STATE of CALIFORNIA
COMMISSION ON STATE MANDATES

TEST CLAIM FORM

For CSM Use Only	
Filing Date:	RECEIVED April 12, 2018 Commission on State Mandates
Test Claim #:	17-TC-04

Section 1

Proposed Test Claim Title:

San Francisco Bay Regional Water Quality Control Board, Order R2-2017-0014, Provision B. 19

Section 2

Local Government (Local Agency/School District) Name:

Santa Clara Valley Water District

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

Norma Camacho, Chief Executive Officer

Street Address, City, State, and Zip:

5700 Almaden Expy, San Jose, CA 95118

Telephone Number	Fax Number	Email Address
(408) 265-2600		ncamacho@valleywater.org

Section 3

Claimant Representative: Peter Prows Title Partner

Organization: Briscoe Ivester & Bazel LLP

Street Address, City, State, Zip:

155 Sansome Street, 7th Floor, San Francisco, CA 94104

Telephone Number	Fax Number	Email Address
(415) 402-2700	(415) 398-5630	pprows@briscoelaw.net

Section 4 – Please identify all code sections (include statutes, chapters, and bill numbers; e.g., Penal Code section 2045, Statutes 2004, Chapter 54 [AB 290]), regulatory sections (include register number and effective date; e.g., California Code of Regulations, title 5, section 60100 (Register 1998, No. 44, effective 10/29/98), and other executive orders (include effective date) that impose the alleged mandate pursuant to Government Code section 17553 and don't forget to check whether the code section has since been amended or a regulation adopted to implement it (refer to your completed WORKSHEET on page 7 of this form):

San Francisco Bay Regional Water Quality Control Board, Order R2-2017-0014

Provision B. 19, effective 4/12/2017

☒ Test Claim is Timely Filed on [Insert Filing Date] [select either A or B]: 4 / 12 / 2018

☒ A: Which is not later than 12 months following [insert the effective date of the test claim statute(s) or executive order(s)] 4 / 12 / 2017, the effective date of the statute(s) or executive order(s) pled; or

☐ B: Which is within 12 months of [insert the date costs were *first* incurred to implement the alleged mandate] ___/___/_____, which is the date of first incurring costs as a result of the statute(s) or executive order(s) pled. *This filing includes evidence which would be admissible over an objection in a civil proceeding to support the assertion of fact regarding the date that costs were first incurred.*

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

Section 5 – Written Narrative:

☒ Includes a statement that actual and/or estimated costs exceed one thousand dollars ($1,000). (Gov. Code § 17564.)

☒ Includes all of the following elements for each statute or executive order alleged ***pursuant to Government Code section 17553(b)(1) (refer to your completed WORKSHEET on page 7 of this form)***:

☒ Identifies all sections of statutes or executive orders and the effective date and register number of regulations alleged to contain a mandate, including a detailed description of the *new* activities and costs that arise from the alleged mandate and the existing activities and costs that are *modified* by the alleged mandate;

☒ Identifies *actual* increased costs incurred by the claimant during the fiscal year for which the claim was filed to implement the alleged mandate;

☒ Identifies *actual or estimated* annual costs that will be incurred by the claimant to implement the alleged mandate during the fiscal year immediately following the fiscal year for which the claim was filed;

☒ Contains a statewide cost estimate of increased costs that all local agencies or school districts will incur to implement the alleged mandate during the fiscal year immediately following the fiscal year for which the claim was filed;
Following FY: 2017 - 2018 Total Costs: $139,398.27

☒ Identifies all dedicated funding sources for this program; State: None

Federal: None Local agency's general purpose funds: None

Other nonlocal agency funds: Measure B, Santa Clara County

Fee authority to offset costs: None

☒ Identifies prior mandate determinations made by the Board of Control or the Commission on State Mandates that may be related to the alleged mandate: See Section 5

☐ Identifies a legislatively determined mandate that is on the same statute or executive order:

Section 6 – The Written Narrative Shall be Supported with Declarations Under Penalty of Perjury Pursuant to Government Code Section 17553(b)(2) and California Code of Regulations, title 2, section 1187.5, as follows (refer to your completed WORKSHEET on page 7 of this form):

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

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

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

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

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

Section 7 – The Written Narrative Shall be Supported with Copies of the Following Documentation Pursuant to Government Code section 17553(b)(3) and California Code of Regulations, title 2, § 1187.5 (refer to your completed WORKSHEET on page 7 of this form):

☒ The test claim statute that includes the bill number, and/or executive order identified by its effective date and register number (if a regulation), alleged to impose or impact a mandate. Pages 34 to 71.

☒ Relevant portions of state constitutional provisions, federal statutes, and executive orders that may impact the alleged mandate. Pages 73 to 99.

☐ Administrative decisions and court decisions cited in the narrative. (Published court decisions arising from a state mandate determination by the Board of Control or the Commission are exempt from this requirement.) Pages _____ to _____.

☒ Evidence to support any written representation of fact. *Hearsay evidence may be used for the purpose of supplementing or explaining other evidence but shall not be sufficient in itself to support a finding unless it would be admissible over objection in civil actions.* (*Cal. Code Regs., tit. 2, § 1187.5*). Pages 35 to 1717.

Section 8 –TEST CLAIM CERTIFICATION Pursuant to Government Code section 17553

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

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

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

Norma Camacho	Chief Executive Officer
Name of Authorized Local Government Official pursuant to Cal. Code Regs., tit.2, § 1183.1(a)(1-5)	**Print or Type Title**
	4/12/2018
Signature of Authorized Local Government Official pursuant to Cal. Code Regs., tit.2, § 1183.1(a)(1-5)	**Date**

Test Claim Form Sections 4-7 WORKSHEET

Complete Worksheets for Each New Activity and Modified Existing Activity Alleged to Be Mandated by the State, and Include the Completed Worksheets With Your Filing.

Statute, Chapter and Code Section/Executive Order Section, Effective Date, and Register Number: San Francisco Bay Regional Water Quality Control Board Order R2-2017-0014

Activity: Costs required by off-site mitigation requirement of Provision B. 19

Initial FY: 16 - 17 Cost: $2701 Following FY: 17 - 18 Cost: $139,398.27

Evidence (if required): See enclosed

All dedicated funding sources; State: None Federal: None

Local agency's general purpose funds: None

Other nonlocal agency funds: Measure B, Santa Clara County

Fee authority to offset costs: None

Statute, Chapter and Code Section/Executive Order Section, Effective Date, and Register Number: _____

Activity: _____

Initial FY: ____-____ Cost: _____ Following FY: _____-_____ Cost: _____

Evidence (if required): _____

All dedicated funding sources; State: _____ Federal: _____

Local agency's general purpose funds: _____

Other nonlocal agency funds: _____

Fee authority to offset costs: _____

Statute, Chapter and Code Section/Executive Order Section, Effective Date, and Register Number: _____

Activity: _____

Initial FY: ____-____ Cost: _____ Following FY: _____-_____ Cost: _____

Evidence (if required): _____

All dedicated funding sources; State: _____ Federal: _____

Local agency's general purpose funds: _____

Other nonlocal agency funds: _____

Fee authority to offset costs: _____

SECTION 5:
WRITTEN NARRATIVE

Section 5 Table of Contents

I. INTRODUCTION

The Santa Clara Valley Water District ("District") finds itself saddled with an order from the State's San Francisco Bay Regional Water Quality Control Board ("Regional Board") to plan and pay for a large new project to enhance a preexisting State program to expand wetlands. The order at issue is Regional Board Order No. R2-2017-0014, effective April 12, 2017 ("Order"). The Order's "offsite mitigation" requirements, in Provision B.19, are a State mandate ("Mandate") for which Article XIII B Section 6 of the California Constitution ("Section 6") requires the State to reimburse the District. The District files this test claim for reimbursement for the increased costs of the Mandate.

II. BACKGROUND

A. The Santa Clara Valley Water District

The Legislature enacted the Santa Clara Valley Water District Act in 1951 ("District Act"), creating the District. (Stats 1951 ch 1405, as amended.) A copy of the operative District Act may be found at Chapter 60 of West's California Water Code Appendix, at Act 1170 of Deering's California Water-Uncodified Acts, or at Exhibit 2 to the Declaration of Rita Chan.

Section 2 of the District Act creates the District as a "flood control and water district" consisting of "all the territory of the County of Santa Clara lying within the exterior boundaries of said county." Section 5 gives the District certain powers, including, in subsections 9 through 11, to collect fees, take on debt, or levy taxes (subject to constitutional and other constraints). Section 13 describes certain District powers to levy ad valorem taxes or certain other taxes or assessments. Section 26.3 authorizes the District to levy certain ground water charges for specified purposes.

B. The Upper Berryessa Project

As part of its mission, the District has partnered with the U.S. Army Corps of Engineers ("Corps") on a flood-risk management project for a heavily urbanized reach of Upper Berryessa Creek in urban Santa Clara County ("Upper Berryessa Project"). (Declaration of Rita Chan ("Chan Decl.") Exhibit ("Ex.") 1 at Finding 3 p. 1.) The Upper Berryessa Project includes construction of channel modifications and associated structures along 2.2 miles of Upper Berryessa Creek in the cities of Milpitas and San Jose. (*Id.* Finding 6 pp. 2-3.) This Project will provide 100-year flood protection for a new Milpitas BART station, a necessary part of the $2.3 billion (including $900 million in federal funding) project to extend BART to San Jose. (*Id*.) The Upper Berryessa Project will also result in the removal of 680 parcels—residences, businesses, and schools—from the 100-year flood plain. (*Id.*)

C. The Project's Environmental Review

The Corps prepared a full Environmental Impact Statement under the National Environmental Policy Act. (Chan Decl. Ex. 3.) The EIS concluded that impacts to water quality, biological resources, and other issues would be mitigated to less-than-significant levels. (*Id*. at PAC-13 through PAC-15.) The Corps also found that the Project would comply with all State water quality standards, and would be the least environmentally damaging project alternative as defined by the applicable federal regulations. (*Id.* Ex. 4.)

The District prepared and certified an environmental impact report for the Project. (Chan Decl. Ex. 5.) The EIR found that environmental impacts to biological resources, hydrology, and water quality, among other issues, would be either less-than-significant or would be mitigated to a level of less-than-significant. (*Id.* at es-viii, es-xiii.)

D. The Regional Board Approves The Project, Then Imposes New Discretionary Requirements

For purposes of administration of its water resources, California is divided into nine regions. (Water Code § 13200.) For each, there is a Regional Water Quality Control Board (individually or together "Regional Boards"), which may take certain actions. (Water Code §§ 13201 *et seq*.)

Here, in September 2015 the Corps applied to the Regional Board for 'certification' under Section 401 of the federal Clean Water Act (see Part IV.A below) for construction of the Upper Berryessa Project. (Chan Decl. Ex. 6 at 1.)

In March 2016, the Regional Board granted the Corps' Section-401 certification request, with conditions. (*Id.*)

Notably, that original certification did not include any kind of off-site mitigation project or name the District as a party to the Corps' application or the Regional Board's certification. At the request of the Corps, the Regional Board also removed a draft condition that would have committed the Regional Board to imposing additional mitigation conditions on the District, and left any such language out of the final Section 401 certification. (Declaration of Chris Hakes ("Hakes Decl.") Ex. 1.)

Months later, and shortly before construction began, Regional Board staff proposed a new order—this time including the District—that would have required the District to be responsible for an approximately 20-acre, or 20,000 linear-foot, offsite mitigation project. (Chan Decl. Ex. 7 at 11.) (The Corps began construction in October 2016. (Hakes Decl. ¶ 13.) The District never asked for this draft order and objected both to the Regional Board's authority to issue it and to its disruptive timing in doing so. (Chan Decl. Ex. 8) As authority for unilaterally imposing such an order on the District, Regional Board staff invoked State law, primarily Water Code section 13263, which authorizes the Regional Boards to issue unilateral "waste discharge requirements"—

basically a permit—to regulate certain proposed discharges of waste (*see* para. (d) ("[t]he regional board may prescribe requirements although no discharge report has been filed")). (Chan Decl. Ex. 7 at 12-13.)

The District also reminded the Regional Board of its reimbursement obligation under Section 6 of the California Constitution for the State mandate it was now proposing to impose. (Chan Decl. Ex. 8 at 3-4.)

In response, and now months into construction, Regional Board staff changed course again, this time proposing to rescind the Section 401 certification it had issued to the Corps and issuing a new one to both the Corps and the District, including the off-site mitigation condition. (Chan Decl. Ex. 9.) The District has not applied for any federal Clean Water Act permit for the Upper Berryessa Project (Hakes Decl. ¶ 12), so there is no obvious legal reason the District would need or want a Section 401 certification. Nor has the District requested a Section 401 certification from the Regional Board for this Project. (Hakes Decl. ¶ 12) Regional Board staff nevertheless explained that this change was intended, in part, as a way to avoid the Regional Board's constitutional reimbursement obligation: "we are exercising our authority under CWA section 401; therefore, the unfunded mandate claim is not applicable." (Chan Decl. Ex. 10 at p. 45.)

At a January 2017 hearing on that proposal, the Regional Board could not agree on the off-site mitigation condition and continued the hearing for a few months to allow staff time to keep working on it with the Corps and the District. (*Id*. Ex. 11 at 308:11:14 (Regional Board Chair reporting out of closed-session deliberations that "we have not been able to formulate the exact language at this point that we are all comfortable with to describe that mitigation").)

At its April 2017 hearing, the Regional Board took up a new version of the draft order, reducing the off-site mitigation condition by 25%, to approximately 15 acres or

15,000 linear feet. (*Id*. Ex. 12.) At the close of that hearing, the Regional Board made a further amendment to the off-site mitigation condition, *extending* the due date for submission and approval of a plan, before finally adopting the Order, including the Mandate. (*Id.* Ex. 13 at 258:2-262:5 (motion and approval of amended draft order to give more time for development of off-site mitigation plan).) The Order is attached as Exhibit 1 to the Chan declaration.

The final Order makes the District fully responsible for the Mandate. (Order Finding 4, p. 2, p. 19.)

E. The Lake Almaden Project Mitigation Condition

District staff began spending time developing the Almaden Lake Project as a possible means of satisfying the Mandate in August 2017. (See Part V.B.1 below.)

The Almaden Lake project is in the preliminary design phase. The District has not committed to actually constructing the project. Putting aside the Regional Board, the District is under no obligation to actually construct the project. The District has not publicly circulated a draft environmental review document for the project, though the current schedule is for a draft environmental impact report to be publicly circulated by late Spring 2018. (Blank Decl. ¶ 5.)

Almaden Lake is a 32-acre, manmade lake that is located within Almaden Lake Park, San Jose. The majority of the lake is a former quarry and the lake was initially formed by the breaching of the quarry levee located between the quarry pit and an adjacent creek. The adjacent creek was Alamitos Creek, which now flows through the lake. Having the creek flow through the lake creates various water quality issues, including issues of methylmercury associated with a former upstream mine, elevated temperature, low dissolved oxygen concentration, and high concentrations of coliform bacteria. (Blank Decl. ¶ 6.)

Due to poor water quality as a result of historical activities, public use of the lake has been impeded, and

Almaden Lake has been closed to swimming since August 2010. Additionally, poor quality water released from the lake can impact and degrade water quality downstream along the Guadalupe River. The comingling of Almaden Lake with Alamitos Creek also imposes temperature, predation, and entrainment impacts to steelhead by disrupting migratory passage through the footprint of the lake. (Blank Decl. ¶ 7.)

The Almaden Lake Project, as currently planned, would address these issues by separating and restoring Alamitos Creek within the footprint of Almaden Lake. (Blank Decl. ¶ 8.) In other words, this project would rebuild a barrier between Alamitos Creek and Almaden Lake so that the creek bypasses the lake.

F. Other Proceedings

The District timely petitioned the State Water Resources Control Board for review of the Order and for a partial stay. The State Board found that petition complete, but has not acted on the District's partial stay request. (Prows Decl. ¶ 4.)

The District has petitioned the Superior Court for a writ of administrative mandamus to invalidate the Order. That action is pending in Contra Costa County Superior Court as Case No. MSN17-1822. (Prows Decl. ¶ 5.)

The District can provide any of the pleadings or records from either proceeding to the Commission upon request.

III. STATE MANDATE LAW

Section 6 requires that, for every "state agency mandate[]" of "a new program or higher level of service" on "any local government", the State is required to reimburse the local government for the "costs" of that mandate. A number of adjudicatory decisions by the State Water Quality Control Board and the Regional Water Quality Control Boards have

come under sharp scrutiny in recent years by the Commission and the Courts for being unfunded State mandates.[1]

There is an exemption to the reimbursement requirement for certain non-discretionary mandates required by federal law (Gov. Code § 17556(c)), though that exemption is narrow and does not apply here. (Part IV.A below.) Another exemption might apply where the local agency "has the authority to levy service charges, fees, or assessments sufficient to pay" for the new or increased costs. (Gov. Code § 17556(d).) But the District lacks authority under various provisions of Article XIII of the California Constitution to levy such fees here. (Part IV.D below.)

The Regional Board's Mandate is a State mandate. (Part IV.A below.) It was the product of a series of discretionary decisions by the Regional Board, not any particularized federal mandate. (*Id.*) It mandates a new program or higher level of service. (Part IV.B below.) The District is a local government agency within the meaning of these laws. (Part IV.C below.) The District does not have fee authority for the costs of the Mandate. (Part IV.D below.) And the District has incurred costs as a result of the Mandate. (Part V below.) This test claim should be approved.

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[1] *E.g. Department of Finance v. Commission on State Mandates* (2016) 1 Cal.5th 749; *Department of Finance v. Commission on State Mandates* (2017) 18 Cal.App.5th 661, petition for review filed (Jan. 26, 2018); *County of Los Angeles v. Commission on State Mandates* (2007) 150 Cal.App.4th 898; In re Test Claim On: *San Diego Regional Water Quality Control Board Order No. R9-2007-0001* (Mar. 26, 2010); In re Test Claim On: *Los Angeles Regional Quality Control Board Order No. 01-182* (Jul. 31, 2009).) An additional fifteen adjudicatory decisions by Regional Water Quality Control Boards are pending before the Commission as of the time of this filing. (*See* Commission on State Mandates, 17 Pending Test Claims (Mar. 23, 2018), *available at* https://www.csm.ca.gov/documents/TestClaims032318.pdf.)

IV. THE STATE MANDATE AT ISSUE

A. The Mandate Is A *State* Mandate, Not Federal

State mandates include an "executive order". (Gov. Code § 17514.) "Executive order" means any "order", "plan", or "requirement" issued by any "agency, department, board, or commission of state government". (Gov. Code § 17516, especially subsection (c).) As one of the nine Regional Boards, the Regional Board is a board of state government. (Water Code § 13100 (regional boards are part of the California Resources Agency).) Their orders are state mandates. (*County of Los Angeles v. Commission on State Mandates* (2007) 150 Cal.App.4th 898, 920 (contrary reading unconstitutional).)

The Order is a State mandate in both form and substance. The Regional Board styled the Order as an "Order". (Order, p. 1.) The Order orders the District, "pursuant to authority under [California Water Code] sections 13263 and 13267", to "comply" with the provisions of the Order. (Order, p. 19; *see* Finding 4 (defining District as a "Discharger").) Among those provisions is the Mandate: the off-site mitigation requirements of Provision B.19, requiring the District to prepare a mitigation and monitoring plan, "acceptable to the [Regional Board's] Executive Officer", that, in addition to other on-site restoration, "shall provide for" "additional offsite mitigation" that "shall enhance" the equivalent of "15,000 linear feet or 15 acres of creek waters". (Order, p. 25, Provision B.19; *see also* Finding 21 ('Mitigation') incorporated by reference into this Provision.)

For any "[v]iolation or threatened violation" of that requirement, the Order threatens "administrative civil liability pursuant to [California Water Code] section 13350" up to "a maximum of $5,000 per day of violation or $10 for each gallon of waste discharged". (Order, p. 31.) If any required technical report (which might include plans required by the Mandate) is not submitted, or is "late or inadequate", the Order threatens further "civil liability

pursuant to [California Water Code] section 13268." (Order, p. 32.)

The Order is an order by a State agency invoking State law, and threatening potentially significant State-law penalties for violations, to require the District to undertake a large offsite wetlands enhancement project subject to the State agency's approval. That is a State mandate.

The Order's citation to Section 401 of the federal Clean Water Act (33 U.S.C. § 1341) does not transform this State mandate into a federal one qualifying for the exemption of Government Code § 17556(c). That exemption is narrow, applying only when the State lacks "*discretion* whether to impose a *particular* implementing requirement" of the federal law. (*Department of Finance v. Commission on State Mandates* (2016) 1 Cal.5th 749, 765, emphasis added; *see* Cal. Const., Art. XIII B § 9(b)) (exemption from Article XIII B applies only when agency is "without discretion" in complying with federal mandate).) The State has the initial burden to establish that this exemption to Section 6, like any other, applies. (*Department of Finance*, 1 Cal.5th at 769.) It does not.

For starters, Section 401 cannot be a federal mandate because it does not regulate State or local agencies as such. It regulates an "*applicant*" for "a Federal license or permit" under the Clean Water Act by requiring them to provide the federal permitting agency with a "certification" from the State. (33 U.S.C. § 1341(a)(1), emphasis added.) Once a federal permit applicant requests a certification from the State, Section 401 gives the State a number of choices—including the choice to ignore the request altogether.

The State *may* grant the certification, in which case the processing of the federal permit may proceed (*id.*); the State *may* deny the certification, in which case no federal permit may issue (*id.*); the State *may* also just ignore the request altogether (*see id.* para. (a)(1) (if State has no authority to issue certification, then applicants fall back to obtaining "such certification" from the EPA Administrator). Or the State *may*

issue a certification with any conditions necessary to meet "any other appropriate requirement of *State* law", which conditions the federal permitting agency must then include in the federal permit. (*Id.* para. (d)), emphasis added.) If the State "fails or refuses to act on a request for certification" within a year, the requirement on the federal permit applicant to obtain a certification under Section 401 "shall be waived". (*Id.* para. (a)(1).)

In California, the Regional Boards issue most Section 401 certifications on behalf of the State. (*See* 23 Cal. Code Regs. § 3859(c).) Federal law places no constraints on the Regional Boards' discretion to act or not act in any way they want when considering Section 401 certification. Every decision by one of the Regional Boards to grant a federal permit applicant's request for a Section 401 certification is, at heart, discretionary, both in whether even to consider the request and also in any State-law conditions the Regional Boards may insist on becoming conditions of the federal permit. Because they are discretionary decisions implementing State law, Section 401 certifications by any of the Regional Boards are not federal mandates under Government Code § 17556(c).

In this case, the Regional Board took it upon itself to exercise a rather extraordinary amount of discretion when it issued the Order and Mandate. The Regional Board's discretion drove every step that led to the Mandate: in issuing the original Section 401 certification to the Corps, in taking it upon itself to consider four different proposals to try to impose responsibility for a significant off-site mitigation project on the District in a way it hoped would help it avoid its reimbursement obligation under Section 6, and twice making substantive changes to the size, timing, or justifications for the off-site mitigation requirement from the dais at public hearings. (See Part II.D above.) No federal law required the Regional Board to do any of this. The exemption

of Government Code § 17556(c) cannot apply. The Mandate is a State mandate.

B. The Mandate Is A New Program Or Higher Level Of Service

A State mandate requires a "higher level of service" within the meaning of Section 6 when two factors are met. First, the mandate's requirements must be "new in comparison with the preexisting scheme". (*San Diego Unified School Dist. v. Commission on State Mandates* (2004) 33 Cal.4th 859, 878.) The Mandate is new because the Order now requires the District to carry out a large off-site mitigation project, whereas before the Mandate and Order were adopted the District had no such requirement.

Second, the mandate's requirements must be "intended to provide an enhanced service to the public." (*Id.*) Here, the State had a preexisting State program—the 'California Wetlands Conservation Policy'—to ensure a "net gain" in wetlands in California, and the Mandate is expressly designed to enhance that program by requiring the District to create a "net gain" in wetlands: the Mandate requires the District to ensure that there is a "*net gain* in wetland and waters area, function, and value, *consistent with Finding 21*." (Order, Provision B.19.a, emphasis added.)

The Mandate makes clear, by way of its reference to Finding 21, that its goal of ensuring a net gain in wetlands is derived from the "California Wetlands Conservation Policy (Executive Order W-59-93)". (Order, Finding 21, p. 12.)[2] Executive Order W-59-93 recites that wetlands "act as primary producers in the food chain, help retain floods, recharge and discharge groundwater, act as water quality filters, provide recreational and scenic values, and harbor a

[2] Executive Order W-59-93 is available here: https://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/wrapp2008/executive_order_w59_93.pdf. A courtesy copy can be provided to the Commission upon request.

significant number of California's threatened and endangered plant and animal species"—public services all. The Executive Order creates a State program to ensure a "net gain in the quantity, quality, and permanence of wetlands acreage and values in California." By requiring the District to create a net gain in wetlands, the Regional Board is really just coopting the District to pay for an expansion and enhancement of the State's Wetlands Conservation Policy. The Mandate requires a higher level of service of the District.

