeration, the problems downstream are less of a concern to the upper watershed communities, and downstream communities may not be able to solve their water issues without help from the upstream communities.

Often neighboring communities' plans or the methods or data used do not coincide. For example, often out-of-date rainfall distributions, methods, or standards are required in the code that do not apply to the newer focus on smaller storms and volume reduction. If methods that include Modified Rational or TR-55 are used, it is difficult if not impossible to show the benefits in peak flow reduction gained through volume reduction devices. Also, some municipalities may require curb and piping and not allow swales, impeding the implementation of a cost-effective design. Finally, it is difficult to observe a measureable impact of SCMs when they are guided by a patchwork of regulations. One community may require removal of the first inch of runoff, and another may require the reduction of the 25-year, post-construction peak to the 10-year pre-construction level.

Water Rights that Conflict with Stormwater Management

In the West, water is considered real property, governed by state law and regional water compacts. Landowners in urban areas rarely own surface water rights and are typically prohibited from "beneficial use" of that water, which affects how SCMs are chosen. For example, current practices in Colorado typically allow stormwater to be infiltrated within a short period of time on-site without violation of water laws. However, storage of and/or pumping this water for broader distribution is considered to be a beneficial use and is therefore prohibited. Moreover, as discussed in Chapter 2, SCMs that manage stormwater by driving the water underground with a bored, drilled, or driven shaft or a hole dug deeper than its widest surface dimension are typically considered to be "injection wells," requiring a federal permit and regular monitoring under the Safe Drinking Water Act.

Some states prohibit infiltration because of concerns over long-term groundwater pollution. In California, which does not have a uniform policy for groundwater management and groundwater rights, authority over groundwater quality management falls to several regional and local agencies. For example, the Upper Los Angeles River Area (ULARA) has a court-appointed Watermaster to manage the complex appropriation of its groundwater to user cities and agencies. The ULARA has clashed with the City of Los Angeles regarding rights to all of

the water that normally recharges the Los Angeles River via runoff from precipitation. In 2000, the ULARA Watermaster expressed a concern with certain permit provisions of the Los Angeles County MS4 Permit for New Development/ Redevelopment that promoted infiltration, stating that the MS4 permit interfered with the adjudicated right of the City of Los Angeles to manage groundwater.

Urban Development and Sprawl

The continued expansion of urban areas is inevitable given population increases worldwide and the transition from agricultural to industrial economies. Given that urbanization of almost any magnitude—even less than 10 percent impervious area—has been demonstrated to have an impact on in-stream water quality, a central question to be addressed is how water quality can be maintained as cities grow, without having negative impacts on social and economic systems. Ideally, SCMs would perform their water quality function, contribute to the livability of cities, and enhance their economic and social potentials.

Low-density, auto-oriented urban development, commonly known as sprawl, has been the predominant pattern of development in the United States, and increasingly worldwide, since World War II. It has been widely criticized for its inefficient use of land, its high use of natural resources, and its high energy costs—all of which are associated with the required auto-oriented travel. Additionally, ongoing economic costs related to the provision of widely dispersed services and social impacts of a breakdown in community life have been identified (Brugemann, 1974). Sprawl and the impacts on in-stream water quality that result from urbanization have been an inevitable consequence of improved economic conditions. In the United States, sprawl constitutes the vast majority of development occurring today because a majority of the population is attracted to the benefits of a suburban lifestyle, government has subsidized roads and highways at the expense of public transit, and local zoning often limits development density.

There has been a great deal of innovation in city planning and design in the past decade that encourages greater density and a return to urban living. New types of zoning, New Urbanism, Smart Growth, and related innovations in urban planning and design have been developed in parallel with environmental regulations at local to national levels (see Chapter 2). They acknowledge the importance of protecting natural resources to maintain quality of life and have established water quality as an important consideration in city building.

It is not clear that current stormwater regulations can be effectively implemented over the broad range of development patterns that characterize contemporary cities or if they inadvertently favor one type of development over another. For example, on-site SMCs are often recommended as the preferred means of stormwater management, although they tend to encourage lower-density development patterns. And while they are easily implemented and regulated given the incremental, site-by-site development that is typical of most urban growth, monitoring and maintenance can be expensive and difficult for both the individual property owner and the regulating authority. In highly urbanized areas, they are often relegated to subsurface systems that are expensive and that, to be effective, require high levels of maintenance.

In newly developing areas, cluster development should be encouraged whenever possible, according to the Smart Growth principles of narrower streets, reduced setbacks, and related approaches to reduce the amount of impervious area required and land consumed. Furthermore,

an interconnected series of on-site and consolidated SCMs can reduce subsurface stormwater piping requirements. Most planned communities have dedicated park and open-space areas that can constitute 25 percent or more of a development's total land area, making it feasible to easily accommodate consolidated SCMs (typically 8 to 10 percent of impervious area) within multi-functional open space and park lands. Cost efficiencies such as a 30 percent reduction in infrastructure costs (Duaney Plater-Zyberk & Company, 2006) can be realized through Smart Growth development techniques. Clustered housing surrounded by open space, laced with trails, has appreciated in value at a higher rate than conventionally designed subdivisions (Crompton, 2007).

In order to encourage infill or redevelopment over sprawl patterns of development, innovative zoning and other practices will be needed to prevent stormwater management from becoming onerous. For example, incentive zoning or performance zoning could be used to allow for greater densities on a site, freeing other portions of the site for SCMs. Innovations in governance and finance can also be used to incorporate consolidated SCMs into urban environments. For example, the City of Denver, in updating its Comprehensive Plan, designated certain underdeveloped corridors and districts in the city as "areas of change" where it hoped to encourage large-scale infill redevelopment. Given the scale of redevelopment, it would be feasible to establish special maintenance districts, allowing the development of consolidated SCMs that have multiple functions. To fund land purchase and facility design and construction, cash in lieu of payments could be made.

Safety and Aesthetic Concerns

Vector-borne diseases, especially West Nile virus, are a concern when SCMs such as extended detention basins, constructed wetlands, and rain barrels are proposed. Furthermore, other SCMs that are poorly designed, improperly constructed, or inadequately maintained may retain water and provide an ideal breeding ground for mosquitoes, increasing the potential for disease transmission to humans and wildlife. Kwan et al. (2005) found that water-retaining SCMs increase the availability of breeding habitats for disease vectors and provide opportunistic species an extended breeding season. State Health Departments generally recommend that SCMs be designed to drain fully in 72 hours, which is the minimum time required for a mosquito to complete its life cycle under optimum conditions. In SCMs where there is permanent standing water, such as stormwater wetlands, there is the possibility of introducing biota that might prey on mosquitoes. Municipalities may have to consider the added cost of vector control and public health when implementing stormwater quality management programs.

With larger consolidated and regional extended detention facilities, concerns about the safety of children who may be attracted to such SCMs and ensuing liability must be considered. These SCMs need to be fenced off or otherwise designed appropriately to reduce the risk of drowning.

One aspect of stormwater management that is infrequently considered is the aesthetic appeal, or lack thereof, of SCMs. The visual qualities of SCMs are important because they are a growing part of the urban landscape setting. Although it can be assumed that landscapes that are carefully tended are often preferred over other types of landscapes, it depends substantially on one's point of view. For example, an engineer may consider a particular SCM that is functioning as expected to be beautiful in the sense that its engineering function has been realized, even

though there is sediment buildup, algae, or other products of a properly functioning SCM visible. Similarly, a biologist or ecologist evaluating an ecologically healthy SCM in an urban context might find it to be beautiful because of its biological or ecological diversity, whereas another individual who evaluates the same SCM finds it to be "weedy." SCMs can be viewed as a means of restoring a degraded landscape to a state that might have existed before urban development. The desire to "return to nature" is a seductive idea that suggests naturalistic SCMs that may have very little to do with an original landscape, given the dramatic changes in hydrology that are inevitable with urban streams. Each of these widely varied views of SCMs may be appropriate depending on the context and the viewer.

One goal of stormwater management should be to make SCMs desirable and attractive to a broader audience, thereby increasing their potential for long-term effectiveness. For example, the Portland convention center rain gardens demonstrate how native and non-native wetland plantings can be carefully composed as a landscape composition and also provide for stormwater treatment. If context and aesthetics of a chosen SCM are poorly matched, there is a high probability that the SCM will be eliminated or its function compromised because of modifications that make its landscape qualities more appropriate for its context.

CONCLUSIONS AND RECOMMENDATIONS

SCMs, when designed, constructed, and maintained correctly, have demonstrated the ability to reduce runoff volume and peak flows and to remove pollutants. However, in very few cases has the performance of SCMs been mechanistically linked to the guaranteed sustainment at the watershed level of receiving water quality, in-stream habitat, or stream geomorphology. Many studies demonstrate that degradation in rivers is directly related to impervious surfaces in the contributing watershed, and it is clear that SCMs, particularly combinations of SMCs, can reduce the runoff volume, erosive flows, and pollutant loadings coming from such surfaces. However, none of these measures perfectly mimic natural conditions, such that the accumulation of these SCMs in a watershed may not protect the most sensitive beneficial aquatic life uses in a state. Furthermore, the implementation of SCMs at the watershed scale has been too inconsistent and too recent to observe an actual cause-and-effect relationship between SCMs and receiving waters. The following specific conclusions and recommendations about stormwater control measures are made.

Individual controls on stormwater discharges are inadequate as the sole solution to stormwater in urban watersheds. SCM implementation needs to be designed as a system, integrating structural and nonstructural SCMs and incorporating watershed goals, site characteristics, development land use, construction erosion and sedimentation controls, aesthetics, monitoring, and maintenance. Stormwater cannot be adequately managed on a piecemeal basis due to the complexity of both the hydrologic and pollutant processes and their effect on habitat and stream quality. Past practices of designing detention basins on a site-by-site basis have been ineffective at protecting water quality in receiving waters and only partially effective in meeting flood control requirements.

Nonstructural SCMs such as product substitution, better site design, downspout disconnection, conservation of natural areas, and watershed and land-use planning can dramatically reduce the volume of runoff and pollutant load from a new development.

Such SCMs should be considered first before structural practices. For example, lead concentrations in stormwater have been reduced by at least a factor of 4 after the removal of lead from gasoline. Not creating impervious surfaces or removing a contaminant from the runoff stream simplifies and reduces the reliance on structural SCMs.

SCMs that harvest, infiltrate, and evapotranspire stormwater are critical to reducing the volume and pollutant loading of small storms. Urban municipal separate stormwater conveyance systems have been designed for flood control to protect life and property from extreme rainfall events, but they have generally failed to address the more frequent rain events (<2.5 cm) that are key to recharge and baseflow in most areas. These small storms may only generate runoff from paved areas and transport the “first flush” of contaminants. SCMs designed to remove this class of storms from surface runoff (runoff-volume-reduction SCMs—rainwater harvesting, vegetated, and subsurface) can also address larger watershed flooding issues.

Performance characteristics are starting to be established for most structural and some nonstructural SCMs, but additional research is needed on the relevant hydrologic and water quality processes within SCMs across different climates and soil conditions. Typical data such as long-term load reduction efficiencies and pollutant effluent concentrations can be found in the International Stormwater BMP Database. However, understanding the processes involved in each SCM is in its infancy, making modeling of these SCMs difficult. Seasonal differences, the time between storms, and other factors all affect pollutant loadings emanating from SCMs. Research is needed that moves away from the use of percent removal and toward better simulation of SCM performance. Hydrologic models of SCMs that incorporate soil physics (moisture, wetting fronts) and groundwater processes are only now becoming available. Research is particularly important for nonstructural SCMs, which in many cases are more effective, have longer life spans, and require less maintenance than structural SCMs. EPA should be a leader in SCM research, both directly by improving its internal modeling efforts and by funding state efforts to monitor and report back on the success of SCMs in the field.

Research is needed to determine the effectiveness of suites of SCMs at the watershed scale. In parallel with learning more about how to quantify the unit processes of both structural and nonstructural practices, research is needed to develop surrogates or guidelines for modeling SCMs in lumped watershed models. Design formulas and criteria for the most commonly used SCMs, such as wet ponds and grass swales, are based on extensive laboratory and/or field testing. There are limited data for other SCMs, such as bioretention and proprietary filters. Whereas it is important to continue to do rigorous evaluations of individual SCMs, there is also a role for more simple methods to gain an approximate idea about how SCMs are performing. The scale factor is a problem for watershed managers and modelers, and there is a need to provide guidance on how to simulate a watershed of SCMs, without modeling thousands of individual sites.

Improved guidance for the design and selection of SMCs is needed to improve their implementation. Progress in implementing SCMs is often handicapped by the lack of design guidance, particularly for many of the non-traditional SCMs. Existing design guidance is often

incomplete, outdated, or lacking key details to ensure proper on-the-ground implementation. In other cases, SCM design guidance has not been disseminated to the full population of MS4 communities. Nationwide guidance on SCM design and implementation may not be advisable or applicable to all physiographic, climatic, and ecoregions of the country. Rather, EPA and the states should encourage the development of regional design guidance that can be readily adapted and adopted by municipal and industrial permittees. As our understanding of the relevant hydrologic, environmental, and biological processes increases, SCM design guidance should be improved to incorporate more direct consideration of the parameters of concern, how they move across the landscape, and the issues in receiving waters.

The retrofitting of urban areas presents both unique opportunities and challenges.

Promoting growth in these areas is desirable because it takes pressure off the suburban fringes, thereby preventing sprawl, and it minimizes the creation of new impervious surfaces. However, it is more expensive than Greenfields development because of the existence of infrastructure and the limited availability of land. Both innovative zoning and development incentives, along with the selection of SCMs that work well in the urban setting, are needed to achieve fair and effective stormwater management in these areas. For example, incentive or performance zoning could be used to allow for greater densities on a site, freeing other portions of the site for SCMs. Publicly owned, consolidated SCMs should be strongly considered as there may be insufficient land to have small, on-site systems. The performance and maintenance of the former can be overseen more effectively by a local government entity. The types of SCMs that are used in consolidated facilities—particularly detention basins, wet/dry ponds, and stormwater wetlands—perform multiple functions, such as prevention of streambank erosion, flood control, and large-scale habitat provision.

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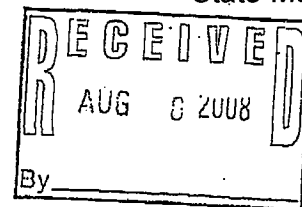
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State Mandates

ATTACHMENT 55



POLLUTION CONTROL HEARINGS BOARD
STATE OF WASHINGTON

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PUGET SOUNDKEEPER ALLIANCE;
PEOPLE FOR PUGET SOUND; PIERCE
COUNTY PUBLIC WORKS AND
UTILITIES DEPARTMENT; CITY OF
TACOMA; PORT OF SEATTLE;
SNOHOMISH COUNTY; CLARK
COUNTY; PACIFICORP; and PUGET
SOUND ENERGY,

Appellants,

v.

STATE OF WASHINGTON,
DEPARTMENT OF ECOLOGY,

Respondent,

CITY OF SEATTLE; KING COUNTY;
PORT OF TACOMA; PACIFICORP;
PUGET SOUND ENERGY; STATE OF
WASHINGTON, DEPARTMENT OF
TRANSPORTATION,

Intervenors.

FINDINGS OF FACT, CONCLUSIONS
OF LAW, AND ORDER

PHASE I

PCHB NOS. 07-021, 07-026, 07-027
07-028, 07-029, 0-030,
07-037

These consolidated appeals involve the regulation of stormwater discharges from municipal storm sewer systems under a National Pollutant Discharge Elimination System (NPDES) and State Waste Discharge General Permit (State Waste Permit). In these appeals, multiple parties challenge the validity of the Department of Ecology's (Ecology) 2007 Phase I Municipal Stormwater General Permit (Phase I Permit). This permit was issued pursuant to the

1 Federal Water Pollution Control Act, commonly known as the "Clean Water Act" (CWA), 33
2 U.S.C. § 1251 *et seq.* and the state Water Pollution Control Act, (WPCA), Chapter 90.48 RCW.

3 The Pollution Control Hearings Board (Board) held a multiple day hearing between April
4 29, 2008 and May 8, 2008. Attorneys Todd True and Jan Hasselman represented Appellants
5 Puget Soundkeeper Alliance and People for Puget Sound (PSA). Attorney Tad H. Shimazu
6 represented Appellant Pierce County. Assistant City Attorney Doug Mosich represented
7 Appellant City of Tacoma. Attorneys Susan Ridgley and Tanya Barnett represented Appellant
8 Port of Seattle. Catherine A. Drews and Elizabeth E. Anderson, Deputy Prosecuting Attorneys,
9 represented Appellant Snohomish County. E. Bronson Potter, Senior Deputy Prosecuting
10 Attorney and Rodney Swanson, Clark County Department of Public Works represented
11 Appellant Clark County. Attorneys Loren R. Dunn and Blake Mark-Dias represented Appellants
12 Pacificorp and Puget Sound Energy (Utilities). Ronald L. Lavigne, Senior Counsel, and Thomas
13 J. Young, Assistant Attorney General represented Respondent Ecology. Assistant City Attorney
14 Theresa R. Wagner represented Intervenor City of Seattle. Senior Deputy Prosecuting Attorney
15 Joseph B. Rochelle and Deputy Prosecutor Verna P. Bromley represented Intervenor King
16 County. Attorney Carolyn Lake represented Intervenor Port of Tacoma. Stephen Klasinski,
17 Assistant Attorney General represented Intervenor Washington State Department of
18 Transportation (WSDOT).

19 Chair, Kathleen D. Mix, William H. Lynch, and Andrea McNamara Doyle comprised the
20 Board. Administrative Appeals Judge Kay M. Brown, presided for the Board. Randi Hamilton
21

1 and Kim L. Otis of Gene Barker and Associates of Olympia, Washington provided court
2 reporting services.

3
4 PROCEDURAL BACKGROUND

5 On January 17, 2007, Ecology issued the Phase I Permit for discharges from large and
6 medium municipal separate storm sewer systems (called MS4s). The Phase I Permit went into
7 effect on February 16, 2007.

8 PSA, Pierce County, City of Tacoma, Port of Seattle, Snohomish County, Clark County,
9 and the Utilities appealed the Phase I Permit.¹ The Board conducted pre-hearing conferences,
10 and entered pre-hearing orders for the Phase I Appeal. The parties raised multiple issues. The
11 Board addressed many of these issues in a separate summary judgment order² and has resolved
12 others through orders on summary judgment and after a hearing on the merits related to the
13 Permit's Special Condition S4.³ The parties also withdrew some of the issues. This decision
14 resolves the remaining issues, which include the following:⁴

15 C. Special Condition 8 re: Monitoring (challenged only by Clark and Pierce
16 County)⁵

17 ¹ City of Pacific (PCHB No. 07-031), Whatcom County (PCHB No. 07-032), and Sammamish Plateau Water &
18 Sewer District (PCHB No. 07-024) filed additional appeals, but they are not part of this consolidated action.

² See Order on Dispositive Motions (Phase I Municipal Stormwater Permit), issued on April 7, 2008.

³ See Order on Dispositive Motions: Condition S4, issued on April 2, 2008 and Findings of Fact, Conclusions of
19 Law and Order, Condition S4, issued on August 7, 2008.

⁴ The numbering of these issues was retained from the numbering system used in the Third Pre-Hearing Order
20 issued on December 11, 2007.

⁵ All of the permittee appellants initially raised issues related to the S8 monitoring provisions. These issues were
21 resolved through an agreement between Ecology and all of the permittee appellants except Clark and Pierce County.
See Ex. Ecy 11 (Phase I). The agreement also resolves issues raised by Snohomish County related to Special
Condition S7.

- 1 1. Whether the requirements imposed in Special Condition S8 are lawful,
2 practicable, reasonable, and/or designed to achieve the goals of the statutory
municipal stormwater permit program?
- 3 3. Whether the monitoring requirements imposed in Special Condition S8 are
4 overly broad, overly prescriptive, and cost-ineffective so that requiring
5 implementation of such requirements as written is unlawful, impracticable,
6 and/or unreasonable?
- 7 E. Issues Specific to the Ports of Seattle and Tacoma
- 8 5. Whether the requirement in Special Condition S6.E.7 to prepare and
9 implement SWPPP(s) for "all Port-owned lands," regardless of their capacity
10 to generate pollutants or other site-specific characteristics, is unlawful,
11 unreasonable, unjust, or invalid?
- 12 F. Joint Environmental Legal Issues
- 13 1. Low-Impact Development:
- 14 a. Does the permit fail to require maximum on site dispersion and
15 infiltration of stormwater, through the use of "low impact
16 development" techniques, basin planning, and other appropriate
17 technologies, and if so, does that failure unlawfully cause or contribute
18 to violations of water quality standards?
- 19 b. Does the permit fail to require maximum onsite dispersion and
20 infiltration of stormwater, through the use of "low impact
21 development" techniques, basin planning, and other appropriate
technologies, and if so, does that failure unlawfully allow permittees to
discharge pollutants that have not been treated with all known
available and reasonable methods of treatment ("AKART"), and/or fail
to reduce the discharge of pollutants to the maximum extent
practicable ("MEP")?
2. Existing Development:
- a. Does the absence of any standard and/or technology requirements for
reducing stormwater discharges from existing development and
existing stormwater systems unlawfully cause or contribute to
violations of water quality standards?

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b. Does the absence of any standard and/or technology requirements for reducing stormwater discharges from existing development and existing stormwater systems unlawfully allow permittees to discharge pollutants that have not been treated with AKART, and/or fail to reduce the discharge of pollutants to MEP?

3. Monitoring: Is the monitoring required under Permit Condition S.8 unlawful because it is inadequate to determine whether: (i) the permittee is in compliance with water quality standards; (ii) discharges are causing or contributing to violations of water quality standards; or (iii) discharges are being treated with AKART and/or MEP?⁶

4. Water Quality Standards Violations:

a. Does the Phase I permit fail to ensure that discharges will not cause or contribute to violations of water quality standards?⁷

5. Compliance:

a. Does the permit unlawfully provide for compliance with permit terms on a schedule that is indefinite and unenforceable, not as expeditious as possible, and/or in excess of statutory deadlines?

b. Does the permit unlawfully allow a permittee to create and implement permit requirements without Ecology's oversight or involvement?

Based on pre-filed testimony, multiple days of sworn testimony of witnesses, extensive exhibits submitted into the record, and argument from counsel representing the numerous parties that participated in these consolidated appeals, and having fully considered the record, the Board enters the following decision:

⁶ PSA is not challenging the monitoring provisions of the permit. This issue is brought by the Utilities only.

⁷ This issue also includes the issue originally stated as S4.6: Does the prohibition on violations of water quality standards contained in Permit Condition S4 unlawfully or unreasonably conflict with the other provisions of the permit?

1 SUMMARY OF THE DECISION

2 The Board concludes that the monitoring program established in Special Condition S8
3 and required of all permittees is a valid exercise of Ecology's technical expertise and discretion.
4 (Issues C.1 and 3, and F.5). The Board upholds the permit term requiring that Stormwater
5 Pollution Prevention Plans (SWPPPs) be prepared on all port-owned lands, but directs that
6 Ecology modify the condition to exempt environmental mitigation sites owned by the Port of
7 Tacoma from the SWPPP preparation requirement. (Issue E.5). The Board concludes that the
8 Phase I Permit fails to require that the municipalities control stormwater discharges to the
9 maximum extent practicable, and does not require application of all known, available, and
10 reasonable methods to prevent and control pollution, because it fails to require more extensive
11 use of low impact development (LID) techniques. (Issue F.1.b). To remedy this problem, the
12 Board directs Ecology to make specific changes to some provisions in the permit, and also
13 remands the permit with direction to Ecology to require the permittees to develop methods for
14 use of low impact development at parcel and subdivision levels in their jurisdictions. The Board
15 concludes that permittees must provide information in their annual report to Ecology on the
16 extent to which basin planning is being undertaken or should be considered in their jurisdiction
17 in order to assist with future phases of the permit. The areas identified should be relatively
18 undeveloped where new development is occurring, and from which discharges may impact
19 aquatic resources. The Board concludes that the structural stormwater control program
20 provisions of the permit, as drafted, constitute impermissible self regulation. (Issues F.2 and
21 F.5.b). To remedy this deficiency, the Board directs modification of the permit to require

1 permittees to describe the prioritization of their selected structural control projects. The Board
2 ~~affirms the source control program requirements without change. Finally, the Board concludes~~
3 that PSA and the Utilities failed to prove that any of the conditions of the permit violate the
4 timing requirements of 33 U.S.C. § 1342 (p)(4)(A) (Issue F.5.a).

5 FINDINGS OF FACT

6 A. History of Phase I Permit

7 1.

8 Ecology developed the current Phase I Permit through an eight year long process. The
9 2007 Phase I Permit replaced the first municipal stormwater NPDES and State Waste Permits,
10 which were issued in 1995 and expired in July of 2000. *Testimony of Wessel, Moore, Exs. Muni*
11 *0002, p. 17, 0006, 0007, 0008, 0009.*

12 2.

13 On January 19, 1999, Ecology filed a Notice of Intent to reissue the 1995 permits. *Ex.*
14 *Muni 0002, p. 6.* Ecology formed an advisory committee, which included representatives from
15 cities, counties, state and federal agencies, environmental groups, and the public, to assist with
16 development of the revised permit. This committee met several times during 1999 and 2000.
17 *Testimony of Wessel, Moore, Exs. Muni 0002, p. 6-7.* The 1995 Phase I Permit closely followed
18 the EPA Phase I Regulations, which allowed the permittees to propose what was contained
19 within their own stormwater programs. Ecology was dissatisfied with this approach and decided
20 that more detailed requirements were needed for the 2007 Phase I Permit. *Testimony of Moore.*
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~~Completion of the new permit was delayed at several junctures as a result of a number of~~

intervening events and shifting priorities, including the federal listing of Puget Sound Chinook Salmon in 1999, the adoption of EPA's Phase II rules, and Ecology's decision to revise the state's Stormwater Management Manuals and develop the first Phase II municipal stormwater permits in tandem with the Phase I permit update. *Testimony of Wessel, Moore, Exs. ECY 6 (Phase I), Muni 0002, p. 7.*

4.

In response to legislative interest in the new federal requirements for municipal stormwater permits, Ecology convened two advisory groups during the summer of 2003: one for Eastern Washington and one for Western Washington. Each advisory group submitted a report of its findings to Ecology in early December, 2003. Ecology developed its own recommendations and published these, together with the recommendations from both advisory groups, in a report to the Legislature dated January, 2004. *Testimony of Moore, Exs. ECY 6 (Phase I), Muni 0002, p. 7.*

5.

Ecology filed a notice of intent to issue the Phase I and Phase II Permits in June of 2004. The agency released the first preliminary draft of the Phase I Permit for public comment in May, 2005, and the first formal draft in February, 2006. *Exs. PSA 018, Muni-0100.* Ecology received and reviewed thousands of pages of public comment, and responded to those comments in a 205 page document when it released the revised, final permit in January, 2007. *Exs. Muni 002, p. 7-*

1 8, *ECY 3 (Phase I)*. Ecology issued the Phase I permit, in its current form, on January 17, 2007.

2 ~~It became effective on February 16, 2007, and expires on February 15, 2012. Ex. Muni 001,~~

3 *Testimony of Moore.*

4 B. Overview of the permit

5 6.

6 The Phase I Permit regulates discharges from municipal separate storm sewer systems
7 (MS4s) owned or operated by the following large and medium municipalities statewide: City of
8 Seattle, City of Tacoma, Clark County, King County,⁸ Pierce County and Snohomish County.⁹ It
9 also allows coverage of "secondary permittees," including the Ports of Seattle and Tacoma, for
10 discharges from other publicly owned or operated municipal separate sewer systems located
11 within the primary permittee cities and counties. Secondary permittees as a group are subject to
12 somewhat different terms under the permit than primary permittees, and the permit also has
13 specific terms applicable only to the Ports of Seattle and Tacoma and not other secondary
14 permittees. The Phase I permit does not cover direct discharges into waters of the state from
15 privately owned stormwater systems, nor does it cover the storm sewers owned and operated by
16 the Washington State Department of Transportation (WSDOT).¹⁰ Unlike traditional NPDES
17 permits, the Phase I permit is a "programmatic permit," meaning it requires the municipal

18 ⁸ King County Department of Metropolitan Services (METRO) is covered as a "co-permittee" with the City of
19 Seattle for discharges from outfalls King County owns or operates in the City of Seattle. *Special Condition S1.C.,*
Exs. Muni 0001, p. 1, Muni 0002, p. 21.

20 ⁹ An MS4 consists of all of the conveyances, or systems of conveyances (including roads with drainage systems,
21 municipal streets, catch basins, curbs gutters, ditches manmade channels or storm drains) designed or used for
collecting or conveying stormwater. By definition, these systems cannot be combined with sanitary sewer systems.
Exs. Muni 0001, p. 61, 63, Muni 0002, p. 22-24.

¹⁰ The Phase I permit does not cover the storm sewers owned and operated by the Washington State Department of
Transportation (WSDOT). WSDOT's system is covered under an individual permit. *Ex. Muni 0002, p. 19, 21.*

1 permittees to implement area-wide stormwater management programs rather than establishing
2 ~~benchmarks or other numeric or narrative effluent limits for stormwater discharges from~~
3 individual outfalls. *Testimony of Moore, Exs. Muni 0001, p. 1, 2, 60-65, Muni 0002, p 20-24.*

4 7.

5 The heart of the Phase I Permit requires that permittees implement a Stormwater
6 Management Program (SWMP). Special Condition S5 contains the SWMP requirements for the
7 primary permittees, and Special Condition S6 sets out the SWMP requirements for secondary
8 and co-permittees. The required elements of the SWMP track closely with EPA's Part II
9 Application rules but contain much more detailed minimum performance standards for the
10 municipalities' programs. This approach avoids the need for separate review and approval by
11 Ecology of each SWMP prior to coverage under the Phase I Permit. Instead, a permittee is
12 required to submit the SWMP with the permittee's first year annual report. S5.A. *Testimony of*
13 *Moore, Wessel; Exs. Muni 0001, p. 6-25; Muni 0002, p. 18, 28-42.*

14 8.

15 Ecology views these SWMP requirements, in the aggregate, to represent the MEP
16 standard; that is, permittees who implement all of the program requirements in combination with
17 one another are considered by Ecology to be reducing the discharge of pollutants to the
18 maximum extent practicable, even though it may be possible for a permittee to do more in a
19 specific program element or at a specific outfall if the individual requirements were evaluated in
20 isolation from the rest of the program requirements. *Testimony of Moore.*

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Under Special Condition S5 the SWMP must include ten component parts, which are mandatory to the extent allowable under state and federal law. These program components address the following topics, and the minimum requirements for each are set out in S5.C. 1 through 10 of the Phase I Permit: (1) Legal authority; (2) System mapping and documentation; (3) Coordination; (4) Public involvement; (5) Controlling runoff from new development, redevelopment, and construction; (6) Structural stormwater controls (retrofits); (7) Source control for existing development; (8) Illicit connections, illicit discharge detection and elimination; (9) Operations and maintenance; and (10) Education and outreach. *Muni 0001, p. 6-25.*

10.

More specifically, S5.C.1 requires the permittee to demonstrate by the effective date of the Phase I Permit that it has the legal authority to control discharges to and from its MS4s. S5.C.2 requires the permittee to map, by specific dates, prescribed parts of its MS4. S5.C.3 requires the permittee to establish coordination mechanisms to remove barriers to stormwater management created by the need to coordinate efforts both internally within one governmental entity, and externally with jurisdictions that share drainage basins. S5.C.4 requires the permittee to provide ongoing opportunities for public involvement in its stormwater management program. S5.C.5 requires the permittee to develop a program to prevent and control impacts of runoff from new development, redevelopment, and construction activities. S5.C.6 requires the permittee to

1 include a program to construct structural stormwater controls to prevent or reduce impacts from
2 ~~discharges from its MS4s. This element is applicable to existing development, as well as new~~
3 development, and addresses impacts that are not already adequately controlled by other required
4 actions under the SWMP. S5.C.7 requires the permittee to include a source control program for
5 existing development that reduces pollutants in runoff from these areas. S5.C.8 requires the
6 permittee to have an ongoing program to detect, remove and prevent illicit connections and illicit
7 discharges, including spills, into its MS4s.¹¹ S5.C.9 requires the inclusion of a program to
8 regulate maintenance activities and to conduct maintenance activities by the permittee that
9 prevent or reduce stormwater impacts. S5.C.10 requires that the permittee's SWMP include an
10 education program with the goal of reducing or eliminating behaviors and practices that cause or
11 contribute to adverse stormwater impacts. The performance measures associated with S5.C.2
12 through 10 must be completed within specific time periods. *Testimony of Moore, Wessel, Exs.*
13 *Muni 0001, p. 6-25, Muni 0002, p. 28-42.*

14
15 11.

16 Special Condition S6 (S6), which is similar but not identical to S5, establishes the
17 components required for SWMPs from secondary permittees. Parts of this condition apply to all
18 secondary permittees (S6.A, B and C), all secondary permittees other than the Ports of Seattle
19

20 ¹¹ An illicit connection is any man-made conveyance that is connected to a MS4 without a permit, excluding roof
21 drains and other similar type connections. An illicit discharge is any discharge to a MS4 that is not composed
entirely of stormwater except discharges pursuant to a NPDES permit and discharges resulting from fire fighting
activities. *Ex. Muni 0001, p. 61.*

1 and Tacoma (S6.D), and just the Ports of Seattle and Tacoma (S6.E). *Testimony of Moore, Exs.*

2 ~~*Muni-0001, p. 25-39, Muni-0002, p. 42-47.*~~

3 12.

4 Special Condition S8 (S8) addresses monitoring. It requires the primary permittees and
5 the Ports to develop and implement long-term monitoring programs for the purpose of meeting
6 two of the four monitoring objectives identified in the first round of the Phase I municipal
7 stormwater permits issued in 1995: (1) estimating pollutant concentrations and loads from
8 representative areas or basins; and (2) evaluating the effectiveness of selected Best Management
9 Practices (BMP). The permit does not require monitoring to identify specific sources of
10 pollutants or the degree to which stormwater discharges are impacting selected receiving waters
11 and sediments. *Testimony of Moore, O'Brien, Exs. Muni 0001 p. 40-49; Muni 0002, p. 49-50.*

12 C. Monitoring provisions in S8

13 13.

14 Special Condition S8.C.1 specifies that the primary permittees' and the Ports' monitoring
15 programs must contain three components: 1) stormwater outfall monitoring, which is intended to
16 characterize stormwater runoff quantity and quality at a limited number of locations 2) Targeted
17 stormwater management program effectiveness monitoring, which is intended to improve
18 stormwater management efforts by evaluating at least two stormwater management practices that
19 significantly affect the success of, or confidence in, stormwater controls, and 3) BMP evaluation
20 monitoring, which is intended to evaluate the effectiveness and operation and maintenance
21 requirements of stormwater treatment and hydrologic management BMPs. S8.D, E, and F set out

1 the requirements for each of the three components. *Testimony of Moore, O'Brien, Exs. Muni*
2 ~~0001, p. 40-49; Muni-0002, p. 49-56.~~ A Quality Assurance Project Plan (QAPP) must be
3 prepared for each of the components of the monitoring program in accordance with Ecology
4 guidelines and submitted to Ecology for review. Ecology must review and approve the QAPPs
5 for stormwater monitoring conducted under S8.D and F prior to monitoring. *Ex. Muni 0001, p.*
6 *40-41.*

7 14.

8 The first component of the Special Condition S8 monitoring involves outfall monitoring
9 for the purpose of developing local knowledge of pollutant loads and average event mean
10 concentrations from representative areas drained by MS4s. Developing a baseline of local data
11 is important because some variations are emerging between stormwater characterization data
12 from the Pacific Northwest and other areas around the county and world, with examples of both
13 higher and lower concentration levels present regionally, differing from national averages. To
14 accomplish this objective, the Permit requires permittees to select three sites that represent
15 different land uses and then to monitor a certain percentage of storm events per year for a wide
16 range of constituents and parameters. The permit requires storm events to be sampled using
17 flow-weighted composite storm sampling. S8.D.2.b. The seasonal first-flush must be tested for
18 toxicity. S8.D.2.d. Grab samples from each storm must be taken and tested for total petroleum
19 hydrocarbon and fecal coliform bacteria, and one to three sediment samples must be collected
20 each year at each site and analyzed for a variety of parameters. S8.D.2.e, f. *Testimony of*
21 *O'Brien, Moore, Ex. Muni 0001, p. 41-45.*

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~~The number of samples is intended to establish a sufficient database from which to~~
discern annual and seasonal loading trends over a long time period. Performing a toxicity test on
the "seasonal first-flush storm" provides an annual worst case scenario. Ecology believes this
data is necessary to evaluate whether stormwater management programs are making progress
towards the goal of reducing pollutants discharged and protecting water quality. The data would
also be useful when establishing Water Clean-up Plans (TMDLs) for water bodies not currently
achieving water quality standards, and in other efforts to identify sources of toxicant loading to
Puget Sound. *Testimony of O'Brien, Ex. Muni 0002, p. 49-53.*

16.

The second component of the S8 required monitoring, described in detail in S8.E, is the
targeted stormwater management program effectiveness monitoring. In this section, each
permittee must conduct monitoring designed to determine the effectiveness of (1) a targeted
action (or narrow suite of actions) from their SWMP, and (2) achieving a targeted environmental
outcome. The monitoring must, at a minimum, include stormwater, sediment or receiving water
monitoring of physical, chemical and/or biological characteristics, and may also include other
kinds of data collection and analysis. Ecology anticipates that the targeted environmental
outcomes permittees will chose to evaluate will be measured in the receiving water and,
therefore, may involve receiving water monitoring. *Testimony of O'Brien, Moore, Exs. Muni
0001, p. 45-46; Muni 0002, p. 53-54.*

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2

The third component of the S8 monitoring provisions is BMP effectiveness monitoring,

3

the requirements of which are set out in S8.F. The purpose of this third component of the S8

4

monitoring is to develop local performance data on the effectiveness of specific treatment BMPs

5

in reducing pollutant discharges and the effectiveness of various low impact development (LID)

6

practices in reducing the quantity of runoff. This section requires the primary permittees and

7

Ports to select and monitor two treatment BMPs in use at a minimum of two sites in their

8

jurisdiction. S8.F.2. The permittees are also required to monitor the effectiveness of one flow

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reduction strategy¹² that is in use or planned for installation in their jurisdiction. S8.F.7. Though

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many of these treatment BMPs have been in common use for many years, and the 2005

11

Stormwater Management Manual for Western Washington relies on them as presumptively

12

effective, Ecology has only incomplete information about their actual pollutant removal

13

capabilities. *Testimony of O'Brien, Exs. Muni 0001, p. 46-47; Muni 0002, p. 54-56.*

14

18.

15

In the absence of local data, Ecology had relied on an existing national stormwater

16

treatment BMP database,¹³ as its primary source of BMPs for the 2005 Stormwater Management

17

Manual for Western Washington (The Manual) *Testimony of O'Brien, Tobiason, Exs. PI 0059,*

18

0060, 0064 and 0065. The national database is of limited utility, however, in evaluating the

19

20

¹² A flow reduction strategy is an approach that reduces the volume of runoff coming off a landscape. Ecology witness Ed O'Brien indicated in his testimony that this referred to the use of low impact development techniques.

21

¹³ The purpose of the database, called the International Stormwater Treatment Database, is to facilitate understanding about how particular BMPs perform database and contains studies from both inside and outside the United States. *Testimony of O'Brien.*

1 effectiveness of BMPs because the performance of treatment BMPs varies greatly depending on
2 ~~specific design criteria, loading criteria, different rainfall patterns, and the types and sizes of~~
3 solids to which a site gets exposed. These factors vary widely across the country, and therefore
4 BMP performance data from one area is not always useful for another area. This has been a
5 specific concern for Washington because, until recently, there has been little Washington data in
6 the database. In some instances, this national database lacks also data quality, and relies on an
7 insufficient number of samples at a particular site or from a particular BMP to be statistically
8 useful. So, while there exists national data that allows Ecology to make some general
9 assumptions about how well BMPs perform, Ecology still lacks site-specific, region-specific data
10 to verify that the BMPs perform the way Ecology anticipates they will perform. As a result,
11 Ecology required permittees to evaluate BMP effectiveness in an effort to learn and apply the
12 information in future settings and permit iterations. *Testimony of O'Brien, Tobiasson, Kibbey,*
13 *Exs. PI 0059, 0060, 0064, 0065, Muni 0002, p. 54-56.*

14 19.

15 Ecology considered requiring receiving water monitoring in the Phase I Permit, but the
16 municipalities as a group opposed the requirement. The 1995 Phase I Permit identified one
17 monitoring objective as evaluating the degree to which stormwater discharges impact selected
18 receiving waters and sediments, and Ecology concedes this continues to be a valid long-term
19 objective for the municipal stormwater general permits. In the current iteration of the Phase I
20 Permit Ecology decided, however, that receiving water monitoring data would not be the most
21 helpful monitoring data because 1) receiving water monitoring data is more complex data to

1 obtain, 2) samples can be hard to collect during storms, and 3) it is difficult to tie the receiving
2 ~~water data back to a specific discharger. Ecology agreed with the municipalities that certain~~
3 receiving waters may receive pollution from multiple upland sources, and monitoring the
4 receiving water would not provide permittees with useful data by which they could develop or
5 tailor their stormwater management programs. Ecology also does not typically require receiving
6 water monitoring under several other general stormwater discharge permits, including the
7 construction and industrial permits, except for certain impaired water bodies where there have
8 been violations of discharge limitations. *Testimony of Moore, O'Brien, Ex. Muni 0002, p. 49.*

9 20.

10 The monitoring required by S8 is primarily aimed at developing a uniform baseline of
11 information about the pollutant loading discharging from MS4s, and evaluating the effectiveness
12 of the BMPs that permittees use to control and reduce the pollutants discharging from those
13 systems. Ecology determined this data will be the most useful for establishing what constitutes
14 maximum extent practicable reduction in pollutants from MS4 discharges for future iterations of
15 the municipal stormwater permits. Allowing some municipalities to opt out of these
16 requirements, by substituting different kinds of monitoring, would reduce the robustness of the
17 data set Ecology seeks for establishing this baseline for future permits. *Testimony of Moore,*
18 *O'Brien.*

19 21.

20 Ecology intends to rely on its own monitoring programs, coordinated with and
21 supplemented by other monitoring efforts, to accomplish the receiving water monitoring

1 objectives identified in the 1995 permit. Ecology received an \$800,000 state appropriation to
2 begin work with a collaborative monitoring consortium to identify the elements of a
3 comprehensive receiving water monitoring program, outside of the permit process. Such a
4 monitoring consortium could more fairly distribute the cost of monitoring among all of the
5 entities with an interest in receiving water data and form the basis for effective, region-wide
6 monitoring of receiving water quality in relation to discharge points. Although Ecology is
7 currently organizing the consortium, no water monitoring has been started to date through this
8 program, and inadequate funding currently exists to do so. Outside the consortium, some
9 receiving water monitoring occurs through statewide ambient water quality monitoring and
10 pollutant specific monitoring where a water body is subject to a TMDL. *Testimony of Moore,*
11 *O'Brien, Wessel.*

12 D. Pierce and Clark Counties Monitoring Plans

13 22.

14 Two primary permittees, Pierce and Clark Counties, already have water quality
15 monitoring programs which differ significantly from the monitoring required in the Phase I
16 Permit. The key difference between both of the counties' programs, and the Phase I Permit
17 monitoring requirements, is that the county programs focus on monitoring in the receiving water
18 environment. However, neither of the County programs monitors the chemical composition or
19 toxicity of stormwater discharges from their MS4, nor relates stormwater management actions to
20 a reduction in the pollutant characteristics of stormwater. *Testimony of Tobiasson, O'Brien, Exs.*
21 *PSA 018, PI 0042.*

1 23.

2 ~~Pierce County began working with a consultant in 2004 to develop its monitoring~~
3 program. The County developed the program based on the proposed monitoring requirements in
4 an early draft of the Phase I permit, which included a receiving water monitoring component, as
5 well as ongoing communications with Ecology personnel. The 2005 draft of the Phase I permit
6 prescribed two of the five monitoring methods that Pierce County incorporated into its
7 monitoring plan. *Ex. PI 0041*. Pierce County published its final program in March, 2007.
8 *Testimony of Tobiason, O'Brien, Ex. PI 0042.*

9 24.

10 The overall goal of the Pierce County monitoring program is to implement a
11 comprehensive monitoring program that will provide meaningful data to support the County's
12 efforts to protect receiving waters from stormwater impacts. Although developed primarily in
13 anticipation of the NPDES permit requirements, it also serves other county water quality
14 objectives. In order to accomplish its goal, the program uses a three level receiving water
15 monitoring approach. It includes long term status and trends monitoring, which includes a triad
16 of bioassessments, physical channel characterization, and in-situ bioassays at existing County
17 monitoring sites in selected streams, and may also include flow monitoring where gauges exist.
18 Pierce County includes the sampling of the stream bottom as part of this long-term monitoring in
19 order to determine the presence and health of benthic invertebrates. Monitoring benthic
20 invertebrates provides a good indicator of watershed health because these organisms respond to
21 physical and chemical stresses at the stream bottom. Pierce County applies these monitoring

1 methods over a five year period to characterize the receiving waters in up to nine watersheds
2 with regards to the receiving waters' physical stability, habitat, biological health, and
3 susceptibility to toxicants in stormwater. This will enable Pierce County to prioritize responses
4 to watersheds that exhibit vulnerability. It also includes targeted development monitoring, which
5 compares upstream and downstream conditions to assess impacts of stormwater discharges on
6 the receiving waters over finite periods before and after specific development. Targeted
7 development monitoring includes continuous turbidity, conductivity and hydraulic stage
8 monitoring and *in-situ* bioassay upstream and downstream of discharges from targeted
9 development, and assessment of physical channel conditions downstream. Some aspects of the
10 County's monitoring program, particularly the real-time data, will also assist the county in
11 detecting spills and illicit discharges. The third level of receiving water monitoring included is a
12 special studies monitoring. This method provides for adaptive management to be employed as
13 needed on a site specific basis to develop cause-effect relationships that lead to focused
14 stormwater management response. As part of this method, chemical analysis may be conducted
15 if other programs indicate a need for such study to determine the cause of a problem discovered
16 through receiving water monitoring. This is the only aspect of the Pierce County Program that
17 provides for the use of chemical analysis. *Testimony of Tobiason, Kibbey, Exs. PI 0042, Ex. PI*
18 *0055, PI 0094.*

19 25.