The Mandate could equally be viewed as requiring a "new program" within the meaning of Section 6. Where a mandate effects a "shift in funding of an existing program from the state to a local entity", it is a "new program" as to that local agency. (*Lucia Mar Unified School Dist. v. Honig* (1988) 44 Cal.3d 830, 835.) By shifting to the District financial responsibility for funding and implementing the State's program to create net gains in wetlands, the Mandate creates a new State-mandated wetlands expansion program for the District. This is a new program.

C. The District Is A Local Agency

"Local agency" includes any "special district" or "other political subdivision of the state". (Gov. Code § 17518.) The District is a special district because it "performs governmental or proprietary functions within limited boundaries" (Gov. Code § 17520) by providing water, flood control, and other services to Santa Clara County (see Part II.A above). The District is also a political subdivision of the State because it was created by the District Act, a state law. (*Id.*) The District is a local agency entitled to reimbursement for State mandates.

D. The District Does Not Have Fee Authority To Recover The State Mandate's Costs

A local agency lacks authority to pay for a State mandate with service charges, fees, or assessments, within the meaning of the Government Code § 17556(d) exemption, if

imposing them would be subject to voter approval under Proposition 218. (In re Test Claim On: *San Diego Regional Water Quality Control Board Order No. R9-2007-0001*, at pp. 106, 115 (Mar. 26, 2010) (fees and charges under both Const. Art. XIII D § 6 paras. (a)(2) & (c) are subject to voter approvals).) Proposition 218 subjects any "fee" or "charge" to voter approval. (Cal. Const. Art. XIII D § 6 paras. (a)(2) & (c)).) "Service charges, fees, or assessments", within the meaning of Government Code § 17556(d), are a "fee" or "charge" under Proposition 218. (*See* Cal. Const. Art. XIII D § 2(b) ("Assessment" means "any levy or charge upon real property by an agency for a special benefit conferred upon the real property"), § 2(e) ("Fee" or "charge" means "any levy other than an ad valorem tax, a special tax, or any assessment, imposed … as an incident of property ownership").) Because any service charges, fees, or assessments the District could use to pay for the Mandate would require voter approval, the District lacks authority to use them to excuse the State's reimbursement requirement. (*See also* Cal. Const. Art. XIII C § 1(e) (subjecting to local voter approval "any levy, charge, or exaction of any kind imposed by a local government").)

The Mandate is a State mandate of a new program or increased level of service on a local agency without fee authority to recover its costs. The District is entitled to reimbursement.

V. THE COSTS TO THE DISTRICT OF THE MANDATE

A. Statement That Actual And Estimated Costs Exceed $1,000

Actual and estimated costs to the District in this test claim exceed $1,000.

B. New Activities And Costs That Arise From The Mandate

"Costs mandated by the state" means "any" increased costs to the local agency required by "any" State mandate.

(Gov. Code § 17514.) The District has had to incur three categories of increased costs required by the Mandate: (i) the costs associated with developing District staff communications with the Regional Board about the suitability of the Almaden Lake Project to satisfy the Mandate; (ii) the costs of the Regional Board staff time related to the suitability of the Almaden Lake Project to satisfy the Mandate that has been charged to the District under separate agreements; and (iii) the costs of pursuing this test claim.

Taken together, the District's increased costs required by the Mandate total $2,701.07 for the previous fiscal year (2016/2017).

For the present fiscal year (2017/2018), the District's increased costs required by the Mandate total at least $71,993.27 in increased costs actually incurred so far this fiscal year, and at least $67,405 in increased costs that are reasonably foreseeable for the remainder of this fiscal year (not including known but unquantifiable or unknown costs), for a total in actual plus reasonably foreseeable costs this fiscal year of $139,398.27.

1. Costs Of Communications With Regional Board About Almaden Lake

District staff began spending time on developing the Lake Almaden Project as a possible means of satisfying the Mandate on August 23, 2017. (Hakes Decl. ¶ 5.) Within less than a month, the Regional Board sent what it has called a 'comfort letter' to the District, acknowledging "the proposed Lake Almaden mitigation project" as part of the discussions to meet the Mandate, promising to hold off on taking enforcement action against the District related to the Mandate so long as discussions continued, and expressing hope that an "acceptable plan" could be submitted soon. (Chan Decl. Ex. 14.)

Since then, District staff have continued to communicate with Regional Board staff about improvements

at Almaden Lake, communicate internally, including with counsel, in order to formulate responses to questions from the Regional Board about using Almaden Lake to satisfy the Mandate, and respond to questions from the Regional Board about the implementation of the Mandate. (Blank Decl. ¶¶ 11, 14 *et seq.*; Hakes Decl. ¶¶ 6,8.) Regional Board staff may be nearing some kind of recommendation or action on the suitability of the Almaden Lake Project for satisfying the Mandate. (*See* Blank Decl. ¶ 25.) This work would not have been done by District staff but for the Regional Board's Mandate. (Blank Decl. ¶ 22; Hakes Decl. ¶ 11.) These are increased costs required by the Mandate. More specifically:

(a) Chris Hakes Costs

Chris Hakes is the District's Assistant Operation Officer for Water Utility Capital Division, and previously was the Unit Manager responsible for project delivery of the Upper Berryessa Project. (Hakes Decl. ¶¶ 2-3.) He communicated with, and helped, with other District staff and counsel, to develop communications with Regional Board staff (Ms. Susan Glendening) about the suitability of the Lake Almaden project to satisfy the Mandate. (Hakes Decl. ¶ 6.) He would not have spent this time but for the Mandate. (*Id.*) The District incurred a total cost of $2,044.45 for his time required by this category of the Mandate this fiscal year. (Hakes Decl. ¶ 7.)

(b) Rechelle Blank and the Almaden Lake Project Team Costs

Rechelle Blank is the Temporary Assistant Operating Officer responsible for the four divisions of the District's Watersheds Stewardship and Planning Division, and previously was a Capital Engineering Manager responsible for overall project oversight, budgeting, and project team management of three capital improvement projects, including the Almaden Lake project. (Blank Decl. ¶ 3.) Ms. Blank

communicated directly with Ms. Glendening about Ms. Glendening's questions about the Almaden Lake Project, and oversaw the project team necessary to develop, in consultation with counsel, responses to those questions, including various technical memoranda and CADD project plans. (Blank Decl. ¶¶ 11, 15, 16.) The District incurred a total cost of $46,944.06 for Ms. Blank and the Almaden Lake Project team by this category of the Mandate this fiscal year. (Blank Decl. ¶ 22.)

(c) Counsel Costs

The District incurred costs for in-house and outside counsel time incurred related to consultations with District staff necessary for them to communicate with Regional Board staff about the suitability of the Almaden Lake Project to satisfy the Mandate. These costs total $10,008.37 for this fiscal year. (*See* Chan Decl. ¶ 19 ($2,245.87) and Prows Decl. ¶ 23 ($7,762.50).)

(d) Summary

Adding these costs together, the District incurred a total of $58,996.88 this fiscal year related to communications with Regional Board staff about the suitability of the Almaden Lake Project to satisfy the Mandate. There is no reasonable basis for projecting the District's estimated costs for the remainder of this fiscal year related to this aspect of the Mandate. (Hakes Decl. ¶ 11; Blank Decl. ¶ 25.)

2. Costs Of Regional Board Staff Time On Mandate

The District has entered into a series of agreements with the Association of Bay Area Governments ("ABAG") to cover the costs of the full time employment of an Environmental Specialist II or equivalent for the Regional Board to help facilitate the Regional Board's review of the District's applications or requests of the Regional Board. (*See* Declaration of Tamra Zozaya ("Zozaya Decl."). Ex. 1 (original

2012 agreement with ABAG "on behalf" of the Regional Board); Ex. 2 (third amendment extending term of original agreement to September 30, 2017); Ex. 3 (new agreement, between the District and ABAG, with similar terms, effective October 1, 2017). Susan Glendening is the staff person at the Regional Board funded by the District under the Contract. (Hakes Decl. ¶ 6; Blank Decl. ¶ 10; Zozaya Decl. Exs. 4 & 5 (September 2017 through January 2018 spreadsheets and invoices under agreements for Ms. Glendening's time).)

The District receives spreadsheets, usually monthly, from ABAG accounting for Ms. Glendening's time under these agreements. (Zozaya Decl. Ex. 5.) Before September 2017, there was no mention in those spreadsheets for her of anything that might be related to mitigation for the Upper Berryessa project or to the Almaden Lake project, and no such time is included in this test claim. In September through December 2017, the "Agency Notes" column (column M) for her on the "Upper Berryessa" Project line (line 15) notes variants of "Almaden Lake" related to "mitigation". This suggests that some, though not all, of her time for "Upper Berryessa" (line 15) for those months was billed to the District as a cost of investigating the suitability of the Almaden Lake project to satisfy the Mandate. The District paid ABAG $8,140.67 for the September 2017 invoice, $8,082.59 for the October 2017 invoice, $1,566.64 for the November 2017 invoice, and $1,500.81 for the December 2017 invoice for those line-15 items. (Declaration of Gloria del Rosario ("del Rosario Decl.") ¶¶ 10-13; *see* Zozaya Decl. Exs. 4 & 5 (corresponding spreadsheets and invoices).) While the District cannot reasonably quantify the Regional Board staff time billed to the District for September or October 2017 limited just to the Mandate, the evidence shows the District did incur costs, albeit currently unquantified, required by the Mandate for those months this fiscal year.

The District has also received, though not yet paid, an invoice from ABAG for January costs under its agreement

with the District for $12,164.50. (Zozaya Decl. Ex. 4; *see* del Rosario Decl. ¶ 14.) All 22.5 hours Ms. Glendening charged in January—23% of her total time—to "Upper Berryessa" (line 15) appear to have been spent on matters related to the suitability of the Almaden Lake Project to satisfy the Mandate. (*See* 'Agency Notes' in column M, line 15, of Zozaya Decl. Ex. 5 for bill for January 2018 services.) The District can reasonably expect to pay approximately $2,700 (23% of $12,164.50 is $2,797.84) more this fiscal year in increased costs under the ABAG agreement required by the Mandate.

3. Costs Of Test Claim

Costs of preparing and filing an approved test claim are reimbursable. (*See Mandate Reimbursement Process II*, Commission Case No. 05-TC-05 at 2.)

(a) Counsel Costs

Last fiscal year, in-house and outside counsel for the District began spending time related to this test claim very shortly after the Order was adopted and through the end of the last fiscal year, for a total cost to the District of $2,701.07. (Chan Decl. ¶ 20 ($1,183.67); Prows Decl. ¶ 24 ($1,517.40); Prows Decl. Exs. 1-10 (redacted invoices for April through June 2017 time).)

For this fiscal year, the District has paid outside counsel $6,004.50 for time spent on this test claim through February 2018; outside counsel has billed the District an additional $32,352.50 for March 2018 time (including $110 in costs) related to this test claim; and outside counsel expects April's bill related to this test claim to at least match March's. (Prows Decl. ¶ 20, Ex. 10.) In-house counsel has cost the District $4,917.19 for time spent this fiscal year to prepare this test claim. (Chan Decl. ¶ 21.)

(b) District Staff Assistance

This fiscal year, Chris Hakes and Rechelle Blank each spent significant time assisting in the preparation of this test

claim. Chris Hakes's time on this test claim has cost the District approximately $444.09 (Hakes Decl. ¶ 9.) Rechelle Blank's time on this test claim has cost the District at least $1,630.65. (Blank Decl. ¶ 23.) Added together, the District's staff assistance costs for preparing this test claim this fiscal year total at least approximately $2074.74.

(c) Summary

Last fiscal year, the District's total costs for the test claim were $2,701.07.

This fiscal year, the counsel plus district staff assistance costs the District has paid on the test claim total $12,996.43. The District is reasonably likely to incur at least $64,705 more this fiscal year in counsel fees on the test claim. (*See* Prows Decl. ¶¶ 19-20 ($32,352.50 for March time plus at least that much for April).). The District has actually incurred and is reasonably likely to incur costs for the test claim this fiscal year of at least $77,701.43.

C. Existing Activities And Costs That Are Modified By The Mandate

The costs described in Part V.B above might also be considered existing activities and costs that are modified by the Mandate. (*See* Part IV.B above.)

D. The Actual Increased Costs Incurred The Previous Year

There are at least $2,701.07 in increased costs actually incurred the previous fiscal year. (See Part V.B.3.a above.)

E. The Actual Or Estimated Annual Costs Incurred This Fiscal Year

Actual costs incurred so far this year by the District for the Mandate this fiscal year total $71,993.27.[3]

Additional costs to the District that are reasonably well known to the District for this fiscal year total at least $67,405.[4]

The District knows it has incurred additional costs, as explained above, but does not know the amounts.

Added together, the total actual plus estimated costs for the Mandate for this fiscal year total at least $139,398.27.

F. Statewide Cost Estimate

The District bears full responsibility under the Mandate for all statewide costs of the Mandate.

G. Identification Of All Available Funding Sources

The District's funds to pay for the three categories of increased costs of the Mandate identified in this test claim have come from Measure B, Santa Clara County (2012). (Blank Decl. ¶ 24; Hakes Decl. ¶ 10.)[5]

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[3] Actual Almaden Lake costs:
$2,044.45 for Chris Hakes (V.B.1.a)+
$46,944.06 Almaden Lake Project team (V.B.1.b)+
$10,008.33 for counsel (V.B.1.c)
+
Actual Test Claim costs:
$6,004.50 for outside counsel (V.B.3.a)+
$4,917.19 for in-house counsel (V.B.3.a)+
$2,074.74 for District staff support (V.B.3.b) =
$71,993.27

[4] Approximate payment to ABAG for January 2018 time (V.B.2):
$2,700
+
Expected March+April 2018 fees for outside counsel (V.B.3.a):
$64,705 =
$67,405

[5] Information about Measure B, including its text, is available online at: http://www.smartvoter.org/2012/11/06/ca/scl/meas/B/#text

SECTION 6: DECLARATIONS

Containing declarations and supporting exhibits by:

Rita Chan

Chris Hakes

Rechelle Blank

Gloria del Rosario

Tamra Zozaya

Peter Prows

DECLARATION OF RITA CHAN

I, Rita Chan, declare as follows:

1. I have personal knowledge of the facts stated in this declaration, and if called as a witness could competently testify to them.

2. I am employed by the Santa Clara Valley Water District ("District") as an Assistant District Counsel in the Office of District Counsel. I have held this position since December of 2008. I have a Bachelor of Science and Master of Science degrees in Civil Engineering and a Juris Doctor degree.

3. I provide legal advice to District staff, often including outside counsel, relating to environmental review and permitting of District projects including the Upper Berryessa Project. Since the San Francisco Bay Regional Water Quality Control Board ("Regional Board") issued Order Number R2-2017-0014 in April 2017 ("Order"), I have been providing legal support and assisting staff with their efforts in negotiating and developing the mitigation project that might comply with Provision B.19 – (the "Mandate") of the Order. In recent months, I have also worked with outside counsel on numerous aspects of this test claim. None of the above work activities would have been required if the Regional Board had not issued the Mandate.

4. Attached as Exhibit 1 to this declaration is an accurate copy of the Regional Board's Order.

5. Attached as Exhibit 2 to this declaration is a courtesy copy of the District Act, as posted on the District's website.

6. Attached as Exhibit 3 to this declaration is an accurate copy of the "Final General Reevaluation Report And Environmental Impact Statement" prepared by the U.S. Army Corps of Engineers ("Corps") in relation to the Upper Berryessa Project.

7. Attached as Exhibit 4 to this declaration is an accurate copy of the "404(b)(1) Water Quality Evaluation" prepared by the Corps in relation to the Upper Berryessa Project.

8. Attached as Exhibit 5 to this declaration is an accurate copy of the Final Environmental Impact Report for the Upper Berryessa Creek Flood Risk Management Project, Santa Clara County, California, which the District certified.

9. Attached as Exhibit 6 to this declaration is an accurate copy of a Clean-Water-Act Section 401 certification the Regional Board issued to the Corps in March 2016 related to the Upper Berryessa Project.

10. Attached as Exhibit 7 to this declaration is an accurate copy of a draft order Regional Board staff proposed in August 2016 related to the Upper Berryessa Project.

11. Attached as Exhibit 8 to this declaration is an accurate copy of a letter that District staff sent to Regional Board staff in relation to the Upper Berryessa Project on September 19, 2016.

12. Attached as Exhibit 9 to this declaration is an accurate copy of a draft order and Section 401 certification Regional Board staff proposed in November 2016 related to the Upper Berryessa Project.

13. Attached as Exhibit 10 to this declaration is an accurate copy of November 2016 Regional Board staff responses to comments on the August 2016 draft order related to the Upper Berryessa Project.

14. Attached as Exhibit 11 to this declaration is an accurate copy of a transcript of the Regional Board's January 2017 public hearing on the Upper Berryessa Project.

15. Attached as Exhibit 12 to this declaration is an accurate copy of a draft order and Section 401 certification Regional Board staff proposed in April 2017 related to the Upper Berryessa Project.

16. Attached as Exhibit 13 to this declaration is an accurate copy of a transcript of the Regional Board's April 2017 public hearing on the Upper Berryessa Project.

17. Attached as Exhibit 14 to this declaration is an accurate copy of a letter Regional Board Staff sent District staff in this matter, dated September 20, 2017.

18. Attached as Exhibit 15 to this declaration is an accurate copy of a spreadsheet I prepared to report my hours, accurate based on my best estimation upon reviewing my recollection

and files, attributable to either the filing of the test claim or to assisting staff with communications with the Regional Board about using Almaden Lake to satisfy the Mandate, and the applicable productive hourly rates incurred by the District related to my work required by the Mandate.

19. My costs to the District for advising District staff about communications with the Regional Board on the suitability of the Almaden Lake Project total $2,245.87 for this fiscal year, as per line 21 of Exhibit 15.

20. My costs to the District for advising District staff about communications with the Regional Board on the suitability of the Almaden Lake Project total $1,183.67 for the previous fiscal year, as per Exhibit 15.

21. My costs to the District for preparing this test claim total $4,917.19 for this fiscal year, as per Exhibit 15.

I declare under penalty of perjury under the laws of the State of California that the facts stated in this declaration are true.

Dated: April 12, 2018

Rita Chan

EXHIBIT 1

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER No. R2-2017-0014

WASTE DISCHARGE REQUIREMENTS and WATER QUALITY CERTIFICATION for:

**SANTA CLARA VALLEY WATER DISTRICT and
U.S. ARMY CORPS OF ENGINEERS,
UPPER BERRYESSA CREEK FLOOD RISK MANAGEMENT PROJECT
SANTA CLARA COUNTY**

The California Regional Water Quality Control Board, San Francisco Bay Region (Water Board), finds that:

1. The Santa Clara Valley Water District (District) delivers water and is responsible for flood protection and stream stewardship in Santa Clara County (County). The District is charged with providing local flood protection within five major watersheds in the County, including the 322-square mile Coyote Creek watershed, which drains from the southeastern hills of the County to Lower San Francisco Bay.

2. Berryessa Creek is in the Coyote Creek watershed in the County and drains from the undeveloped Diablo Range hills east of San Jose, through urbanized areas in San Jose and Milpitas, until it discharges to Lower Penitencia Creek, which is tributary to Coyote Creek. Under existing conditions, Berryessa Creek overtops its banks about once every 10 to 20 years in the 2.2-mile-long reach from Calaveras Boulevard in Milpitas upstream to Interstate 680 (I-680) in San Jose (Upper Berryessa Creek) (Attachment A, Figure 1).

3. **Local-Federal Partnership.** The District is partnering with the U.S. Army Corps of Engineers (Corps) for the Upper Berryessa Creek Flood Risk Management Project (Project) to increase flood protection in the surrounding community. Construction of the Project was authorized by Congress in the Water Resources Development Act (WRDA) of 1990, Public Law 101-640, section 101(a)(5). The District and Corps are each funding Project costs and, between the two sponsors, are dividing and/or sharing various roles and responsibilities, such as design, construction, and post-construction operations, in accordance with the Project Partnership Agreement signed by the Corps and District on May 17, 2016. Regarding cost-sharing, the Project Partnership Agreement stipulates that the District will contribute 25 to 50 percent of the total Project cost, in accordance with the WRDA of 1986, Public Law 99-662, as amended (United States Code, title 33, section 2213). The cost-sharing schedule specifically requires the Corps to conduct (and/or oversee) construction contracting and activities and the District to provide all lands, easements, rights-of-way, relocations, and disposal areas (LERRD). The WRDA also requires the Corps to prepare an operations and maintenance manual for the Project (see Finding 16 - Maintenance).

   While the WRDA and the Project Partnership Agreement stipulate cost-sharing criteria between the Corps and District, construction management and implementation to the Corps,

and LERRD to the District, this Order specifically requires the development and implementation of additional plans, which are described in more detail in this Order:

a. Adaptive Management Plan (Finding 17; Provision 18);

b. Mitigation and Monitoring Plan for compensatory mitigation (Finding 21; Provision 19); and

c. Post-Construction Stormwater Management Plan (Finding 20 (Impacts); Provision 15).

The Water Board's understanding is that the District will be responsible for these three plans because the District owns the Project and is responsible for post-construction operations and maintenance. In addition, the Water Board understands that certain aspects of the construction activities are the responsibility of the Corps (see Findings 8, 9, and 10).

4. **Dischargers.** The Water Board is issuing this Order to the District and Corps, collectively referred to as the "Discharger," because the Project activities will cause or contribute to a discharge of waste that will affect the quality of waters of the State and the United States. By the nature of WRDA projects, the partnership between the Corps and District is inextricable, and the Project could not occur without each sponsor. Therefore, the Water Board is naming the District and Corps, the two Project co-sponsors, as dischargers. As appropriate, this Order notes which Discharger has agreed to be responsible for certain requirements based on WRDA requirements, as well as the Water Board's understanding of the agreements the Corps and District have made with each other (see Finding 3).

5. **Rescission of Existing Water Quality Certification.** The Water Board previously issued water quality certification for the Project pursuant to Clean Water Act (CWA) section 401 to the Corps on March 14, 2016, (Certification) to facilitate the Corps' timely contracting for the Project (see Finding 23). The Certification required the Corps to construct the Project consistent with the then-current design plans and the Corps' water quality certification application dated September 25, 2015 (Application). This Order rescinds and supersedes the previously-issued water quality certification with waste discharge requirements (WDRs) and a reissued water quality certification. The Water Board is authorized to issue WDRs and water quality certification for the Project in accordance with California Water Code (CWC) section 13263(a) and CWA section 401(d) to both the Corps and the District as the Dischargers.

6. **Project Purpose.** The Project is intended to provide flood protection in Upper Berryessa Creek from the one percent exceedance probability flood event (also known as the one-percent-annual-chance flood event, or the 100-year flood event) for an estimated 650 land parcels and to contribute to reduced flood risks for an unquantified number of additional parcels where flow from Upper Berryessa Creek combines with other flood waters. The Project will also modify about 220 linear feet of Los Coches Creek and 60 linear feet of Piedmont Creek, which are tributary to Upper Berryessa Creek. The completed Project will meet Federal Emergency Management Administration certification standards.

The area being protected encompasses the new Milpitas Bay Area Rapid Transit (BART) station and rail line infrastructure, part of a $2.3 billion (including $900 million in federal

funding) BART expansion project to extend BART service from Fremont through Milpitas to San Jose. Project construction began in early October 2016 and is scheduled to be completed in December 2017, with the intent to be complete before the planned opening of the Milpitas BART station in late 2017. The Project is located just upstream of the Lower Berryessa Creek and Lower Calera Creek Flood Protection Improvements Project currently under construction by the District, as authorized by the Water Board in October 2015, which has a planned completion date of October 2018.

7. **Coverage of this Order.** This Order covers Project construction activities (see construction elements listed below), as well as planned operations and maintenance activities after the Project is constructed (see Finding 16 for additional information about maintenance). This Order also covers the mitigation and monitoring requirements necessary for compliance with federal and State regulations (e.g., see Findings 19 through 28).

   The Project's major construction features include: (1) enlarging the Upper Berryessa Creek channel; (2) armoring the channel beds and banks with rock riprap to be covered with 4 inches of soil and to be hydroseeded; and (3) constructing concrete box culverts and concrete transition structures, floodwalls, and access ramps.