20 Clark County, like Pierce County, has its own monitoring plan which is focused on
21 receiving water monitoring. Clark County developed its plan in response to its first

1 NPDES/State Waste permit which was issued July, 1999 and expired December, 2000.¹⁴ *Muni*
2 *0140, Special Condition S5.B.4, p. 7, 8.* Its plan has three elements: a long-term index site
3 project, hydrologic monitoring, and a stormwater needs assessment program. The index site
4 project involves nine stream stations which are influenced by stormwater, and a forested
5 reference site. A suite of stream health characteristics are monitored at each site. Water quality
6 monitoring takes place on a monthly basis. The hydrologic monitoring consists of monitoring
7 stream flow continuously through the use of storm gauges at several locations, including some of
8 the site index locations. The stormwater needs assessment program is a system created to make
9 an assessment of needs for each sub-basin in the county that contains parts of the MS4.
10 Currently, Clark County is in the process of completing reports on 12 urbanizing and rural sub-
11 watersheds. *Testimony of Swanson, Ex. Muni 0140, p. 7-8.*

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¹⁴ Clark County was not informed of the need to submit a permit application until January of 1995, because of confusion over whether Clark County met the requirements of the Phase I Permit, i.e. urbanized area with a population greater than 100,000. *Ex. Muni 0141, p. 8.*

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~~Ecology stated that it was extremely important to be able to answer whether our~~

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stormwater programs are adequate to protect aquatic resources and uses in its 2004 report to the

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Legislature. Therefore, Ecology included recommendations that certain types of environmental

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monitoring be conducted at the local and regional levels, including monitoring of the biological,

6

chemical, and physical health of receiving waters. *Ex. ECY 6 (Phase I), p. 31-32.*

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28.

8

Ecology does not oppose the Counties continuing on with their own monitoring programs

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in addition to the S8 monitoring. However, it has not allowed Pierce and Clark Counties to

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substitute their programs for the required S8 monitoring. Ecology witness Edward O'Brien did

11

not rule out the possibility that Ecology could allow Pierce and Clark to substitute their

12

monitoring programs for some parts of the required S8 monitoring. Pierce County witness

13

Heather Kibbey testified that Pierce County could not afford to do both its receiving monitoring

14

program and the required S8 monitoring. *Testimony of O'Brien, Tobiason, Kibbey.*

15

E. Ports

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29.

17

One of the required elements of the SWMP for all Phase I permittees is the preparation of

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a stormwater pollution prevention plan (SWPPP). The permit requires all primary permittees to

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prepare SWPPS for "all heavy equipment maintenance or storage yards, and material storage

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facilities owned or operated by the Permittee(s)" that are not already covered by another

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stormwater discharge permit. S5.C.9.b.xi, p. 23, 24. The primary permittees are allowed 24

1 months to complete the development of their SWPPPs. The secondary permittees, other than the
2 Ports, are required to prepare SWPPPs for "material storage areas, heavy equipment storage
3 areas, and maintenance areas" not covered by another stormwater discharge permit. S6.D.6.a.vi,
4 p. 32. Their SWPPPs must also be completed within three years from the date of permit
5 coverage. *Testimony of Moore, Ex. Muni 0001, p. 23, 24, 32.* In contrast, the Ports' SWPPP
6 preparation requirement, found in S6.E.7, requires the Ports to prepare SWPPPs "all Port-owned
7 lands" that are not covered by another stormwater discharge permit. The Ports are allowed 24
8 months to develop and implement their SWPPPs. *Ex. Muni 0001, p. 38.*

9 30.

10 The Port of Seattle estimates this requirement will involve the preparation of SWPPPs for
11 approximately 44 properties covering approximately 27 percent of its total Seaport acreage (286
12 acres).¹⁵ Some of these sites include port-controlled and operated facilities with multiple tenants,
13 such as Shilshole Marina and Fisherman's Terminal, and several others consist of tenant-
14 controlled container areas. *Testimony of Guthrie, Exs. PI 0020, 0022.* The Port of Tacoma has
15 identified several port-owned sites that are not covered by other stormwater discharge permits,
16 some of which include buildings and parking lots leased to other businesses, others of which
17 consist of environmental mitigation sites. *Testimony of Graves, Ex. PI 0039.*

18 31.

19 The Phase I fact sheet explains Ecology's general thinking regarding SWPPP preparation
20

21 ¹⁵ By agreement with Ecology, SWPPPs will not be required on "no discharge" properties, which include Port-owned parks and properties with connections to Metro Stormwater Conveyances.

1 for the primary permittees. It states:

2 Ecology has determined that activities at certain sites owned or operated by permittees
3 are potentially similar to activities at sites regulated under the Industrial Stormwater
4 General Permit. For this reason this provision of the permit calls for developing
5 Stormwater Pollution Prevention Plans (SWPPPs) for these sites.

6 *Ex. Muni 0002, p. 41.*

7 32.

8 In the 2005 draft of the Phase I Permit, Ecology required SWPPP preparation for "all
9 Port-owned lands with potential pollutant-generating sources." *Ex. PSA 018, p. 37.* The final
10 permit eliminated the qualifier because Ecology expected that all port-owned lands would be
11 pollutant-generating sources, although Ecology did not consider wetland mitigation areas owned
12 by the Port of Tacoma when it made this decision. *Testimony of Graves, Moore, Exs. PSA 018,*
13 *p. 37; PI 0022, 0025-0027.*

14 33.

15 The Port of Tacoma owns several environmental mitigation sites (i.e. wetlands). Most of
16 these sites probably discharge directly to surface or ground waters of the state, and not to the
17 MS4. For the ones that do discharge to the MS4, there is only a small potential that the
18 discharges would carry pollutants. Therefore, preparation of SWPPPs on these sites is unlikely
19 to result in any corresponding water-quality benefits. *Testimony of Moore, Graves.*

20 34.

21 Ecology also explains in the fact sheet its reasons for providing a slightly different

1 standard for the Ports regarding SWPPP preparation. It states:

2 Ecology has determined that special consideration is needed for the Ports of Seattle and
3 Tacoma, distinguishing them from the broader group of Secondary permittees such as
4 diking and drainage districts and public universities. These ports are both located on
5 urban bays with documented water quality and sediment contamination problems that
6 may be linked to stormwater discharges. The infrastructure in both Seattle and Tacoma is
7 fairly old and the MS4s are heavily interconnected between each port and the respective
8 city. Also, both ports lease properties to tenants, of whom many, but not all, are required
9 to have coverage under the Industrial Stormwater General Permit. For these reasons this
10 permit establishes SWMP components that are specific to these two entities.

11 *Ex. Muni 0002, p. 43.*

12 35.

13 In general, the permit has more requirements for primary permittees SWMPs than it does
14 for the Ports. Contrast S5.C. 1 through 10 (establishing 10 components for primary permittees
15 SWMPs) p. 6-25 with S6.E (establishing 7 components for Ports SWMPs) p. 32-39. The source
16 control program for existing development, which is a component of both primary permittees and
17 the Ports SWMPs, also imposes more requirements on the primary permittees than it does the
18 Ports. Contrast S5.C.7, p. 13-15, with S6.E.7, p. 38-39. Further, the scope of the primary
19 permittees source control obligation is much wider than that of the Ports, because the primary
20 permittees are dealing with thousands of different sources, compared to a much more limited
21 number for the Ports. Therefore, the Ports will be preparing a much smaller number of SWPPPs
than the primary permittees. While Ecology suggests that the Guidance Manual for Preparation
of SWPPPs for Industrial Facilities can be used to assist in preparation of Port SWPPPs, it also
encourages the use of generic SWPPP provisions for sites grouped by type of activity, such as

1 parking lots. *Testimony of Moore, Guthrie, Exs. Muni 0001, p. 6-25, 33-39, Muni 0002, p. 44, PI*

2 0021.

3 36.

4 The Port of Seattle expects its tenant businesses to be involved in the preparation of the
5 required SWPPPs because they have the most familiarity with the pollution-generating activities
6 and source control opportunities at the individual sites, but the port, in its role as property
7 manager, will work cooperatively with tenants through its routine compliance assessment
8 process. For example, it has already provided its tenants with templates for preparing the
9 SWPPPs. This process will involve some cost and effort on the part of the tenants, but can also
10 serve as an opportunity for educating and training tenants in issues related to stormwater
11 management. *Testimony of Guthrie.* The Port of Tacoma intends to prepare the SWPPPs for its
12 existing tenant facilities which will require the port to become better informed about the details
13 of its tenant operations and pollutant-generating activities. For new facilities, the Port of Tacoma
14 intends to direct tenants to prepare the SWPPPs. *Testimony of Graves.*

15 F. Low Impact Development (LID)

16 37.

17 The major contention of PSAs' challenge to the Phase I permit is that traditional
18 structural engineered stormwater management practices are inadequate to address the municipal
19 stormwater problem and that the Permit should have also required greater use of Low Impact
20 Development (LID) practices on a broader and more comprehensive scale.

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In the Phase I Permit, Ecology chose to regulate stormwater discharges from new development and redevelopment primarily through the imposition of a flow control standard. S5.C.5.b.i. *Ex. Muri 0001, p. 9, Testimony of O'Brien*. The flow control standard generally requires new and redeveloped sites that discharge to surface waters to control the rate at which stormwater is released from their sites so that the discharges do not cause accelerated stream channel erosion. The flow control standard is not a LID concept, because, in contrast to LID techniques, it is based on the premise that there will be discharges of stormwater from particular sites, and it attempts to control the duration and frequency of high stormwater runoff flows. Conventional stormwater management criteria frequently incorporate a post development peak discharge rate for a 2- and 10-year storm event based upon possible property damage due to flooding and stream bank erosion. These are becoming more recognized as insufficient because they do not address the loss of storage volume to provide for groundwater recharge, they do not adequately protect downstream channels from accelerated erosion, and the inspection and maintenance costs are an increasing burden for local governments. The goal of LID, on the other hand, is to minimize or prevent entirely the discharge of stormwater from the site. While utilization of LID techniques may be useful (or even in some cases necessary) to meet the flow control standard on a particular site, the flow control standard does not require the use of LID techniques. *Testimony of O'Brien, Booth, Exs. ECY 4 (Phase I) p. 2-30 through 2-35, Ex. PSA-053, p. 7.*

1 39.

2 In order to meet the Permit's flow control standard(s), facilities must be engineered so
3 that discharges are not predicted to exceed the predevelopment flow "durations" for a range of
4 storm events. The Stormwater Management Manual gives detailed design specifications for
5 sizing and constructing detention/retention facilities to meet the flow control standard. The
6 Manual itself recognizes the shortcomings of the use of engineered stormwater conveyance,
7 treatment and detention systems to control stormwater. It states, at page 1-25:

8 [These techniques] can reduce the impacts of development to water quality and
9 hydrology. But they cannot replicate the natural hydrologic functions of the natural
10 watershed that existed before development, nor can they remove sufficient pollutants to
11 replicate the water quality of pre-development conditions.

12 The primary focus of detention standards is on mitigating the worst impacts of large storm
13 events. These standards have little or no effect on small storm events, which can also cause
14 damaging increase in flows. Stated another way, the flow control standard addresses large
15 stormwater flow rates only, which occur only a small percentage of time (1%), and provides only
16 residual control to runoff the remainder of the time. *Testimony of O'Brien, Booth, Ex. ECY 4*
17 *(Phase I), p. 1-25, 2-30 through 2-35.*

18 40.

19 Another limitation of the flow control standard comes from a significant exception to the
20 requirement to achieve pre-developed discharge rates for basins that have had at least 40 percent
21 total impervious area since 1985. Phase I permit, Appendix 1, p. 25-27, and Manual, Section
2.5.7 Minimum Requirement # 7, pp. 2-33. For sites in these basins, the pre-developed condition

1 to be matched is the existing land cover. Most areas located within the Seattle city limits, many
2 areas within the City of Tacoma, and some areas in Bellevue and Everett would qualify for this
3 exception. *Testimony of O'Brien, Booth, Exs. ECY 4 (Phase I), p. 2-33, Muni 0001, Appendix 1,*
4 *p. 25-27.*

5 41.

6 The Phase I Permit defines LID as follows:

7 stormwater management and land development strategy applied at the parcel and
8 subdivision scale that emphasizes conservation and use of on-site natural features
9 integrated with engineered, small-scale hydrologic controls to more closely mimic pre-
10 development hydrologic functions.

11 *Ex. Muni 0001, p. 62.* Ecology adopted this definition from the Puget Sound Action Team's
12 Low Impact Development Manual (PSAT Manual), which is a technical manual published in
13 2005 to "provide stormwater managers and site designers with a common understanding of LID
14 goals, objectives, specifications for individual practices, and flow reduction credits that are
15 applicable to the Puget Sound region." *Ex. PSA 050, p.2.*¹⁶ Other definitions of LID offered in
16 testimony at the hearing differ from this definition primarily in the scale of application of LID.
17 Thomas Holz offers an almost identical definition to the one quoted above, but includes
18 application at the watershed scale in addition to the parcel or subdivision scale. *Testimony of*
19 *Holz, Ex. PSA 050, p.11.*

20 _____
21 ¹⁶ The advisory committee for the development of the PSAT Manual included Edward O'Brien, Tom Holz, and
Derek Booth. These three experts also testified at the Phase I hearing, *Testimony of Moore, Ex. PSA 050,*
Acknowledgements page and p. 2.

1 42.

2 While specific definitions of LID may vary, the concept of LID is well-established, and
3 the basic BMPs that constitute LID are well-defined. LID techniques emphasize protection of
4 the natural vegetated state, relying on the natural properties of soil and vegetation to remove
5 pollutants. LID techniques seek to mimic natural hydraulic conditions, reducing pollutants that
6 go into stormwater in the first instance, by reducing the amount of stormwater that reaches
7 surface waters. *Testimony of Horner, Booth, Holz.*

8 43.

9 LID techniques store, infiltrate and evaporate stormwater where it falls rather than collect
10 and convey it to surface waters off site, and can be implemented at an individual development
11 site level, as well as part of a broader strategy employed at a basin or watershed level. Site-level
12 LID BMPs include, but are not limited to, maintenance of natural vegetation on site; reduction of
13 impervious surfaces; protection of natural drainage patterns, use of minimal excavation
14 foundations such as pin foundation for structures; use of vegetated swales to capture and retain
15 runoff; use of green roofs, and storage and reuse of runoff. At a watershed or landscape scale,
16 LID strategies can include basin planning, watershed-wide limits on imperviousness, and
17 protection of sensitive areas like riparian zones, wetland and steep slopes. *Testimony of Holz,*
18 *Booth, Ex. PSA 050.*

19 44.

20 Although many LID techniques are not new ideas (i.e. grass roofs, rain gardens), LID as
21 a formal stormwater management concept was developed in the late 1980's. *Testimony of Booth,*

1 Holz. Prince George's County, Maryland, a pioneer in the area of LID in the United States,
2 began working on bioretention or rain gardens during the 1980's, and published a comprehensive
3 LID technical manual and an accompanying volume providing detailed hydrologic analysis and
4 computational procedures in 1999. Exs. PSA 052 and 053. Two federal agencies, the U.S.
5 Department of Defense and Department of Housing and Urban Development, adopted LID
6 Manuals in 2003 and 2004. Exs. PSA 054 and 055. The Puget Sound Action Team and the
7 Washington State University Pierce County Extension published The PSAT Manual, a 247 page,
8 comprehensive, technical guidance manual for the use of LID in the Puget Sound Area, in
9 January of 2005 with funding provided by the Ecology. Ex. PSA 050. The PSAT Manual was
10 intended to provide a menu of treatment options and direction for site design techniques, but it
11 does not attempt to identify a performance standard for any of the included LID strategies.

12 *Testimony of O'Brien.*

13 45.

14 The Environmental Protection Agency (EPA) has not required the use of LID in its
15 stormwater rules or EPA permits, but it is increasingly supporting and encouraging the use of
16 LID approaches in municipal stormwater programs on its website and thorough numerous
17 publications. See for example, Ex. PSA 057 (EPA National Pollutant Discharge Elimination
18 System (NPDES), Post-Construction Stormwater Management in New Development and
19 Redevelopment) (posted on EPA's website); PSA Ex. 058, (EPA National Pollutant Discharge
20 Elimination System (NPDES), Low Impact Development (LID) and Other Green Design
21 Strategies) (posted on EPA's website); PSA 056 (EPA Fact Sheet for Stormwater Phase II Final

1 *Rule, Post-Construction Runoff Control Minimum Control Measure (Jan. 2000, rev'd 2005); Ex.*

2 *PSA 066 (EPA Low Impact Development (LID), A Literature Review (Oct. 2000); Ex. PSA 059*

3 *(EPA 833-F-04-033, Resource List for Stormwater Management Programs (May 2004); Ex.*

4 *PSA 060 (EPA National Management Measures to Control Nonpoint source Pollution for Urban*

5 *Areas (Excerpts: Cover, Table of Content, Chapters 1-4, 10); Ex. PSA 061 (Memorandum from*

6 *Benjamin Grumbles (Assistant Administrator, EPA) to EPA Regional Administrators Re: Using*

7 *Green Infrastructure to Protect Water Quality in Stormwater, CSO, Nonpoint Source and Other*

8 *Water Programs (Mar. 5, 2007); Testimony of Holz.*

9 46.

10 Ecology's 2005 Stormwater Management Manual addresses the use of LID techniques in
11 several ways, as part of the manual's Minimum Technical Requirements and Site Planning
12 (Volume I), its Hydrologic Analysis and Flow Control Design/BMPs (Volume III), and its
13 Runoff Treatment BMPs (Volume V). *Ex. ECY 4.*¹⁷ One of the most significant changes during
14 the 2005 update to the Manual included the addition of a "credit" system for projects that use
15 LID techniques. *Ex. PSA 064.*

16

17

18 ¹⁷ The Manual is not a regulation but rather a guidance document that presents a presumptive approach to meeting
19 requirements established through other means, such as permits. Washington is somewhat unique in its reliance on
20 the Stormwater Management Manual for directing how stormwater management is to be conducted. *Testimony of*
21 *Moore. Testimony of O'Brien.* The Manual represents Ecology's generalized determination of what constitutes
AKART for stormwater management, without regard to how much horizontal development should be allowed (i.e.,
whether a particular parcel, subdivision, or watershed should be developed or a particular project should be
undertaken). The manual is also considered by the Department of Community, Trade, and Economic Development,
the agency charged with state oversight of the implementation of the GMA, to constitute the best available science
for use by local governments planning under the GMA. *Testimony of O'Brien.*

1 47.

2 Volume I covers several key elements of developing a stormwater site plan, including
3 identifying the minimum requirements for stormwater management at all new development and
4 redevelopment projects. Minimum Requirement #5, which directs on-site stormwater
5 management for the purpose of using inexpensive practices on individual properties to reduce the
6 amount of disruption of the natural hydrological characteristics of the site, requires the use of
7 certain LID BMPs such as roof downspout control and dispersion and soil quality BMPs. This
8 minimum requirement applies to single-family home sites and larger properties. *Testimony of*
9 *O'Brien, Ex. ECY 4 (Phase I), Vol I, at 2-26; Ex. Muni 0001, Appendix I at p.10 and 19.* The
10 Phase I permit requires that permittees' local ordinances must meet Minimum Requirement #5,
11 including requiring specified LID BMPs to reduce the hydrologic disruption of developed sites.
12 *Testimony of O'Brien, Ex. Muni 0001, Condition S5.C.5 (at p. 9) and Appendix 1 (at p.19).*

13 48.

14 Stormwater site planning requirements, also contained in Volume I, direct that site
15 layouts minimize land disturbance and maximize on-site filtration by considering a number of
16 LID strategies and techniques such as preserving areas with natural vegetation (especially
17 forested areas) as much as possible, minimizing impervious areas, and maintaining and utilizing
18 natural drainage patterns. *Testimony of O'Brien, Ex. ECY 4 (Phase I), Vol I, at 3-2.*

19 49.

20 Volume III of the Manual focuses primarily on BMPs to address the volume and timing
21 of stormwater flows from developed sites, for the purpose of providing guidance on the

1 estimation and control of stormwater runoff quantity. Appendix III-C of this volume is
2 Ecology's guidance explaining how Low Impact Development techniques can be represented in
3 approved runoff models so that their benefits in reducing surface runoff can be estimated and
4 credited in the flow duration model. It identifies seven categories of LID techniques, including
5 permeable pavements, vegetated roofs, rainwater harvesting, reverse slope sidewalks, minimal
6 excavation foundations, and rain gardens, and lists the basic design criteria Ecology considers
7 necessary in order to justify use of the suggested runoff credit. *Testimony of O'Brien, Ex. ECY 4*
8 *(Phase I), Vol III, at Appendix III-C.*

9 50.

10 Finally, Volume V of the Manual identifies and discusses BMPs designed to treat runoff
11 to remove sediment and other pollutants at developed sites, for the purpose of providing
12 guidance on the selection, design and maintenance of permanent runoff treatment facilities. LID
13 techniques are included in both the basic and advanced treatment options available to developers,
14 and the method for determining the treatment credits for each technique is explained. Chapter 5
15 of this volume is devoted to the methods for analysis and design of on-site LID BMPs that serve
16 to both control runoff flow rates as well as provide runoff treatment and, since 2005, has directed
17 readers to use the PSAT Manual for various LID BMPs. *Testimony of O'Brien, Ex. ECY 4, Vol*
18 *V.*

19 51.

20 Ecology wrote the first draft of the current Phase I Permit in 1999. At that time, LID was
21 recognized as a stormwater management strategy, but there was not the same body of work

1 available on its use as there is today. Although much of the work and literature cited above post-
2 dated the initial draft of the current Phase I Permit, Ecology recognized that a large body of work
3 existed on LID as it finalized the Phase I permit. Despite the existence of many LID source or
4 reference materials, Ecology believed that it could not at that time define minimum LID
5 requirements, and was unable to define a regulatory performance standard to hold municipalities
6 to, should LID requirements be imposed by the permit. The agency also recognized that local
7 governments had adopted other land use and development standards that were obstacles to the
8 implementation of LID on a broader scale. Some local governments also have limited
9 experience with LID techniques and are reluctant to approve them. *Testimony of O'Brien.*

10 52.

11 Early drafts of the permit included requirements for basin or watershed planning as a LID
12 technique. Use of a basin planning approach in the permit would, among other things, require
13 municipalities to consider the effects of loss of impervious cover to water quality in larger,
14 watershed, basin, and sub-basin areas (potentially measured in many square miles). The ideal
15 area size for basin planning is two to ten acres. WRIA-scale (Water Resources Inventory Area)
16 planning efforts are too large to address the impervious surface problem. *Testimony of Wessel.*
17 Basin planning can also lead to the development of better site specific strategies, and some
18 Ecology staff advocated for its inclusion into the Permit. *Testimony of O'Brien.*

19 53.

20 Ultimately, Ecology drafted a permit that requires municipalities to identify barriers to
21 use of LID, and to take steps to also "allow" LID. Specific requirements for basin planning were

1 not included in the final permit, although the Endangered Species Act listing of various salmon
2 species, and efforts of the Puget Sound Partnership are reasons to reexamine the need for basin
3 planning as a permit requirement. *Testimony of Wessel, Moore; Ex. PSA 31.* Ecology rejected
4 basin or watershed planning as a permit requirement, in part because the agency could not
5 require a comprehensive planning effort, given that not all jurisdictions within a given watershed
6 or basin were covered by the Phase I permit. Ecology also concluded that imposing both site
7 level LID and basin planning requirements would move the agency too far into the land use
8 regulatory arena, although Ecology witnesses conceded that imposition of more detailed LID
9 requirements and a basin planning process could be harmonized with a parallel Growth
10 Management Act land use process, thereby elevating water quality as a growth management
11 planning priority. *Testimony of Moore, Wessel, O'Brien.*

12 54.

13 Ecology stated in its 2004 report to the Legislature that:

14 Compact style development, with a smaller footprint, reduced impervious surfaces,
15 natural areas within the urban core, and improved water detention can help local
16 communities meet the Growth Management Act's goals of accommodating growth while
17 protecting the environment.

18 *Ex. ECY 6 (Phase I), p. 31.* This same 2004 report to the Legislature highlighted the importance
19 of stormwater basin planning in areas which are relatively undeveloped where new development
20 is occurring. Ecology stated that in these areas:

21 site specific controls alone cannot prevent impacts and preserve aquatic resources.
Recent research should be used to identify development strategies that may protect the
resources. Scientific modeling of the basin can help predict the extent of potential

1 impacts and the effectiveness of alternative land development options to help avoid or
2 minimize those impacts.

3 *Id. at 28.* Ecology also recommended in its report to the Legislature that state and local
4 governments consider basin planning to address the known shortcomings of the stormwater
5 permits. Ecology stated that:

6 Stormwater basin planning is needed to quantify flow-related impacts and sources of
7 pollution to urban water bodies. This information is needed to target resources spent on
8 structural and non-structural controls (such as maintenance and public education) so that
9 goals for urban water bodies can be met. In many basins, this planning can be combined
10 with the planning for new development described earlier.

11 *Id. at 30.* Other types of water quality planning are taking place on a WRIA basis. The Board
12 finds that information developed by permittees regarding their use of basin planning, and its
13 possible interface with other planning efforts, would be very valuable to Ecology in its
14 development of the next phase of the Permit.

15 55.

16 The Phase I Permit includes several conditions that address LID in various ways, nearly
17 all of which are in the nature of encouraging or promoting rather than requiring LID by
18 municipalities. In contrast to other permit terms, the final permit does not require municipalities
19 to implement ordinances or other measures to use LID as a primary tool to manage stormwater
20 within their jurisdictions. *See* S5.C.5.b.i (allowing local governments to tailor certain
21 requirements applicable to new development through the use of basin plans or other similar
water quality and quantity planning efforts); S5.C.5.b.iii (requiring SWMPs to allow non-
structural preventative actions and source reduction approaches such as LID techniques);

1 S5.C.6.a (stating that permittees should consider other means to address impacts from existing
2 development “such as reduction or prevention of hydrologic changes through the use of on-site
3 (infiltration and dispersion) stormwater management BMPs and site design techniques, riparian
4 habitat acquisition, or restoration of forest cover and riparian buffers . . .”); S5.C.10.b.(3) and (4)
5 (requiring the inclusion of LID techniques in education and outreach programs); S8.F.1 and 7
6 (requiring monitoring of the effectiveness of one flow reduction strategy that is in use or planned
7 for installation in their jurisdiction); and Appendix 1 § 4.5 (imposing, as a minimum
8 requirement, on-site stormwater management where feasible, including use of roof downspout
9 controls and dispersion and soil quality BMPs or their functional equivalent).¹⁸ *Exs. Muni 0001,*
10 *p. 9, 10, 12, 24, 25, 46, 47, and Appendix 1, p. 19.*

11 56.

12 Some commentors on the draft Phase I Permit criticized the lack of more mandatory LID
13 requirements. The National Marine Fisheries Service and the U.S. Fish and Wildlife Service
14 (jointly the Services) offered comments on the Draft Phase I Permit in May, 2006. While they
15 supported many elements of the draft Permit, the Services recommended that the Permit employ
16 methods to help ensure that several LID projects are completed within the permit term and
17 strongly encouraged the use of basin planning to make better linkage with salmonid recovery
18 plans organized at the watershed level. *Ex. PSA 030.* EPA offered its comments on the draft
19 Phase I Permit in October, 2006. *Ex. PSA 067.* While EPA praised many aspects of the permit,
20 it also recommended strengthening the permit by “promot[ing] the implementation of low impact
21

¹⁸ This same requirement is included in The Manual. *Ex. ECY 0004 (Phase I), Vol. 1, p. 2-26.*

1 development and non-structural best management practices,” and “add[ing] a basin planning
2 program requirement.” Similarly, a group of Washington Scientists sent an “open letter” to
3 Ecology on October 26, 2006, in which they criticized the draft Phase I Permit for its continued
4 focus on “end of pipe” management of stormwater, emphasizing the need to preserve existing
5 “least-disturbed” watersheds, to limit forest loss, and to halt runoff from new impervious areas in
6 the Puget Sound Basin. They recommended broad application of LID principles within the
7 context of land use planning and development regulations efforts to prevent runoff to surface
8 water. *Ex. PSA 010.*

9 57.

10 Ecology staff who developed the Phase I permit, as well as a number of stormwater
11 experts who testified before the Board, agreed that no one stormwater management technique
12 could solve the problem of polluted runoff from municipal stormwater systems. Even the
13 extensive use of site-level LID is not sufficient, on its own, to fully protect aquatic resources.
14 Rather, a combination of aggressive use of LID techniques, best conventional engineering
15 techniques to manage high flows (such as the flow duration standard), and land use actions to
16 preserve a high percentage of native land cover, are necessary to reduce pollutants in stormwater
17 to the maximum extent, and to preserve water quality. Although there is considerable dispute
18 about the attainable performance of particular LID strategies and engineering techniques, there is
19 no dispute that *in combination* these approaches offer the best available, known and tested
20 methods to address stormwater runoff. *Testimony of O'Brien, Holtz, Booth.*

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~~There are existing design criteria for many LID techniques, just as there are for~~

traditional BMPs employed to manage stormwater run-off used at the parcel or subdivision scale (for example, pond size or thickness of a liner). These aspects of LID can be employed at a site specific level. However, at this time there are no universal or broadly endorsed performance standards for LID, at either the parcel, subdivision, or watershed scale. Nor were experts before the Board willing to endorse or recommend such standards from among the many potential options identified, although it was undisputed that any permit condition requiring permittees to meet a new stormwater performance standard based on LID would implicate many other local government regulatory schemes, and require modification to local government GMA planning processes and requirements, zoning and development regulations, and building codes. *Testimony of Holz.*

59.

A zero runoff outcome from the use of LID techniques is one such performance standard, but actions to meet that standard would implicate a range of land use planning actions and watershed level assessments. It is possible to create other, more specific performance standards for LID, although the process would involve time and effort. Other jurisdictions are currently using such standards, or have proposed standards for use. For example, jurisdictions can require that LID BMPs be designed in accordance with guidelines in technical manuals, impose specific minimum technical requirements for buildings or roads, require protection of a specific amount of native vegetation at the site or basin level, limit the amount of effective impervious surface,

1 protect the natural hydrograph through various parameters, require maintenance of a certain
2 ~~percentage of predevelopment evapotranspiration capacity or minimize or eliminate surface~~
3 runoff, or require that developers prioritize LID BMPs as the first choice before conventional
4 BMPs. The Phase I Municipal Stormwater Permit for San Diego County, which was reissued in
5 January, 2007, requires all new and redevelopment projects to implement LID BMPs where
6 feasible. The Permittees are given the responsibility of defining the applicability and feasibility
7 of LID BMPs, including the minimum standards to ensure maximum implementation. Another
8 example of an NPDES permit from another jurisdiction that incorporates a LID performance
9 criteria is the Ventura County MS4 Permit. This permit, which was in draft form at the time of
10 the hearing, requires that developers prioritize LID BMPs as the first choice before conventional
11 BMPS. *Testimony of Booth, Holz, Horner, Exs. PSA 048, p. 13-18; PSA 069, p. 49; PSA 070,*
12 *072, 080, Snohomish County Code 30.63C.*

13 60.

14 Requiring municipalities to impose parcel and subdivision-level LID best management
15 practices represents a cost effective, practical advancement in stormwater management. Use of
16 LID techniques at the parcel and subdivision level would not be feasible on every type of site, or
17 under all rainfall conditions present in Western Washington. Use of LID techniques could in
18 some instances allow pollutants to enter groundwater. LID BMPs require maintenance. All of
19 these limitations are also applicable to the more traditional end of pipe BMPs. In fact, site
20 attributes that make implementation of LID techniques difficult also typically make
21 implementation of conventional techniques difficult. In the absence of watershed or basin level

1 efforts to utilize LID, parcel and subdivision-level use of LID will be less effective in overall
2 stormwater management efforts, but still a substantial advancement. *Testimony of O'Brien,*

3 *Booth, Holz, Horner, Exs. ECY 3 (Phase I), p. 34-36, PSA 066, p. 2, 3.*

4 61.

5 In many cases, implementation of LID techniques on the ground for new or
6 redevelopment, or even retrofitting existing development, is less costly, or no more costly, than
7 conventional engineered BMPS. Structural stormwater controls, such as detention ponds, curbs,
8 gutters and pipes, require significant hardware and capital investment. LID techniques eliminate
9 or reduce the need for these structural controls by reducing the volume of water to be managed.

10 LID techniques may also require less space than these traditional methods. *Testimony of Holz,*
11 *Booth, Horner, Exs. PSA 047, p. 6-10, PSA 066, p.1, ECY 3 (Phase I), p. 35-36.*

12 62.

13 A major cost consideration in utilizing LID techniques at a site level is not the
14 engineering or construction associated with the LID techniques, but rather the costs associated
15 with navigating a system of regulation and development that was not created with LID in mind.
16 To fully incorporate LID principles into this system will require review, consideration, and in
17 some instances modification, of existing zoning and building regulations that create obstacles to
18 the use of LID. Some examples of common local government ordinances that could make it
19 difficult to utilize certain LID techniques include requirements related to road width, curbs and
20 gutters, vegetation clearing, and parking spaces. *Testimony of Holz, Horner.* The cost of
21 implementing LID across a broader land use spectrum, through basin or watershed planning is

1 more speculative, and the Board was presented with no clear evidence on costs associated with
2 broader-scale implementation of LID in this manner. Although such planning is underway in
3 certain areas, a longer public and political process could be expected to accompany such an
4 effort.

5 63.

6 The cost of not expanding the application of LID strategies to manage municipal
7 stormwater is very high. The biological health of Puget Sound is declining, and a significant
8 cause of the decline is stormwater run-off. This decline carries with it a variety of
9 environmental, economic, and social costs. *Ex. PSA 087, p. 1.* The Puget Sound Water Quality
10 Plan, which is a plan mandated by the Legislature to be the state's long term strategy for
11 protecting and restoring the Puget Sound, stated as early as 2000 that local governments needed
12 to adopt ordinances that allow and encourage LID practices. *Ex. PSA 078, p. 101.* Many leading
13 scientists concluded, in a paper submitted to the Puget Sound Partnership in July of 2007, that
14 the problem of stormwater must be addressed in the land use context if the health of Puget
15 Sound, the species that inhabit it, and its various important beneficial uses to the region, are to be
16 protected and/or recovered. The group concluded that:

17 We have well documented evidence that the impairment associated with stormwater
18 runoff is primarily a **land use problem**, and that we cannot fully mitigate its effects if we
19 approach it only site-by-site. We know that the problems must be addressed at a basin or
20 landscape level-but we continue to manage land use and stormwater primarily on a site-
21 by-site, end of pipe basis. At the same time, we also know that current site-by-site
development techniques that result typically in wholesale loss of vegetation, compaction
of native soils and connected impervious surfaces, can and should be improved upon
significantly if we are to address stormwater problems.

Ex. PSA -012, p. 3 (emphasis in original).

1

64.

2 Recently, many local governments have begun incorporating LID techniques into their
3 stormwater manuals, and/or adopting LID stormwater requirements. Exs. PSA 072 (City of
4 Olympia, *Engineering Design and Development Standards, Ch. 9, Green Cove Basin*); PSA 073
5 (*Graham Community Plan, A Component of the Pierce County Comprehensive Plan, Excerpts:*
6 *pp. Cover, Table of Contents, p. 70, 87, 109, 149, 208*); PSA 074 (*Gig Harbor Peninsula*
7 *Community Plan, Excerpts: pp. cover, 29, 41, 63, 117, 210*); PSA 076 (*King County,*
8 *Washington, Surface Water Design Manual, Jan. 4, 2005, Excerpts: pp. cover, Table of*
9 *Contents, 5-1 through 5-16*); PSA 051 (*Pierce County, Stormwater Management and Site*
10 *Development Manual, Excerpts: Ch. 10, p. 10-1 to 10-82*).

11

65.

12 Examples of the approaches already being used by Phase I Permittees to encourage or
13 require the use of LID techniques include reducing charges for surface water rates with the use of
14 an approved LID stormwater and surface water runoff systems (*City of Tacoma, Ex. PSA 085, p.*
15 *4*); promoting LID during project scoping meetings with potential developers (*City of Tacoma,*
16 *Ex. PSA 085, p. 4*); adopting LID Ordinances (*Snohomish County, PSA Ex. 077, p. 8*);
17 incorporating LID Development Design concepts into existing regulations (*Snohomish County,*
18 *Ex. PSA 077, p. 9*); and providing public outreach and education about LID (*City of Tacoma, Ex.*
19 *PSA 085, p. 5, Snohomish County, Ex. PSA 077, p. 10-14, City of Seattle, Ex. PSA 079, p. 12, 13*).

20 Other, more stringent examples include requiring project proponents to use LID techniques for
21 all proposed Fully Contained Community developments in rural areas (*Snohomish County, Ex.*

1 *PSA 077, p. 9*); requiring LID for any UGA docket expansions proposals within the Little Bear
2 Creek watershed (*Snohomish County, Ex. PSA 077, p. 10*); and requiring LID to be used on a
3 large project in the Mill Creek pocket expansion (*Snohomish County, Ex. PSA 077, p. 9*).

4 66.

5 The Board finds that LID methods are at this time a known and available method to
6 address stormwater runoff at the site, parcel, and subdivision level. Numerous reference
7 documents, technical manuals, expert testimony, and Ecology's own Stormwater Management
8 Manual, discussed above, support this finding. The Board also finds that LID methods are
9 technologically and economically feasible and capable of application at the site, parcel, and
10 subdivision level at this time. Because application of these methods at the basin and watershed
11 level involves additional cost and practical considerations, we find Ecology must ready for the
12 eventual use of this known and available method of stormwater treatment for future iterations of
13 the permit, consistent with its obligation to impose increasingly stringent requirements on
14 discharges covered by NPDES permits.

15 G. Existing development

16 67.

17 The Phase I Permit addresses stormwater runoff from existing development through the
18 implementation of structural stormwater controls and source controls. Both of these are required
19 components of Permittees' SWMPs, and the Permit includes minimum requirements for each
20
21

1 which are based on EPA's stormwater rules.¹⁹ *Testimony of Wessel, Ex. Muni 0001, p. 12-15,*
2 ~~*Ex. Muni-0002, p. 34-36.*~~

3 68.

4 The structural stormwater control program, also referred to as the "retrofit" component, is
5 targeted at discharges not adequately controlled by other aspects of the SWMP. S5.C.6.
6 Through this program, permittees must consider construction of stormwater control projects, as
7 well as other means to address impacts to state waters caused by MS4 discharges. The permit
8 directs that the program "shall consider the construction of projects such as: regional flow
9 control facilities; water quality treatment facilities; facilities to trap and collect contaminated
10 particulates, retrofitting of existing stormwater facilities; and rights-of-way, or other property
11 acquisition to provide additional water quality and flow control benefits." The Permit also
12 provides that permittees "should consider" other means to address impacts, including LID
13 techniques such as "reduction or prevention of hydrologic changes through the use of on-site
14 (infiltration and dispersion) stormwater management BMPs and site design techniques. . ."

15 S5.C.6.a. *Testimony of Wessel, Ex. Muni 0001, p. 12, 13.*

16 69.

17 The permit establishes minimum performance measures for the structural stormwater
18 control program, including development of the program within 1 year of the effective date of the
19

20 ¹⁹ The Fact Sheet's reference to 40 C.F.R. 122.26(b)(2) appears to be a typographical error. Ecology's pre-hearing
21 brief properly cites the applicable federal regulation for these program elements as 40 C.F.R. 122.26(d)(2). A
portion of this federal rule, unrelated to municipal stormwater, was recently invalidated in *Natural Resources
Defense Council v. U.S. E.P.A.*, 526 F.3d 591 (9th Cir. 2008).

1 permit, and implementation of the program within 18 months from the effective date of the
2 permit. S5.C.6.b.i. Permittees are required to provide a list of planned individual projects that
3 are scheduled for implementation during the term of the permit. Municipalities are not required
4 to prioritize the planned projects in any manner. Permittees are required to submit a description
5 of their structural stormwater control program to Ecology along with the written documentation
6 of their SWMP, but the permit does not set a minimum level of effort for this requirement or
7 provide for Ecology review and/or approval of the structural stormwater control program.
8 S5.C.6.b.ii. *Testimony of Wessel, Dalton, Ex. Muni 0001, p. 12, 13, Ex. Muni 0002, p. 35.*

9 70.

10 The requirements for the Source Control Program for existing development are set out in
11 S5.C.7. Through this program, the permittee must "reduce" pollutants in runoff from areas that
12 discharge to MS4s, through application of operational and structural source control BMPs, and if
13 necessary treatment BMPs to pollution generating sources associated with existing land uses and
14 activities. S5.C.7.a. The program required in this section also must include inspections,
15 application and enforcement of local ordinances at applicable sites, and reduction of pollutants
16 associated with application of pesticides, herbicides and fertilizer discharging to MS4s.
17 S5.C.7.b.ii-iv. While reduction of pollutants is mandated, no objective standard is set for the
18 amount of reduction, although Ecology must review and approve the source control program.
19 S5.C.7.b.i. *Testimony of Wessel, Muni 0001, p. 13-15.* Under this section of the permit,
20 permittees must also implement a progressive enforcement policy to assure compliance with

21

1 stormwater requirements within a reasonable time period. S5.C.7.b.iv. *Testimony of Wessel, Ex.*

2 *Muni-0001, p. 13-15.*

3 H. Timing of Compliance

4 71.

5 PSA challenges the validity of several Phase I Permit provisions on the grounds that they
6 do not require implementation of the permit within three years. PSA provides several examples
7 of permit conditions that allow implementation after three years. Some of these examples
8 include S5.C.2.b.ii (requiring outfalls to be mapped no later than four years from the effective
9 date of the permit); S5.C.8.b.vi (requiring screening for illicit discharges in portion of each
10 jurisdictions to be completed within four years.); and S.5.C.9.b.ii (3) (allowing permittees up to
11 four years after the effective date of the permit to develop a schedule to inspect treatment and
12 flow control facilities). PSA also provides examples of conditions that impose duties that are
13 tied to the expiration of the permit. Some examples of these conditions include Condition
14 S6.A.3 (full development of the co-permittee and secondary permittees' SWMPs no later than
15 180 days prior to the expiration of the permit); and S6.D.1. a.ii (Secondary permittees shall label
16 all inlets 180 days prior to expiration of the permit). *Ex. Muni 0001, p. 7, 18, 20-21, 25, and 27.*

17 72.

18 Any Conclusion of Law deemed to be a Finding of Fact is hereby adopted as such.

19

20

21

1 CONCLUSIONS OF LAW

2 1.

3 The Board has jurisdiction over the parties and the issues in the case pursuant to RCW
4 43.21B.110(1)(c). The burden of proof is on the appealing party(s) as to each of the legal issues,
5 and the Board considers the matter *de novo*, giving deference to Ecology's expertise in
6 administering water quality laws and on technical judgments, especially where they involve
7 complex scientific issues. *Port of Seattle v. Pollution Control Hearings Board*, 151 Wn.2d 568,
8 593-594, 90 P.3d 659 (2004). Pursuant to WAC 371-08-540(2), "In those cases where the board
9 determines that the department issued a permit that is invalid in any respect, the board shall order
10 the department to reissue the permit as directed by the board and consistent with all applicable
11 statutes and guidelines of the state and federal governments."

12 A. Monitoring (Issues C.1, C3, and F.3.)

13 2.

14 Two counties, Pierce and Clark, challenge the monitoring requirements imposed by
15 Special Condition S8.²⁰ They contend that their own monitoring programs, which focus on
16 receiving water monitoring, are more advanced than the monitoring required by S8. While they
17 support Ecology's S8 monitoring approach as a starting point for municipalities that do not
18 already have well developed receiving water monitoring programs, Pierce and Clark Counties
19

20
21 ²⁰ Issues C.1 and C.3.

1 argue that compliance with the S8 monitoring will hinder their own efforts to protect water
2 quality.

3 3.

4 The Utilities also challenge the validity of the S8 monitoring program. They contend that
5 it is deficient because it does not require receiving water or "compliance" monitoring. They
6 argue that receiving water monitoring is necessary to establish whether the permittees have
7 complied with water quality standards and whether they have treated their discharges with
8 AKART or to the maximum extent practicable.²¹

9 4.

10 WAC 173-226-090(1) establishes monitoring requirements for general waste discharge
11 permits. The Board has concluded in its past decisions that this regulation provides Ecology with
12 the discretion to impose *reasonable* monitoring requirements. WAC 173-226-090(1); *Puget*
13 *Soundkeeper Alliance v. Ecology*, PCHB Nos. 05-150, 0151, 06-034, -040 (Jan. 26, 2007) (CL
14 22). Further, since a decision pertaining to monitoring requirements in a general permit falls within
15 an area of Ecology's technical expertise, and involves complex scientific issues, the agency's
16 decision is entitled to deference. *Port of Seattle* at 593-594. The disagreement between appellants
17 and Ecology reflects different sides of a long-standing debate regarding the relative merits of
18 instream versus outfall monitoring, and the most advantageous sequencing of the two. *Ex. PI*
19 *0048*. It is clear there is no one right approach, as the type and timing of monitoring that is best

20
21

²¹ Issue F.3.