   The Project construction elements have the following details below and are shown in Attachment A, Figures 2 and 3; and the fill and excavation information is presented in Table 1:

   a. Widen, deepen, and contour Upper Berryessa Creek to create a trapezoidal channel cross section with a bed width varying from 12 to 40 feet, depth varying from 8 to 14 feet, and banks with a 2-to-1 horizontal-to-vertical (2:1) slope. The channel footprint from top of bank to top of bank in Upper Berryessa Creek will increase from 9.7 to 17.2 acres;

   b. Build two new pre-cast (or cast-in-place) concrete box culverts (where currently none exist), consisting of a box culvert at both the Los Coches Creek and Piedmont Creek mouths and a double-barrel box culvert to replace the existing Union Pacific Railroad (UPRR) wooden trestle bridge downstream of Montague Expressway, and the associated cast-in-place concrete wingwalls and concrete or grouted rock riprap transition structures;

   c. Armor the channel bed and banks with rock riprap, covered by 4 inches of soil and hydroseeded for erosion protection, with the following details:

      i. Total area of 9.81 acres (10,072 linear feet of rock riprap, including 9.71 acres in Upper Berryessa Creek (9,831 linear feet), 0.09 acres in Los Coches Creek (221 linear feet), and less than 0.01 acres in Piedmont Creek (20 linear feet);

      ii. Rock riprap (9 to 24 inches thick) in channel beds and banks extending up to the 2.5- to 10-year water surface elevation (7,547 linear feet);

      iii. Rock riprap in banks (additional 2,525 linear feet in Upper Berryessa Creek) extending from 5 feet below the channel invert elevation up to the 2.5- to 10-year water surface elevation;

      iv. A 4-inch layer of native soil covering channel bed and bank riprap (10,072 linear

feet), covered by biodegradable coconut fiber mats from the toe to top of banks, with hydroseed in beds and banks to promote herbaceous native vegetation growth and erosion protection; and

v. Grouted rock riprap (24 inches thick) at the Piedmont Creek confluence and beneath the existing Yosemite Drive bridge crossing;

d. Construct concrete floodwalls of 1,123 feet long by up to 2-feet high on the left bank (looking downstream) of Upper Berryessa Creek, between Los Coches Street and Piedmont Creek at the top of bank, and 450-feet long by 3-feet deep, to be buried on the left bank upstream of Montague Expressway to reinforce an existing retaining wall;

e. Construct two concrete access ramps on the right bank (looking downstream), one located about 1,000 feet upstream of Montague Expressway and the other one is 900 feet downstream of I-680;

f. Construct concrete and rock riprap transition structures at the upstream face of the existing Calaveras Boulevard Bridge;

g. Build 4.33 acres and 10,865 linear feet of new maintenance roads and redevelop 2.47 acres and 5,978 linear feet of existing maintenance roads, with a width of 18 feet on the right bank and a width of 15 to 18 feet on the left banks, except in certain two sections downstream of Montague Expressway and I-680 that lack space for a road;

h. Remove an unspecified volume of sediment and vegetation from about 200 linear feet of a concrete-lined reach of Upper Berryessa Creek just downstream of I-680; and

i. Replace and realign existing selected utilities within the Project right-of-way according to the 100 percent design plans dated August 4, 2016.

Table 1. Fill and Excavation Quantities

Project Element	Material	Excavation (cubic yards)	Fill (cubic yards)	Length (linear feet)	Area (acres)
Enlarge and contour channel	Soil	148,400	33,600	10,453	17.2
Riprap in beds and banks	Imported rock (9 to 24-inch diameter)	--	15,233	9,753	9.23
Grouted riprap in beds and banks	Imported rock (24-inch diameter)	--	1,882	319	0.58
Pre-cast concrete culverts	Concrete	--	675	284	0.11
Cast-in-place wingwalls and transition structures	Concrete	--	37	100	<0.01
Access ramps	Concrete	--	101	200	0.10
Floodwalls	Concrete	--	424	1,573	0.04
Concrete channel lining	Concrete	290	---	262	0.36
Maintenance roads	Aggregate base material	--	5,654	16,843[1]	6.8

Notes:
"- -" – Not applicable; UPRR – Union Pacific Railroad

[1] This length is the total for roads on both sides of the channel. Roughly 10,400 linear feet of Upper Berryessa Creek will have maintenance roads on at least one side of the channel. The area of new road is 4.33 acres and the area of redeveloped road is 2.47 acres.

8. **Staging, Stockpiling, and Hauling.** Two areas outside of the Project right-of-way will be used for staging and sediment stockpiling (Attachment A, Figures 2 and 3). Access to and from the Project site and the staging areas will occur along existing paved roads via Calaveras Boulevard, Los Coches Street, Yosemite Drive, Ames Avenue, and Montague Expressway. The Water Board's understanding is that the Corps is implementing the staging, stockpiling, and hauling tasks associated with the construction of the Project.

9. **Reuse or Dispose of Exported Material.** The Discharger will haul about 114,800 cubic yards of sediment from the Project site in addition to demolition debris such as concrete and utility components. Soil and demolition debris will be reused or recycled to the extent feasible. Disposal of any demolished material and debris will be in accordance with all applicable local, State, and federal regulations. The soil to be transported offsite is suitable for non-hazardous landfill disposal, according to the Project Environmental Impact Report (Project EIR) (State Clearinghouse No. 2001104013). The Water Board's understanding is

that the Corps is implementing the soil reuse and disposal tasks relevant to this Finding.

10. **Construction General Permit.** The Discharger is required to seek coverage under and comply with, or oversee that its contractors seek coverage and comply with, the statewide General Permit for Discharges of Storm Water Associated with Construction Activities (Order No. DWQ-2009-0009, as amended by Order Nos. 2010-0014-DWQ and 2012-006-DWQ) (Construction General Permit) (Provision 9). The Corps has contracted with its consultants to meet the requirements of the Construction General Permit.

11. **Final 100 Percent Design Plans.** The Water Board has received final 100 percent design plans and specifications dated August 4, 2016, and the final 100 percent Planting Plan dated April 1, 2016. Effective October 3, 2016, the Project is under construction.

12. **Replace and Realign Selected Utilities Infrastructure.** Multiple utility lines are in the Project right-of-way, including sanitary sewer, stormwater, irrigation, cable, electrical, telephone, fiber optic, and gas lines. The locations of some utilities are estimated and will be confirmed during Project construction activities. Consistent with the 100 percent design plans, the utility infrastructure planned for replacement and/or realignment are sanitary sewer, stormwater lines and outlets, a water irrigation line, an electric line, and two electric utility vaults. In addition, two groundwater monitoring wells and a gauging port will be relocated. In addition, the Application states that all utility work will be implemented by cut and fill procedures with no directional drilling.

13. **Rain Event Action Plan.** The Discharger shall develop and implement a Rain Event Action Plan (REAP), as required by the Construction General Permit, designed to protect all exposed portions of the Site within 48 hours prior to any likely precipitation event. The REAP requirement is designed to ensure that the Discharger has adequate materials, staff, and time to implement erosion and sediment control measures that are intended to reduce the amount of sediment and other pollutants generated from the active site. A REAP must be developed when there is a forecast of 50 percent or greater probability of substantial precipitation in the Project area.

14. **Dewatering.** Dewatering of surface water or groundwater that accumulates at excavated areas will likely be necessary. The Project EIR includes a mitigation measure for creek dewatering (WAQ-B, "Prepare and Implement a Dewatering Plan"). The Discharger submitted an acceptable Dewatering Plan on January 9, 2017.

15. **Groundwater Management and Soil Management.** The Project is within the footprint of a past solvent release from the former Jones Chemical, Inc., chemical plant (JCI site). The Water Board requires the Discharger to capture and treat all groundwater encountered from within the potential extent of the toxic waste plume as demarcated in the 100 percent design plans (JCI plume area). Any such groundwater must meet the standards of the General Permit for the Discharge or Reuse of Extracted and Treated Groundwater Resulting from the Cleanup of Groundwater Polluted by Volatile Organic Compounds (VOC), Fuel Leaks and Other Related Wastes (Water Board Order No. R2-2012-0012; NPDES Permit No. CAG912002) (VOC and Fuel General Permit), as stipulated in a letter to the Corps dated August 14, 2015. The Corps submitted a Groundwater Management Plan dated January 26,

2016, for groundwater discharges in the JCI plume area. Water Board staff notified Corps staff on March 8, 2016, that the plan is acceptable.

The Project EIR, Appendix E, contains soil sampling data from the JCI plume area indicating that VOCs were detected in soils at concentrations less than the Water Board's Environmental Screening Levels. However, excavating in the JCI plume area may bring soil vapor VOC concentrations to the surface at concentrations that may be a worker health and safety concern, in light of the soil vapor concentrations west of the Project site. The Corps' Design Documentation Report (DDR) dated April 29, 2016, states that if contaminated soils are encountered, the soil will be removed and stockpiled on the JCI site for disposal by others. The Water Board requires the data collected for soil analyses, stockpiling, and disposal for soil excavated within the JCI plume area to be made available to the Executive Officer upon request, consistent with Provision 16.

16. **Maintenance**. The Project EIR states that regular maintenance, such as sediment and vegetation removal in Upper Berryessa Creek, will be necessary after the Project is constructed. The District will be responsible for maintenance for the life of the Project, which is anticipated to be approximately 50 years. As part of the federal-local partnership, and in accordance with the WRDA of 1990 (Finding 3), the Corps will develop an Operations and Maintenance Manual (O&M Manual) to guide maintenance, such as sediment removal.

    The O&M Manual will be completed after the Local Cost Agreement is completed between the Corps and the District. However, the schedule for this has not been identified by the Corps. According to the Project Environmental Impact Statement/General Reauthorization Report (EIS/GRR), the Corps plans to conduct cross-sectional and longitudinal monitoring after construction is completed to inform development of the O&M Manual (Revised Final EIS/GRR, March 2014; specifically in the Corps' responses to comments from the Peer Review Panel (Batelle, 2013[1]).

    The Project EIR also states that the Project will result in less sediment accumulation and less volume than existing conditions and, specifically, that sediment will accumulate only at the UPRR trestle bridge replacement site and the other UPRR culvert upstream of Ames Avenue. Water Board staff's review of the sediment transport model and other Project documents indicates that the Project reach will continue to be depositional, despite the banks being stabilized. This is because there is ample sediment supply to the Project reach both from upstream and its tributaries, and because, as stated in the Project EIR, the Project design will increase the channel cross-sectional area, which will result in reduced velocity during storm flows and lower sediment transport capacity. In addition, based on the sediment transport modeling results in the technical memo dated July 20, 2016,[2] "...small benches might deposit in the proposed design cross section...," which would have "minor" impacts on flood

[1] Batelle Memorial Institute (Batelle), 2013. Final Independent External Peer Review Report Berryessa Creek, Santa Clara County, California, General Reevaluation Study (GRS) Draft General Reevaluation Report and Environmental Impact Statement/Environmental Impact Report. Department of the Army U.S. Army Corps of Engineers Flood Risk Management Planning Center of Expertise for the Baltimore District. Batelle, Columbus, OH.

[2] Santa Clara Valley Water District (District), 2016a. Comments on Waste Discharge Requirements for the Upper Berryessa Creek Flood Risk Management Project. Exhibit 1-Technical Memorandum. Channel Stability and Geomorphologic Characteristics (July 20, 2016). Submitted to Water Board, September 19, 2016.

conveyance and would not trigger sediment maintenance. Further, the Project site is in an alluvial fan, which by its very nature tends toward deposition. All lines of geomorphic evidence, including lower shear stresses, field observations, comparison of historic and current cross sections, and maintenance records, indicate the Project will result in a more-depositional system than existing conditions (Water Board Staff Memos, October 21, 2016,[3] and April 12, 2016[4]).

The accumulation of sediment may benefit the creek because the sediment could provide a more natural substrate for biota and allow for more diverse habitat via the development of a low-flow channel. However, if sediment must be removed at a volume and frequency that prevents the development and persistence of a low-flow channel, these benefits will not be realized. In addition, an independent peer review panel (Batelle, 2013 (see Footnote 1)) found that sedimentation can occur at various locations in the Project reach. Although the peer review panel did not elaborate on whether its members concur or disagree with the Discharger's findings that sediment will only accumulate at the two UPRR sites, the panel expressed significant concern about "...the lack of details on the operation and maintenance (O&M) plan and has identified the need for a detailed O&M plan to ensure the design assumptions concerning sedimentation are valid." The Water Board shares these concerns and, accordingly, requires the following steps to address sediment maintenance in the Project. These steps will occur in tandem with the Corps' process to develop an O&M Manual for the Project and are intended to minimize the recurring impacts from sediment maintenance activities:

a. **Santa Clara Valley Water District Stream Maintenance Program.** The timing of the Local Cost Agreement to occur, and for the transfer of the Project from the Corps to the District, is uncertain, and the O&M Manual may not be available immediately after the Project is constructed. Although the EIS/GRR states the O&M Manual will be developed during the pre-construction design and engineering phase, the Corps will instead develop it after the Project is constructed based on an interagency agreement (January 4, 2016, meeting with Water Board, Corps, and District staffs). Therefore, while the O&M Manual is being developed, this Order authorizes the District to conduct maintenance consistent with the District's existing Stream Maintenance Program (SMP) (Provision 17), authorized under Water Board Order No. R2-2014-0015 (SMP Order), and any future revisions. In the event there is a conflict between the SMP Order, the O&M Manual, and this Order, the requirements of this Order will govern.

b. **Multiagency Collaboration.** Development of the O&M Manual will be accomplished through a collaboration of the Water Board and other appropriate regional, State, and federal agencies. This is necessary to ensure the planning and implementation of

[3] Setenay Bozkurt Frucht, 2016. Response to SCVWD Comments on the Upper Berryessa Creek Tentative Order. Internal Staff Memorandum from S. Bozkurt Frucht to Keith Lichten, Chief, Watershed Management Division, San Francisco Bay Regional Water Quality Control Board. Available from Water Board staff upon request.

[4] Riley, Ann L., and Setenay Bozkurt Frucht, 2016. Projected Future Maintenance on the Upper BerryessaCreek Flood Risk Management Project. Internal Staff Memorandum from A. Riley and S. Bozkurt Frucht to Keith Lichten, Chief, Watershed Management Division, San Francisco Bay Regional Water Quality Control Board. Available from Water Board staff upon request.

maintenance are consistent with the SMP and, accordingly, will minimize environmental impacts. Additionally, it is consistent with the SMP approach, which includes a multi-agency collaborative process to determine maintenance needs, based on avoiding and minimizing impacts in waters to the extent practicable.

c. **Maintenance Action Thresholds.** The O&M Manual will set maintenance action thresholds based on channel capacities and a performance standard based on protecting 50 percent of the Project design freeboard, consistent with the maximum tolerance applied by the Corps in flood control projects it co-sponsors. The Manual will include using a combination of vegetation and/or sediment management to meet flood risk objectives while minimizing environmental impacts. Using maintenance action thresholds is consistent with the District's SMP Manual process for developing reach- and creek-specific maintenance guidelines. Maintenance action thresholds will be revised iteratively, if needed, based on data to be collected under the Adaptive Management Plan described in the next finding.

d. **Five-Year Assessments for Adaptive Management, and Previously-Mitigated Areas.** The O&M Manual will be evaluated at least every five years to incorporate the findings (i.e., development of maintenance guidelines) under the activities required in the next finding to prepare and implement an Adaptive Management Plan.

e. **Authority to Conduct Maintenance in the Project Site.** Maintenance in the Project site, after construction is completed, is authorized under this Order until such time that the Executive Officer determines the site may be folded into the District's SMP. This is necessary because the monitoring necessary to verify sediment transport processes cannot be maintained under the SMP procedures for priority project budgeting and implementation.

17. **Adaptive Management Plan.** This Order requires the Discharger to submit an Adaptive Management Plan, acceptable to the Executive Officer, pursuant to Provision 18. The Adaptive Management Plan will describe channel dimension and flow data to be collected, which the Discharger will use to understand how the Project is performing after construction (e.g., stage-discharge relationships) and to generate quantifiable channel capacity flood protection objectives (e.g., acceptable freeboard at bridge crossings) to guide future maintenance activities. The objectives shall be revised iteratively as new data are collected under post-construction conditions and shall inform the O&M five-year assessments.

    Adaptive management is consistent with the District's SMP, which requires development of channel and reach-specific triggers for maintenance (i.e., maintenance guidelines) that minimize disturbance of the creek channel vegetation and substrate. This approach informs sediment and vegetation removal based on field observations of channel processes and performance, rather than solely using design criteria. Further, at least part of the data to be collected is consistent with the Corps' plans to collect longitudinal and cross-sectional data to calibrate sediment transport model results, specified in the Corps' responses to comments from the peer review panel (Batelle, 2013).

18. **Waters of the U.S. and of the State.** Based on a jurisdictional wetland delineation (Tetra

Tech, 2014), the Project has 4.18 acres of waters of the U.S. as creek waters (other waters). The waters of the U.S. are also waters of the State. An additional area of 5.63 acres from the ordinary high water mark elevation to the tops of banks constitutes waters of the State (but not waters of the U.S.), for a total area of 9.81 acres of waters of the State. This elevation difference, i.e., the vertical distance from the ordinary high water mark to the top of bank, ranges from zero to 6 feet. The linear extent of the Project activities in waters of the U.S. and of the State is approximately 10,072 linear feet of other waters.

No jurisdictional wetlands, as defined by the Corps' 1987 manual for wetland delineation, are in the Project area. However, significant portions of the creek, inset floodplain, and riparian habitat from top of bank to top of bank are riverine wetlands that are waters of the State (see Finding 26). The wetland delineation identified patches of wetland vegetation fringing the margins of the Upper Berryessa Creek active channel, with a combined area estimated at less than 0.5 acres, and an earlier assessment found an area of 0.39 acres of fringing wetland vegetation. For purposes of this Order, about 0.45 acres of fringing wetland vegetation is in the Project downstream of the Piedmont Creek confluence, where flow is most likely to be present year round and support wetland vegetation.

19. **Rare and Endangered Species.** The Project site does not presently support any rare or endangered species. It provides potential habitat for such species.

20. **Impacts.** The Project will result in fill and excavation impacts to 4.18 acres of waters of the U.S. that are also waters of the State and an additional 5.63 acres of waters of the State, for a total of 9.81 acres and about 10,450 linear feet of waters of the State in Upper Berryessa Creek, Los Coches Creek, and Piedmont Creek. These impacts consist of both permanent and temporal degradation of water quality function and value. The permanent and temporal impacts are co-located, although they each affect separate types of function and value in the affected creeks, as explained in detail in sections (a) and (b) below. The Project will also result in impacts from installation of new and replaced impervious surfaces.

    a. Permanent Degradation in Water Quality Function and Values

    i. *Rock Riprap.* The rock riprap fill (excluding the *grouted* riprap (see (ii) below)) will permanently degrade the function and value of creek bed and bank by displacing existing soil with 9- to 24-inch diameter angular rock underlain with a layer of geotextile fabric. This will result in less habitat for the benthic organisms living in the creek, including, but not limited to, algae, worms, diatoms, micro- and macroinvertebrates, and fish larvae. This impact to the benthic community will likely, in turn, reduce nutrient cycling and energy (as carbon) transfer to upper trophic level organisms (e.g., fish and birds). The lack of lower trophic organisms will restrict the designated beneficial uses in the Project, including warm water habitat, wildlife habitat, and non-contact water recreation uses (see Finding 26 for additional details of the beneficial uses).

    The total rock riprap length is 9,753 feet, which encompasses 262 linear feet of concrete lining that will be removed in the area of Station 177. At this section, the replacement of concrete with rock riprap will result in a low-level improvement in

habitat quality. Therefore, the net length of permanent degradation from rock riprap is 9,491 feet (9.23 acres).

Although a 4-inch layer of soil will cover the rock, this layer is not enough to make up for the loss in functions and values currently provided by the earthen substrate in the creek bed and banks. In addition, the riprapped substrate is likely to severely restrict the colonization of vegetation in the creek bed and banks. Woody species that may attempt to grow would be impeded by the rock substrate. Any attempts to establish native vegetation as dominant cover at the Project site (see next finding - Mitigation) will be severely restricted due to the lack of soil on the creek banks and bed. Of the six native plant species in the upland and wetland hydroseed mixes being used in the Project, the minimum root depth requirement in soil ranges from 5.1 to 20.5 inches (Cal Flora database, http://www.calflora.org/. Accessed September 26, 2016).

ii. *Concrete and Grouted Riprap Structures.* Concrete and grouted riprap culverts and transition structures will permanently degrade the function and value by restricting the creek's natural processes in the same manner but to a greater extent than the riprapped sections of channel. Both concrete and grouted riprap are impervious and block the natural exchange of water, oxygen, and nutrients in the channel bed and bank. Further, concrete and grouted riprap surfaces do not support biota except a film of algae, fungi, and other non-vascular vegetative growth and any invertebrates that incidentally land on the hardscape. The length of concrete and grouted riprap is about 703 linear feet and 0.7 acres of creek bed and bank and an additional 200 linear feet (0.1 acre) along the right bank extending from the top of bank to the bed elevation. In addition, the 1,123-foot long concrete floodwall will disconnect the creek from the riparian corridor.

b. Temporal Degradation in Water Quality Function and Values

i. *Creek Widening.* The Project design will likely result in temporal losses of function and value by removing Upper Berryessa Creek's existing low-flow channel and inset floodplain benches that have formed over the past few decades and replacing them with a widened, flat-bottomed, riprapped channel. This could homogenize habitat structure within the creek and alter material transport functions until sediment deposition creates a new low-flow channel and floodplain benches. The formation of a low-flow channel with inset floodplain benches may occur from about the 1.1-year[5] to 10-year[6] flow based on the District's analyses and depending on precipitation patterns after construction is completed. Accordingly, recovery from channel widening will likely occur within five years. Thus, channel widening will result in temporal losses in function, contingent upon the Discharger's implementation of adaptive management discussed in Finding 17. Channel widening will impact 9,327 linear feet of Upper Berryessa Creek (channel widening will not occur at the Montague Expressway crossing, the two UPRR bridges, the Yosemite Drive crossing, and the Los Coches Creek confluence).

[5] Santa Clara Valley Water District, 2016-b. Geomorphic Approach to Design and Maintain Creeks. PowerPoint Presentation, June 24, 2016.

[6] Stefanovic, Dragi (District's Consulting Engineer at Tetra Tech), 2016. Email to Water Board staff, Setenay Bozkurt Frucht, January 11, 2016.

ii. *Vegetation Removal.* The Project will remove 53 native trees and shrubs growing within creek banks along the entire length of the Project. The Project will also remove about 0.45 acres of non-woody wetland vegetation fringing and within the active channel downstream of the Piedmont Creek tributary. Removing the woody vegetation from the riparian corridor and non-woody wetland vegetation fringing and within the active channel is impactful because this vegetation contributes to bank stability, nutrient cycling, water cycling, and habitat for wildlife. Wetland vegetation will likely reestablish within the same time frame as the active channel (i.e., within five years), based on similar projects in the San Francisco Bay Region, and the District's SMP.

iii. *Construction Activities.* The Project will temporarily impact waters of the State and the U.S. during construction (about 15 months) of the Project. The water quality of Upper Berryessa Creek, Los Coches Creek, and Piedmont Creek will be impacted by creek dewatering activities and may be impacted by accidental releases of soil, debris, other non-hazardous materials, hazardous materials, and contaminants during construction. These releases could cause violations of the water quality objectives proscribed in Chapter 3 of the Basin Plan, including, but not limited to, water quality objectives for the following parameters: bacteria, dissolved oxygen, floating material, oil and grease, pH, sediment, settleable material, suspended material, temperature, toxicity, turbidity, and specific chemical constituents.

21. **Mitigation.** The Application states the Discharger will replace any native trees and shrubs that will be removed and maintain them for five years. The locations for native tree and shrub species to be planted at the site are shown in the 100 percent Planting Plan dated April 1, 2016. The Discharger will seed the creek channel beds with wetland species to serve as a seed bank to restore the 0.45 acres of wetland vegetation to be removed by the Project. The Discharger will also seed the banks with native grass species. The wetland and grass species palettes are listed in the 100 percent Planting Plan specifications (section 32 92 19).

The Water Board requires additional mitigation to compensate for temporary and permanent losses of functions and values resulting from the Project design as described in Finding 20. The Discharger has stated that compensatory mitigation is not feasible within the Project site. Therefore, compensatory mitigation will be offsite. This Order requires the Discharger to submit a Mitigation and Monitoring Plan (MMP), acceptable to the Executive Officer, by October 2, 2017, and to timely implement the MMP. The Water Board's understanding is that this schedule coincides with the District's schedule to adopt the capital improvement project budget for its One Water Plan. However, this Order does not require the District to propose a One Water Plan project as compensatory mitigation. The Water Board will notify the public upon receipt of the required MMP and consider public comments before the Executive Officer accepts it.

The MMP must propose mitigation such that the Project and mitigation, taken together, meet the California Wetlands Conservation Policy (Executive Order W-59-93), known as the "No Net Loss Policy," as described in the Basin Plan (see Findings 27 and 28). The purpose of the No Net Loss Policy is to ensure no overall net loss and to achieve a long term net gain in the quantity, quality, and permanence of wetlands acreage and values. Compensatory mitigation is determined in part on the functions and areal extent of the lost wetlands. The Water Board

has considered the following factors in determining the required amount of mitigation that will adequately compensate for functions lost as a result of the Project:

- The mitigation project will enhance riverine wetland functions rather than restore or create riverine wetland area and functions;
- The mitigation will be in-kind (i.e., riverine mitigation for riverine impacts);
- The mitigation project will be offsite (because the Discharger has stated that compensatory mitigation is not feasible within the Project site) and will be within the Berryessa Creek watershed or elsewhere within the District's jurisdiction and within the San Francisco Bay Region;
- The mitigation project will be constructed within 12 months of the date when creek impacts first occurred (i.e., temporal loss of functions for one year);
- The enhancement benefits from the mitigation project will be fully achieved within five years;
- The mitigation project will have a moderate to high likelihood of success;
- The Project will result in an additional 7.4 acres of waters of the State, which will have the function and value of creek waters with rock riprap armor and concrete substrate and a moderate to low likelihood of native vegetation success in dominating the disturbed area; and
- The Project site will partially recover from impacts within five years of incurring the impacts (e.g., formation of a new low-flow channel and establishment of wetland vegetation within five years).