1 in any given situation depends on the particular purpose, context, and available resources, among
2 other factors.

3 5.

4 Neither the Utilities nor the Counties have cited to any law requiring the Phase I Permit
5 to require receiving water monitoring. The federal stormwater rules require only that
6 municipalities propose a monitoring program for the term of the permit, but list few specific
7 requirements. 40 C.F.R. 122.26(d)(2)(iii)(D).²² The Board concludes that Ecology's decision
8 not to require receiving water monitoring during this permit cycle is lawful and reasonable.
9 Ecology's decision to require monitoring designed to understand the pollutants discharging from
10 MS4s, and to evaluate the effectiveness of the BMP's in use, will provide the most useful data to
11 establish what constitutes maximum extent practicable reduction in pollutants in discharges from
12 MS4s for future permits. Further, as pointed out by Ecology, the counties are not prohibited
13 from conducting receiving water monitoring in addition to the S8 monitoring required under the
14 permit.²³

15 6.

16 In light of the discretion Ecology has in this area, the deference its technical decisions are
17 entitled to, and the fact that the burden of proof rests on the party challenging the permit, neither
18 the Counties nor the Utilities have presented a sufficient case to convince the Board that it should

19 ²² A portion of this federal rule, unrelated to municipal stormwater, was recently invalidated in *Natural Resources
20 Defense Council v. U.S. E.P.A.*, 526 F.3d 591 (9th Cir. 2008).

21 ²³ It is also possible that parts of the Pierce and Clark County programs could be used to satisfy the targeted
effectiveness component of the S8 monitoring (S8.E). *Ex. Muni 0001*, p. 45-46. The Board encourages Ecology to
work with Pierce and Clark Counties to find ways to make parts of their current monitoring programs satisfy some
of the requirements under S8.

1 reverse Ecology's decision to select the S8 monitoring program and require all permittees to
2 participate in it.

3 B. Ports (Issue E.5)

4 7.

5 The Ports contend that it is "unlawful, unreasonable, unjust, or invalid" to require them to
6 prepare SWPPPs on all port owned land not covered by another discharge permit. The Ports
7 argue that the primary permittees have to prepare SWPPPs only on areas on which industrial
8 type activities occur (maintenance areas and material and heavy equipment storage) that are not
9 covered by another discharge permit. The Ports assert that it is unreasonable to require SWPPPs
10 without consideration to how property is used, it is unreasonably burdensome to the Ports
11 because of the cost to prepare SWPPPs, and it is unnecessary because not all port-owned lands
12 have polluting generating characteristics. The evidence presented, however, does not support
13 these arguments.

14 8.

15 The evidence presented at the hearing establishes that lands owned by the Ports of Seattle
16 and Tacoma are located close to vulnerable urban waters with documented water quality and
17 sediment contamination problems. Almost all of the port-owned lands that discharge to MS4s
18 have pollutant-generating characteristics. Therefore preparation of SWPPPs for these properties
19 will have environmental benefits. The only exception is those few environmental mitigation
20 sites owned by the Port of Tacoma. Most of these environmental mitigation sites probably do
21 not discharge to the MS4s, and therefore would not require coverage under the Phase I Permit.

1 For the ones that do, however, there is no environmental benefit gained by requiring the
2 preparation of a SWPPP, and it is appropriate to exempt these sites from preparation of SWPPPs.

3 9.

4 The Board concludes that it not an unreasonable burden to require the Ports to prepare a
5 SWPPP for all port-owned lands which discharge to the MS4 and are not already covered by
6 another discharge permit. Based on the permit's inventory of types of sites with potential
7 pollutant generating sources (*Muni 0001, Appendix 8*), it was reasonable for Ecology to conclude
8 that the Ports owned most or all of these type of pollution sources, and that the Ports needed to
9 prepare plans to manage stormwater from such port-owned property. The Ports also have fewer
10 requirements under the Phase I Permits than other primary permittees. They will have fewer
11 SWPPPs to prepare than the primary permittees. For SWPPP preparation, they can use some
12 generic conditions for sites with identical uses, such as commercial buildings or parking lots.
13 This will reduce the amount of time it takes to prepare each SWPPP and the cost of preparation.
14 The ports can also work cooperatively with their tenants who share some responsibility for the
15 proper management of stormwater on port-owned properties, which will have the added
16 environmental benefit of educating site operators about stormwater BMPs.

17 10.

18 The Board concludes that Special Condition S6.E.7, which requires the Ports to prepare
19 SWPPPs on all port-owned lands is appropriate and valid. However, the permit should not
20 mandate SWPPP preparation for environmental mitigation sites owned by the Port of Tacoma, as
21

1 the Port of Tacoma has shown that such sites are unlikely to generate untreated stormwater
2 pollution.

3 C: LID (Issue F.1.a & .b)

4 11.

5 The LID issues raised in this appeal involve the question of whether the Phase I Permit fails
6 to meet the required treatment standard of reducing pollutants to the "maximum extent
7 practicable"(MEP) and applying "all known, available and reasonable methods of treatment"
8 (AKART), because the permit does not require more extensive use of LID techniques.

9 12.

10 The Board has previously ruled in this appeal (on summary judgment in the Special
11 Condition S4 proceeding) the CWA requires that NPDES permits issued for discharges from
12 MS4s must reduce pollution to the maximum extent practicable (the "MEP" standard). The
13 Board also concluded the WPCA contains a similar requirement, in that all wastewater discharge
14 permits must incorporate permit conditions requiring all known, available and reasonable
15 methods of treatment to control the discharge of toxicants and protect water quality (the
16 "AKART" standard). Order on Dispositive Motions: S4 issued on April 2, 2008.

17 13.

18 The MEP standard in the CWA provides:

19 Permits for discharges from municipal stormsewers . . . (iii) shall require controls to
20 reduce the discharge of pollutants to the maximum extent practicable, including
21 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.

1
2 33 U.S.C. § 1342(p)(3)(B)(iii).

3 Neither Congress nor the EPA have defined the meaning of MEP in the municipal
4 stormwater context, nor do the parties cite to federal court cases interpreting the MEP standard in
5 the municipal stormwater context.²⁴ The Board, in a prior decision pertaining to the first round
6 of the municipal stormwater permits, stated:

7 The MEP standard is unique under water pollution laws and applicable only to municipal
8 stormwater discharges. MEP reflects the difficulty of addressing stormwater on a system
9 wide basis and the focus of regulating municipal stormwater discharges on prevention
and control. This approach by its nature requires extensive planning and *prioritization* to
achieve the underlying goal of meeting water quality standards.

10 *Save Lake Sammamish v. Ecology*, PCHB Nos. 95-78 & 121, Order Granting Summary
11 Judgment (Dec. 12, 1995) (emphasis added).

12 14.

13 The AKART standard originates in state law, but the Legislature has not explicitly
14 defined the term. Ecology has incorporated the state AKART standard into several of its
15 regulatory programs (e.g., the state surface and ground water quality standards, state waste
16 discharge and NPDES permit programs, sediment management standards, and domestic
17 wastewater facilities regulations), and has defined the AKART standard through rulemaking.
18 In the state's surface water quality standards, "AKART" is defined as "the most current
19 methodology that can be reasonably required for preventing, controlling, or abating the
20

21 ²⁴ The term "practicable" as used in a different section of the CWA, 33 USC § 1311(b)(1)(a), has been defined as
meaning that technology is required unless the costs are "wholly disproportionate" to pollution reduction benefits.
Rybacheck v. U.S. EPA, 904 F.2d 1276, 1289 (9th Cir. 1990).

1 pollutants associated with a discharge.” WAC 173-201A-020. The Washington Supreme Court
2 has further clarified that the “reasonableness” prong of AKART involves both technological and
3 economic feasibility. *Puget Soundkeeper Alliance v. Ecology*, 102 Wn. App. 783, 792-793, 9
4 P.3d 892, 897 (2000).

5 15.

6 In evaluating MEP and AKART for the Phase I Permit, we start with the context that this
7 is a “programmatic” permit that regulates the discharge from MS4 systems on a jurisdiction-wide
8 basis, through the municipalities’ implementation of their Stormwater Management Programs.
9 In several instances the permit requires that through these Stormwater Management Programs,
10 municipalities enact ordinances or orders, or adopt other enforceable documents, to control
11 pollution in stormwater. *See, e.g.*, Condition S5.C.1. The nature and scope of the LID
12 provisions in the Permit, and what can be required through the permit, must therefore be
13 evaluated within the broader context of the SWMP requirements and the programmatic nature of
14 this permit.

15 16.

16 The permit’s reliance on a flow control standard as the primary method to control
17 stormwater runoff from MS4s fails to reduce pollutants to the federal MEP standard, and without
18 greater reliance on LID, does not represent AKART under state law. The permit’s reliance on
19 terms that simply require “removal of obstacles” and actions to “allow” use of LID is insufficient
20 to meet these same federal and state pollution control standards. The testimony presented by
21 PSA, the Utilities, and Ecology’s technical experts leads to the indisputable conclusion that

1 application of LID techniques, at the parcel and subdivision level, is a currently known and
2 ~~existing methodology that is reasonable both technologically and economically to control~~
3 discharges entering into MS4s covered by the Phase I Permit. The great weight of testimony
4 before the Board, from various experts and Ecology witnesses, was that in order to reduce
5 pollution in urban stormwater to the maximum extent practicable, and to apply AKART, it is
6 necessary to aggressively employ LID practices *in combination with* conventional stormwater
7 management methods. Thus, we conclude that under state law, the permit must require greater
8 application of LID techniques, where feasible, in combination with the flow control standard, to
9 meet the AKART standard. The permit must also require the application of LID, where feasible,
10 and conventional engineered stormwater management techniques to remove pollutants from
11 stormwater to the maximum extent practicable in order to comply with federal law. Our
12 recognition that use of LID is to be employed where feasible recognizes that, like all stormwater
13 management tools, it too is subject to limitations in its practical application by site or other
14 constraints. See Findings of Fact 49-51. We do not change the applicable legal standard by use
15 of this term. Accordingly, the permit must be remanded for modification in light of this
16 conclusion.

17 17.

18 Although we conclude that the permit must require municipalities to employ broader use
19 of LID at the parcel and subdivision level, we stop short of concluding that the permit must, at
20 this time, require use of LID at a basin and watershed level. Based on the evidence before the
21 Board, we cannot conclude that the current iteration of the permit must require implementation

1 of LID on a basin or watershed scale in order to meet federal and state water quality standards.

2 ~~Little evidence was presented as to the elements and cost of basin or watershed planning that~~

3 would be necessary to implement LID at this level. Ecology testified that the current Phase I and

4 Phase II permits result in a patchwork of regulation of municipal stormwater, and jurisdictions

5 are at greatly varying degrees of readiness to manage stormwater on basin or watershed levels.

6 The Phase II permittees themselves are at greatly varying degrees of readiness and capacity to

7 undertake LID on a basin and watershed level, and would need to work with Phase I and other

8 jurisdictions to do so. Given these several factors, the Board concludes that a permit condition

9 requiring municipalities to implement LID at a basin or watershed level is not, at this time,

10 reasonable or practicable. This is not to say that no steps can or should be taken at this time.

11 Ecology has identified the particular importance of basin planning in areas which are relatively

12 undeveloped where new development is occurring. The Board concludes that city and county

13 permittees should identify such areas where potential basin planning would assist in reducing the

14 harmful impacts of stormwater discharges upon aquatic resources. This will assist Ecology in

15 readying for the next round of permits when such a requirement may be necessary to meet the

16 state AKART standard and, under federal law, to reduce pollutants in municipal stormwater to

17 MEP. As we discuss in further conclusions, we do not find the Growth Management Act to be

18 an impediment to Ecology requiring greater use of LID than represented by the current permit,

19 including at the basin and watershed planning level. Because the CWA and state water quality

20 laws anticipate that there will be increasingly stringent requirements imposed on those that

21 discharge pollutants to the state's waters, including municipalities, efforts to further basin and

1 watershed planning efforts in order to incorporate the known and available LID techniques
2 should begin in anticipation of the next permit cycle.

3 18.

4 No party challenges Ecology's authority to require LID techniques if they are necessary
5 to meet the AKART or MEP standards. The Board affirmed this point in its summary judgment
6 order. Order on Dispositive Motions: (Phase I Municipal Stormwater Permit) (April 8, 2008).

7 The Board further stated:

8 As pointed out by PSA, it is impossible to untangle stormwater management from land
9 use. Even the commonly accepted water quality technique of requiring a stormwater
10 retention pond at a site takes up significant area in a development, potentially reducing
11 the number of buildable sites and constituting a land use restriction. The challenge, as
12 recognized by both Ecology and PSA, is to most effectively harmonize Ecology's
13 authority over site design and land use standards under the water pollution laws with
14 other state laws that are specifically aimed at addressing land use on a broader scale.

15 *Id.* While Ecology does not dispute that it has the authority to require the use of LID techniques,
16 it was constrained in the full exercise of this authority because of concerns about intruding too
17 far into local government land use planning efforts under the Growth Management Act.

18 Ecology's position is somewhat puzzling, as it has, through various requirements of its
19 Stormwater Management Manual, and the permit itself, already required a number of LID
20 techniques, and has required local government to remove obstacles to use of the same.²⁵ The

21 ²⁵ We also note that, in another context, Ecology has recently adopted rules for the implementation of the Shoreline
Management Act which outline a comprehensive process for preparing or amending shoreline master programs that
requires, among other things, local governments to incorporate the most current, accurate, and complete scientific
and technical information available that is applicable to the issues of concern; prepare a characterization of shoreline
ecological functions, including hydrologic functions; identify water quality and quantity issues relevant to master

1 Board concludes that contrary to the concerns raised by Ecology during permit development, that
2 the GMA is not a barrier to greater use of LID but rather complements the efforts of Ecology to
3 move forward with requiring the use of LID techniques under the Phase I Permit.

4 19.

5 The Legislature enacted the Growth Management Act (GMA), Ch. 36.70A RCW in 1990
6 and 1991, largely "in response to public concerns about rapid population growth and increasing
7 development pressures in the state, especially in the Puget Sound region." *Quadrant Corp. v.*
8 *State Growth Management Hearings Bd.*, 154 Wn.2d 224, 231-232, 110 P.3d 1132, 1136 (2005)
9 (citations deleted). The GMA includes a broad statement of goals to guide local governments in
10 their development and adoption of comprehensive plans including a goal to "Protect the
11 environment and enhance the state's high quality of life, including air and water quality. . ."
12 RCW 36.70A.020(10).

13 20.

14 The GMA mandates that local governments adopt comprehensive plans which include,
15 among other elements; a land use element addressing, "drainage, flooding, and stormwater run-
16 off in the area and nearby jurisdictions" and providing "guidance for corrective action to mitigate
17 or cleanse those discharges that pollute waters of the state, including Puget Sound or waters
18 entering Puget Sound." RCW 36.70A.070(1); *Swinomish Indian Tribal Community v. Skagit*

19
20
21 program provisions; identify important ecological functions that have been degraded through loss of vegetation; and
identify measures to ensure that new development meets vegetation conservation objectives. WAC 173-26-201.

1 Co., 138 Wn. App. 771, 774, 158 P.3d 1179 (2007) (concluding that the GMA mandates that
2 local governments adopt comprehensive plans to protect surface and ground water resources.)

3 21.

4 The state WPCA predated the GMA, with the specific purpose of protecting the waters of
5 the state. RCW 90.48.010. The Legislature tasked Ecology with the job of implementing the
6 WPCA. RCW 90.48.030, .035. Clearly, there is an area of interface and overlap between the
7 GMA and the WPCA.

8 22.

9 The Washington Courts have stated that statutes are to be read together harmoniously
10 whenever possible. "The construction of two statutes shall be made with the assumption that the
11 Legislature does not intend to create an inconsistency." *Peninsula Neighborhood Ass'n v. Dep't*
12 *of Transportation*, 142 Wn.2d 328, 342, 12 P.3d 134 (2000). Further, as the Washington
13 Supreme Court recently stated: "We do not favor repeal by implication, and where potentially
14 conflicting acts can be harmonized, we construe each to maintain the integrity of the other".
15 *Anderson v. State, Dept. of Corrections*, 159 Wash.2d 849, 859, 154 P.3d 220, 225 (2007) (citing
16 *Misterek v. Washington Mineral Products, Inc.*, 85 Wn.2d 166, 168, 531 P.2d 805 (1975)). See
17 also *Kariah Enterprises, LLC v. Ecology*, PCHB No. 05-021, Corrected Order Granting Partial
18 Summary Judgment (Jan. 6, 2005).

19 23.

20 The Board has addressed the interface between the GMA and the WPCA in the *Kariah*
21 decision, cited above. In that case, the appellant challenged Ecology's denial of a CWA Section

1 401 Water Quality Certification for a proposed residential development. The Appellant argued
2 that the Legislature, through GMA, had delegated Ecology's authority over wetlands under the
3 WPCA to local governments. The Board rejected this argument, concluding that neither chapter
4 90.48 RCW nor 36.70A RCW contained any express provisions delegating Ecology's authority
5 over protecting water quality in wetlands to cities and counties. The Board went on to conclude
6 that the WPCA and the GMA should be harmonized, and that:

7 The legislative policy articulated in RCW 36.70A.010 indicates the GMA was directed at
8 addressing uncoordinated and unplanned growth, not at shifting the responsibility to
9 regulate wetlands from the state government to local governments.

9 *Kariah*, CL 33.

10 24.

11 Similarly, in a Shoreline Hearings Board decision addressing the interaction between the
12 Shoreline Management Act (SMA) and the GMA, the Board concluded that Ecology's newly
13 adopted shoreline rules did not improperly usurp the authority of local governments planning
14 under the GMA, despite venturing into land use controls. *Association of Washington Businesses*
15 *v. Ecology*, SHB No. 00-037, Order granting and denying appeal (2001)(Issue 9).²⁶

16
17
18 ²⁶ Although this decision was split on several issues, the holding on the GMA issue was unanimous. We note that
19 even prior to the GMA, the Shoreline Management Act (SMA), Ch. 90.58 RCW, was enacted by initiative of the
20 people in 1971 after recognizing the "ever increasing pressures of additional uses ... being placed on the shorelines
21 necessitate[e] increased coordination in the management and development of the shorelines of the state." RCW
90.58.020. The SMA includes a broad policy to protect the waters of the state and gives preference to uses that
protect water quality and the natural environment. *Id.* The SMA establishes a balance of authority between local
and state government, where cities and counties have the primary responsibility for initiating the planning required
by the Act and administering the regulatory program, and Ecology is tasked with providing assistance to local
governments in the development of their shoreline master programs and "insuring compliance with the policy and
provisions of [the Act]." RCW 90.58.050.

25.

1

2

The Legislature has not expressed any intent, either through the GMA, SMA, or

3

amendments to the WPCA, to redirect Ecology's role in water quality protection to the local

4

governments. The Department of Community, Trade and Economic Development (CTED), the

5

agency charged with implementing and interpreting the GMA, has considered the interaction

6

between the GMA and pre-existing laws not specifically addressed in the GMA. In WAC 365-

7

195-700, CTED's GMA regulations state:

8

For local jurisdictions subject to its terms, the Growth Management Act mandates the development of comprehensive plans and development regulations that meet statutory goals and requirements. These plans and regulations will take their place among existing laws relating to resource management, environmental protection, regulation of land use, utilities and public facilities. Many of these existing laws were neither repealed nor amended by the act.

9

10

11

This circumstance places responsibilities both on local growth management planners and on administrators of preexisting programs to work toward producing a single harmonious body of law.

12

13

WAC 365-195-700 (emphasis added).²⁷

14

15

CTED's regulations further explain that:

16

Overall, the broad sweep of policy contained in the act implies a requirement that all programs at the state level accommodate the outcomes of the growth management process wherever possible. State agencies are rarely concerned solely with the rote application of fixed standards. The exercise of statutory powers, whether in permit functions, grant funding, property acquisition or otherwise, routinely involves such agencies in discretionary decision-making. The discretion they exercise should now take into account the new reality of legislatively mandated local growth management

17

18

19

20

²⁷ Ecology's SMA rules recognize a similar responsibility to harmonize overlapping bodies of law and regulation, which now provide: "It is the responsibility of the local government to assure consistency between the master program and other elements of the comprehensive plan and development regulations." WAC 173-26-191(e).

21

1 programs.

2 WAC 365-195-765(4).

3

26.

4

5 The Phase I permittees are all cities and counties required to plan under the GMA. RCW

6

7 36.70A.040. Their planning must address protection of surface and ground water. RCW

8

9 36.70A.070(1). CTED has identified the Ecology Stormwater Management Manual as best

10

11 available science in regard to stormwater management under the GMA. Ecology, as a state

12

13 agency, must also work toward implementation of the GMA. We conclude that there is no

14

15 conflict between GMA and the WPCA, nor the roles of local governments and Ecology under

16

17 these statutes. These roles support and complement each other and can be harmonized to allow

18

19 water quality efforts to be considered and integrated into the growth management process

20

21 outlined in the GMA.

27.

28 The Board concludes Ecology may, within the bounds of the GMA, require use of LID as

29

30 a water quality management tool. The Board further concludes that the Phase I Permit must be

31

32 modified to require use of LID where feasible, as it is necessary to meet the MEP and AKART

33

34 standards of federal and state law, respectively. RCW 36.70A.070(1) already provides the

35

36 mandate for local governments planning under the GMA to address drainage, flooding, and

37

38 stormwater runoff in order to mitigate or cleanse discharges of water pollution. The Permit,

39

40 including the Manual, merely sets forth the methods to accomplish this requirement.

41

1 D. Existing Development (Issue F.2)

2 28.

3 PSA and the Utilities contend that the permit provisions addressing existing development
4 are inadequate to meet the MEP and AKART standards. Their primary complaint is that both the
5 structural and source control provisions applicable to existing development require only that
6 programs "reduce" impacts from discharges (S5.C.6) or that the permittees "reduce" pollutants in
7 runoff (S5.C.7). They contend that these sections do not set any minimum expectation for the
8 level of effort required and allow the permittees to make de minimus reductions in polluting
9 discharges, and thus constitute impermissible self regulation. *PSA v. Ecology*, PCHB Nos. 02-
10 162, -163, and -164, Order Granting Partial Summary Judgment (June 6, 2003)(CL XVI)(citing
11 *Environmental Defense Center v. Environmental Protection Agency*, at U.S. App. 497, at 57-62
12 (9th Cir., Jan. 14, 2003)).

13 29.