Based on these factors, the Water Board requires the MMP to include measures that enhance about 15,000 linear feet or 15 acres of waters of the State or a combination of length and area commensurate with the Project's impacts.

In addition, the Water Board may increase or decrease the amount of mitigation required if any of the factors listed above change. For instance, the mitigation length and/or area will be increased by an additional 10 percent for each year mitigation is delayed to compensate for the additional temporal loss. This annual increase is consistent with how the Water Board accounts for temporary impacts in any project. Similarly, the Water Board may decrease the amount of mitigation if the proposed mitigation project is constructed quickly, has a small footprint for construction activities, and has far-reaching beneficial impacts in waters downstream and/or upstream of the mitigation project construction footprint.

When determining whether to accept out-of-kind mitigation, the Water Board may consider such sources as the Baylands Ecosystem Habitat Goals (1999), the Baylands Ecosystem Species and Community Profiles (2000), and the Baylands Ecosystem Habitat Goals Science Update (2015) (referred to collectively as the "Habitat Goals Reports"), the San Francisco Estuary Partnership's Comprehensive Conservation and Management Plan (1993 and its

2016 revision), or other plans specific to the District's flood protection and stream stewardship goals that would result in a project with a "long-term net gain in the quantity, quality, and permanence of wetlands acreage and values ..." consistent with the Basin Plan, section 4.23.4. Examples of potentially acceptable mitigation projects include dam removal, increasing salmonid habitat complexity in another creek, replacing a concrete channel with restored riverine wetland habitat, and preparing a watershed management plan and implementing projects specified in that plan sufficient to meet the Order's mitigation requirements.

The MMP must include performance and success criteria appropriate for the type of project. For vegetation in mitigation sites, herbaceous plantings must be monitored for no less than five years, and shrubs and trees must be monitored for no less than ten years, consistent with the Vegetation Performance and Success Criteria in Attachment B or standards of equivalent or better effectiveness.

The MMP will also report on the recovery of channel form and processes after the Project is completed using data collected to calibrate sediment transport model results and inform maintenance activities under the Adaptive Management Plan (see Finding 17).

22. **Monitoring and Technical Reports.** All monitoring and technical reports required in this Order are required pursuant to CWC section 13267. The burden of preparing these reports, including costs, bears a reasonable relationship to the benefits to be obtained from the reports and monitoring. Specifically, the monitoring and technical reports will demonstrate protection of beneficial uses during construction and maintenance projects, as well as verify the success of efforts to mitigate impacts as described in Findings 20 (i.e., impacts) and 21 (i.e., mitigation requirements). The monitoring reports will log the progress of revegetation over time and verify the success of mitigation plantings and/or other project features in the MMP, consistent with the minimum success and performance standards in the MMP. In addition, the technical reports will document the Project design and inform the Adaptive Management Plan and its implementation.

23. **Water Quality Certification.** The Project will result in discharge of dredge and fill materials into waters of the U.S. and of the State. The CWA (33 U.S.C. §§ 1251-1387) was enacted "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." (33 U.S.C. § 1251(a).) Section 401 of the CWA (33 U.S.C. §1341) requires every applicant for a federal license or permit that may result in a discharge into navigable waters to provide the licensing or permitting federal agency with certification that the project will be in compliance with specified provisions of the CWA, including water quality standards and implementation plans promulgated pursuant to CWA section 303 (33 U.S.C. § 1313). CWA section 401 directs the agency responsible for certification to prescribe effluent limitations and other limitations necessary to ensure compliance with the CWA and with any other appropriate requirement of state law. CWA section 401 further provides that state certification conditions shall become conditions of any federal license or permit for the project.

As the federal administrating agency for regulating the discharge of dredge and fill materials to waters of the U.S. pursuant to CWA section 404 (33 U.S.C., section 1344), the Corps

signed the Record of Decision dated May 29, 2015, stating that the Project meets all environmental statutes. On March 14, 2016, the Water Board issued the Certification pursuant to CWA section 401 to the Corps for the Project. The Certification states that the Water Board would consider WDRs for the Project to address the future operations and maintenance activities, vegetation monitoring for construction mitigation plantings, and an offsite mitigation plan for impacts due to the Project's design. This Order rescinds and supersedes the previously-issued water quality certification and replaces it with WDRs and a new water quality certification.

24. **Waste Discharge Requirements (WDRs).** Pursuant to CWC section 13263 and Title 23, section 3857 of the California Code of Regulations (CCR), the Water Board is issuing WDRs to regulate the proposed discharge of excavation, dredge, and fill materials into waters of the State. The Water Board considers WDRs necessary to adequately address impacts and mitigation to beneficial uses of waters of the State from the Project, to meet the objectives of the California Wetlands Conservation Policy (Executive Order W-59- 93), and to accommodate and require appropriate changes over the life of the Project, including during its construction. In accordance with CWC sections 13263(a) and 13241, the Water Board, after considering this matter at a public hearing, has prescribed requirements as to the nature of the proposed discharge. These requirements implement the Water Board's relevant water quality control plans and policies and take into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, and the need to prevent nuisance.

25. **California Environmental Quality Act (CEQA).** CEQA requires all discretionary projects approved by public agencies to be in full compliance with CEQA, and requires a lead agency to prepare an appropriate environmental document for such projects. The Discharger, as the lead agency, certified an Environmental Impact Report for the Project on February 9, 2016 (Project EIR). The Project EIR found several significant impacts that are under the purview and jurisdiction of the Water Board. These included significant impacts to: (1) biological resources; (2) soil or topsoil resources; (3) hazardous materials; (4) utility and service systems; and (5) hydrology and water quality. The Project EIR also found that the mitigation measures proposed therein would mitigate all of these impacts to less than significant levels. The Project EIR identified the following mitigation measures to mitigate these impacts to less than significant levels:

    - Using seeds or cuttings collected at or near the Project area, or higher in the watershed if onsite collection is not feasible, to replace the 53 native tree and shrubs removed at the following rates:
        - Native tree up to 8 inches diameter at breast height (dbh): plant 1 native tree for each tree removed;
        - Native trees up to 20 inches dbh: plant 2 native trees for each tree removed;
        - Native trees greater than 20 inches dbh: plant 3 native trees for each native tree removed; and
        - Native shrubs: plant 2 native shrubs for each native shrub removed;

- Maintaining a buffer zone around those riparian trees that will be protected in place during construction;

- Replacing non-native and ruderal vegetation with native grass and forbs by hydroseeding disturbed areas;

- Conducting nesting bird surveys prior to construction and during nesting season, and establishing appropriate buffers to reduce impacts to nesting bird species;

- Preventing soil erosion or loss of topsoil by preparing and implementing Rain Event Action Plans (REAPs);

- Collecting and treating potentially contaminated groundwater encountered during Project excavation in the Jones Chemical groundwater plume area to comply with the VOC and Fuels General Permit standards before discharging the groundwater to the environment; and

- During construction, removing hazardous materials and wastes from the creek channel prior to substantial rain so that water flowing in the creek does not entrain hazardous substances.

The Water Board, as a responsible agency under CEQA, has considered the EIR and finds that in combination with the requirements of this Order, impacts during the construction of the Project that are within the Water Board's purview and jurisdiction have been identified and will be mitigated to less-than-significant levels. This Order includes conditions and mitigation measures that will substantially lessen or avoid the Project's impacts on the environment. The need for compensation of impacts from the Project design is addressed in this Order (see Finding 21).

26. **Water Quality Control Plans.** The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) was duly adopted by the Water Board and approved by the State Water Resources Control Board (State Water Board), U.S. EPA, and the Office of Administrative Law where required. The Basin Plan is the Water Board's master water quality control planning document. It designates beneficial uses of receiving waters, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed by the Plan.

Section 2.2.1 of the Basin Plan indicates that the beneficial uses of any specifically identified water body generally apply to its tributary streams. Existing and potential beneficial uses of waters at the Project include the following:

- **Upper Berryessa Creek:** Warm Freshwater Habitat (WARM), Wildlife Habitat (WILD), Water Contact Recreation (REC-1), and Noncontact Water Recreation (REC-2)

- **Los Coches Creek:** Preservation of rare and endangered species (RARE), WARM, WILD, REC-1, and REC-2

- **Piedmont Creek:** WARM, WILD, REC-1, and REC-2

Upper Berryessa Creek is tributary to Lower Penitencia Creek, Calera Creek, and Tularcitos Creek. The Basin Plan designates WARM, WILD, REC-1, REC-2, and Navigation (NAV) to these creeks. These creeks, in turn, flow into Coyote Creek, a tributary to San Francisco Bay. The beneficial uses of Lower Penitencia Creek are the same as for Upper Berryessa Creek. Some of the beneficial uses of Coyote Creek, which also apply to Upper Berryessa Creek by the Tributary Rule, include migration habitat (MIGR), spawning habitat (SPWN), preservation of rare and endangered species (RARE), and cold water habitat (COLD).

Section 2.2.3 of the Basin Plan indicates that the Water Board will rely on the naming conventions of the National Wetlands Inventory for mapping wetlands. Under these naming conventions, significant portions of Upper Berryessa Creek are riverine wetlands, and, as such, Table 2-3 of the Basin Plan lists examples of existing and potential beneficial uses for riverine wetlands. Therefore, Upper Berryessa Creek is a type of wetland under the Water Board's regulations. Moreover, Section 2.2.3 of the Basin Plan provides a list of aquatic features that the Water Board recognizes as wetlands, some of which would not be recognized as wetlands by the Corps. Some of the features listed that occur at the Project site include unvegetated ponded areas, the inset floodplain within the current channel, and riparian habitat within the Project site and are wetlands that are waters of the State. Moreover, the Project EIR states that there is in-channel wetland vegetation and riparian habitat on the Project site and acknowledges that the riparian habitat is waters of the State, although it is not waters of the U.S. The Corps disclaimed federal wetland jurisdiction over the fringing wetland vegetation because it did not have wetland soils. Section 4.23.4 of the Basin Plan states that "The Water Board may choose to exercise its independent authority under the Water Code in situations where there is a conflict between the state and the Corps, such as over a jurisdictional determination ... ." Wetlands and waters impacted in the Project site are riverine wetlands. The beneficial uses associated with riverine wetlands at the Project site include WARM, WILD, REC-1, REC-2, and RARE. However, rare or endangered species do not presently inhabit the Project site. Requirements of this Order implement the Basin Plan.

27. **Basin Plan Wetland Fill Policy.** The Basin Plan Wetland Fill Policy (Fill Policy) establishes that there is to be no net loss of wetland acreage and no net loss of wetland value when a project and any proposed mitigation are evaluated together, and that mitigation for wetland fill projects is to be located in the same area of the region, whenever possible, as the project. The Fill Policy further establishes that wetland disturbance should be avoided whenever possible and, if not possible, should be minimized and only after avoidance and minimization of impacts should mitigation for lost wetlands be considered. The Water Board applies the Fill Policy to waters that are creeks because significant portions of creeks are riverine wetlands. Requirements of this Order implement the Fill Policy.

28. **California Wetlands Conservation Policy.** The goals of the California Wetlands Conservation Policy (Executive Order W-59-93, signed August 23, 1993) include ensuring "no overall loss" and achieving a "...long-term net gain in the quantity, quality, and permanence of wetland acreage and values...." The California Wetlands Conservation Policy

also calls for a "development of means to provide flexibility in the regulatory process … for allowing public agencies, water districts, and landowners to establish wetlands on their property consistent with the primary purpose of the property."

Senate Concurrent Resolution No. 28 states that "[i]t is the intent of the legislature to preserve, protect, restore, and enhance California's wetlands and the multiple resources which depend on them for benefit of the people of the State." Section 13142.5 of the CWC requires that the "highest priority shall be given to improving or eliminating discharges that adversely affect…wetlands, estuaries, and other biologically sensitive areas."

The Water Board applies the California Wetlands Conservation Policy to waters that are creeks because significant portions of creeks are riverine wetlands. Requirements of this Order implement the California Wetlands Conservation Policy.

29. **California EcoAtlas.** It has been determined through regional, State, and national studies that tracking of mitigation/restoration projects must be improved to better assess the performance of these projects, following monitoring periods that last several years. In addition, to effectively carry out the California Wetlands Conservation Policy, the State needs to closely track both wetland losses and mitigation/restoration project success. Therefore, this Order requires that the Discharger use the California Wetlands Form to provide Project information related to impacts and mitigation/restoration measures. An electronic copy of the form and instructions can be downloaded at: http://www.waterboards.ca.gov/sanfranciscobay/certs.shtml. Project information concerning impacts and mitigation/restoration will be made available at the web link: http://ecoatlas.org/regions/ecoregion/bay-delta/projects.

30. **Endangered Species Act.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). The Discharger is responsible for meeting all requirements of the applicable Endangered Species Acts. As applicable, the Discharger shall utilize the appropriate protocols, as approved by the U.S. Fish and Wildlife Service (USFWS) and stated in the USFWS Coordination Act Report, to ensure that Project activities do not adversely impact water quality or the beneficial uses of Upper Berryessa Creek, Los Coches Creek, and Piedmont Creek, or other beneficial uses of waters downstream of the Project as referenced in Finding 26.

31. **Notification of Interested Parties.** The Water Board has notified interested parties, including the Corps, U.S. EPA, USFWS, the California Department of Fish and Wildlife, the Guadalupe-Coyote Resource Conservation District, the Citizens Committee to Complete the Refuge, the City of Milpitas, the Valley Transportation Authority, BART, the Santa Clara County Parks and Recreation Department, and the California Department of Transportation-District 4, of its intent to prescribe WDRs for this discharge.

32. **Consideration of Public Comment.** The Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.

33. **Records Management.** This Project file is maintained at the Water Board under CIWQS Place No. 818597, and Regulatory Measure No. 403119.

34. **Fees for Dredge and Fill Projects.** The fee amount for the WDRs shall be in accordance with the current fee schedule, per California Code of Regulations (CCR), Title 23, Division 3, Chapter 9, Article 1, section 2200(a)(3). The Water Board understands, based on information from the Corps and the District, that the District is responsible for the fee.

35. Pursuant to 23 CCR sections 3857 and 3859, the Water Board is issuing WDRs and Water Quality Certification for the activities proposed in this Order.

IT IS HEREBY ORDERED that the water quality certification pursuant to CWA section 401, dated March 14, 2016, issued to the Corps, is rescinded upon the effective date of this Order, except for enforcement purposes. The Water Board hereby issues this modified certification for the Project, updating the March 14, 2016, certification to reflect current Project conditions and certifying that any discharge from the Project will comply with the applicable provisions of CWA sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 303 (Water Quality Standards and Implementation Plans), 306 (National Standards of Performance), and 307 (Toxic and Pretreatment Effluent Standards) and with other applicable requirements of State law. Pursuant to the provisions of CWA 401 and Division 7 of the CWC, related regulations, and guidelines adopted thereunder, the Dischargers, their agents, successors, and assigns shall comply with the following pursuant to authority under CWC sections 13263 and 13267:

A. Discharge Prohibitions

1. The discharge of wastes, including debris, rubbish, refuse, or other solid wastes into surface waters or at any place where they would contact or where they would be eventually transported to surface waters, including floodplains, is prohibited.

2. The discharge of floating oil or other floating materials from any activity in quantities sufficient to cause deleterious bottom deposits, turbidity, or discoloration in surface waters is prohibited.

3. The discharge of silt, sand, clay, or other earthen materials from any activity in quantities sufficient to cause deleterious bottom deposits, turbidity, or discoloration in surface waters is prohibited.

4. The fill activities in waters of the State subject to these requirements shall not cause a nuisance as defined in CWC section 13050(m).

5. The groundwater in the vicinity of the Project shall not be degraded as a result of the Project activities or placement of fill for the Project.

6. The discharge of materials, which are not otherwise regulated by a separate NPDES permit or allowed by this Order, to waters of the U.S. and State is prohibited.

7. The use of imported soil in the Project is prohibited unless the Executive Officer grants

an exception to this under the requirements of Provision 16. Under such circumstances, the Discharger shall submit the report required in Provision 16 to provide justification for the use of imported soil fill with resulting impacts to the waters of the State.

8. Directional drilling in the Project is prohibited.

9. The use of bank stabilization methods and materials other than the methods and materials in the 100 percent design plans and specifications is not authorized under this Order.

10. This Order prohibits any creek dewatering, diversion, or discharge before the Executive Officer accepts, in writing (including via electronic mail), a Dewatering Plan that meets the requirements of Provision 12.

11. This Order prohibits the alignment of any utilities, or maintaining existing utility lines in the Project, in such a manner that will create an obstacle to flow or destabilize the creek channel.

B. Provisions

1. The Discharger shall comply with all Prohibitions and requirements of this Order immediately upon adoption of this Order or as otherwise provided below. The Discharger shall fully implement all requirements of this Order, including all plans accepted by the Water Board or the Executive Officer. The Discharger shall notify the Executive Officer in writing should the Discharger need to significantly alter the Project. If the Water Board is not notified of a significant alteration to the Project, the Discharger will be considered in violation of this Order and may be subject to Water Board enforcement actions.

2. All plans and reports required under this Order shall be submitted and acceptable to the Executive Officer.

3. The Project shall be constructed in conformance with the 100 percent Design Plans dated August 4, 2016, and 100 percent Planting Plan, dated April 1, 2016, consistent with Finding 11.

4. All work performed within waters of the State shall be completed in a manner that minimizes impacts to beneficial uses and habitat. Measures shall be employed to minimize disturbances that will adversely impact the water quality of waters of the State. Disturbance or removal of vegetation shall not exceed the minimum necessary to complete Project implementation.

5. Disturbance or removal of vegetation shall be minimized. The Project site shall be stabilized through incorporation of appropriate BMPs, including the successful establishment of native grass vegetation, to compensate for impacts to wildlife habitat values and to prevent and control erosion and sedimentation. The Discharger shall revegetate the Project based on the 100 percent Planting Plan and Specifications for trees and shrubs dated April 1, 2016, and the 100 percent Conformed Drawings dated August 4, 2016, for native wetland and grass species. The Discharger shall maintain trees and shrubs for five years as stated in the Application.

6. There shall be no violation of any water quality standard for receiving waters adopted by the Water Board or the State Water Board. Creek dewatering discharges, accumulated groundwater or stormwater removed during dewatering of excavations, and diverted creek and stormwater flows shall not be discharged to waters of the State without meeting the receiving water objectives in the Basin Plan.

7. Dredging, excavation, and fill in Upper Berryessa Creek, Piedmont Creek, and Los Coches Creek shall not cause the turbidity in the receiving water (i.e., water in these creeks and in waters to which they discharge) to increase by more than 10 percent if the ambient turbidity of the receiving water is greater than 50 NTU or by more than 5 NTU if the ambient turbidity of the receiving water is less than or equal to 50 NTU.

8. No equipment shall be operated in stream channels or other waters where there is flowing or standing water. No fueling, cleaning, or maintenance of vehicles or equipment shall take place within any areas where an accidental discharge to waters of the State may occur.

9. Concrete used in the Project shall be allowed to completely cure (a minimum of 28 days) or be treated with a California Department of Fish and Wildlife-approved sealant before it comes into contact with flowing water.

10. **Construction General Permit.** The Discharger shall seek coverage under and comply with, or oversee that its contractors seek coverage and comply with, the statewide General Permit for Discharges of Storm Water Associated with Construction Activities (Order No. DWQ-2009-0009, as amended by Order Nos. 2010-0014-DWQ and 2012-006-DWQ) (Construction General Permit). All work performed within waters of the State shall be completed in a manner that minimizes impacts to water quality and the beneficial uses of Upper Berryessa Creek, Los Coches Creek, and Piedmont Creek and waters downstream of these creeks.

11. **Rain Event Action Plan.** The Discharger shall develop and implement a Rain Event Action Plan (REAP), as required by the Construction General Permit, designed to protect all exposed portions of the Project site within 48 hours prior to any likely precipitation event. The REAP requirement is designed to ensure that the Discharger has adequate materials, staff, and time to implement erosion and sediment control measures that are intended to reduce the amount of sediment and other pollutants generated from the active site. A REAP must be developed when there is a forecast of 50 percent or greater probability of precipitation in the Project area.

12. **Dewatering Plan.** The Discharger shall implement, or ensure that its contractor implements, the Dewatering Plan consistent with Finding 14 and the discharge requirements in Provision 14, for surface and groundwater flows throughout the Project site, excluding the groundwater flow within the JCI plume area that is regulated under Provision 13.

13. **Groundwater Management Plan.** The Discharger shall implement the Groundwater Management Plan dated January 26, 2016, and accepted by the Executive Officer on

March 8, 2016, to meet the standards of the VOC and Fuel General Permit, consistent with Finding 15, and discharge requirements in Provision 14.

14. **Discharge and Receiving Water Objectives.** Creek dewatering discharges, accumulated groundwater or stormwater removed during dewatering of excavations, and diverted creek and stormwater flows shall not be discharged to waters of the State without meeting the following discharge and receiving water limitations herein. All monitoring records at the Project site shall be maintained at a location to be designated in the Dewatering Plan and shall be made available upon request by Water Board staff.

    a. pH - the instantaneous discharge pH shall be in the range of 6.5 to 8.5, and controllable water quality factors shall not cause changes greater than 0.5 units in the receiving water pH levels.

    b. Discharge Dissolved Oxygen - the discharge dissolved oxygen concentration shall be no less than 5.0 milligrams per liter (mg/L) (hourly average).

    c. Discharge Dissolved Sulfide - the discharge dissolved sulfide shall not be greater than 0.1 mg/L.

    d. Receiving Water Turbidity - the receiving water turbidity measured as nephelometric turbidity units (NTU) shall not be greater than 10 percent of natural conditions in areas where natural turbidity is greater than 50 NTU (daily average). All Project discharge plans shall identify an acceptable location or locations at which to measure background turbidity. The Discharger shall monitor receiving water and discharge turbidity at least one time every 8 hours on days when discharges from excavations or any other dewatering processes may occur.

    e. Receiving Water Temperature - the receiving water shall not be increased by more than 5°F (2.8°C) above natural receiving water temperature.

    f. Nutrients - the receiving waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.

15. **Post-Construction Stormwater Management Plan.** No later than 90 days from the date this Order is adopted, the Discharger shall submit a Post-Construction Stormwater Management Plan consistent with the Municipal Regional Stormwater Permit's (Water Board Order No. R2-2015-0049; NPDES Permit No. CAS612008) requirements for post-construction stormwater management for new or replacement impervious surfaces. The plan shall identify construction materials, designs, treatment controls, a proposed operation and maintenance plan, and all other information, as appropriate, sufficient to ensure the appropriate treatment of runoff from 6.8 acres of maintenance roads and 0.1 acres of concrete access roads and ramps, either onsite or at an alternative offsite location, and a trash management plan for public access areas.

16. **Fill Quality Report.** The Discharger shall avoid reusing any contaminated soil excavated from within the JCI plume area, consistent with the Project's DDR. The Executive

Officer may authorize reuse of soil from the JCI plume area if the soil analytical results meet the criteria outlined in this Provision. The Discharger shall maintain records onsite of laboratory analyses, excavation quantities, stockpiling, and disposal records, for soil excavated from the JCI plume area, and shall make the records available upon request by the Executive Officer or staff upon request.

In addition, no later than 30 days prior to placing any imported soil fill material, and any soil from within the JCI plume area, at the Project area, including all placement of fill in areas below the top of bank, on levees, and at any other location where the fill is a discharge to or has the potential to discharge to any waters of the State in the Project, the Discharger shall submit a technical report, acceptable to the Executive Officer, that the chemical concentrations in the imported fill soil are in compliance with the protocols specified in the following documents:

- The Dredged Material Management Office (DMMO) guidance document *Guidelines for Implementing the Inland Testing Manual in the San Francisco Bay Region* (Discharger Public Notice 01-01, or most current version) (Inland Testing Manual) with the exception that the water column bioassay simulating in-bay unconfined aquatic disposal shall be replaced with the modified effluent elutriate test, as described in Appendix B of the Inland Testing Manual, for both water column toxicity and chemistry (DMMO suite of metals only); and,

- The Water Board May 2000 staff report *Beneficial Reuse of Dredged Materials: Sediment Screening and Testing Guidelines*, or the most current revised version. Water Board staff shall review and approve data characterizing the quality of all material proposed for use as fill prior to placement of fill at any of the levee, marsh, or channel areas at the Project site. Modifications to these procedures may be approved by the Executive Officer on a case-by-case basis, pending the Discharger's ability to demonstrate that the imported fill material is unlikely to adversely impact beneficial uses.

17. **Maintenance.** Maintenance activities shall be consistent with the District's SMP as described in Finding 16 and consistent with the Adaptive Management Plan this Order requires pursuant to Provision 18 (Finding 17). In addition, the mitigation required due to impacts from maintenance activities shall be consistent with the District's SMP.