14 The Board agrees the structural stormwater control program, as drafted, amounts to
15 impermissible self-regulation. First, the permit fails to require a minimum level of effort for the
16 permittees in the selection and prioritization of structural stormwater projects, and provides no
17 review and approval role for Ecology. Second, the permit fails to comply with the applicable
18 EPA rule and therefore amounts to impermissible self regulation on this basis as well. 40 C.F.R.
19 122.26(d)(2)(iv) requires that "Proposed management programs shall describe priorities for
20 implementing controls." Condition S5.C.6 merely requires the permittees to develop a program
21 within 12 months and provide Ecology a "list of planned individual projects that are scheduled

1 for implementation” during the term of the permit. S5.C.6.b.i. While initial project selection is
2 presumably subject to the MEP and AKART standard of the permit, Ecology plays no role in
3 ensuring these standards are met, even through simple review of the selected projects. The
4 permit does not contain any requirement that permittees describe their project priorities or
5 require that Ecology review the permittees’ structural stormwater control program. Ecology is
6 not expected to approve the municipalities’ prioritization of projects in relation to the pollution
7 reduction requirements of the permit. While Ecology testified that the permit “implied” there
8 needs to be a prioritization of planned structural stormwater control projects, and a schedule
9 reviewed by Ecology (*Moore testimony*), the permit does not expressly state this requirement and
10 the fact sheet explicitly states that “review and approval by Ecology is not a permit requirement.”
11 *Ex. Muni 0002, p. 35*. Thus, the structural stormwater control program is left entirely to the
12 discretion of the municipalities, not only with respect to which projects they initially select, but
13 also in the timing and manner in which they implement the selected projects. Prioritization of
14 projects is particularly important given that Conditions S5 and S6 are based upon actions taken
15 by the permittees and not outcomes, and this structural stormwater control provision is to
16 “address impacts that are not adequately controlled by the other required actions of the SWMP.”
17 Prioritization helps to ensure that the sites where the permittees choose to “act” are meaningful
18 in providing environmental protection. It can also assist to engage the public as a partner in
19 reducing pollutants in discharges and the overall volume of discharges. A community, for
20 example, could request a permittee to focus a project in an area which discharges near shellfish
21 beds. While the Board recognizes that local funding will influence the selection of planned

1 projects and that municipalities must therefore retain local control in the selection process, we
2 conclude that the permit must require permittees to describe the prioritization of their selected
3 projects in order to comply with federal rules, demonstrate compliance with the MEP and
4 AKART standards, and facilitate oversight by Ecology to ensure the legal standards of the permit
5 are applied on a programmatic level. *See Save Lake Sammamish v. Ecology*, PCHB Nos. 95-78
6 & -121, Order Granting Summary Judgment (Dec. 12, 1995).

7 30.

8 In contrast to the structural stormwater control program provisions, the source control
9 program for existing development requires a more rigorous program to reduce pollutants in
10 runoff from areas that discharge to MS4s owned or operated by the permittee, and does not
11 suffer from the same flaws as the structural stormwater control program. The permit requires
12 that Ecology must review and approve the source control program. S5.C.7.b.i. Therefore, the
13 Board concludes that the source control program as drafted meets the MEP and AKART
14 standard.

15 E. Water quality violations (Issues F.1.a., F.2.a., and F.4)

16 PSA and PSE argue, through several different issues, that the permit fails to prevent
17 discharges that violate water quality. *See* F.1.a (permit fails to require LID techniques which
18 results in discharges that violate water quality); F.2.a (permit allows discharges from existing
19 development that violate water quality); F.4 (Permit as a whole allows discharges that violate
20 water quality standards; Prohibition on violations of water quality standards contained in Special
21 Condition S4 conflicts with other provisions of the permit). The Board concludes that the

1 permit, with the amendments directed by the Board to meet AKART and MEP, and with the
2 amendments directed by the Board to the S4.F compliance process,²⁸ is adequately conditioned
3 to comply with state law.

4 F. Timelines for Compliance (Issue F.5)

5 31.

6 The CWA sets out a number of deadlines related to NPDES permits for industrial and
7 large municipal dischargers, including a deadline for EPA to establish regulations setting forth
8 permit application requirements, a deadline for filing permit applications, and a deadline for
9 EPA's approval or denial of the permits. 33 U.S.C. § 1342 (p)(4)(A). The final sentence in 33
10 U.S.C. § 1342 (p)(4)(A) states: "Any such permit shall provide for compliance as expeditiously
11 as practicable, but in no event later than 3 years after the date of issuance of such permit." PSA
12 contends that the Phase I Permit violates this provision.

13 32.

14 The Board has addressed this specific sentence before, in a case involving a challenge to
15 a renewal of the Industrial Stormwater General NPDES Permit. *PSA v. Ecology*, PCHB Nos. 02-
16 162, -163, -164, Order Granting Partial Summary Judgment (June 6, 2003). In that case,
17 involving industrial stormwater discharges, the Board concluded that the reference to
18 "compliance" in the sentence referred to compliance with the permit requirement contained in 33
19 U.S.C. § 1342 (p)(3)(A)(the provision pertaining to industrial stormwater discharges). *PSA* at
20 CL XXI. Applying that same analysis to this case, involving municipal stormwater discharges,

21 ²⁸ These modifications are ordered in the Board's Findings, Conclusions and Order on S4, issued on August 7, 2008.

1 the reference to "compliance" is to 33 U.S.C. § 1342 (p)(3)(B)(the provision establishing the
2 MEP standard for municipal stormwater discharges). Therefore, the question becomes whether
3 the permit allows any actions to occur later than three years after the date of issuance of the
4 permit that are necessary to reduce discharges of pollutants to the maximum extent practicable.

5 33.

6 Several of the conditions of the Phase I Permit allow actions required by the permit to
7 occur more than three years after the date of issuance of the permit. PSA and the Utilities
8 contend that this establishes that the permit violates 33 U.S.C. § 1342 (p)(4)(A). However, this
9 fact alone does not establish a violation of 33 U.S.C. § 1342 (p)(4). PSA and the Utilities, as the
10 parties with the burden of proof, must bring forth evidence establishing that earlier compliance
11 with one of the permit provisions currently allowing implementation outside of the three year
12 statutory window is necessary to meet the MEP standard. Ecology has developed a
13 programmatic permit with multiple components to be implemented throughout the permit cycle
14 which, collectively, represent MEP and AKART. To read the statute as suggested by PSA and
15 the Utilities would inappropriately limit Ecology's ability to include within the permit additional
16 conditions or requirements that may not be practicable within three years but which are
17 reasonable within a longer time frame. The Board concludes that PSA and the Utilities have
18 failed to meet their burden on this issue. The record does not contain sufficient evidence on any
19 specific permit condition to convince the Board that the permit violates 33 U.S.C. § 1342
20 (p)(4)(A).

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Any Finding of Fact deemed to be a Conclusion of Law is hereby adopted as such.

Having so found and concluded, the Board enters the following

ORDER

Having concluded that portions of the Phase I Permit are invalid, the Board remands the Phase I Permit to Ecology pursuant to WAC 371-08-540, for modifications consistent with this opinion.

1. Ecology shall modify Special Condition S6.E.7 as follows:

7. Source Control in existing Developed Areas

The SWMP shall include the development and implementation of one or more Stormwater Pollution Prevention Plans (SWPPPs). A SWPPP is a documented plan to identify and implement measures to prevent and control the contamination of discharges of stormwater to surface or ground water. SWPPP(s) shall be prepared and implemented for all Port-owned lands, **except environmental mitigation sites owned by the Port of Tacoma**, that are not covered by either a General Permit or an individual NPDES permit issued by Ecology that covers stormwater discharges.

(modified language is in bold and underlined)

2. With respect to the use of LID, in addition to the specific modifications identified in

No. 1 above, Ecology shall also modify the permit consistent with this opinion as follows :

a. Modify Permit Condition S5.C.5.b to read as follows:

iii. The program must ~~((allow))~~ **require** non-structural preventive actions and source reduction approaches ~~((such as))~~, **including** Low Impact Development Techniques (LID), to minimize the creation of impervious surfaces, and measures to minimize the disturbance of soils and vegetation **where feasible**.

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- b. Require permittees to identify barriers to implementation of LID and, in each annual report, identify actions taken to remove barriers identified.
- c. Require permittees to adopt enforceable ordinances that require use of LID techniques where feasible in conjunction with conventional stormwater management methods.
- d. Require permittees to address in their annual report to Ecology under the Phase I Permit, information on the extent to which basin planning is being conducted in their jurisdiction, either voluntarily, or pursuant to GMA or any other requirement.
- e. Require permittees to identify, prior to the next permit cycle or renewal, areas for potential basin or watershed planning that can incorporate development strategies as a water quality management tool to protect aquatic resources.

3. Ecology shall modify Special Condition S5.C.6.b.ii, related to structural Stormwater control programs minimum performance measures, to require that permittees describe the prioritization of their selected projects as required by federal rules, in order to facilitate oversight by Ecology to ensure that the MEP and AKART standards are met on a programmatic level.

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SO-ORDERED this 7th day of August, 2008.

POLLUTION CONTROL HEARINGS BOARD

Kathleen D. Mix
Kathleen D. Mix, Chair

see concurrence/dissent
William H. Lynch, Member

Andrea M. Doyle
Andrea McNamara Doyle, Member

Kym B
Kay M. Brown, Presiding
Administrative Appeals Judge

Received
March 9, 2011
Commission on
State Mandates

POLLUTION CONTROL HEARINGS BOARD
STATE OF WASHINGTON

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PUGET SOUNDKEEPER ALLIANCE;
PEOPLE FOR PUGET SOUND; PIERCE
COUNTY PUBLIC WORKS AND
UTILITIES DEPARTMENT; CITY OF
TACOMA; PORT OF SEATTLE;
SNOHOMISH COUNTY; CLARK
COUNTY; PACIFICORP; and PUGET
SOUND ENERGY,

Appellants,

v.

STATE OF WASHINGTON,
DEPARTMENT OF ECOLOGY,

Respondent,

CITY OF SEATTLE; KING COUNTY;
PORT OF TACOMA; PACIFICORP;
PUGET SOUND ENERGY; STATE OF
WASHINGTON, DEPARTMENT OF
TRANSPORTATION,

Intervenors.

FINDINGS OF FACT, CONCLUSIONS OF
LAW, AND ORDER

PHASE I

PCHB NOS. 07-021, 07-026, 07-027
07-028, 07-029, 0-030,
07-037

CONCURRENCE AND DISSENT

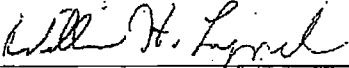
I write separately for the purpose of disagreeing with my colleagues on one portion of the decision. I would allow Pierce County to substitute its monitoring program for the monitoring required under Special Condition S8 (S8). Pierce County provided testimony that it was unable to afford both monitoring programs. Pierce County has established an extensive monitoring program that will allow the County to assess the impacts of stormwater discharges in the

1 receiving water over an extended period of time. Portions of the monitoring program include
2 continuous monitoring, so that a more accurate assessment can be made of the impact of
3 development on the physical channel conditions and aquatic organisms. Ecology has recognized
4 the importance of this type of monitoring in its 2004 report to the Legislature. Ecology's efforts
5 to collect data regarding the effectiveness of BMPs would not significantly suffer from the
6 absence of BMP effectiveness data from Pierce County. To the contrary, I believe that Pierce
7 County's monitoring program would yield information that would be quite valuable to Ecology
8 and assist in the development of future phases of the permit. The one modification I would
9 require to Pierce County's monitoring regime is for Pierce County to test for the full range of
10 chemical pollutants required of other permittees under S8.

11 For this reason, I concur with the remainder of the decision but respectfully dissent
12 regarding Pierce County's monitoring program.

13
14 Dated this 7th day of August 2008.

15
16 **POLLUTION CONTROL HEARINGS BOARD**

17
18 
19 William H. Lynch, Member

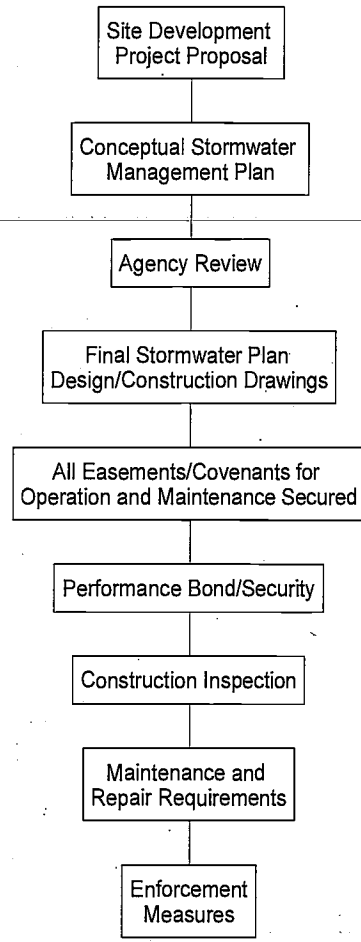
ATTACHMENT 56

Model Post-Construction Stormwater Runoff Control Ordinance

This model ordinance is intended to be a tool for communities who are currently or may soon be responsible for meeting the stormwater management requirements of the National Pollutant Discharge Elimination System (NPDES) regulations. The goal of providing this model ordinance is to assist communities in creating their own stormwater management ordinance. In designing a model stormwater ordinance for a national audience, we purposely avoided creating too complex an ordinance, and instead tried to include suggestions for standard language and concepts that we believe a good stormwater management ordinance should contain. This ordinance should not be construed as an exhaustive listing of all the language needed for a local ordinance, but represents a good base that communities can build upon and customize to be consistent with the staff resources available in their locality. We recommend that you use this document in conjunction with other sources, such as existing ordinances created by other stormwater management programs in your geographic region that have objectives similar to your program's.

Feel free to download and alter any and all portions of this document to meet your needs. Throughout the ordinance, there are sections in which you must insert the name of the agency that you have given regulatory power over stormwater management issues in order to customize it. These sections are denoted by **bold** text placed in brackets. By using this ordinance and customizing these sections, you can create a viable local ordinance with minimal editing.

Italicized text with this symbol ☞ should be interpreted as comments, instructions, or information to assist the ordinance writer. This text *should not appear* in your final ordinance.



Flow Chart Illustrating the Stormwater
Permit Review Process

Model Ordinance for the Control of Post Construction Stormwater Runoff

Table of Contents

Section 1. General Provisions

Section 2. Definitions

Section 3. Permit Procedures and Requirements

Section 4. Waivers

Section 5. General Performance Criteria for Stormwater Management

Section 6. Specific Performance Criteria for Stormwater Treatment Practices

Section 7. Requirements for Stormwater Management Plan Approval

Section 8. Construction Inspection Provisions

Section 9. Maintenance and Repair Requirements

Section 10. Enforcement and Violations

Section 1. General Provisions

1.1. Findings of Fact

It is hereby determined that:

Land development projects and associated increases in impervious cover alter the hydrologic response of local watersheds and increase stormwater runoff rates and volumes, flooding, stream channel erosion, and sediment transport and deposition;

This stormwater runoff contributes to increased quantities of water-borne pollutants, and; Stormwater runoff, soil erosion and nonpoint source pollution can be controlled and minimized through the regulation of stormwater runoff from development sites.

Therefore, the **(jurisdictional stormwater authority)** establishes this set of water quality and quantity policies applicable to all surface waters to provide reasonable guidance for the regulation of stormwater runoff for the purpose of protecting local water resources from degradation. It is determined that the regulation of stormwater runoff discharges from land development projects and other construction activities in order to control and minimize increases in stormwater runoff rates and volumes, soil erosion, stream channel erosion, and nonpoint source pollution associated with stormwater runoff is in the public interest and will prevent threats to public health and safety.

1.2. Purpose

The purpose of this ordinance is to establish minimum stormwater management requirements and controls to protect and safeguard the general health, safety, and welfare of the public residing in

watersheds within this jurisdiction. This ordinance seeks to meet that purpose through the following objectives:

- (1). minimize increases in stormwater runoff from any development in order to reduce flooding, siltation, increases in stream temperature, and streambank erosion and maintain the integrity of stream channels;
- (2). minimize increases in nonpoint source pollution caused by stormwater runoff from development which would otherwise degrade local water quality
- (3). minimize the total annual volume of surface water runoff which flows from any specific site during and following development to not exceed the pre-development hydrologic regime to the maximum extent practicable.
- (4). reduce stormwater runoff rates and volumes, soil erosion and nonpoint source pollution, wherever possible, through stormwater management controls and to ensure that these management controls are properly maintained and pose no threat to public safety.

☞ *The above list is a general set of objectives to reduce the impact of stormwater on receiving waters. The local stormwater authority may wish to set some more specific objectives, based on priority water quality and habitat problems (e.g., to reduce phosphorus loads being delivered to recreational lakes, to sustain a class X trout fishery)*

1.3. Applicability

This ordinance shall be applicable to all subdivision or site plan applications, unless eligible for an exemption or granted a waiver by the **(jurisdictional stormwater authority)** under the specifications of Section 4 of this ordinance. The ordinance also applies to land development activities that are smaller than the minimum applicability criteria if such activities are part of a larger common plan of development that meets the following applicability criteria, even though multiple separate and distinct land development activities may take place at different times on different schedules. In addition, all plans must also be reviewed by local environmental protection officials to ensure that established water quality standards will be maintained during and after development of the site and that post construction runoff levels are consistent with any local and regional watershed plans.

☞ *The size of the site development to which post-construction stormwater management runoff control applies varies but many communities opt for a size limit of 5000 square feet or more. For sites less than 5000 square feet, local officials may wish to grant an exemption as long as the amount of impervious cover created does not exceed 1000 square feet.*

To prevent the adverse impacts of stormwater runoff, the **(jurisdictional stormwater authority)** has developed a set of performance standards that must be met at new development sites. These standards apply to any construction activity disturbing ___ or more square feet of land. The following activities may be exempt from these stormwater performance criteria:

1. Any logging and agricultural activity which is consistent with an approved soil conservation plan or a timber management plan prepared or approved by the

- (appropriate agency), as applicable.
2. Additions or modifications to existing single family structures
 3. Developments that do not disturb more than ____ square feet of land, provided they are not part of a larger common development plan;
 4. Repairs to any stormwater treatment practice deemed necessary by **(jurisdictional stormwater authority)**.

When a site development plan is submitted that qualifies as a redevelopment project as defined in Section 2 of this ordinance, decisions on permitting and on-site stormwater requirements shall be governed by special stormwater sizing criteria found in the current stormwater design manual. This criteria is dependent on the amount of impervious area created by the redevelopment and its impact on water quality. Final authorization of all redevelopment projects will be determined after a review by **(jurisdictional stormwater authority)**.

There are a number of decisions to be made by local communities when addressing the issue of redevelopment and stormwater treatment. The first is defining exactly what qualifies as redevelopment. The definition in Section 2 is from the current Maryland Stormwater Management regulations, and uses the square foot size of the project and its land use classification to establish the definition of a redevelopment project. The second decision involves to what level of stormwater management standards redevelopment projects will be held. Providing cost effective stormwater treatment at redevelopment sites is often a difficult task, and these projects may be given reduced criteria to meet to allow for site constraints. The State of Maryland currently requires that proposed redevelopment project designs include either at least a 20 percent reduction in existing site impervious area, management of at least 20 % of the water quality volume, or some combination of both.

1.4. Compatibility with Other Permit and Ordinance Requirements

This ordinance is not intended to interfere with, abrogate, or annul any other ordinance, rule or regulation, statute, or other provision of law. The requirements of this ordinance should be considered minimum requirements, and where any provision of this ordinance imposes restrictions different from those imposed by any other ordinance, rule or regulation, or other provision of law, whichever provisions are more restrictive or impose higher protective standards for human health or the environment shall be considered to take precedence.

1.5. Severability

If the provisions of any article, section, subsection, paragraph, subdivision or clause of this ordinance shall be judged invalid by a court of competent jurisdiction, such order of judgment shall not affect or invalidate the remainder of any article, section, subsection, paragraph, subdivision or clause of this ordinance.

1.6. Development of a Stormwater Design Manual

The **(jurisdictional stormwater authority)** may furnish additional policy, criteria and information including specifications and standards, for the proper implementation of the

requirements of this ordinance and may provide such information in the form of a Stormwater Design Manual.

This manual will include a list of acceptable stormwater treatment practices, including the specific design criteria and operation and maintenance requirements for each stormwater practice. The manual may be updated and expanded from time to time, at the discretion of the local review authority, based on improvements in engineering, science, monitoring and local maintenance experience. Stormwater treatment practices that are designed and constructed in accordance with these design and sizing criteria will be presumed to meet the minimum water quality performance standards.

☞ *Local communities will need to select the minimum water quality performance standards (e.g., 80% TSS, 40% P) they will require for stormwater treatment practices and place these in their design manual. The 80% removal goal for total suspended solids (TSS) is a management measure developed by EPA as part of the Coastal Zone Act Reauthorization Amendments of 1990. It was selected by EPA for the following factors: (1) removal of 80% is assumed to control heavy metals, phosphorus, and other pollutants; (2) a number of states including DE, FL, TX, MD, and MA require/recommend TSS removal of 80% or greater for new development; and (3) data show that certain structural controls, when properly designed and maintained, can meet this performance level. Further discussion of water quality standards for stormwater management measures can be found in the CZARA Coastal Zone 6217(g) management measures document entitled "Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters" (US EPA, 1993).*

☞ *There are a number of good stormwater design manuals available around the country that communities may wish to refer to in creating their own local manual. Two examples are the new Maryland Department of the Environment 2000 Maryland Stormwater Design Manual Volumes I & II available online at <http://www.mde.state.md.us/environment/wma/stormwatermanual/> and the Stormwater Management Manual for Western Washington, Volumes 1-5 available online at <http://www.ecv.wa.gov/programs/wq/stormwater/manual.html>.*

☞ *Local communities may also wish to consult a new resource available on the Internet called the **Stormwater Managers Resource Center (SMRC)**. This site is dedicated to providing information to stormwater management program managers in Phase II communities to assist in meeting the requirements of the new National Pollutant Discharge Elimination System Phase II regulations. Among the resources available at the website will be a section devoted to supplying guidance on how to build a stormwater manual, including sizing and design criteria. The SMRC website and the manual-builder resources are located at www.stormwatercenter.net.*

Section 2. Definitions

"Accelerated Erosion" means erosion caused by development activities that exceeds the natural processes by which the surface of the land is worn away by the action of water, wind, or chemical action.

“Applicant” means a property owner or agent of a property owner who has filed an application for a stormwater management permit.

“Building” means any structure, either temporary or permanent, having walls and a roof, designed for the shelter of any person, animal, or property, and occupying more than 100 square feet of area.

“Channel” means a natural or artificial watercourse with a definite bed and banks that conducts continuously or periodically flowing water.

“Dedication” means the deliberate appropriation of property by its owner for general public use.

“Detention” means the temporary storage of storm runoff in a stormwater management practice with the goals of controlling peak discharge rates and providing gravity settling of pollutants.

“Detention Facility” means a detention basin or alternative structure designed for the purpose of temporary storage of stream flow or surface runoff and gradual release of stored water at controlled rates.