18. **Adaptive Management Plan.** No later than 180 days after the date this Order is adopted, the Discharger shall submit an Adaptive Management Plan that is consistent with Finding 17. The Adaptive Management Plan shall identify the Project's performance with respect to sediment deposition and accumulation and develop ways of reducing the need and frequency of maintenance activities and maximizing habitat acreage, values, and functions. The Adaptive Management Plan shall be implemented immediately upon Project channel construction completion. For the purposes of this Order, Project channel construction completion is defined as the first business day after construction contractors are no longer within the Project right-of-way, except for any contractor present solely for the purposes of vegetation planting, monitoring, and/or management.

The Adaptive Management Plan shall include, but not be limited to, the following elements:

a. A workplan to periodically conduct cross-sectional and longitudinal profile surveys and collect stage-discharge recordings, including high water stages and velocities, after the Project is constructed. The data collected shall inform the Geomorphology Report described below in section (f).

b. A decision-making process to avoid sediment and/or vegetation removal before analyzing channel capacity based on field survey data to be collected in accordance with (a) above.

c. Identification of a maintenance trigger based on a stated freeboard; and other appropriate maintenance trigger(s).

d. Identification of stream gage locations necessary to implement the monitoring requirements for the Adaptive Management Plan, installation of gage(s), and data acquisition and analysis of stream flow gage(s) to implement the monitoring requirements of the Adaptive Management Plan.

e. A collaborative process comparable to the District's Notification of Proposed Work process under the SMP (see Finding 16) to convene a team, including Discharger staff and Water Board staff, to jointly develop Project-specific maintenance work plans, acceptable to the Executive Officer, for any bank stabilization, sediment, and/or vegetation (including woody vegetation) maintenance activities that may be necessary in the event that a maintenance trigger (or multiple triggers) occurs.

f. **Geomorphology Report.** A report submitted after five measurable flood events at or exceeding the estimated 1.1-year flood event, and one event at or exceeding the estimated 10-year flood event, to analyze data collected over the first years of Adaptive Management Plan implementation to evaluate channel performance and address the uncertainty in sediment transport processes (see Finding 16). The Geomorphology Report will evaluate:

   i. whether flow events have occurred that will enable the evaluation of sediment deposition processes in the Project;

   ii. whether sediment deposition rates have increased or decreased compared to the existing conditions;

   iii. whether sediment only accumulates at the two UPRR culverts as stated in the Project EIR; and

   iv. a comparison of stage-discharge relationships based on collected field data and the model projections.

   In addition, the Geomorphology Report shall be the basis for the following possible steps to determine whether the District will continue implementing the Adaptive

Management Plan:

v. The Executive Officer shall authorize the Project to be transferred to the District's SMP if results in the report indicate sediment deposition has decreased or is similar to existing conditions. The maintenance guidelines developed with the Adaptive Management Plan shall be incorporated into the District's SMP and implemented for future maintenance activities under the SMP.

vi. The District shall continue implementing the Adaptive Management Plan if the Geomorphology Report findings indicate the sediment transport issues have not been resolved, either because not enough rainfall has occurred to generate flows in the creeks to verify sediment transport processes and/or because the data are inconclusive.

Mitigation Requirements

19. **Mitigation and Monitoring Plan.** No later than October 2, 2017, the Discharger shall submit a final Mitigation and Monitoring Plan (MMP) acceptable to the Executive Officer. The MMP shall include the following performance criteria by addressing the following elements and/or comparable criteria appropriate for the case-specific plan:

    a. The MMP shall include a proposal, workplan, monitoring plan, performance standards, and all other information, as appropriate, sufficient to ensure the mitigation of permanent and temporal losses in functions and values of waters of the State and to ensure the Project results in no net loss and a long-term net gain in wetland and waters area, function, and value, consistent with Finding 21.

    Thus, the mitigation package (i.e., the MMP) shall provide for a minimum restoration of the Project reach, subject to the Adaptive Management Plan (see Provision 18) and additional offsite mitigation. The offsite mitigation shall enhance 15,000 linear feet or 15 acres of creek waters or the equivalent.

    The Water Board may require a lesser or greater amount of area and/or linear feet based changes in the factors listed in Finding 21, such that the size and scope of the mitigation project shall be appropriate for the Project's impacts.

    b. The MMP shall include (but not be limited to) the vegetation performance standards and success criteria, or comparable standards, as those in Attachment B. If the offsite mitigation plan includes vegetation plantings and/or hydroseeding, the vegetation shall be monitored annually for success, health, and vigor as specified in Attachment B, Tables 1 and 2.

    c. Plantings in the offsite mitigation area(s) shall be monitored for a minimum period of five years for grasses, forbs, and shrubs and ten years for trees, until the success criteria in the MMP are achieved.

    d. The Discharger shall ensure invasive plant species in the Project site do not exceed cover of more than 10 percent based on the percent cover of, specifically, "highly" invasive plant species as defined by the California Invasive Plant Council. In

addition, the Discharger shall apply the guidance in Attachment B, or comparable standards, for revegetation of onsite grasses, shrubs, and trees specified in the Planting Plan.

e. In addition to performance standards and success criteria for vegetation, the MMP shall identify other appropriate performance standards and success criteria based on the mitigation plan, habitat features, and other factors, as appropriate to the proposed mitigation project(s).

f. The MMP shall include methods for performing an assessment of whether the low-flow channel has recovered within the first five years after construction, using data collected for the Adaptive Management Plan (see Provision 18). If the low flow channel does not recover within five years, the Discharger shall provide additional mitigation to compensate for the temporal loss in function and value due to the impacts of creek widening, consistent with Finding 21.

The MMP shall incorporate the reporting requirements stipulated in Provisions 24 through 28.

20. **EIR Mitigation Measures.** To mitigate the significant impacts identified in the Project EIR over which the Water Board has authority, the Discharger shall implement those mitigation measures, which are summarized below and described in Finding 25:

a. Replacing any native trees and shrubs of certain sizes the Project will remove during construction;

b. Maintaining a buffer zone around riparian trees during construction;

c. Replacing non-native and ruderal vegetation with native grass and forbs;

d. Conducting nesting bird surveys following established protocols prior to construction and during the nesting season (general mid-April to late July). If nests are detected at staging areas and construction sites during these surveys, a 50-foot no-construction buffer will be delineated around the nest until young have fledged (300-foot buffer for raptors);

e. Preparing and implementing Rain Event Action Plans;

f. Preparing and implementing a creek dewatering plan;

g. Collecting and treating potentially contaminated groundwater encountered to meet the VOC and Fuels General Permit standards; and

h. Preventing hazardous materials and wastes from being entrained in creek flow.

21. **Log of Impacts.** The Discharger shall maintain an Impacts Log to track Project activities including the start dates of impacts to waters of the State and the associated mitigation

activities. The Discharger shall make the Impacts Log available for review by Water Board staff upon request. The Impacts Log shall include, but not be limited to, the start dates of the following Project milestones:

a. Channel excavation and grading;

b. Creek dewatering;

c. Groundwater management;

d. Hydroseeding;

e. Tree and shrub planting; and

f. Offsite mitigation construction elements (as described in the MMP requirements (Finding 21; Provision 19)).

Reporting Requirements

22. All reports pursuant to these Provisions shall be prepared under the supervision of suitable professionals registered in the State of California.

23. The Discharger shall report any water quality monitoring data that are not in compliance with Provision 14 (a non-compliance event) to the Water Board within 24 hours via telephone and shall follow up with a written report within 14 days. The written report shall provide the following:

    a. Discharge and receiving water measurements for the water quality parameter(s) collected during the non-compliance event;

    b. The location, duration, and likely cause of the non-compliance event;

    c. All actions taken to remedy non-compliance immediately after identifying the non-compliance event and to mitigate for any adverse impacts caused or contributed to by the non-compliance event; and

    d. All actions taken to prevent a similar non-compliance event in the future.

24. **California EcoAtlas.** The Discharger shall use the standard California Wetlands Form to provide Project information describing impacts and restoration measures no later than 14 days from the date of the final MMP approved pursuant to Provision 19. An electronic copy of the form can be downloaded at: http://www.waterboards.ca.gov/sanfranciscobay/certs.shtml. The completed form shall be submitted electronically to habitatdata@waterboards.ca.gov or shall be submitted as a hard copy to both (1) the Water Board, to the attention of EcoAtlas, and (2) the San Francisco Estuary Institute, 4911 Central Avenue, Richmond, CA 94804, to the attention of EcoAtlas.

25. **Mitigation Monitoring Reports**. The Discharger shall submit annual reports, no later

than January 31 following each year in which mitigation is monitored, during each year of the first five years of the initial ten year monitoring period. After the first five years, the Discharger shall submit reports in years seven, nine, and ten. The reports shall summarize each year's monitoring results, including the need for any remedial actions (e.g., re-planting or bank stabilization). The annual report shall compare data to previous years and describe progress towards meeting final success criteria. The final year's report (e.g., the year 10 report if the MMP spans 10 years) shall consist of the annual data from the final year (e.g., from year 10 for an MMP that spans 10 years), in addition to a comprehensive final report. Annual reports and the comprehensive final report shall include photographs from the photo-documentation points specified in Provision 29.

The final report shall document whether the Project site and offsite mitigation area(s) meet the final performance criteria of the MMP. If the criteria are not met, the report shall identify remedial measures to be undertaken, including extension of the monitoring period until the criteria are met.

Success of the mitigation program shall be determined by the Executive Officer after all the minimum success criteria in MMP are achieved. All Annual Reports shall include photographs, special-status species monitoring, and all other information, as appropriate.

26. The Discharger shall continue to submit Annual Reports after the designated monitoring period in the MMP as necessary (e.g., after the first ten years if the MMP spans 10 years), until the sites have met their performance standards and final success criteria, and the Executive Officer has accepted a notice of mitigation completion (see Provision 28) for each mitigation site.

27. **EIR Mitigation Measure Implementation**. The Discharger shall submit annual reports to report on implementation of Project EIR mitigation measures pursuant to Provision 20. The Discharger shall submit the first annual report no later than January 31 following adoption of this Order and shall continue annual reporting until one year after completion of channel construction. Annual reporting to meet this requirement may be a section within the MMP annual reports required under Provision 25, with clearly defined section headings to identify the Project EIR mitigation annual data and information.

28. **Notice of Mitigation Completion**. When the Discharger has determined that a mitigation area achieved the performance standards and final success criteria specified in the MMP, it shall submit a notice of mitigation completion. This notice shall include a status report on the implementation of the long-term maintenance and management portion of the MMP and a description of the status of the mitigation component that has been determined to be successful. After acceptance of the notice of mitigation completion in writing by the Executive Officer, the Discharger's submittal of mitigation monitoring reports for that mitigation component is no longer required.

29. **Photo-documentation Report.** To document channel and bank conditions immediately upstream and downstream of the Project site, as well as the Project site itself, the Discharger shall establish a minimum of 12 photo-documentation sites at the Project site, and additional sites sufficient to document each bridge crossing in the Project. These

photo-documentation sites shall be selected to document channel and bank conditions immediately upstream and downstream of each site, as well as the Project reach. The Discharger shall prepare site maps with the photo-documentation points clearly marked. Prior to implementing the Project, the Discharger shall photographically document the condition of each site. Following implementation of the Project, the Discharger shall photographically document the immediate post-construction condition of the sites and submit a report to the Water Board including the pre-construction photographs, the post-construction photographs, and the map with the locations of the photo-documentation points. This report shall be submitted to the Water Board along with the as-built plans (Provision 30).

30. **As-built Plans.** Within 180 days of construction completion in the Project site, the Discharger shall submit an as-built report of the Project in both digital format and hard copy of at least 11-inches by 17-inches to the Water Board. The as-built report shall be submitted either by email to staff or by uploading it to the Water Board's FTP internet site. Instructions for uploading documents to the FTP internet site are available at http://www.waterboards.ca.gov/sanfranciscobay/publications_forms/documents/FTP_Discharger_Guide-12-2010.pdf. If the as-built report is submitted by uploading it to the FTP internet site, the Discharger shall notify the Water Board case manager via email. For purposes of this Order, the definition for construction completion shall be the final date when construction contractors (excluding contractors for revegetation activities) are in the Project site.

31. **Project Completion Report**. The Discharger shall notify the Water Board by electronic mail or by hard copy of Project completion upon transfer of the Project to the local sponsor. This notification, known as a Project Completion Report, shall consist of the following information: (a) the CIWQS Place ID for this Project (i.e., CWIQS Place ID 818597); (b) the date Project construction activities were completed; and (c) the completion date of mitigation plantings. Project construction activities for the purpose of this condition are defined as activities associated with construction of the Project, establishing native grass vegetation on the banks, and planting trees and shrubs as per the Planting Plan. The Project Completion Report shall be submitted to Susan Glendening at Susan.Glendening@waterboards.ca.gov or the current Water Board staff member assigned to the Project.

32. **Final Operations and Maintenance Manual.** The Discharger shall submit the final Project Operations and Maintenance Manual, as referenced in Finding 16, to the Water Board upon transfer of the Project to the local sponsor.

Other Requirements

33. The Discharger shall immediately notify the Water Board by telephone whenever an adverse condition occurs as a result of this discharge. Such a condition includes, but is not limited to, a violation of the provisions of this Order, a significant spill of petroleum products or toxic chemicals, or damage to control facilities that would cause noncompliance. A written notification of the adverse condition shall be submitted to the Water Board within two weeks of occurrence. The written notification shall identify the

adverse condition, describe the actions necessary to remedy the condition, and specify a timetable, subject to the modifications of the Executive Officer, for the remedial actions. The Discharger shall notify the Water Board, in writing or via electronic mail, at least 30 days prior to actual start dates for each Project component (i.e., prior to the start of grading or other construction activity for any Project component, including the creek mitigation components).

34. The Discharger shall at all times fully comply with the engineering plans, specifications, and technical reports submitted with the Project materials for the Corps' Application and the plans and reports required by this Order (e.g., Provisions 12, 13, 15, 16, 18, and 19), which, together, serve as the basis for the Project description this Order covers.

    Please be advised that failure to implement the Project as proposed is a violation of this Certification. Failure to comply with any condition of this Certification shall constitute a violation of the CWA. Any such Certification previously granted shall immediately be revoked and any or all discharges shall cease. The Discharger may then be subject to injunctive release, including stop work and/or restoration orders.

35. The Discharger shall be responsible for work conducted by its consultants, contractors, and subcontractors.

36. The Discharger is considered to have full responsibility for correcting any and all problems that arise in the event of a failure that results in an unauthorized release of waste or wastewater. The discharge of any hazardous, designated, or non-hazardous waste as defined in Title 23, Division 3, Chapter 15 of the California Administrative Code, shall be disposed of in accordance with applicable State and federal regulations.

37. The Discharger shall remove and relocate any wastes that are discharged at any sites in violation of this Order.

38. The Discharger shall maintain a copy of this Order at the Project site at all times during construction of the Project and be made available to Water Board staff upon request. All foremen and other employees responsible for overseeing that construction of the Project complies with permitting requirements shall have access to and be familiar with the Order requirements.

39. The Discharger shall permit the Water Board or its authorized representatives at all times, upon presentation of credentials:

    a. Entry onto Project premises, including all areas on which wetland or waters fill or mitigation of waters of the State, is located or in which records are kept.

    b. Access to copy any records required to be kept under the terms and provisions of this Order.

    c. Inspection of any treatment equipment, monitoring equipment, or monitoring method required by this Order.

d. Sampling of any discharge or surface water covered by this Order.

40. This Order does not authorize commission of any act causing injury to the property of another or of the public; does not convey any property rights; does not remove liability under federal, State, or local laws, regulations or rules of other programs and agencies, nor does this Order authorize the discharge of wastes without appropriate permits from other agencies or organizations.

41. The Discharger shall timely pay all fees associated with this Order. The fee amount for this Order shall be in accordance with the current fee schedule, per California Code of Regulations, Division 3, Chapter 9, Article 1, section 2200(a)(3). The fee payment shall indicate the Order number, the CIWQS Place ID no. 818597, the Regulatory Measure ID no. 403119, and the applicable season.

42. This Order is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to CWC section 13330 and 23 CCR section 3867.

43. The Water Board may add to or modify the conditions of this Order, as appropriate, to implement any new or revised water quality standards and implementation plans adopted and approved pursuant to the CWC or CWA section 303 or in response to new information concerning the conditions of the Project. Additionally, the Water Board reserves the right to suspend, cancel, or modify and reissue this Certification, after providing notice to the Discharger, if the Water Board determines that the Project fails to comply with any of the conditions of this Certification, or when necessary to implement any new or revised water quality standards and implementation plans adopted or approved pursuant to the CWC or CWA section 303 (33 U.S.C. § 1313).

44. This Order is not intended and shall not be construed to apply to any discharge from any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent Project materials for the Order were filed pursuant to 23 CCR subsection 3855(b) and those Project materials specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.

45. The Water Board may consider rescission of this Order upon Project completion and the Executive Officer's acceptance of notices of completion of mitigation for all mitigation, creation, and enhancement projects required or otherwise permitted now or subsequently under this Order.

This Order applies to the Project as proposed in the Project materials. Failure to implement the Project as proposed and as authorized herein is a violation of this Order. Violation or threatened violation of the Provisions of this Order is subject to any remedies, penalties, process or sanctions as provided for under applicable State or federal law, including administrative civil liability pursuant to CWC section 13350. Failure to meet any Provision of this Order may subject the Discharger to civil liability imposed by the Water Board to a maximum of $5,000 per day of violation or $10 for each gallon of waste discharged in

violation of the Order. Also, any requirement for a report made as a Provision to this Order (e.g., Provisions 23 through 32) or technical or monitoring reports the Water Board requests in response to a suspected violation of this Order, is a formal requirement pursuant to CWC section 13267, and failure to submit, late or inadequate submittal, or falsification of such technical report(s) is also subject to civil liability pursuant to CWC section 13268.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on April 12, 2017.

Digitally signed by Bruce H. Wolfe
Date: 2017.04.28 14:59:04 -07'00'

Bruce H. Wolfe
Executive Officer

Attachments:

Attachment A - Figures

1 – Upper Berryessa Creek Project Location and Vicinity

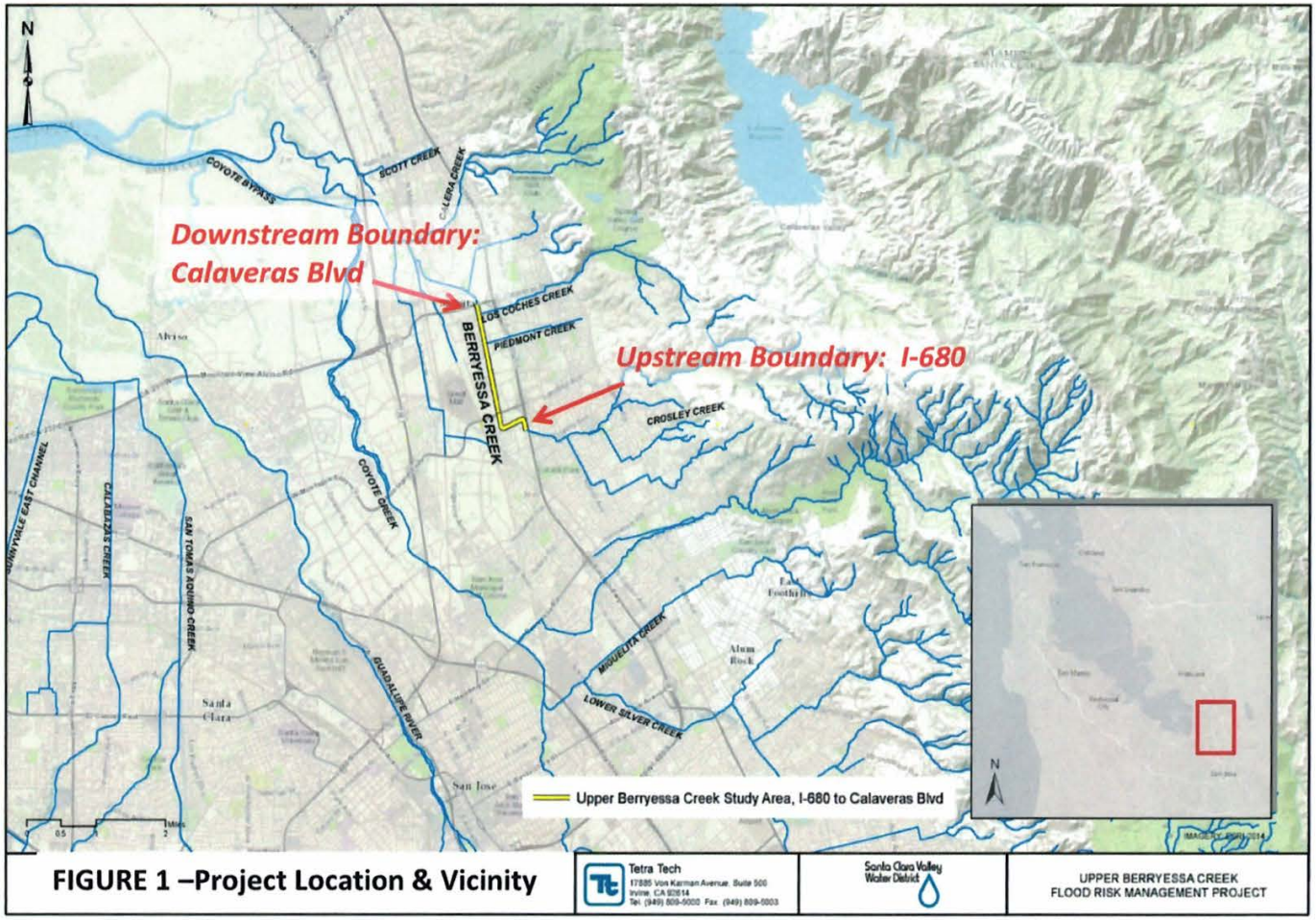
2 – Project Elements, Calaveras Boulevard to Ames Avenue