“Developer” means a person who undertakes land disturbance activities.

“Drainage Easement” means a legal right granted by a landowner to a grantee allowing the use of private land for stormwater management purposes.

“Erosion and Sediment Control Plan” means a plan that is designed to minimize the accelerated erosion and sediment runoff at a site during construction activities.

“Fee in Lieu” means a payment of money in place of meeting all or part of the storm water performance standards required by this ordinance.

“Hotspot” means an area where land use or activities generate highly contaminated runoff, with concentrations of pollutants in excess of those typically found in stormwater.

“Hydrologic Soil Group (HSG)” means a Natural Resource Conservation Service classification system in which soils are categorized into four runoff potential groups. The groups range from A soils, with high permeability and little runoff production, to D soils, which have low permeability rates and produce much more runoff.

“Impervious Cover” means those surfaces that cannot effectively infiltrate rainfall (e.g., building rooftops, pavement, sidewalks, driveways, etc).

“Industrial Stormwater Permit” means an National Pollutant Discharge Elimination System permit issued to a commercial industry or group of industries which regulates the pollutant levels associated with industrial stormwater discharges or specifies on-site pollution control strategies.

“Infiltration” means the process of percolating stormwater into the subsoil.

“Infiltration Facility” means any structure or device designed to infiltrate retained water to the subsurface. These facilities may be above grade or below grade.

“Jurisdictional Wetland” means an area that is inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions, commonly known as hydrophytic vegetation.

“Land Disturbance Activity” means any activity which changes the volume or peak flow discharge rate of rainfall runoff from the land surface. This may include the grading, digging, cutting, scraping, or excavating of soil, placement of fill materials, paving, construction,

substantial removal of vegetation,, or any activity which bares soil or rock or involves the diversion or piping of any natural or man-made watercourse.

“Landowner” means the legal or beneficial owner of land, including those holding the right to purchase or lease the land, or any other person holding proprietary rights in the land.

“Maintenance Agreement” means a legally recorded document that acts as a property deed restriction, and which provides for long-term maintenance of storm water management practices.

“Nonpoint Source Pollution” means pollution from any source other than from any discernible, confined, and discrete conveyances, and shall include, but not be limited to, pollutants from agricultural, silvicultural, mining, construction, subsurface disposal and urban runoff sources.

“Offset Fee” means a monetary compensation paid to a local government for failure to meet pollutant load reduction targets.

“Off-Site Facility” means a stormwater management measure located outside the subject property boundary described in the permit application for land development activity.

“On-Site Facility” means a stormwater management measure located within the subject property boundary described in the permit application for land development activity.

“Recharge” means the replenishment of underground water reserves.

“Redevelopment” means any construction, alteration or improvement exceeding ___ square feet in areas where existing land use is high density commercial, industrial, institutional or multi-family residential.

“Stop Work Order” means an order issued which requires that all construction activity on a site be stopped.

“Storm Water Management” means the use of structural or non-structural practices that are designed to reduce storm water runoff pollutant loads, discharge volumes, peak flow discharge rates and detrimental changes in stream temperature that affect water quality and habitat.

“Storm Water Retrofit” means a stormwater management practice designed for an existing development site that previously had either no stormwater management practice in place or a practice inadequate to meet the stormwater management requirements of the site.

“Stormwater Runoff” means flow on the surface of the ground, resulting from precipitation.

“Stormwater Treatment Practices (STPs)” means measures, either structural or nonstructural, that are determined to be the most effective, practical means of preventing or reducing point source or nonpoint source pollution inputs to stormwater runoff and water bodies.

“Water Quality Volume (WQ_v)” means the storage needed to capture and treat 90% of the average annual stormwater runoff volume. Numerically (WQ_v) will vary as a function of long term rainfall statistical data.

“Watercourse” means a permanent or intermittent stream or other body of water, either natural or man-made, which gathers or carries surface water.

Section 3. Permit Procedures and Requirements

3.1. Permit Required.

No land owner or land operator shall receive any of the building, grading or other land development permits required for land disturbance activities without first meeting the requirements of this ordinance prior to commencing the proposed activity.

➤ *The intent is to ensure that no activities that disturb the land are issued permits prior to review and approval of the stormwater management plan. Communities may elect to issue a stormwater management permit separate of any other land development permits required, or, as in this ordinance, tie the issuing of construction permits to the approval of a final stormwater management plan.*

3.2. Application Requirements

Unless specifically excluded by this ordinance, any land owner or operator desiring a permit for a land disturbance activity shall submit to the **(jurisdictional stormwater authority)** a permit application on a form provided for that purpose.

Unless otherwise excepted by this ordinance, a permit application must be accompanied by the following in order that the permit application be considered: a stormwater management concept plan; a maintenance agreement; and a non-refundable permit review fee.

The stormwater management plan shall be prepared to meet the requirements of Sec. 5 of this ordinance, the maintenance agreement shall be prepared to meet the requirements of Sec. 9 of this ordinance, and fees shall be those established by the **(jurisdictional stormwater authority)**.

3.3. Application Review Fees

The fee for review of any land development application shall be based on the amount of land to be disturbed at the site, and the fee structure shall be established by the **(jurisdictional stormwater authority)**. All of the monetary contributions shall be credited to a local budgetary category to support local plan review, inspection and program administration, and shall be made prior to the issuance of any building permit for the development.

➤ *Local communities can use these review fees to raise funds for staff and resources to further their stormwater management programs.*

3.4. Application Procedure

1. Applications for land disturbance activity permits must be filed with the **(appropriate review agency)** on any regular business day.
2. A copy of this permit application shall be forwarded to **(jurisdictional stormwater authority)** for review
3. Permit applications shall include the following: two copies of the stormwater management concept plan, two copies of the maintenance agreement, and any required review fees.
4. Within __ business days of the receipt of a complete permit application, including all documents as required by this ordinance, the **(jurisdictional stormwater authority)** shall inform the applicant whether the application, plan and maintenance agreement are approved or disapproved.

Local officials will need to decide the appropriate time frame for review of an application. This will often be determined by the staff available for permit review and for an inspection of sites undergoing construction.

5. If the permit application, stormwater management plan or maintenance agreement are disapproved, the applicant may revise the stormwater management plan or agreement. If additional information is submitted, the **(jurisdictional stormwater authority)** shall have ___ business days from the date the additional information is received to inform the applicant that the plan and maintenance agreement are either approved or disapproved.
6. If the permit application, final stormwater management plan and maintenance agreement are approved by the **(jurisdictional stormwater authority)**, all appropriate land disturbance activity permits shall be issued.

3.5. Permit Duration

Permits issued under this section shall be valid from the date of issuance through the date the **(jurisdictional stormwater authority)** notifies the permitholder that all stormwater management practices have passed the final inspection required under permit condition.

Section 4. Waivers to Stormwater Management Requirements

4.1. Waivers for Providing Stormwater Management

Every applicant shall provide for stormwater management as required by this ordinance, unless a written request is filed to waive this requirement. Requests to waive the stormwater management plan requirements shall be submitted to the **(jurisdictional stormwater authority)** for approval.

The minimum requirements for stormwater management may be waived in whole or in part upon written request of the applicant, provided that at least one of the following conditions applies:

1. It can be demonstrated that the proposed development is not likely to impair attainment of the objectives of this ordinance.
2. Alternative minimum requirements for on-site management of stormwater discharges have been established in a stormwater management plan that has been approved by the **(jurisdictional stormwater authority)** and the implementation of the plan is required by local ordinance.
3. Provisions are made to manage stormwater by an off-site facility. The off-site facility is required to be in place, to be designed and adequately sized to provide a level of stormwater control that is equal to or greater than that which would be afforded by on-site practices and there is a legally obligated entity responsible for long-term operation and maintenance of the stormwater practice.
4. The **(jurisdictional stormwater authority)** finds that meeting the minimum on-site management requirements is not feasible due to the natural or existing physical characteristics of a site.

5. Non-structural practices will be used on the site that reduce: a) the generation of stormwater from the site, b) the size and cost of stormwater storage and c) the pollutants generated at the site. These non-structural practices are explained in detail in the current design manual and the amount of credit available for using such practices shall be determined by the **(jurisdictional stormwater authority)**.

In instances where one of the conditions above applies, the **(jurisdictional stormwater authority)** may grant a waiver from strict compliance with these stormwater management provisions, as long as acceptable mitigation measures are provided. However, to be eligible for a variance, the applicant must demonstrate to the satisfaction of the **(jurisdictional stormwater authority)** that the variance will not result in the following impacts to downstream waterways:

- Deterioration of existing culverts, bridges, dams, and other structures;
- Degradation of biological functions or habitat;
- Accelerated streambank or streambed erosion or siltation;
- Increased threat of flood damage to public health, life, property .

Furthermore, where compliance with minimum requirements for stormwater management is waived, the applicant will satisfy the minimum requirements by meeting one of the mitigation measures selected by the jurisdictional stormwater authority. Mitigation measures may include, but are not limited to, the following:

- The purchase and donation of privately owned lands, or the grant of an easement to be dedicated for preservation and/or reforestation. These lands should be located adjacent to the stream corridor in order to provide permanent buffer areas to protect water quality and aquatic habitat,
- The creation of a stormwater management facility or other drainage improvements on previously developed properties, public or private, that currently lack stormwater management facilities designed and constructed in accordance with the purposes and standards of this ordinance,
- Monetary contributions (Fee-in-Lieu) to fund stormwater management activities such as research and studies (e.g., regional wetland delineation studies, stream monitoring studies for water quality and macroinvertebrates, stream flow monitoring, threatened and endangered species studies, hydrologic studies, and monitoring of stormwater management practices.

4.2. Fee in Lieu of Stormwater Management Practices.

Where the **(jurisdictional stormwater authority)** waives all or part of the minimum stormwater management requirements, or where the waiver is based on the provision of adequate stormwater facilities provided downstream of the proposed development, the applicant shall be required to pay a fee in an amount as determined by the **(jurisdictional stormwater authority)**.

When an applicant obtains a waiver of the required stormwater management, the monetary contribution required shall be in accordance with a fee schedule (unless the developer and the

stormwater authority agree on a greater alternate contribution) established by the **(jurisdictional stormwater authority)**, and based on the cubic feet of storage required for stormwater management of the development in question. All of the monetary contributions shall be credited to an appropriate capital improvements program project, and shall be made by the developer prior to the issuance of any building permit for the development.

4.3. Dedication of land

In lieu of a monetary contribution, an applicant may obtain a waiver of the required stormwater management by entering into an agreement with the **(jurisdictional stormwater authority)** for the granting of an easement or the dedication of land by the applicant, to be used for the construction of an off-site stormwater management facility. The agreement shall be entered into by the applicant and the **(jurisdictional stormwater authority)** prior to the recording of plats or, if no record plat is required, prior to the issuance of the building permit.

Section 5. General Performance Criteria for Stormwater Management

Unless judged by the **(jurisdictional stormwater authority)** to be exempt or granted a waiver, the following performance criteria shall be addressed for stormwater management at all sites:

- (A). All site designs shall establish stormwater management practices to control the peak flow rates of stormwater discharge associated with specified design storms and reduce the generation of stormwater. These practices should seek to utilize pervious areas for stormwater treatment and to infiltrate stormwater runoff from driveways, sidewalks, rooftops, parking lots, and landscaped areas to the maximum extent practical to provide treatment for both water quality and quantity.

☞ *There are several sources of climatological references that can be consulted to find the rainfall depths for the appropriate design storm intervals (1, 10, 25, and 100 year). The NOAA National Climatological Data Center has a "Summary of the Day" database that can provide rainfall numbers for most major cities and airports in the country. Another possible source is the Urban Hydrology for Small Watersheds. TR-55 (Technical Release 55) published by the Engineering Division, United States Natural Resource Conservation Service (formerly known as the Soil Conservation Service) United States Department of Agriculture, June 1986.*

- (B). All stormwater runoff generated from new development shall not discharge untreated stormwater directly into a jurisdictional wetland or local water body without adequate treatment. Where such discharges are proposed, the impact of the proposal on wetland functional values shall be assessed using a method acceptable to the **(jurisdictional stormwater authority)**. In no case shall the impact on functional values be any less than allowed by the Army Corp of Engineers (ACE) or the **(Appropriate State Agency)** responsible for natural resources.
- (C). Annual groundwater recharge rates shall be maintained, by promoting infiltration through the use of structural and non-structural methods. At a minimum, annual recharge from the

post development site shall mimic the annual recharge from pre-development site conditions.

➤ *Recharge is a relatively new stormwater criteria, and has been implemented so far in the Massachusetts coastal zone and in Maryland. The recharge criteria requires considerable effort to use existing pervious areas for stormwater treatment and infiltration, which means that it must be considered very early in the site design process when basic decisions about layout and vegetative cover are made. For additional discussion of recharge criteria, consult the manual builder on the Stormwater Managers Resource Center (SMRC) at www.stormwatercenter.net.*

- (D). For new development, structural stormwater treatment practices shall be designed to remove ___% of the average annual post development total suspended solids load (TSS). It is presumed that a STP complies with this performance standard if it is:
- sized to capture the prescribed water quality volume (WQ_v).
 - designed according to the specific performance criteria outlined in the local stormwater design manual,
 - constructed properly, and
 - maintained regularly.

➤ *For post construction stormwater runoff, the ability of stormwater management programs to meet federal guidelines under the NPDES regulations will become increasingly important. A local government seeking to manage runoff to achieve water quality standards has a number of options for reaching their goal. The options are listed below, from the most typical standard stormwater quality practice to more advanced program options. Each option has an associated level of effort for the management of stormwater, and the likelihood of realizing water quality treatment goals depends on the option a local government selects. Local governments should assess the option they wish to select in light of new Phase II regulations and the current ability of their stormwater management staff to meet more extensive local/state staff review and inspection requirements.*

Option 1. Require Stormwater Treatment Practices for Stormwater Quality

Many current stormwater programs simply require that the developer install stormwater treatment practices, but do not specify a target for specific pollutant reduction performance. These programs simply require that a standard volume of stormwater be treated (e.g., a half-inch of runoff). Many of these programs also have generous waiver and exemption provisions, so that as much as 25% of all new development can avoid criteria for water quality. Unless the target removal goals are very low, these communities cannot expect their current programs to eliminate net additional pollutants associated with future development.

(See City of Knoxville, TN Stormwater and Street Ordinance, at <http://www.ci.knoxville.tn.us/>)

Option 2. Institute More Rigorous Design Standards for Stormwater Practices.

A number of communities have improved their stormwater programs by strengthening their design standards for stormwater practices. This has involved narrowing the list of acceptable practices to those with a proven ability to remove particular pollutants, increasing the volume of runoff that is treated by each practice (e.g. treat first 1" of stormwater runoff), clamping down on waivers and exemptions (or requiring a fee-in-lieu), and requiring design features that reduce maintenance problems.

The advantage of this program option is that compliance can be presumed as long as designers follow the design rules. It does require a good stormwater manual and more extensive local/state staff review and training. It can achieve significant reduction for some pollutants, such as sediment and nutrients. The disadvantage of the program option is that current stormwater technology may not be effective enough for some pollutants (e.g., bacteria), or capable of reducing the net additional load for high levels from future development.

(For an example see Maryland Department of the Environment 2000 Maryland Stormwater Design Manual available at <http://www.mde.state.md.us/environment/wma/stormwatermanual/>. The states of New York and Vermont are in the process of adopting similar design standards for their manuals).

Option 3. Require On-Site Load Calculation

A handful of communities have adopted an approach whereby the design engineer must calculate pre- and post- development loads for a particular pollutant, and then design a system of practices to meet a load reduction target, based on STP removal rates. Phosphorus has been used in most cases, and the load reduction target varies. This option results in more directed design geared more specifically to the pollutant of concern.

The on-site load calculation option has several disadvantages. First, designers can select to use math modeling to their advantage to reduce costs and come into compliance. Second, technical data to support the program option are limited to just a few parameters, such as phosphorus, nitrogen and sediment. Third, the removal rates for the stormwater practices seldom account for factors where pollutant load removal is compromised, and tend to be optimistic. Lastly, this program option is very intensive in terms of local review and compliance, and requires more staffing to implement.

(For an example of on-site load calculation see the publication Phosphorus Control in Lake Watersheds: A Technical Guide to Evaluating New Development by the Maine Department of Environmental Protection. Another example where this option has been applied is for New York City water supply areas).

Option 4. Load Calculation w/ Stormwater Offset Fee to Provide Retrofits on Existing Development

In this program option, a community requires the on-site load calculation described in Option 3, but is very conservative in the assumptions it allows on loading and removal efficiency. Consequently, designers at most sites cannot fully comply with the load reduction for the requirement at their site. To fully comply, they must pay an offset fee to the local government which is used to support design and construction of stormwater retrofits at existing development in the watershed. The fee is set at the cost of providing an equivalent amount of pollutant removal elsewhere (dollars/pound).

The advantage of this approach is that it provides a means of financing the stormwater retrofits needed to reduce pollutant loads from existing development. It does require greater local staffing to find, design and build the retrofits which offset the loads from new development. If administered properly, this program option can potentially eliminate the net additional load from new development. Several communities currently provide this option for developers, but it is not clear how much revenue has been collected so far.

(This option has been applied in Maryland Critical Areas and Virginia Chesapeake Bay resource management areas. For more information, see the website regarding the Maryland Critical Area Act at <http://www.dnr.state.md.us/criticalarea/> and the Virginia Chesapeake Bay Preservation Area Regulation at <http://www.cblad.state.va.us/regs.htm>)

- (E). To protect stream channels from degradation, a specific channel protection criteria shall be provided as prescribed in the current stormwater manual.

➤ Channel protection is a relatively new criteria, but is increasingly viewed as a critical one due to the mounting evidence that stream channels enlarge in response to watershed development. Studies have found higher bank erosion rates and increased instream sediment loads for urban streams when compared to the 5-20% estimate for the annual sediment budget attributable to bank erosion in rural streams (Walling and Woodward, 1995; Collins et al., 1997). Research also indicates that channel enlargement can begin at a relatively low level of watershed development, as indicated by the amount of impervious cover. One study estimated that channel erosion rates were three to six times higher in a moderately urbanized watershed (14% impervious cover) than in a comparable rural one, with less than 2% impervious cover (Neller, 1988).

The basic methodology to calculate channel enlargement relies on obtaining historical cross-sectional data from past surveys (often obtained from transportation agencies or public works departments that conducted surveys at the time of road construction or improvement projects) and comparing these with current cross-sectional data obtained from field surveys conducted at the time of the study. The approach also utilizes predictive (i.e., empirical) equations to estimate an ultimate channel enlargement ratio once the channel has enlarged sufficiently to be in balance with its hydrological forces.

Basic Options for Stream Channel Protection

Many different design criteria have been suggested to protect downstream channels from erosion. It should be clearly noted that none of these criteria have yet been monitored in the field to demonstrate their effectiveness, and most are based on hydrologic or hydraulic modeling of streams. The three options that appear to hold some promise are:

24 hour detention of the one year storm event. This criteria would result in up to 24 hours of detention for runoff generated by a rainfall depth based on annual rainfall for a region. Smaller storms events would also experience some detention, but probably much less than 24 hours. The premise of this criteria is that runoff would be stored and released in such a gradual manner that critical erosive velocities would seldom be exceeded in downstream channels. The required volume needed for 1 year extended detention is significant; it is roughly equivalent to about 90 to 95% of the required volume needed for ten year peak discharge control. Consequently, the need for two year peak discharge management would be eliminated when the 1 year ED is provided, as long as the ten year peak discharge control is achieved. (For an example, see Maryland Department of the Environment 2000 Maryland Stormwater Design Manual available at <http://www.mde.state.md.us/environment/wma/stormwatermanual/>. The states of New York and Virginia also use this design criteria for stream channel protection in their stormwater design manuals).

Distributed runoff control (DRC): This criteria has been developed by MaCrae (1993) and involves complex field assessments and modeling to determine the hydraulic stress and erosion potential of bank materials. The criteria states that channel erosion is minimized if the alteration in the transverse distribution of erosion potential about a channel parameter is maintained constant with predevelopment values, over the range of available flows, such that the channel is just able to move the dominant particle size of the bed load. This Canadian method holds promise, but has not been tested extensively in the United States and requires significantly greater data collection and modeling than any of the other methods.

(For a discussion of this criteria, see the Vermont Stormwater Management Handbook Technical Support Document- Appendix B, November 2000).

Bankfull capacity/duration criteria: This criteria has been advanced by Tapley et al 1996, and states that the post-development, bankfull flow frequency, duration and depth must be controlled to predevelopment values at a designated control point(s) in the channel. The Rule of thumb for selecting control point(s) is to use a 10: 1 ratio of peak discharge from the one year storm for the developed site to the discharge from the stream for the same frequency storm (Tapley et al, 1996). In theory, this criteria should result in a high level of downstream protection. The practical problem is in defining how the criteria is to be interpreted; whether sub-bankfull events (that typically erode the toe of the streambank) should also be considered; and precisely where the "bankfull" should be measured. For example, the channel of many streams have been modified in the past by prior land uses and channelization, and may not represent the "true" channel. In other cases, the stormwater outfall discharge laterally to a stream, and it is therefore difficult to assign which flows the developer is actually responsible for controlling.

Pros and Cons of Channel Protection Sizing Criteria.

Each of the three options has some limitations. For example, both the DRC and bankfull capacity sizing criteria options lack widely accepted or universal design methodologies. In each case, local stream cross-section and/or soil measurements are needed, and considerable contention between the designer and the reviewer can be expected on how and where the analysis should be performed. Given the many operational problems currently associated with either option, and the lack of a tested design methodology at present, the two options probably deserve further study, but are not ready for wide application.

This leaves only one remaining option-- the one-year 24 hour detention criteria. It, too, has some limitations:

- *results in unacceptably small diameter orifices for sites less than ten acres in size.*
- *requires a storage volume roughly equivalent to that needed for two year control.*
- *has not been "tested" by continuous simulation modeling to determine if acceptable detention times can be achieved for smaller storms can be achieved (1.0 to 1.5 inches).*
- *is only needed in streams that are susceptible to bank erosion.*

Based on the foregoing, it appears that the best option to provide channel protection (C_p) is 12 to 24 hour extended detention of the one-year 24 hour storm event. This C_p requirement only applies to sites greater than ten acres in size. Local governments may wish to retain the option of employing the DRC or bankfull capacity/duration criteria as an alternative, should their analytical and design requirements become more simplified and refined in the future

There are some basic exemptions to where the channel protection criteria should be applied (small drainage areas, direct discharge to tidal waters or a lake, flat terrain etc), and communities must decide how and when this criteria will be required.

- (F). Stormwater discharges to critical areas with sensitive resources (i.e., cold water fisheries, shellfish beds, swimming beaches, recharge areas, water supply reservoirs) may be subject to additional performance criteria, or may need to utilize or restrict certain stormwater management practices.

- (G). Certain industrial sites are required to prepare and implement a stormwater pollution prevention plan, and shall file a notice of intent (NOI) under the provisions of the National Pollutant Discharge Elimination System (NPDES) general permit. The stormwater pollution prevention plan requirement applies to both existing and new industrial sites.