3 – Project Elements, Ames Avenue to Interstate 680

Attachment B - Vegetation Performance Standards and Criteria

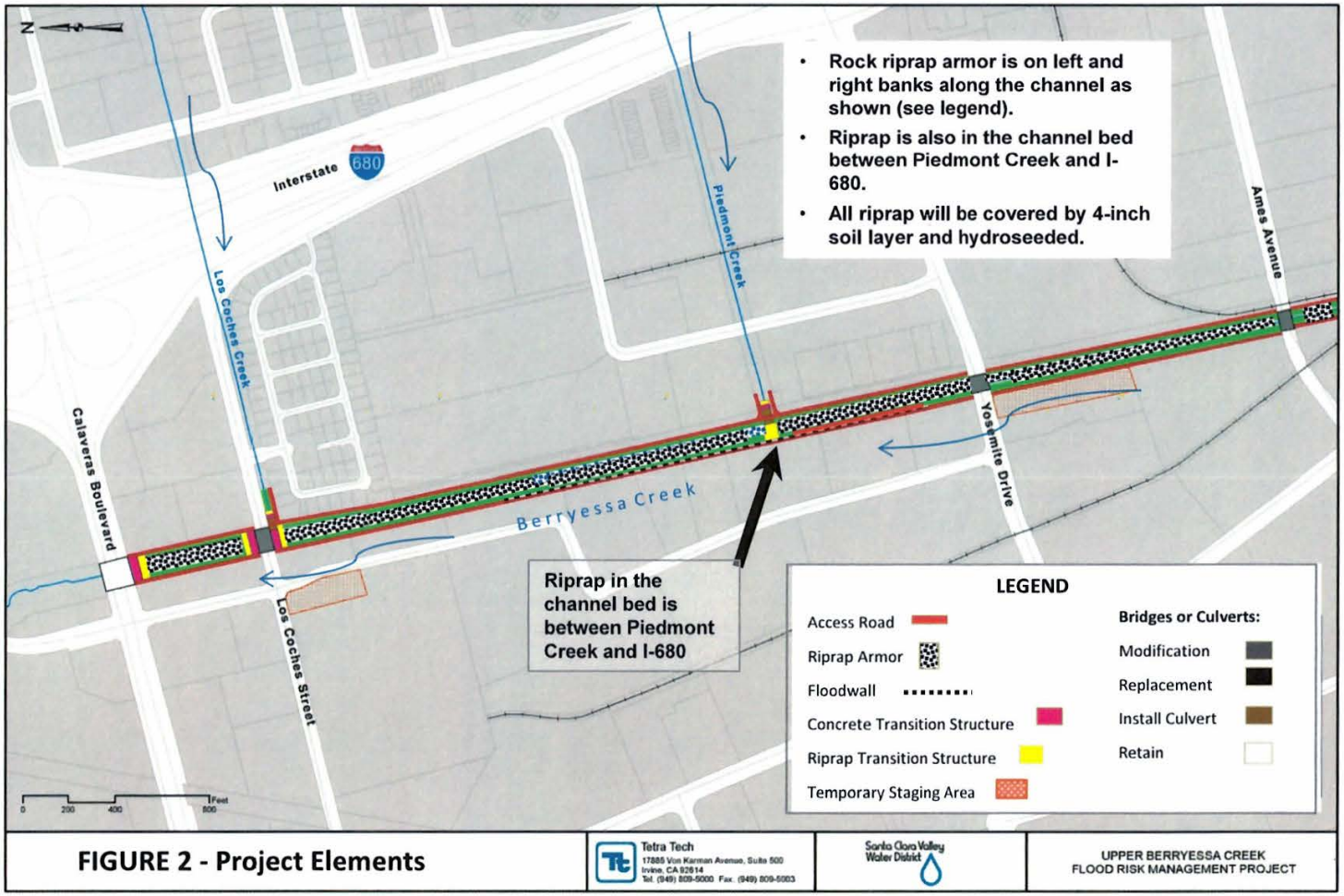
Attachment A

Figure 1 – Project Location and Vicinity



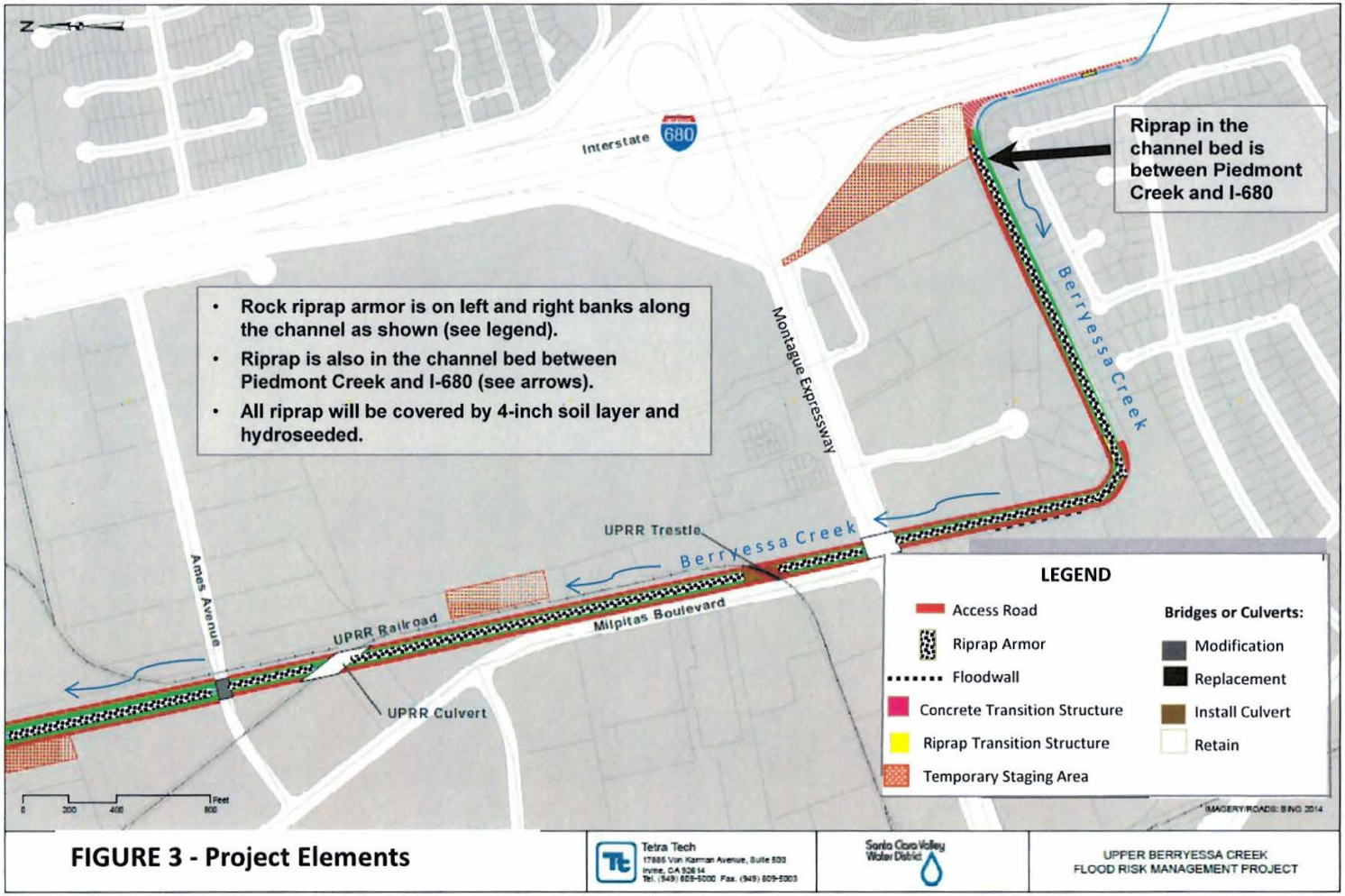
Attachment A

Figure 2 – Project Elements, Calaveras Boulevard to Ames Avenue



Attachment A

Figure 3 – Project Elements, Ames Avenue to Interstate 680



ATTACHMENT B
Vegetation Performance and Success Criteria

Performance and success criteria for the Project's mitigation plantings are outlined in Table 1. The overall health and vigor of all plantings will be evaluated each year in the field using the ratings listed in Table 2. The criteria include annual or semi-annual plant survival success criteria of no less than five years for herbaceous species and no less than ten years for woody species (i.e. trees and shrubs).

a. A vegetation monitoring plan shall be developed and implemented to track whether the plantings meet success criteria; replanting to replace unsuccessful growth; and other steps to ensure establishment, vigor, and health in mitigation plantings and mitigation success.

b. The mitigation for tree and shrub removals shall be consistent with the tree removal ordinances or similar requirements in the County of Santa Clara and cities of Milpitas and San Jose, at a minimum, and shall meet the requirements of the U.S. Fish and Wildlife Service Coordination Act Report for the Project dated April 26, 2013.

c. The Discharger shall water all riparian and wetland plantings for a minimum of three years. The Discharger shall continue to water all plantings during all projected dry water years (defined as 75 percent of average annual rainfall) that occur during the first ten years after construction. Any replacement plants shall be watered for a minimum of three years.

d. The Discharger shall follow the best management practices for preventing introduction and spreading of plant pathogens in mitigation areas, in accordance with the Planting Plan.

Table 1. Performance and Minimum Success Criteria - Offsite Mitigation Plantings

Habitat Type	Criteria
Native herbaceous and forbs communities – percent cover native species and non-native species	Year 1: 50 percent cover Year 3: 75 percent cover Year 5: 85 percent cover • Post-planting shall meet 85 percent cover after five years • Invasive plant species at a maximum cover of no more than 10% based on, specifically, "highly" invasive plant species as defined by the California Invasive Plant Council. • Health and vigor monitoring pursuant to Table 2.

Riparian plantings including trees and shrubs – canopy cover success criteria	• Performance standards and success criteria shall be consistent with the District's Stream Maintenance Program Manual, July 21, 2014, section 11.3.2. • In addition, shrubs and trees shall be monitored for an additional 5 years beyond the first 5 years following initial planting. Monitoring shall be conducted in years 6 through 10, but annual reporting shall only be in years 7, 9, and 10. Each annual report shall cover the monitoring for the previous year or two years of monitoring conducted, in addition to the cumulative monitoring results at each monitoring milestone. • Annual health and vigor monitoring pursuant to Table 2.
Seasonal wetland communities (applicable if the offsite mitigation area includes seasonal wetland habitat)	Year 1: 5 percent or greater absolute cover of planted and natural recruitment of wetland species. No more than 5 percent absolute cover of target invasive plants. No large unvegetated bare spots (greater than 25 percent) or erosional areas; no evidence of oversaturation or permanent inundation. Year 2: 20 percent or greater absolute cover of planted and natural recruitment of wetland species. No more than 5 percent absolute cover of target invasive plants. No large unvegetated bare spots (greater than 25 percent) or erosional areas; no evidence of oversaturation or permanent inundation. Year 3: 45percent or greater absolute cover of planted and natural recruitment of wetland species. No more than 5 percent absolute cover of target invasive plants. No large unvegetated bare spots (greater than 25 percent) or erosional areas; no evidence of oversaturation or permanent inundation. Year 4: 60 percent or greater absolute cover of planted and natural recruitment of wetland species. No more than 5 percent absolute cover of target invasive plants. No large unvegetated bare spots (greater than 25 percent) or erosional areas; no evidence of oversaturation or permanent inundation. Year 5: 70 percent or greater absolute cover of planted and natural recruitment of wetland species. • Invasive plant species at a maximum cover of no more than 10% based on, specifically, "highly" invasive plant species as defined by the California Invasive Plant Council. • No large unvegetated bare spots (greater than 20 percent) or erosional areas; no evidence of oversaturation or permanent inundation. • Annual health and vigor monitoring pursuant to Table 2.

Table 2. Health and Vigor Ratings

5	Excellent – less than 5% of the quadrat affected by mortality or cumulative symptoms of poor health, for example, disease, insect damage, mechanical damage, and poor growth;
4	Very good – 5 to 25% of quadrat affected by mortality or cumulative symptoms of poor health;
3	Good – 25 to 50% of quadrat affected;
2	Fair – 50 to 75% of quadrat affected;
1	Poor – greater than 75% of quadrat affected; or
0	Dead – no living plants in quadrat

EXHIBIT 2

§ 1. Short title

This act shall be known and may be cited as the Santa Clara Valley Water District Act.

§ 2. Creation; name of district; boundaries; district

A flood control and water district is hereby created to be called the Santa Clara Valley Water District. Said district shall consist of all the territory of the County of Santa Clara lying within the exterior boundaries of said county. As used in this act "district" means the Santa Clara Valley Water District.

§ 3. Zones; establishment; change of boundaries

The board of the district created by this act, by resolutions thereof adopted from time to time, may establish zones within said district without reference to the boundaries of other zones, setting forth in such resolutions descriptions thereof by metes and bounds and entitling each of such zones by a zone number, and institute zone projects for the specific benefit of such zones. The board may, by resolution, amend the boundaries by annexing property to or by withdrawing property from said zones or may divide existing zones into two or more zones or may superimpose a new or amended zone on zones already in existence, setting forth in such resolutions descriptions of the amended, divided or superimposed zones by metes and bounds and entitling each of such zones by a zone number.

Proceedings for the establishment of such zones may be conducted concurrently with and as a part of proceedings for the instituting of projects relating to such zones, which proceedings shall be instituted in the manner prescribed in Section 12 of this act.

§ 4. Objects and purposes

(a) The purposes of this act are to authorize the district to provide comprehensive water management for all beneficial uses and protection from flooding within Santa Clara County.

(b) It is the intent of the Legislature that the district work collaboratively with other appropriate entities in Santa Clara County in carrying out the purposes of this act.

(c) The district may take action to do all of the following:

(1) Protect Santa Clara County from floodwater and stormwater of the district, including tidal floodwater and the floodwater and stormwater of streams that have their sources outside the district, but flow into the district.

(2) Protect from that floodwater or stormwater the public highways, life and property in the district, and the watercourses and watersheds of streams flowing within the district.

(3) Provide for the conservation and management of floodwater, stormwater, or recycled water, or other water from any sources within or outside the watershed in which the district is located for beneficial and useful purposes, including spreading, storing, retaining, and causing the water to percolate into the soil within the district.

(4) Protect, save, store, recycle, distribute, transfer, exchange, manage, and conserve in any manner any of the waters.

(5) Increase and prevent the waste or diminution of the water supply in the district.

(6) Obtain, retain, protect, and recycle drainage, stormwater, floodwater, or treated wastewater, or other water from any sources, within or outside the watershed in which the district is located for any beneficial uses within the district.

(7) Enhance, protect, and restore streams, riparian corridors, and natural resources in connection with carrying out the purposes set forth in this section.

(8) Preserve open space in Santa Clara County and support the county park system in a manner that is consistent with carrying out the powers granted by this section.

§ 5. Nature of district; powers

The district is hereby declared to be a body corporate and politic and, in addition to other powers granted by this act, may take action to carry out all of the following purposes:

1. To have perpetual succession.

2. To sue and be sued in the name of the district in all actions and proceedings in all courts and tribunals of competent jurisdiction.

3. To adopt a seal and alter it at pleasure.

4. To acquire by grant, purchase, lease, gift, devise, contract, construction, or otherwise, and to hold, use, enjoy, sell, let, and dispose of real and personal property of every kind, including lands, structures, buildings, rights-of-way, easements, and privileges, and to construct, maintain, alter, and operate any and all works or improvements, within or outside the district, necessary or proper to carry out any of the objects or purposes of this act and convenient to the full exercise of its powers, and to complete, extend, add to, alter, remove, repair, or otherwise improve any works, or improvements, or property acquired by it as authorized by this act.

5. To store water in surface or underground reservoirs within or outside of the district for the common benefit of the district or of any zone or zones affected; to conserve, reclaim, recycle, distribute, store, and manage water for present and future use within the district; to appropriate and acquire water and water rights, and import water into the district and to conserve within or outside the district, water for any purpose useful to the district; and to do any and every lawful act necessary to be done that sufficient water may be available for any present or future beneficial use or uses of the lands or inhabitants within the district, including, but not limited to, the acquisition, storage, and distribution of water for irrigation, domestic, fire protection, municipal, commercial, industrial, environmental, and all other beneficial uses; to distribute, sell, or otherwise dispose of, outside the district, any waters not needed for beneficial uses within the district; to commence, maintain, intervene in, defend, or compromise, in the name of the district on behalf of the landowners therein, or otherwise, and to assume the costs and expenses of any action or proceeding involving or affecting the ownership or use of waters or water rights within or outside the district, used or useful for any purpose of the district or of common benefit to any land situated therein, or involving the wasteful use of water therein; to commence, maintain, intervene in, defend, and compromise and to assume the cost and expenses of any and all actions and proceedings now or hereafter begun; to prevent interference with or diminution of, or to declare rights in the natural flow of any stream or surface or subterranean supply of water used or useful for any purpose of the district or of common benefit to the lands within the district or to its inhabitants; to prevent unlawful exportation of water from the district; to prevent contamination, pollution, or otherwise rendering unfit for beneficial use the surface or subsurface water used or useful in the district, and to commence, maintain, and defend actions and proceedings to prevent any such interference with the described waters as may endanger or damage the inhabitants, lands, or use of water in, or flowing into, the district; provided, however, that the district shall not have power to intervene or take part in, or to pay the costs or expenses of, actions or controversies between the owners of lands or water rights that do not affect the interests of the district.

6. To control the flood and storm waters of the district and the flood and storm waters of streams that have their sources outside of the district, but which streams and the floodwaters thereof, flow into said district, and to conserve such waters for beneficial and useful purposes of the district by spreading, storing, retaining, and causing to percolate into the soil within or without the district, or to save or conserve in any manner all or any of those waters and protect from damage from those flood or storm waters the watercourses, watersheds, public

highways, life, and property in the district, and the watercourses outside of the district of streams flowing into the district.

7. To enter upon any land, to make surveys and locate the necessary works of improvement and the lines for channels, conduits, canals, pipelines, roadways, and other rights-of-way; to acquire by purchase, lease, contract, gift, devise, or other legal means all lands and water and water rights and other property necessary or convenient for the construction, use, supply, maintenance, repair, and improvement of the works, including works constructed and being constructed by private owners, lands for reservoirs for storage of necessary water, and all necessary appurtenances, and also where necessary or convenient to that end, and for those purposes and uses, to acquire and to hold in the name of the state, the capital stock of any mutual water company or corporation, domestic or foreign, owning water or water rights, canals, waterworks, franchises, concessions, or rights, when the ownership of such stock is necessary to secure a water supply required by the district or any part thereof, upon the condition that when holding such stock, the district shall be entitled to all the rights, powers, and privileges, and shall be subject to all the obligations and liabilities conferred or imposed by law upon other holders of such stock in the same company; to cooperate with, act in conjunction with, enter into and to do any acts necessary for the proper performance of any agreement with the State of California, or any of its engineers, officers, boards, commissions, departments, or agencies, or with the government of the United States, or any of its engineers, officers, boards, commissions, departments, or agencies or with any state, city and county, city, county, district of any kind, public or private corporation, association, firm, or individual, or any number of them, for the ownership, joint acquisition, leasing, disposition, use, management, construction, installation, extension, maintenance, repair, or operation of any rights, works, or other property of a kind which might lawfully be acquired or owned by the district or for the lawful performance of any power or purpose of the district provided for in this act, including, but not limited to, the granting of the right to the use of any water or the right to store that water in any reservoir of the district or to carrying that water through any tunnel, canal, ditch, or conduit of the district or for the delivery, sale, or exchange of any water right, water supply, or water pumped, stored, appropriated, or otherwise acquired or secured for the use of the district, or for controlling drainage waters, or flood or storm waters of streams in or running into the district, or for the protection of life or property therein, or for the purpose of conserving any waters for the beneficial use within the district, or in any other works, uses, or purposes provided for in this act; and to adopt and carry out any definite plan or system for accomplishing, facilitating, or financing all work which may lawfully be accomplished by the district and to enforce that plan or system by resolution or ordinance.

8. To carry on technical and other necessary investigations, make measurements, collect data, make analyses, studies, and inspections pertaining to water supply, water rights, control of flood and storm waters, and use of water both within and outside the district relating to watercourses or streams flowing in or into the district. For these purposes, the district shall have the right of access through its authorized representatives to all properties within the district and elsewhere relating to watercourses and streams flowing in or into said district. The district, through its authorized representatives, may enter upon such lands and make examinations, surveys, and maps thereof.

9. To prescribe, revise, and collect fees and charges for facilities furnished or to be furnished to any new building, improvement, or structure by the use of any flood control or storm drainage system constructed or to be constructed in a zone of the district, and whenever a drainage or flood control problem is referred to the district by the County of Santa Clara, or any incorporated city therein, to require the installation of drainage or flood control improvements necessary and/or convenient for needs of the zone, including, but not limited to, residential, subdivision, commercial, and industrial drainage and flood control needs, that county and those cities being hereby authorized to refer all drainage and flood control problems, arising under the Subdivision Map Act (Division 2 (commencing with *Section 66410) of Title 7 of the Government Code*) or otherwise, to the district for solution. Revenues derived under this section shall be used for the acquisition, construction, reconstruction, maintenance, and operation of the flood control or storm drainage facilities of the zone, to reduce the principal or interest of any bonded indebtedness thereof, or to replace funds expended on behalf of that zone derived from the fund created pursuant to subdivision 1 of Section 13.

10. To incur indebtedness, and to issue bonds in accordance with this act.

11. To cause taxes or assessments to be levied and collected for the purpose of paying any obligation of the district, and to carry out any of the purposes of this act, in the manner hereinafter provided.

12. To make contracts, and to employ labor, and to do all acts necessary for the full exercise of all powers vested in the district or any of the officers thereof, by this act.

13. To have the power and right to disseminate information concerning the rights, properties, activities, plans, and proposals of the district; provided, however, that expenditures during any fiscal year for those purposes shall not exceed one-half cent ($0.005) for each one hundred dollars ($100) of assessed valuation of the district.

14. To pay to any city, public agency, district, or educational institution recognized under Chapter 3 (commencing with *Section 94301) of Part 59 of the Education Code*, a portion of the cost of water imported by that city, public agency, district, or educational institution into, for use within, and of benefit to the Santa Clara Valley Water District.

15. To establish designated floodways in accordance with the Cobey-Alquist Flood Plain Management Act (Chapter 4 (commencing with *Section 8400) of Part 2 of Division 5 of the Water Code*).

16. To acquire, construct, maintain, operate, and install landscaping or recreational facilities in connection with any dam, reservoir, or other works owned or controlled by the district.

17. To acquire, construct, maintain, operate and install, lease, and control facilities for the generation, transmission, distribution, sale, exchange, and lease of electric power.

18. To require the sealing of abandoned or unused wells according to standards adopted by the board by ordinance and designed to protect the groundwater resources of the district from contamination. Upon and following the effective date of the ordinance, the County of Santa Clara or any incorporated city therein shall require all persons applying for any land development permit or approval to show the existence and location of any water well upon a map of the property the subject of the application. When a well is shown, the map shall be referred to the district immediately upon receipt for review and investigation. If upon review and investigation the district determines that the well or wells are to be sealed by the applicant pursuant to the ordinance, the determination shall be transmitted promptly to the applicant by the district as a requirement in writing.

§ 6. Eminent domain

The district may exercise the right of eminent domain, either within or without said district, to take any property necessary to carry out any of the objects or purposes of this act. The district in exercising such power shall in addition to the damage for the taking, injury, or destruction of property, also pay the cost of removal or relocation of any structure, railways, mains, pipes, conduits, wires, cable, poles, of any public utility which is required to be moved to a new location. Nothing in this act contained shall be deemed to authorize said district, or any person or persons to divert the waters of any river, creek, stream, irrigation system, canal or ditch, from its channel, to the detriment of any person, or persons having any interest in such river, creek, stream, irrigation system, canal or ditch, or the waters thereof or therein, unless compensation therefor be first provided in the manner provided by law.

Nothing in this act shall authorize the district to condemn any of the properties, structures or works, now owned or hereafter to be constructed or acquired, by any water conservation district within the County of Santa Clara.

§ 6.1. Water contamination hazard; public nuisance; standards; notice to property owner to abate; hearing; clearance letter or recordation; order to abate; abatement by district; payment of costs by owner; notice of lien; recordation; effect

Any abandoned or unused water well endangering the public health and safety by creating a water contamination hazard is a public nuisance. The board shall, by ordinance, establish standards for what constitutes a water contamination hazard.

Whenever the district determines that a public nuisance, as so defined, exists, it shall, by certified mail, notify the then current record owner of the property to abate the public nuisance and that it is the intention of the district to record a notice of violation of the ordinance. The notice to the owner shall describe the violation and

specify a time, date, and place for a hearing, at which the owner may present evidence to the board that a public nuisance does not actually exist and that the notice should not be recorded. The notice to the owner shall state that, unless the public nuisance is abated within the time specified by the board following the hearing, the district may abate the public nuisance and the costs of the abatement will be assessed against the property. The meeting shall take place no sooner than 30 days and no later than 60 days from date of mailing. If, within 15 days of receipt of the notice, the owner of the real property fails to inform the district of his or her objection to recording the notice of violation, the board shall record the notice of violation with the county recorder. If, after the owner has presented evidence, it is determined that there has been no violation, the district shall mail a clearance letter to the then current owner of record. If, however, after the owner has presented evidence, the board determines that a violation has in fact occurred, the board shall record the notice of violation with the county recorder. The notic e of violation, when recorded, shall be deemed to be constructive notice of the violation to all successors in interest in the property. The county recorder shall index the names of the fee owners in the general index.

If the board determines, at the conclusion of the hearing, that a public nuisance actually exists, the board shall order the property owner to abate the public nuisance within a specified time.

If the public nuisance is not abated within the time specified in the order of the board following a hearing, the district may abate the public nuisance. Any entry upon private property by the district for this purpose shall be preceded by written notice to the owner by certified mail stating the date and place of entry, the purpose thereof, and the number of persons entering. If the mailed notice is returned undelivered, the district may post a copy thereof at the proposed entry point five days prior to entry.

Any costs incurred by the district in abating a public nuisance pursuant to this section are a lien upon the property upon which the public nuisance existed when notice of the lien is filed and recorded.

Notice of the lien, particularly identifying the property on which the nuisance was abated and the amount of the lien, and naming the owner of record of the property, shall be recorded by the district in the office of the Santa Clara County Recorder within one year after the first item of expenditures by the district or within 90 days after the completion of the work, whichever first occurs. Upon recordation of the notice of lien, the lien shall have the same force, effect, and priority as a judgment lien, except that it shall attach only to the property described in the notice, and shall continue for 10 years from the time of recording of the notice unless sooner released or otherwise discharged.

§ 7. Board of directors; continuance of service

Except as otherwise provided in this act, the individuals who serve on the board of the Santa Clara Valley Water District on December 31, 2008, in accordance with the Santa Clara Valley Water District Act (Chapter 1405 of the Statutes of 1951, as amended) shall continue to serve on the board of the district established by this act.

§ 7.1. Directors; composition until noon on December 3, 2010

Until noon on December 3, 2010, the board shall consist of the following directors:

(a) Two appointed directors who serve on the board of the Santa Clara Valley Water District on December 31, 2008, pursuant to Section 7.2 of the Santa Clara Valley Water District Act (Chapter 1405 of the Statutes of 1951), as amended by Section 4 of Chapter 279 of the Statutes of 2006).

(b) Five directors who are elected pursuant to Section 7.1 of the Santa Clara Valley Water District Act (Chapter 1405 of the Statutes of 1951, as amended by Chapter 906 of the Statutes of 1993).

§ 7.2. Appointed directors; qualifications; terms

[Section repealed 2010.]

§ 7.3. Service of directors from the first and fourth supervisorial districts until noon on December 3, 2010

Directors described in subdivision (b) of Section 7.1 from the first and fourth supervisorial districts who are elected in 2006 shall serve until noon on December 3, 2010.

§ 7.4. Service of directors from the second, third, and fifth supervisorial districts until noon on December 7, 2012.

Directors described in subdivision (b) of Section 7.1 from the second, third, and fifth supervisorial districts who are elected in 2008 shall serve until noon on December 7, 2012.