➤ *Applicants and local communities may wish to consult the Environmental Protection Agency website at <http://www.epa.gov/owm/swm/phase2> for more information on Phase II requirements.*

- (H). Stormwater discharges from land uses or activities with higher potential pollutant loadings, known as “hotspots”, may require the use of specific structural STPs and pollution prevention practices.
- (I). Prior to design, applicants are required to consult with the **(jurisdictional stormwater authority)** to determine if they are subject to additional stormwater design requirements.
- (J). The calculations for determining peak flows as found in the Stormwater Design Manual shall be used for sizing all stormwater management practices.

Section 6. Basic Stormwater Management Design Criteria

➤ *Rather than place specific stormwater design criteria into an ordinance, it is often preferable to fully detail these requirements in a stormwater design manual. This allows specific design information to change over time as new information or techniques become available without requiring the formal process needed to change ordinance language. The ordinance can then require those submitting any development application to consult the current stormwater design manual for the exact design criteria for the stormwater management practices appropriate for their site.*

In the Maryland Stormwater Design Manual, for example, there are a set of specified performance criteria for each stormwater management practice, based on six factors:

- *Site Design Feasibility -*
- *Conveyance Issues -*
- *Pretreatment Requirements -*
- *Treatment/Geometry Conditions*
- *Environmental/Landscaping Standards*
- *Maintenance Needs*

Each community will need to decide the specific design and sizing criteria for the stormwater management practices they allow, and select a storm event frequency(1, 2, 10, 100 year) that they believe will meet their stormwater quality and quantity control requirements.

6.1. Minimum Control Requirements

All stormwater management practices will be designed so that the specific storm frequency storage volumes (e.g., recharge, water quality, channel protection, 10 year, 100 year) as identified in the current stormwater design manual are met, unless the **(jurisdictional stormwater authority)** grants the applicant a waiver or the applicant is exempt from such requirements.

In addition, if hydrologic or topographic conditions warrant greater control than that provided by the minimum control requirements, the **(jurisdictional stormwater authority)** reserves the right to impose any and all additional requirements deemed necessary to control the volume, timing, and rate of runoff.

6.2 Site Design Feasibility

Stormwater management practices for a site shall be chosen based on the physical conditions of the site. Among the factors that should be considered:

1. Topography
2. Maximum Drainage Area
3. Depth to Water Table
4. Soils
5. Slopes
6. Terrain
7. Head
8. Location in relation to environmentally sensitive features or ultra-urban areas

Applicants shall consult the Stormwater Design Manual for guidance on the factors that determine site design feasibility when selecting a stormwater management practice.

6.3 Conveyance Issues

All stormwater management practices shall be designed to convey stormwater to allow for the maximum removal of pollutants and reduction in flow velocities. This shall include, but not be limited to:

1. Maximizing of flowpaths from inflow points to outflow points
2. Protection of inlet and outfall structures
3. Elimination of erosive flow velocities
4. Providing of underdrain systems, where applicable

The Stormwater Design Manual shall provide detailed guidance on the requirements for conveyance for each of the approved stormwater management practices.

6.4 Pretreatment Requirements

Every stormwater treatment practice shall have an acceptable form of water quality pretreatment, in accordance with the pretreatment requirements found in the current stormwater design manual. Certain stormwater treatment practices, as specified in the Stormwater Design Manual, are prohibited even with pretreatment in the following circumstances:

- A. Stormwater is generated from highly contaminated source areas known as "hotspots"
- B. Stormwater is carried in a conveyance system that also carries contaminated, non-stormwater discharges
- C. Stormwater is being managed in a designated groundwater recharge area.

D. Certain geologic conditions exist (e.g., karst) that prohibit the proper pretreatment of stormwater.

6.5. Treatment/Geometry Conditions

All stormwater management practices shall be designed to capture and treat stormwater runoff according to the specifications outlined in the Stormwater Design Manual. These specifications will designate the water quantity and quality treatment criteria that apply to an approved stormwater management practice.

6.6. Landscaping Plans Required

All stormwater management practices must have a landscaping plan detailing both the vegetation to be in the practice and how and who will manage and maintain this vegetation. This plan must be prepared by a registered landscape architect or soil conservation district.

6.7. Maintenance Agreements

All stormwater treatment practices shall have an enforceable operation and maintenance agreement to ensure the system functions as designed. This agreement will include any and all maintenance easements required to access and inspect the stormwater treatment practices, and to perform routine maintenance as necessary to ensure proper functioning of the stormwater treatment practice. In addition, a legally binding covenant specifying the parties responsible for the proper maintenance of all stormwater treatment practices shall be secured prior to issuance of any permits for land disturbance activities.

6.8. Non-Structural Stormwater Practices

The use of non-structural stormwater treatment practices is encouraged in order to minimize the reliance on structural practices. Credit in the form of reductions in the amount of stormwater that must be managed can be earned through the use of non-structural practices that reduce the generation of stormwater from the site. These non-structural practices are explained in detail in the current design manual and applicants wishing to obtain credit for use of non-structural practices must ensure that these practices are documented and remain unaltered by subsequent property owners.

Section 7. Requirements for Stormwater Management Plan Approval

7.1. Stormwater Management Plan Required for All Developments.

No application for development will be approved unless it includes a stormwater management plan detailing in concept how runoff and associated water quality impacts resulting from the development will be controlled or managed. This plan must be prepared by an individual

approved by the **(jurisdictional stormwater authority)** and must indicate whether stormwater will be managed on-site or off-site and, if on-site, the general location and type of practices. The stormwater management plan(s) shall be referred for comment to all other interested agencies, and any comments must be addressed in a final stormwater management plan. This final plan must be signed by a licensed professional engineer (PE), who will verify that the design of all stormwater management practices meet the submittal requirements outlined in the Submittal Checklist found in the stormwater design manual. No building, grading, or sediment control permit shall be issued until a satisfactory final stormwater management plan, or a waiver thereof, shall have undergone a review and been approved by the **(jurisdictional stormwater authority)** after determining that the plan or waiver is consistent with the requirements of this ordinance.

➤ *One way to handle the submittal requirements for both the concept plan and the final design plan is to place Submittal Checklists in the stormwater design manual and require that they are used for submission of any plan. The benefit of this is that changes in submittal requirements can be made as needed without needing to revisit and alter the original ordinance. Three model checklists can be found on the Stormwater Managers Resource Center (SMRC) website at www.stormwatercenter.net.*

7.2. Stormwater Management Concept Plan Requirements

A stormwater management concept plan shall be required with all permit applications and will include sufficient information (e.g., maps, hydrologic calculations, etc) to evaluate the environmental characteristics of the project site, the potential impacts of all proposed development of the site, both present and future, on the water resources, and the effectiveness and acceptability of the measures proposed for managing stormwater generated at the project site. The intent of this conceptual planning process is to determine the type of stormwater management measures necessary for the proposed project, and ensure adequate planning for management of stormwater runoff from future development. To accomplish this goal the following information shall be included in the concept plan:

1. A map (or maps) indicating the location of existing and proposed buildings, roads, parking areas, utilities, structural stormwater management and sediment control facilities. The map(s) will also clearly show proposed land use with tabulation of the percentage of surface area to be adapted to various uses; drainage patterns; locations of utilities, roads and easements; the limits of clearing and grading; A written description of the site plan and justification of proposed changes in natural conditions may also be required.

➤ *This project description and site plan requirement includes information normally found in an Erosion and Sediment Control plan. For local governments that do not currently have ESC plan requirements or are looking to upgrade their ESC ordinance language, there is a model Erosion and Sediment Control ordinance located at the SMRC website.*

2. Sufficient engineering analysis to show that the proposed stormwater management measures are capable of controlling runoff from the site in compliance with this ordinance and the specifications of the Stormwater Design Manual.

3. A written or graphic inventory of the natural resources at the site and surrounding area as it exists prior to the commencement of the project and a description of the watershed and its relation to the project site. This description should include a discussion of soil conditions, forest cover, topography, wetlands, and other native vegetative areas on the site. Particular attention should be paid to environmentally sensitive features that provide particular opportunities or constraints for development.
4. A written description of the required maintenance burden for any proposed stormwater management facility.
5. The **(jurisdictional stormwater authority)** may also require a concept plan to consider the maximum development potential of a site under existing zoning, regardless of whether the applicant presently intends to develop the site to its maximum potential.

For development or redevelopment occurring on a previously developed site, an applicant shall be required to include within the stormwater concept plan measures for controlling existing stormwater runoff discharges from the site in accordance with the standards of this Ordinance to the maximum extent practicable.

7.3. Final Stormwater Management Plan Requirements

After review of the stormwater management concept plan, and modifications to that plan as deemed necessary by the **(jurisdictional stormwater authority)**, a final stormwater management plan must be submitted for approval. The final stormwater management plan, in addition to the information from the concept plan, shall include all of the information required in the Final Stormwater Management Plan checklist found in the Stormwater Design Manual. This includes:

1. Contact Information

The name, address, and telephone number of all persons having a legal interest in the property and the tax reference number and parcel number of the property or properties affected.

2. Topographic Base Map

A 1" = 200' topographic base map of the site which extends a minimum of ___ feet beyond the limits of the proposed development and indicates existing surface water drainage including streams, ponds, culverts, ditches, and wetlands; current land use including all existing structures; locations of utilities, roads, and easements; and significant natural and manmade features not otherwise shown.

3. Calculations

Hydrologic and hydraulic design calculations for the pre-development and post-development conditions for the design storms specified in this ordinance. Such calculations shall include (i) description of the design storm frequency, intensity and duration, (ii) time of concentration, (iii) Soil Curve Numbers or runoff coefficients, (iv) peak runoff rates and total runoff volumes for each watershed area, (v) infiltration rates, where applicable, (vi) culvert capacities, (vii) flow velocities, (viii) data on the increase in

rate and volume of runoff for the design storms referenced in the Stormwater Design Manual, and (ix) documentation of sources for all computation methods and field test results.

4. Soils Information

If a stormwater management control measure depends on the hydrologic properties of soils (e.g., infiltration basins), then a soils report shall be submitted. The soils report shall be based on on-site boring logs or soil pit profiles. The number and location of required soil borings or soil pits shall be determined based on what is needed to determine the suitability and distribution of soil types present at the location of the control measure.

5. Maintenance and Repair Plan

The design and planning of all stormwater management facilities shall include detailed maintenance and repair procedures to ensure their continued function. These plans will identify the parts or components of a stormwater management facility that need to be maintained and the equipment and skills or training necessary. Provisions for the periodic review and evaluation of the effectiveness of the maintenance program and the need for revisions or additional maintenance procedures shall be included in the plan.

6. Landscaping plan

The applicant must present a detailed plan for management of vegetation at the site after construction is finished, including who will be responsible for the maintenance of vegetation at the site and what practices will be employed to ensure that adequate vegetative cover is preserved. This plan must be prepared by a registered landscape architect or by the soil conservation district.

7. Maintenance Easements

The applicant must ensure access to all stormwater treatment practices at the site for the purpose of inspection and repair by securing all the maintenance easements needed on a permanent basis. These easements will be recorded with the plan and will remain in effect even with transfer of title to the property.

8. Maintenance Agreement

The applicant must execute an easement and an inspection and maintenance agreement binding on all subsequent owners of land served by an on-site stormwater management measure in accordance with the specifications of this ordinance.

9. Erosion and Sediment Control Plans for Construction of Stormwater Management Measures

The applicant must prepare an erosion and sediment control plan for all construction activities related to implementing any on-site stormwater management practices.

10. Other Environmental Permits

The applicant shall assure that all other applicable environmental permits have been acquired for the site prior to approval of the final stormwater design plan.

7.4. Performance Bond/Security

The **(jurisdictional stormwater authority)** may, at its discretion, require the submittal of a performance security or bond prior to issuance of a permit in order to insure that the stormwater

practices are installed by the permit holder as required by the approved stormwater management plan. The amount of the installation performance security shall be the total estimated construction cost of the stormwater management practices approved under the permit, plus 25%. The performance security shall contain forfeiture provisions for failure to complete work specified in the stormwater management plan.

The installation performance security shall be released in full only upon submission of "as built plans" and written certification by a registered professional engineer that the stormwater practice has been installed in accordance with the approved plan and other applicable provisions of this ordinance. The **(jurisdictional stormwater authority)** will make a final inspection of the stormwater practice to ensure that it is in compliance with the approved plan and the provisions of this ordinance. Provisions for a partial pro-rata release of the performance security based on the completion of various development stages can be done at the discretion of the **(jurisdictional stormwater authority)**.

➤ *Some communities elect to also require a maintenance performance security. This bond typically is set at the maintenance costs estimated in the stormwater plan for the period during which the permit holder has maintenance responsibility and is released when the responsibility for practice maintenance is passed on to another party, via an approved maintenance agreement.*

Section 8. Construction Inspection

8.1. Notice of Construction Commencement

The applicant must notify the **(jurisdictional stormwater authority)** in advance before the commencement of construction. Regular inspections of the stormwater management system construction shall be conducted by the staff of the **(jurisdictional stormwater authority)** or certified by a professional engineer or their designee who has been approved by the jurisdictional stormwater authority. All inspections shall be documented and written reports prepared that contain the following information:

1. The date and location of the inspection;
2. Whether construction is in compliance with the approved stormwater management plan
3. Variations from the approved construction specifications
4. Any violations that exist

If any violations are found, the property owner shall be notified in writing of the nature of the violation and the required corrective actions. No added work shall proceed until any violations are corrected and all work previously completed has received approval by the **(jurisdictional stormwater authority)**.

8.2. As Built Plans

All applicants are required to submit actual "as built" plans for any stormwater management practices located on-site after final construction is completed. The plan must show the final design specifications for all stormwater management facilities and must be certified by a

professional engineer. A final inspection by the **(jurisdictional stormwater authority)** is required before the release of any performance securities can occur.

8.3. Landscaping and Stabilization Requirements

Any area of land from which the natural vegetative cover has been either partially or wholly cleared or removed by development activities shall be revegetated within ten (10) days from the substantial completion of such clearing and construction. The following criteria shall apply to revegetation efforts:

Reseeding must be done with an annual or perennial cover crop accompanied by placement of straw mulch or its equivalent of sufficient coverage to control erosion until such time as the cover crop is established over ninety percent (90%) of the seeded area.

Replanting with native woody and herbaceous vegetation must be accompanied by placement of straw mulch or its equivalent of sufficient coverage to control erosion until the plantings are established and are capable of controlling erosion.

Any area of revegetation must exhibit survival of a minimum of seventy-five percent (75%) of the cover crop throughout the year immediately following revegetation.

Revegetation must be repeated in successive years until the minimum seventy-five percent (75%) survival for one (1) year is achieved.

In addition to the above requirements, a landscaping plan must be submitted with the final design describing the vegetative stabilization and management techniques to be used at a site after construction is completed. This plan will explain not only how the site will be stabilized after construction, but who will be responsible for the maintenance of vegetation at the site and what practices will be employed to ensure that adequate vegetative cover is preserved. This plan must be prepared by a registered landscape architect or by the soil conservation district, and must be approved prior to receiving a permit.

Section 9. Maintenance and Repair of Stormwater Facilities

☞ *A model operation and maintenance ordinance for stormwater facilities is also available at the SMRC website. This ordinance goes into greater detail on the elements needed to create an effective stormwater maintenance ordinance. Requirements for inspection are also included in the model.*

9.1. Maintenance Easement

Prior to the issuance of any permit that has an stormwater management facility as one of the requirements of the permit, the applicant or owner of the site must execute a maintenance easement agreement that shall be binding on all subsequent owners of land served by the stormwater management facility. The agreement shall provide for access to the facility at reasonable times for periodic inspection by the **(jurisdictional stormwater authority)**, or their contractor or agent, and for regular or special assessments of property owners to ensure that the

facility is maintained in proper working condition to meet design standards and any other provisions established by this ordinance. The easement agreement shall be recorded by the **(jurisdictional stormwater authority)** in the land records.

9.2. Maintenance Covenants

Maintenance of all stormwater management facilities shall be ensured through the creation of a formal maintenance covenant that must be approved by the **(jurisdictional stormwater authority)** and recorded into the land record prior to final plan approval. As part of the covenant, a schedule shall be developed for when and how often maintenance will occur to ensure proper function of the stormwater management facility. The covenant shall also include plans for periodic inspections to ensure proper performance of the facility between scheduled cleanouts.

The **(jurisdictional stormwater authority)**, in lieu of an maintenance covenant, may accept dedication of any existing or future stormwater management facility for maintenance, provided such facility meets all the requirements of this chapter and includes adequate and perpetual access and sufficient area, by easement or otherwise, for inspection and regular maintenance.

9.3. Requirements for Maintenance Covenants

All stormwater management facilities must undergo, at the minimum, an annual inspection to document maintenance and repair needs and ensure compliance with the requirements of this ordinance and accomplishment of its purposes. These needs may include; removal of silt, litter and other debris from all catch basins, inlets and drainage pipes, grass cutting and vegetation removal, and necessary replacement of landscape vegetation. Any maintenance needs found must be addressed in a timely manner, as determined by the **(jurisdictional stormwater authority)**, and the inspection and maintenance requirement may be increased as deemed necessary to ensure proper functioning of the stormwater management facility.

9.4. Inspection of Stormwater Facilities

Inspection programs may be established on any reasonable basis, including but not limited to: routine inspections; random inspections; inspections based upon complaints or other notice of possible violations; inspection of drainage basins or areas identified as higher than typical sources of sediment or other contaminants or pollutants; inspections of businesses or industries of a type associated with higher than usual discharges of contaminants or pollutants or with discharges of a type which are more likely than the typical discharge to cause violations of state or federal water or sediment quality standards or the NPDES stormwater permit; and joint inspections with other agencies inspecting under environmental or safety laws. Inspections may include, but are not limited to: reviewing maintenance and repair records; sampling discharges, surface water, groundwater, and material or water in drainage control facilities; and evaluating the condition of drainage control facilities and other stormwater treatment practices.

9.5. Right-of-Entry for Inspection

When any new drainage control facility is installed on private property, or when any new connection is made between private property and a public drainage control system, sanitary sewer or combined sewer, the property owner shall grant to the **(jurisdictional stormwater authority)** the right to enter the property at reasonable times and in a reasonable manner for the purpose of inspection. This includes the right to enter a property when it has a reasonable basis to believe that a violation of this ordinance is occurring or has occurred, and to enter when necessary for abatement of a public nuisance or correction of a violation of this ordinance.

9.6. Records of Installation and Maintenance Activities.

Parties responsible for the operation and maintenance of a stormwater management facility shall make records of the installation and of all maintenance and repairs, and shall retain the records for at least ___ years. These records shall be made available to the (jurisdictional stormwater authority) during inspection of the facility and at other reasonable times upon request.

9.7 Failure to Maintain Practices

If a responsible party fails or refuses to meet the requirements of the maintenance covenant, the **(jurisdictional stormwater authority)**, after reasonable notice, may correct a violation of the design standards or maintenance needs by performing all necessary work to place the facility in proper working condition. In the event that the stormwater management facility becomes a danger to public safety or public health, the **(jurisdictional stormwater authority)** shall notify the party responsible for maintenance of the stormwater management facility in writing. Upon receipt of that notice, the responsible person shall have ___ days to effect maintenance and repair of the facility in an approved manner. After proper notice, the **(jurisdictional stormwater authority)** may assess the owner(s) of the facility for the cost of repair work and any penalties; and the cost of the work shall be a lien on the property, or prorated against the beneficial users of the property, and may be placed on the tax bill and collected as ordinary taxes by the county.

Section 10. Enforcement and Penalties.

10.1. Violations

Any development activity that is commenced or is conducted contrary to this Ordinance, may be restrained by injunction or otherwise abated in a manner provided by law.

10.2. Notice of Violation.

When the **(jurisdictional stormwater authority)** determines that an activity is not being carried out in accordance with the requirements of this Ordinance, it shall issue a written notice of violation to the owner of the property. The notice of violation shall contain :

(1) the name and address of the owner or applicant;

- (2) the address when available or a description of the building, structure or land upon which the violation is occurring;
- (3) a statement specifying the nature of the violation;
- (4) a description of the remedial measures necessary to bring the development activity into compliance with this Ordinance and a time schedule for the completion of such remedial action;
- (5) a statement of the penalty or penalties that shall or may be assessed against the person to whom the notice of violation is directed;
- (6) a statement that the determination of violation may be appealed to the municipality by filing a written notice of appeal within fifteen (15) days of service of notice of violation.

10.3. Stop Work Orders

Persons receiving a notice of violation will be required to halt all construction activities. This "stop work order" will be in effect until the **(jurisdictional stormwater authority)** confirms that the development activity is in compliance and the violation has been satisfactorily addressed. Failure to address a notice of violation in a timely manner can result in civil, criminal, or monetary penalties in accordance with the enforcement measures authorized in this ordinance.

10.4. Civil and Criminal Penalties

In addition to or as an alternative to any penalty provided herein or by law, any person who violates the provisions of this Ordinance shall be punished by a fine of not less than _____ Dollars (\$xx) or by imprisonment for a period not to exceed ___ (xx) days, or both such fine and imprisonment. Such person shall be guilty of a separate offense for each day during which the violation occurs or continues.

10.4. Restoration of lands

Any violator may be required to restore land to its undisturbed condition. In the event that restoration is not undertaken within a reasonable time after notice, the **(jurisdictional stormwater authority)** may take necessary corrective action, the cost of which shall become a lien upon the property until paid.

10.5. Holds on Occupation Permits

Occupation permits will not be granted until a corrections to all stormwater practices have been made and accepted by the **(jurisdictional stormwater authority)**.

Approved by: _____ Date _____

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Commission on State Mandates

Original List Date: 2/14/2011
Last Updated: 8/10/2011
List Print Date: 08/29/2011
Claim Number: 10-TC-07
Issue: Santa Ana Region Water Permit - Riverside County

Mailing List

TO ALL PARTIES AND INTERESTED PARTIES:

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, § 1181.2.)

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COMMISSION ON STATE MANDATES

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**DECLARATION OF SERVICE BY EMAIL**

I, the undersigned, declare as follows:

I am a resident of the County of Solano 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 August 29, 2011, I served the:

DOF Comments and SWRCB Comments

Santa Ana Region Water Permit – Riverside County, 10-TC-07

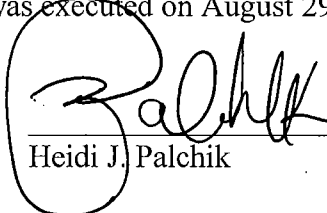
California Regional Water Quality Control Board, Santa Ana Region, Order No.

R8-2010-0033, effective January 29, 2010

Riverside County Flood Control & Water Conservation District, County of Riverside, Cities of Beaumont, Corona, Hemet, Lake Elsinore, Moreno Valley, Perris and San Jacinto, Co-Claimants

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 August 29, 2011 at Sacramento, California.


Heidi J. Palchik