§ 7.5. Service of specified directors until noon on December 3, 2010

Directors described in subdivision (a) of Section 7.1 shall serve until noon on December 3, 2010.

§ 7.6. Director composition as of December 3, 2010

Notwithstanding any other provision of law, commencing at noon on December 3, 2010, the number of elected directors on the board shall be increased from five to seven and the number of appointed directors shall be reduced from two to zero.

§ 7.7. Electoral districts

(a) On or before June 30, 2010, the board shall adopt a resolution that divides the district into seven electoral districts and that assigns a number to each district.

(b) Using the most recent census data as a basis, the electoral districts shall be as nearly equal in population as possible.

(c) In establishing the boundaries of the electoral districts, the board may give consideration to the topography, geography, cohesiveness, contiguity, integrity, compactness of territory, and the community of interests of the electoral districts.

§ 7.8. First elections for first through seventh electoral districts; term of office; eligibility

(a) The first elections for the first, fourth, sixth, and seventh electoral districts established pursuant to Section 7.7 shall be conducted at the November 2, 2010, statewide general election. The first elections for the second, third, and fifth electoral districts established pursuant to Section 7.7 shall be conducted at the November 6, 2012, statewide general election.

(b) Except as otherwise provided by this act, the term of office for each director elected pursuant to subdivision (a) shall be four years beginning at noon on the first Friday in December following his or her election and the director shall hold office until his or her successor qualifies and takes office.

(c) Elections for the electoral districts established pursuant to Section 7.7 shall be conducted in accordance with the Uniform District Election Law (Part 4 (commencing with *Section 10500) of Division 10 of the Elections Code*).

(d)

(1) One director shall be elected in accordance with this section by the voters of each electoral district.

(2) A candidate for the board of directors shall be a resident in the electoral district for which he or she is a candidate.

(3) A director shall continue to reside within the electoral district during his or her term of office, except that no change in boundaries of an electoral district shall affect the term of office of any incumbent director.

(e) The directors elected pursuant to this section are to exercise their independent judgment on behalf of the interests of the entire district, including the residents, property owners, and the public as a whole in furthering the purposes and intent of this act.

§ 7.9. Vacancies in office

A vacancy in the office of any director shall be filled pursuant to *Section 1780 of the Government Code*. Any director appointed to fill a vacancy in either of the offices described in subdivision (a) of Section 7.1 shall represent the district at large and shall be a qualified elector residing in the County of Santa Clara.

§ 7.10. Recall

Any elected director may be recalled by the voters pursuant to Chapter 1 (commencing with *Section 11000) of Division 11 of the Elections Code.*

§ 7.11. Review and adjustment of electoral district boundaries

The board shall review the boundaries of the seven electoral districts established pursuant to Section 7.7 before November 1 of the year following the year in which each decennial census is taken. The boundaries shall be adjusted if needed in accordance with *Section 22000 of the Elections Code* so that each electoral district is as nearly equal in population to the others as possible. In making the adjustments, the board may give consideration to the factors described in subdivision (c) of Section 7.7.

§ 8. Compensated employment; regulations governing lobbyists; prohibited contact; severance pay; public reporting; expense reimbursements

(a) While serving as a member of the board of directors, and for one year immediately following the end of the director's term of office, no director shall seek or accept compensated employment with the district.

(b) The board, by ordinance, shall adopt regulations governing the activities of persons who lobby the district. Those regulations shall include provisions requiring registration of lobbyists, reporting requirements governing the activities of lobbyists and communications with board members, and disclosure by directors of contact with lobbyists prior to voting on matters related to the contact. This ordinance shall be adopted no later than July 1, 2010.

(c)

(1) No director shall contact staff on behalf of a party who is bidding or intends to bid on a district contract or who has or intends to submit a response to a request for proposals or request for qualifications, nor shall a director inquire about the identity of bidders or proposers prior to the time that staff has made a recommendation for selection of a contractor, vendor, or consultant.

(2) Paragraph (1) does not prohibit a director from making general inquiries about the status of a particular procurement, or from providing a member of the public with information about the appropriate staff contact concerning procurement of goods and services by the district.

(d) The board may not authorize severance pay for a board-appointed employee of the district when the employee voluntarily separates from district employment. "Severance pay" does not include any otherwise lawful payment required to be paid by the district under a preexisting employment agreement or under a separation and release agreement resolving a claim or claims made or threatened to be made against the district. The board shall not agree to amend an employment contract after the employee announces or requests a voluntary separation, except upon a board determination, in open session, that an adjustment in compensation is required to retain the employee and is in the best interest of the district.

(e) A public report made pursuant to *Section 54957.1 of the Government Code* of actions taken in closed session shall be reflected in the minutes of the board meeting at which the report was made.

(f)

(1) Except as provided in paragraph (2), reports prepared by district staff for the board that recommend action on any item to be considered at a regular public meeting of the board, or at a public hearing conducted by the board, shall be made available to the public no later than six days prior to the date of that meeting or hearing.

(2) Notwithstanding paragraph (1), the following reports shall be made available to the public within the time period required by the Ralph M. Brown Act (Chapter 9 (commencing with *Section 54950) of Part 1 of Division 2 of Title 5 of the Government Code*):

(A) Reports relating to a contract award, if the contract has been considered at a prior board meeting.

(B) Reports recommending board action necessary to meet a legal deadline, including a deadline for a grant funding application.

(C) Reports conveying a recommendation from a board committee.

(D) Reports recommending immediate board action to address urgent health, safety, or financial matters identified in the report.

(E) Supplemental reports conveying additional information received after the initial report was released.

(3) If a recommendation in a staff report is revised based upon direction from a member of the board, the revision shall be disclosed in the applicable report.

(4) This subdivision does not require the public release of any document that is exempt from disclosure pursuant to the California Public Records Act (Chapter 3.5 (commencing with *Section 6250) of Division 7 of Title 1 of the Government Code*) or any other provision of law.

(g) On a quarterly basis, a report of the expense reimbursements to each director shall be placed on an open session board meeting agenda for review and a determination by the board whether the expense reimbursements comply with the board's reimbursement policies adopted pursuant to *Section 53232.3 of the Government Code*. Only expenses in compliance with those policies may be reimbursed by the district.

§ 9. Ordinances and resolutions; rules and regulations; officers and employees

The board shall have power to adopt resolutions for the district which shall be adopted, certified to, recorded, and published, in the same manner except as herein otherwise provided for, as are resolutions for the County of Santa Clara.

The board shall have the power to adopt ordinances for the district. All ordinances shall be enacted only by rollcall vote entered into the proceedings of the board. An ordinance shall be in full force and effect 30 days after adoption, and shall be published once in full in a newspaper of general circulation, printed, published, and circulated in the district within 10 days after adoption. It is a misdemeanor for any person to violate any district ordinance adopted pursuant to this section from and after the effective date of the ordinance. The violation

shall be punishable by a fine not exceeding five hundred dollars ($500), or imprisonment in the county jail not to exceed 30 days, or both that fine and that imprisonment. Any violation or threatened violation may also be enjoined by civil action. The board shall have power to make and enforce all needful rules, regulations, standards, and procedures for the administration and government of the district, and to appoint and employ all needful agents, superintendents, engineers, attorneys, and employees to properly look after the performance of any work provided for in this act and to operate and maintain those works, and to perform all other acts necessary or proper to accomplish the purposes of this act.

In addition to the officers and employees herein otherwise prescribed, the board may in its discretion appoint a chairman, a clerk and such other officers and employees for the board or district as in its judgment may be deemed necessary, prescribe their duties and fix their compensation. Those officers and employees shall be employed, suspended, or their employment terminated in accordance with an ordinance setting forth rules, regulations, standards and procedures for appointment, suspension and termination of employment.

§ 10. Engineers; plans for projects; reports; cost estimates; removal

The board shall have jurisdiction and power to employ competent registered civil engineers to investigate and carefully devise a plan or plans for a project, and to obtain such information in regard thereto, as may be deemed necessary or useful for carrying out the purposes of this act; and the board may direct such engineer or engineers to make and file reports from time to time

1. A general description of the project, together with general plans, profiles, cross-sections, and general specifications relating thereto, on each project.

2. A general description of the lands, rights of way, easements and property proposed to be taken, acquired or injured in carrying out said project.

3. A map or maps which shall show the location and zones, as may be required, of each of said projects, and lands, rights of way, easements and property to be taken, acquired or injured in carrying out said project, and any other information in regard to the same that may be deemed necessary or useful.

4. An estimate of the cost of each project, including a statement of the portion, if any, of such cost theretofore advanced by the district for said project for which the district proposes to reimburse itself from the proceeds of sale of any bonds to be issued to pay for said project and an estimate of the cost of lands, rights-of-way, easements and property proposed to be taken, acquired or injured in carrying out said project, and also of all incidental expenses likely to be incurred in connection therewith, including legal, clerical, engineering, superintendence, inspection, printing and advertising, and, if deemed advisable, a sum sufficient to pay interest on any bonds proposed to be issued during all or any part of the period of construction of said project and for not to exceed 12 months thereafter; and the total amount of bonds, if any, necessary to be issued to pay for said project.

Such engineer or engineers shall from time to time and as directed by the board file with the board supplementary, amendatory and additional reports and recommendations, as necessity and convenience may require.

Such engineer or engineers, employed by the board, shall have power and authority, subject to the control and direction of the board, to employ such engineers, surveyors, and others, as may be required for making all surveys or doing any other work necessary for the making of any such report.

The board may at any time remove any or all of the engineers or employees appointed or employed under this act, and may fill any vacancies occurring among them from any cause.

§ 11. Selection of projects; determination of benefits

The board shall determine which projects or works of improvement shall be carried out and shall determine, as to each project or work of improvement, that it is either:

1. For the common benefit of the district as a whole; or

2. For the common benefit of two or more zones hereinafter referred to as participating zones; or

3. For the benefit of a single zone.

§ 12. Institution of zone or joint zone projects; hearing; determination; majority protest

The board may institute projects for single zones and joint projects for two or more zones, for the financing, constructing, maintaining, operating, extending, repairing or otherwise improving any work or improvement of comment benefit to such zone or participating zones. For the purpose of acquiring authority to proceed with any such project, the board shall adopt a resolution specifying its intention to undertake such project, together with the engineering estimates of the cost of same to be borne by the particular zones or participating zones and fixing a time and place for public hearing of said resolution and which shall refer to a map or maps showing the general location and general construction of said project. Notice of such hearing shall be given by publication once a week for two consecutive weeks prior to said hearing, the last publication of which notice must be at least seven (7) days before said hearing, in a newspaper of general circulation designated by the board, circulated in such zone or each of said participating zones, if there be such newspaper, and if there be no such newspaper then by posting notice for two consecutive weeks prior to said hearing in five public places designated by the board, in such zone or in each of said participating zones. Said notice must designate a public place in such zone or in each of said participating zones where a copy or copies of the map or maps of said joint project may be seen by any interested person; such map must be posted in each of said public places so designated in said notice at least two weeks prior to said hearing.

At the time and place fixed for the hearing, or at any time to which said hearing may be continued, the board shall consider all written and oral objections to the proposed project. Upon the conclusion of the hearing the board may abandon the proposed project or proceed with the same, unless prior to the conclusion of said hearing written protests against the proposed project signed by a majority in number of the registered voters residing within such zone or participating zones be filed with the board, in which event further proceedings relating to such project must be suspended for not less than six months following the date of the conclusion of said hearing, or said proceeding may be abandoned in the discretion of the board.

§ 12.5. Advisory boards, committees or commissions

The board may create by resolution such advisory boards, committees, or commissions for the district or any zone therein as in its judgment are required to serve the best interests of said district or zones, and may grant to them such duties as are consistent with the provisions of this act. The number of members of any such board, committee, or commission shall be not less than three (3) and shall be specified in the resolution. Members thereof shall serve at the pleasure of the board. The board shall create an advisory committee consisting of farmers to represent users of agricultural water.

§ 13. Taxation

The board shall have the power, in any year:

1. To levy ad valorem taxes or assessments in the district, to pay the general administrative costs and expenses, including maintenance and operation of established works, of the district, to carry out any of the objects or purposes of this act of common benefit to the district, and to provide a fund which may be used by the district to pay the costs and expenses of constructing or extending any or all works established within or on behalf of a zone or participating zones within the district; provided, that funds so used are replaced from funds derived from either of the following sources:

(a) Taxes or assessments levied pursuant to subdivision 2 or 3 within the zone or participating zones benefited by such construction in the year or years immediately following the use of those funds.

(b) Fees or charges collected under authority of Section 5, subdivision 9, or Section 26.

Taxes or assessments under paragraph (a) of subdivision 1 may be levied for purposes of this subdivision of this section by either of the following methods:

(a) By a levy or assessment upon all property within the district, including land, improvements thereon, and personal property.

(b) By a levy or assessment upon all real property within the district, including both land and improvements thereon.

2. To levy taxes or assessments in each or any of the zones and participating zones, to pay the cost of carrying out any of the objects or purposes of this act performed or to be performed on behalf of the respective zones, including the constructing, maintaining, operating, extending, repairing or otherwise improving any or all works or improvements established or to be established within or on behalf of the respective zones, according to the benefits derived or to be derived by the respective zones, by any of the following methods:

(a) By a levy or assessment upon all property within a zone or participating zone, including land, improvements thereon, and personal property.

(b) By a levy or assessment upon all real property within a zone or participating zones, including both land and improvements thereon.

(c) By a levy or assessment upon land only within a zone or participating zones.

It is declared that for the purposes of any tax or assessment levied under this subdivision, the property so taxed or assessed within a given zone is equally benefited.

3. To levy assessments upon any property in each or any of said zones, according to the provisions and procedures of the Improvment Act of 1911, the Improvement Bond Act of 1915, the Municipal Improvement Act of 1913, or the Refunding Assessment Bond Act of 1935.

In the event of project cooperation with any of the governmental bodies as authorized in subdivision 7 of Section 5 of this act, and the making of a contract with any such governmental body for the purposes set forth in the subdivision 7 of Section 5, by the terms of which work is agreed to be performed by any such governmental body in any specified zone or participating zones, for the particular benefit thereof, and by the contract it is agreed that the district is to pay to the governmental body, a sum of money in consideration or subvention for the performance of the work by the governmental body, the board may levy and collect a special tax or assessment upon the property in the zone or participating zones, whereby to raise funds to enable the district to make the payment, in addition to other taxes or assessments herein otherwise provided for.

The taxes or assessments shall be levied and collected together with, and not separately from taxes for county purposes, and the revenues derived from the district taxes or assessments, together with penalties thereon, shall be paid into the county treasury to the credit of the district, or the respective zones thereof, and the board may control and order the expenditure thereof for those purposes; provided, however, that no revenues, or portions thereof, derived in any of the several zones from the taxes or assessments levied under the provisions of subdivision 2 of this section shall be expended for constructing, maintaining, operating, extending, repairing or otherwise improving any works or improvements located in any other zone, except in the case of joint projects, or for projects authorized or established outside such zone, or zones, but for the benefit thereof. In cases of projects joint to two or more zones, the zones will become, and shall be referred to as, participating zones.

§ 13.2. Special taxes at minimum uniform rates according to land use category and size; exemption

For the purposes of levying special taxes pursuant to paragraph (2) of Section 13, the district may impose special taxes in accordance with Article 3.5 (commencing with *Section 50075) of Chapter 1 of Part 1 of Division 1 of Title 5 of the Government Code* at minimum uniform rates according to land use category and size. The district may provide an exemption from these taxes for residential parcels owned and occupied by one or more taxpayers who are at least 65 years of age, or who qualify as totally disabled under the federal Social Security Act, if the total household income is less than an amount that is approved by the voters of the district.

§ 14. Bonded indebtedness; procedure

(1) Whenever the board determines that a bonded indebtedness should be incurred to pay the cost of any project in any zone or zones, the board may by resolution, determine and declare the respective amounts of bonds to be issued to raise the amount of money necessary for each project and the denomination and the maximum rate of interest of said bonds. In determining each amount of bonds and the amount of money necessary for each project, the board may include therein the portion, if any, of the cost of such project theretofore advanced by the district for which the district proposes to reimburse itself from the proceeds of sale of any bonds to be issued to pay for said project and the cost of lands, rights-of-way, easements and property proposed to be taken, acquired or injured in carrying out said project and also of all incidental expenses likely to be incurred in connection therewith, including legal, clerical, engineering, superintendence, inspection, printing and advertising, and, if deemed advisable, a sum sufficient to pay interest on any bonds proposed to be issued during all or any part of the period of construction of said project and for not to exceed 12 months thereafter. The board shall cause a copy of the resolution, duly certified by the clerk, to be filed for record in the Office of the Recorder of Santa Clara County within five (5) days after its issuance. From and after said filing of said copy of said resolution the board shall be deemed vested with the a uthority to proceed with the bond election.

(2) After the filing for record of the resolution specified in subdivision (1) of this section, the board may call a special bond election in said zone or participating zones at which shall be submitted to the qualified electors of said zone or participating zones the question whether or not bonds shall be issued in the amount or amounts determined in said resolution and for the purpose or purposes therein stated. Said bonds and the interest thereon shall be paid from revenue derived from annual taxes or assessments levied as provided in this act.

(3) Said board shall call such special bond election by ordinance and not otherwise and submit to the qualified electors of said zone or participating zones, the proposition of incurring a bonded debt in said zone or participating zones in the amount and for the purposes stated in said resolution and shall recite therein the objects and purposes for which the indebtedness is proposed to be incurred; provided, that it shall be sufficient to give a brief, general description of such objects and purposes, and refer to the recorded copy of such resolution adopted by said board, and on file for particulars; and said ordinances shall also state the estimated cost of the proposed project, the amount of the principal of the indebtedness to be incurred therefor, and the maximum rate of interest to be paid on said indebtedness, and shall fix the date on which such special election shall be held, and the form and contents of the ballot to be used. The rate of interest to be paid on such indebtedness shall not exceed eight percent (8%) per annum. For the purposes of said election, said board shall in said ordinance establish special bond election precincts within the boundaries of each zone and participating zone and may form election precincts by consolidating the precincts established for general elections in said district to a number not exceeding six general precincts for each such special bond election precinct, and shall designate a polling place and appoint one inspector, one ju dge, and one clerk for each such special bond election precincts.

In all particulars not recited in said ordinance, such special bond election shall be held as nearly as practicable in conformity with the general election laws of the state, except as provided herein.

Said board shall cause a map or maps to be prepared covering a general description of the project, which said map shall show the location of the proposed projects, and shall cause the said map to be posted in a

prominent place in the county courthouse for public inspection for at least thirty (30) days before the date fixed for such election.

Said ordinance calling for such special bond election shall, prior to the date set for such election, be published pursuant to *Section 6062 of the Government Code* in a newspaper of general circulation circulated in each zone and participating zone affected. The last publication of such ordinance must be at least fourteen (14) days before said election, and if there be no such newspaper, then such ordinance shall be posted in five public places designated by the board, in each zone and participaing zone for at least thirty (30) days before the date fixed for such election. No other notice of such election need be given nor need polling place cards be issued.

Any defect or irregularity in the proceedings prior to the calling of such special bond election shall not affect the validity of the bonds authorized by said election. If at such election two-thirds (2/3) of the votes cast are in favor of incurring such bonded indebtedness, then bonds for such zone or participating zones for the amount stated in such proceedings shall be issued and sold as in this act provided.

§ 15. Bonds; forms; terms; maturity; denominations; signatures

The board shall, subject to the provisions of this act, prescribe by resolution the form of said bonds, which must include a designation of the zone or participating zones affected, and of the interest coupons attached thereto. Said bonds shall be payable annually or semiannually at the discretion of the board each and every year on a day and date, and at a place to be fixed by said board, and designated in such bonds, together with the interest on all sums unpaid on such date until the whole of said indebtedness shall have been paid.

The board may divide the principal amount of any issue into two or more series and fix different dates for the bonds of each series. The bonds of one series may be made payable at different times from those of any other series. The maturity of each series shall comply with this section. The board may fix a date, not more than two years from the date of issuance, for the earliest maturity of each issue or series of bonds. The final maturity date shall not exceed 40 years from the time of incurring the indebtedness evidenced by each issue or series. The board may provide for call and redemption of all or any part of any issue or series of bonds before maturity at prices determined by the board. No bond shall be subject to call or redemption prior to maturity unless it contains a recital to that effect.

The bonds shall be issued in such denominations as the board may determine, except that bonds shall be issued in denominations of one thousand dollars ($1,000) or more, and shall be payable on the days and at the place fixed in said bonds, and with interest at the rate specified in such bonds, which rate shall not be in excess of eight percent (8%) per annum, and shall be made payable annually or semiannually, and said bonds shall be numbered consecutively and shall be signed by the chairman of the board, and countersigned by the auditor of said district, and the seal of said district shall be affixed thereto by the clerk of the board. Either or both such signatures may be printed, engraved or lithographed. The interest coupons of said bonds shall be numbered consecutively and signed by the said auditor by his printed, engraved or lithographed signature. In case any such officer whose signatures or countersignatures appear on the bonds or coupons shall cease to be such officer before the delivery of such bonds to the purchaser, such bonds and coupons and signatures or countersignatures shall nevertheless be valid and sufficient for all purposes the same as if such officer had remained in office until the delivery of the bonds.

§ 16. Bonds; issuance and sale; proceeds; payments

The board may issue and sell the bonds of such zones authorized as hereinbefore provided at not less than par value, and the proceeds of the sale of such bonds shall be placed in the treasury of the County of Santa Clara to the credit of said district and the respective participating zones thereof, for the uses and purposes of the zone, or zones voting said bonds; and the proper record of such transactions shall be placed upon the books of said county treasurer, and said respective zone funds shall be applied exclusively to the purposes and objects mentioned in the ordinance calling such special bond election as aforesaid, subject to the provi-

sions in this act contained. Payments from said zone funds shall be made upon demands prepared, presented, allowed and audited in the same manner as demands upon the funds of the County of Santa Clara.

§ 17. Bonds; payment from tax or assessment revenue

Any bonds issued under the provisions of this act and the interest thereon shall be paid by revenue derived from an annual tax or assessment, levied as provided in clause (a) or (b) of subdivision 2 of Section 13 of this act. No zone nor the property therein shall be liable for the share of bonded indebtedness of any other zone, nor shall any moneys derived from taxation or assessment in any of the several zones be used in payment of principal or interest or otherwise of the share of bonded indebtedness chargeable to any other zone, except in the case of joint projects by participating zones.

§ 18. Bond tax

The board shall levy a tax or assessment each year sufficient to pay the interest and such portion of the principal of said bonds as is due or to become due before the time for making the next general tax levy. Such taxes or assessments shall be levied and collected in the respective zones of issuance together with and not separately from taxes for county purposes, and when collected shall be paid into the county treasury of said Santa Clara County to the credit of the zone of payment, and be used for the payment of the principal and interest on said bonds, and for no other purpose. The principal and interest on said bonds shall be paid by the county treasurer of said Santa Clara County in the manner provided by law for the payment of principal and interest on bonds of said county.

§ 19. Taxation; law applicable

The provisions of law of this State, prescribing the time and manner of levying, assessing, equalizing and collecting county property taxes, including the sale of property for delinquency, and the redemption from such sale, and the duties of the several county officers with respect thereto, are, so far as they are applicable, and not in conflict with the specific provisions of this act, hereby adopted and made a part hereof.

§ 20. Adoption of budget

(a) On or before June 15 of each year, the board shall meet, at the time and place designated by published notice, at which meeting any member of the general public may appear and be heard regarding any item in the proposed budget or for the inclusion of additional items.

(b) At the same time and place designated in the public notice, the board shall review its financial reserves, including the justification therefor, and its reserve management policy.

(c) After the conclusion of the meeting, and not later than June 30 of each year, and after making any revisions of, deductions from, or increases or additions to, the proposed budget that the board determines advisable during or after the meeting, the board, by resolution, shall adopt the budget as finally determined.

§ 21. Bonds; legal investments

The bonds of the district issued for any zone or zones thereof pursuant to this act, shall be legal investments for all trust funds, and for the funds of all insurance companies, banks, both commercial and savings, and trust companies, and for the state school funds, and whenever any money or funds may by law now or hereafter enacted be invested in bonds of cities, cities and counties, counties, school districts or municipalities

in the State of California, such money or funds may be invested in the said bonds of said district issued in accordance with the provisions of this act, and whenever bonds of cities, cities and counties, counties, school districts or municipalities, may by any law now or hereafter enacted be used as security for the performance of any act, such bonds of said district may be so used.

This section of this act is intended to be and shall be considered the latest enactment with respect to the matters herein contained, and any and all acts or parts of acts in conflict with the provisions hereof are hereby repealed.

§ 22. Bonds; tax exemption; nature of district

All bonds issued by said district under the provisions of this act shall be free and exempt from all taxation within the State of California. It is hereby declared that the district organized by this act is a reclamation district and an irrigation district within the meaning of Section 1 3/4of Article XIII and Section 13 of Article XI of the Constitution of this State.

§ 23. [Section repealed 1985.]

§ 24. Bonded improvements; conformity to report, plans, specifications, etc.

Any improvement for which bonds are voted under the provisions of this act, shall be made in conformity with the report, plans, specifications and map theretofore adopted, as above specified, unless the doing of any of such work described in said report, shall be prohibited by law, or be rendered contrary to the best interests of the district by some change of conditions in relation thereto, in which event the board may order necessary changes made in such proposed work or improvements and may cause any plans and specifications to be made and adopted therefor.

§ 25. Additional bonds

Whenever bonds have been authorized by any zone or participating zone of said district and the proceeds of the sale thereof have been expended as in this act authorized, and the board shall by resolution determine that additional bonds should be issued for carrying out the work of flood control, or for any of the purposes of this act, the board may again proceed as in this act provided, and submit to the qualified voters of said zone or participating zone, the question of issuing additional bonds in the same manner and with like procedure as hereinbefore provided, and all the above provisions of this act for the issuing and sale of such bonds, and for the expenditure of the proceeds thereof, shall be deemed to apply to such issue of additional bonds.

§ 25.1. Revenue bonds; issuance; law governing

In addition to proceedings authorized under Sections 13, 14, 15, 16, 17, 18 and 24 of this act, whenever the board determines that it is in the public interest, it may borrow money to provide funds to pay the cost of any work or improvement in the district or in any zone or zones thereof by the issuance of revenue bonds pursuant to the Revenue Bond Law of 1941 (Chapter 6 (commencing with *Section 54300) of Part 1, Division 2, Title 5 of the Government Code*). If the work or improvement is determined by the board to be for a zone or zones comprising less than all the district, the election at which the proposition to issue such revenue bonds is submitted shall be held only in such zone or zones. Proceeds from the sale of any such revenue bonds shall be expended only in the zone or zones in which the proposition to issue such revenue bonds is approved. In the case of any conflict between the provisions of this act and the provisions of the Revenue Bond Law of 1941, the provisions of the Revenue Bond Law of 1941 shall control.

§ 25.2. Revenue bonds; water and electric power facilities; special election

(a) Notwithstanding any other provision of this act, the district may from time to time, subject to the provisions of this section, issue bonds in accordance with the Revenue Bond Law of 1941, (Chapter 6 (commencing with *Section 54300) of Part 1 of Division 2 of Title 5 of the Government Code*) for the purpose of financing the construction, reconstruction, replacement, acquisition or improvement of any facility or facilities necessary or convenient for the storage, treatment, including reclamation, transmission, or distribution of water for beneficial use within the district and for the purpose of generation or transmission of electric power; provided, that this section shall not apply to the acquisition of any facility or facilities already employed in any such public utility use, except where the acquisition of the facility or facilities is by mutual agreement between the district and the owner of the property.

(b) The provisions of *Sections 54380 to 54387, inclusive, of the Government Code* shall not apply to the issuance and sale of bonds pursuant to this section.

(c) The board shall not proceed under this section until it has submitted to the qualified voters of the district at a special election called by a resolution of the board a proposition as to whether the district may authorize and sell revenue bonds under this section. If a majority of the voters of the district voting on the proposition at the election vote in favor of the proposition, the board may proceed to issue and sell revenue bonds as provided by this section. If the proposition fails to carry at the election, the proposition shall not again be voted upon until at least six months have elapsed since the date of the last election at which the proposition was submitted.

(d) The resolution calling the election shall fix the date on which the election is to be held, the proposition to be submitted thereat, the manner of holding the election and of voting for or against the proposition, and shall state that in all other particulars the election shall be held and the votes canvassed as provided by law for the holding of elections within the district. The election may be held separately or may be consolidated with any other election authorized by law at which the voters of the district may vote. The resolution calling the election shall be published and no other notice of the election need be given.

§ 25.5. Defeated bond proposal; waiting period before new election

Should a proposition for issuing bonds for any zone or participating zones submitted at any election under this act fail to receive the requisite number of votes of the qualified electors voting at such election to incur the indebtedness for the purpose specified, the board shall not for six months after such election call or order another election in such zone or participating zone for incurring indebtedness and issuing bonds under the terms of this act for the same objects and purposes.

§ 25.6. Indebtedness; limitation; purpose; short-term notes

(a) The district may borrow money and incur indebtedness, not to exceed the amount of eight million dollars ($8,000,000) as provided in this section by action of the board of directors and without the necessity of calling and holding an election in the district.

(b) Indebtness may be incurred pursuant to this section for any purpose for which the district is authorized to expend funds.

(c) Indebtedness incurred under this section shall be evidenced by short-term notes payable at stated times fixed by the board. The maturity of short-term notes shall be not later than five years from the date of issuance. Short-term notes shall bear interest at a rate not exceeding 10 percent per annum payable annually or semiannually. Short-term notes shall be general obligations of the district payable from revenues, charges, taxes, and assessments levied for purposes of the district.

(d) Short-term notes shall not be issued pursuant to this section which are payable in any fiscal year in an amount which, when added to the interest thereon, exceeds 85 percent of the estimated amount of the revenues, charges, taxes, and assessments of or allocable to the district which will be available in that fiscal year for payment of short-term notes and the interest thereon.

§ 26. Ground water charge; power to levy and collect

The board shall have the power, in addition to the powers enumerated elsewhere in this act, to levy and collect a ground water charge for the production of water from the ground water supplies within a zone or zones of the district which will benefit from the recharge of underground water supplies or the distribution of imported water in such zone or zones.

§ 26.1. Definitions relative to ground water charge

As used in connection with the groundwater charge, the following words shall mean:

"Person," "owner," or "operator" means public agencies, federal, state, and local, private corporations, firms, partnerships, limited liability companies, individuals or groups of individuals, whether legally organized or not; "owner" or "operator" also means the person to whom a water-producing facility is assessed by the county assessor, or, if not separately assessed, the person who owns the land upon which a water-producing facility is located.

"Groundwater" means nonsaline water beneath the natural surface of the ground, whether or not flowing through known and definite channels; "nonsaline water" means water which has less than 1,000 parts of chlorides to 1,000,000 parts of water, both quantities measured by weight.

"Production" or "producing" means the extraction or extracting of groundwater, by pumping or any other method, from shafts, tunnels, wells (including, but not limited to, abandoned oil wells), excavations or other sources of groundwater, for domestic, municipal, irrigation, industrial, or other beneficial use, except that the terms do not mean or include the extraction of groundwater produced in the construction or reconstruction of a well, or water incidentally produced with oil or gas in the production thereof, or water incidentally produced in a bona fide mining or excavating operation or water incidentally produced in the bona fide construction of a tunnel, unless the groundwater so extracted shall be used or sold by the producer for domestic, municipal, irrigation, industrial, or other beneficial purpose.

"Water-producing facility" means any device or method, mechanical or otherwise, for the production of water from the groundwater supplies within the district or a zone thereof.

"Water production statement" means the certified statement filed by the owner or operator of a water-producing facility with the district of the production of groundwater of the facility in a specified period.

"Water year" means July 1st of one calendar year to June 30th of the following calendar year.

"Agricultural water" means water primarily used in the commercial production of agricultural crops or livestock.

§ 26.2. Ground water charge zones; establishment; amendment

Prior to the establishment of any ground water charge, the board shall establish a zone or zones within the district within which the ground water charge will be effective. Said zone or zones shall be established and may be amended to the extent and in the manner prescribed in Section 3 of this act.

§ 26.3. Purpose of ground water charges; use of revenues

Ground water charges levied pursuant to this act are declared to be in furtherance of district activities in the protection and augmentation of the water supplies for users within a zone or zones of the district which are necessary for the public health, welfare and safety of the people of this State. The ground water charges are authorized to be levied upon the production of ground water from all water-producing facilities, whether public or private, within said zone or zones of the district for the benefit of all who rely directly or indirectly upon the ground water supplies of such zone or zones and water imported into such zone or zones.

The proceeds of ground water charges levied and collected upon the production of water from ground water supplies within such zone or zones of the district are authorized and shall be used exclusively by the board for the following purposes:

1. To pay the costs of constructing, maintaining and operating facilities which will import water into the district which will benefit such zone or zones, including payments made under any contract between the district and the State of California, the United States of America, or any public, private or municipal utility.

2. To pay the costs of purchasing water for importation into such zone or zones, including payments made under contract to the State of California, the United States of America, or any public, private or municipal utility.

3. To pay the costs of constructing, maintaining and operating facilities which will conserve or distribute water within such zone or zones, including facilities for ground water recharge, surface distribution, and the purification and treatment of such water.

4. To pay the principal or interest of any bonded indebtedness or other obligations incurred by the district on behalf of such zone or zones for any of the purposes set forth in paragraphs 1, 2 and 3 of this section.

The district may apply to any one or more of the purposes set forth in paragraphs 1, 2, 3 and 4 of this section any or all revenues received by the district from water sale contracts executed by the district pursuant to this act.

§ 26.4. Registration of water-producing facilities; violation; penalty

Within six months after the date of establishing any such zone or zones, all water-producing facilities located within the boundaries of such zone or zones shall be registered with the district and, if required by the board, measured with a water-measuring device satisfactory to the district installed by the district or at the district's option by the operator thereof. Any new water-producing facility, constructed or reestablished, or any abandoned water-producing facility which is reactivated, after such date, shall be registered with the district and, if required by the board, measured with a water-measuring device satisfactory to the district within 30 days after the completion or reestablishment, or reactivation thereof.

Failure to register any water-producing facility, as required by this act, is a misdemeanor punishable by a fine of not to exceed five hundred dollars ($500), or imprisonment in the county jail for not to exceed six months, or by both such fine and imprisonment.

In addition to other information which the district may determine is necessary and may require in the registration form provided, there shall also be given information as to the owner or owners of the land upon which each water-producing facility is located, a general description and location of each water-producing facility, the name and address of the person charged with the operation of each water-producing facility, and the name or names and addresses of all persons owning or claiming to own an interest in the water-producing facility.

§ 26.5. Annual report on district's activities; contents

(a) The district shall annually prepare a written report upon the district's activities in the protection and augmentation of the water supplies of the district. The report shall include, among other information the board may order, a financial analysis of the district's water utility system; information as to the present and future water requirements of the district, the water supply available to the district, and future capital improvement and maintenance and operating requirements; a method of financing those requirements; a recommendation as to whether or not a groundwater charge should be levied in any zone or zones of the district during the ensuing water year and, if any groundwater charge is recommended, a proposal of a rate or rates per acre-foot for agricultural water and a rate or rates per acre-foot for all water other than agricultural water for the zone or zones, which rate or rates, as applied to operators who produce groundwater above a specified annual amount, may be subject to prescribed, fixed, and uniform increases in proportion to increases by that operator in groundwater production over the production of that operator for a prior base period to be specified by the board.

(b) The report shall not contain a recommendation of any increases in proportion to increased production in a zone unless based upon an analysis showing the cause of the reduction in the groundwater levels of the zone requiring the increases, with attention given to the effect of extractions of pumpers outside of, as well as within the zone, and with an evaluation of alternative measures which may feasibly be taken within the entire affected groundwater basin and of any alternative supplies of water available for that zone, including the availability of treated water supplied by the district or treated groundwaters or groundwaters extracted in a cleanup operation and available to the district for reuse. The report shall be consistent with any conservation and reuse plan approved by the State Water Resources Control Board. The report shall also include all of the following:

(1) The amount of groundwater produced in the proposed zone and alternative water sources.

(2) The estimated costs of recharging each zone or zones.

(3) The estimated costs of mitigating any effects of pumping.

(4) Information specifying the benefits that have been received and will be received within the zone or zones where a groundwater charge has been levied and collected, or is recommended to be levied and collected.

§ 26.6. Hearing on report; notice

On or before the first Tuesday in April of each year the report shall be delivered to the clerk of the district board in writing. The clerk shall publish, pursuant to *Section 6061 of the Government Code*, a notice of the receipt of the report and of the public hearing to be held on or before the fourth Tuesday in April in a newspaper of general circulation printed and published within the district, at least 10 days prior to the date at which the public hearing regarding the report shall be held. The notice, among other information which the district may provide, shall contain an invitation to all operators of water-producing facilities within the district and to any person interested in the district's activities in the protection and augmentation of the water supplies of the district to call at the offices of the district to examine the report. There shall be held on or before the fourth Tuesday of April of each year, in the chambers of the board, a public hearing at which time any operator of a water-producing facility within the district, or any person interested in the district's activities in the protection and augmentation of the water supplies of the district, may in person, or by representative, appear and submit evidence concerning the subject of the written report.

§ 26.7. Levy and collection of ground water charges; rates; new or adjusted charges; reports; notice; hearing; errors

(a)

(1) Prior to the end of the water year in which the hearing is held, and based upon the findings and determinations from the hearing, the board shall determine whether or not a groundwater charge should be levied in any zone or zones.

(2) If the board determines that a groundwater charge should be levied, it shall levy, assess, and affix the charge or charges against all persons operating groundwater-producing facilities within the zone or zones during the ensuing water year.

(3)

(A) The charge shall be computed at a fixed and uniform rate or rates per acre-foot for agricultural water, and at a fixed and uniform rate or rates per acre-foot for all water other than agricultural water.

(B) Different rates may be established in different zones, except that in each zone the rate or rates for agricultural water shall be fixed and uniform.

(C) The rate or rates, as applied to operators who produce groundwater above a specified annual amount, may, except in the case of any person extracting groundwater in compliance with a government-ordered program of cleanup of hazardous waste contamination, be subject to prescribed, fixed, and uniform increases in proportion to increases by that operator in groundwater production over the production of that operator for a prior base period to be specified by the board, upon a finding by the board that conditions of drought and water shortage require the increases. The increases shall be related directly to the reduction in the affected zone groundwater levels in the same base period.

(D) The rates shall be established each year in accordance with a budget for that year approved by the board pursuant to this act, or amendments or adjustments to that budget, and shall be fixed and uniform rates for agricultural water and for all water other than agricultural water, respectively, except that each rate for agricultural water shall not exceed one-fourth of the rate for all water other than agricultural water.

(b)

(1) The board may also impose or adjust any groundwater charge, and the rate of any charge, on or before January 1 of each water year whenever the board determines that the imposition or adjustment of the charge is necessary.

(2) The board shall prepare a supplemental report to the annual report prepared pursuant to Section 26.5, explaining the reasons for the imposition or adjustment of the charge. The board shall file the supplemental report with the clerk of the board at least 45 days before the date the new or adjusted charge is proposed to take effect.

(3)

(A) The clerk shall publish in a newspaper of general circulation published within the district, pursuant to *Section 6061 of the Government Code*, a notice of the receipt of the supplemental report and a hearing to be held on the proposed imposition or adjustment of the groundwater charge at least 31 days before the date on which the new or adjusted charge is proposed to take effect and at least 10 days before the date of the hearing.

(B) The notice shall invite any operator of a water-producing facility within the district and other interested parties to examine the supplemental report prepared pursuant to paragraph (2) at the district office.

(4)

(A) A public hearing shall be held at least 21 days before the date on which the new or adjusted groundwater charge is proposed to take effect in the chambers of the board.

(B) Any operator of a water-producing facility within the district may, in person or by means of a representative, present evidence at the hearing concerning the imposition or adjustment of the groundwater charge.

(c) Any groundwater charge levied pursuant to this section shall be in addition to any general tax or assessment levied within the district or any zone or zones thereof.

(d) Clerical errors occurring or appearing in the name of any person or in the description of the water-producing facility from which the production of water is otherwise properly charged, or in the making or extension of any charge upon the records that do not affect the substantial rights of the assessee or assessees, shall not invalidate the groundwater charge.

§ 26.8. Notice to owners or operators

The district, after the levying of the ground water charge, shall give notice thereof to each owner or operator of each water-producing facility in the zone or zones as disclosed by the records of said district, which notice shall state the rate for each class of water of the ground water charge for each acre-foot of water to be produced during the ensuing water year. Said notice may be sent by postal card or by other first-class mail and with postage prepaid by the district.

§ 26.9. Water production statement; computation of charges; interest; penalties, and administrative charges

(a) After the establishment of a zone in which a groundwater charge may be levied, each owner or operator of a water-producing facility within the zone, until the time that the water-producing facility has been permanently abandoned, shall file with the district, on or before the 30th day following the end of collection periods established by the board, a water production statement setting forth the total production in acre-feet of water for the preceding collection period, a general description or number locating each water-producing facility, the method or basis of the computation of the water production, and the amount of the groundwater charge based on the computation. The collection periods may be established at intervals of not more than one year or less than one month. If no water has been produced from the water-producing facility during a preceding collection period, this statement shall be filed as provided for in this section, setting forth that no water has been produced during the applicable period. The statement shall be verified by a written declaration under penalty of perjury.

(b) The groundwater charge is payable to the district on or before the last date upon which the water production statements shall be filed, and is computed by multiplying the production in acre-feet of water for each classification as disclosed in the statement by the groundwater charge for each classification of water. The owner or operator of a water-producing facility that is being permanently abandoned shall give written notice of the abandonment to the district. If any owner or operator of a water-producing facility fails to pay the groundwater charge when due, the district shall charge interest at the rate of 1 percent each month on the delinquent amount of the groundwater charge.

(c) If any owner or operator of a water-producing facility fails to register each water-producing facility, or fails to file the water production statements as required by this act, the district shall, in addition to charging interest, assess a penalty charge against the owner or operator in an amount of 10 percent of the amount found by the district to be due. The board may adopt regulations to provide that in excusable or justifiable circumstances the penalty may be reduced or waived.

(d) If any owner or operator of a water-producing facility fails to file a water production statement as required by this act, the district shall, in addition to charging interest and assessing a penalty charge, assess an administrative charge to recover the costs of collection. The board may adopt regulations to provide that in excusable or justifiable circumstances the administrative charge may be reduced or waived.

(e) If a water-measuring device is permanently attached to a water-producing facility, the record of production as disclosed by the water-measuring device shall be presumed to be accurate and shall be used as the basis for computing the water production of the water-producing facility in completing the water production statement, unless it can be shown that the water-measuring device is not measuring accurately.

(f) If a water-measuring device is not permanently attached to a water-producing facility, the board may establish a method or methods to be used in computing the amount of water produced from the water-producing facilities. The methods may be based upon any or all of the following criteria: the minimum charge sufficient to cover administrative costs of collection, size of water-producing facility discharge opening, area served by the water-producing facility, number of persons served by the water-producing facility, use of land served by the water-producing facility, crops grown on land served by the water-producing facility, or any other criteria that may be used to determine with reasonable accuracy the amount of water produced from that water-producing facility. The district may levy an annual charge upon a water-producing facility for which no production has been recorded but that has not been permanently abandoned if that charge does not exceed the annual cost to the district of maintaining and administering the registration of that facility.

§ 26.10. Amendment of statement; correction of records

Upon good cause shown, an amended statement of water production may be filed or a correction of the records may be made at any time within six months of filing the water production statement; provided that if pursuant to Section 26.13, the owner or operator has been notified of a determination by the district that the production of water from the water-producing facility is in excess of that disclosed by the sworn statement covering such water-producing facility, and such owner or operator fails to protest such determination in the manner and in the time set forth in Section 26.13, the owner or operator shall be precluded from later filing an amended water production statement for that period for such water-producing facility.

§ 26.11. Record of water production and ground water charges

The district shall prepare each year a record called "The Record of Water Production and Ground Water Charges" in which shall be entered a general description of the property upon which each water-producing facility is located, an identifying number or code which is assigned to such facility, the annual water production for each class of water produced from each water-producing facility, and the ground water charge for each class of water.

§ 26.12. Injunctive relief; grounds; process; procedure

The superior court of the county in which the district lies may issue a temporary restraining order upon the filing by the district with said court of a petition or complaint setting forth that the person named therein as defendant is the operator of a water-producing facility which has not been registered with the district, or that such defendant is delinquent in the payment of a ground water charge. Such temporary restraining order shall be returnable to said court on or before ten days after its issuance.

The court may issue and grant an injunction restraining and prohibiting the named defendant from the operation of any water-producing facility when it is established at the hearing that the defendant has failed to register such water-producing facility with the district, or that the defendant is delinquent in payment of ground water charges thereon. Such court may provide that the injunction so made and issued shall be stayed for a period not to exceed ten days to permit the defendant to register the water-producing facility or to pay the delinquent ground water charge.

Service of process is completed by posting a copy of the summons and complaint upon the water-producing facility or the parcel of land upon which it is located and by personal service upon the named defendant.

The right to proceed for injunctive relief granted herein is an additional right to those which may be provided elsewhere in this act or otherwise allowed by law. The procedure provided in Chapter 3 (commencing with *Section 525), Title 7, Part 2, of the Code of Civil Procedure*, regarding injunctions shall be followed except

insofar as it may herein be otherwise provided. The district shall not be required to provide an undertaking or bond as a condition to granting injunctive relief.

§ 26.13. Excess water production; investigation and report; fixing amount of production; protest

If the district has probable cause to believe that the production of water from any water-producing facility is in excess of that disclosed by the sworn statements covering such water-producing facility, or if no statements are filed covering any water-producing facility, the district may cause an investigation and report to be made concerning the production of water from each such water-producing facility. The district may fix the amount of water production from any such water-producing facility at an amount not to exceed the maximum production capacity of such water-producing facility; provided, however, where a water-measuring device is permanently attached thereto, the record of production, as disclosed by such water-measuring device, shall be presumed to be accurate.

After such determination has been made by the district, a written notice thereof shall be mailed to the person operating such water-producing facilities at the address shown by the district's records. Any such determination made by the district shall be conclusive on all persons having an interest in such water-producing facility, and the groundwater charge, interest and penalties thereon, shall be paid forthwith, unless such person files with the board within 15 days after the mailing of such notice, a written protest setting forth the ground or grounds for protesting the amount of production so fixed. Upon the filing of such protest, the board thereafter shall hold a hearing at which time the total amount of the water production and the groundwater charge thereon shall be determined, which shall be conclusive if based upon substantial evidence. If the water production statement was filed and the amount disclosed thereon was paid within the time required by this act, and the board finds that the failure to report the amount of water actually produced resulted from excusable or justifiable circumstances, the board may waive the charge of interest on the amount found to be due. A notice of such hearing shall be mailed to the protestant at least 10 days before the date fixed for the hearing. Notice of the determination by the board shall be mailed to each protestant, who shall have 20 days from the date of mailing to pay the groundwater charge, interest or penalties provided by the provisions of this act.

Notice as required in this section shall be given by deposit thereof in any postal facility regularly maintained by the government of the United States in a sealed envelope with postage paid, addressed to the person on whom it is served at the name and address disclosed by the records of the district. The service is complete at the time of deposit.

§ 26.14. Collection of delinquent charges; interest and penalties; attachment

The district may bring a suit in the court having jurisdiction against any operator of a water-producing facility within the district for the collection of any delinquent ground water charge. The court having jurisdiction of said suit, may, in addition to allowing recovery of costs to said district as allowed by law, fix and allow as part of the judgment interest and penalties as provided in Section 26.9. Should the district, as a provisional remedy in bringing such suit, seek an attachment against the property of any named defendant therein, the district shall not be required to provide a bond or undertaking as is otherwise provided for in the Code of Civil Procedure of the State of California in Chapter 4 (commencing with Section 537), Title 7, Part 2, thereof.

§ 26.15. Production from unregistered facilities; violations; penalties

It shall be unlawful to produce water from any water-producing facility required to be registered pursuant to the terms of this act unless such water-producing facility has been registered with the district within the time required by the provisions of this act and, if required by the board, has a water-measuring device affixed thereto capable of registering the accumulated amount of water produced therefrom.

Violation of this provision shall be punishable by a fine not to exceed five hundred dollars ($500), or imprisonment in the county jail for not to exceed six months, or by both such fine and imprisonment. Each day of operation in violation hereof shall constitute a separate offense.

§ 26.16. Interfering or tampering with measuring device; filing fraudulent statements

Any person who injures, alters, removes, resets, adjusts, manipulates, obstructs or in any manner interferes or tampers with or procures or causes or directs any person to injure, alter, remove, reset, adjust, manipulate, obstruct or in any manner interfere or tamper with any water-measuring device affixed to any water-producing facility as required by this act, so as to cause said water-measuring device to improperly or inaccurately measure and record said water production, or any person who willfully does not file with the district a water production statement as prescribed and within the time required by this act, or any person who willfully removes or breaks a seal attached to an abandoned water-producing facility, or any person who with intent to evade any provision or requirement of this act files with the district any false or fraudulent water production statement is guilty of a misdemeanor and is punishable by a fine not to exceed five hundred dollars ($500), or imprisonment in the county jail not to exceed six months, or by both such fine and imprisonment.

§ 26.17. Enforcement powers

In implementing the enforcement of the provisions of this act relating to ground water charges, the district shall have the power, in addition to the powers enumerated elsewhere in this act:

1. To install and maintain water-measuring devices, and other devices which will aid in determining accurate water production, on water-producing facilities not owned by the district.

2. To affix seals to water-producing facilities which the owner or operator thereof has declared to be abandoned, or are in fact permanently abandoned.

3. To enter on to any land for the purposes enumerated in this section and for the purpose of making investigations relating to water production.

§ 27. Repeal or amendments; effect upon obligations

The repeal or amendment of this act or the change in boundaries of any zone of the district shall not in any way affect or release any of the property in said district or any zone thereof from the obligations of any outstanding bonds or indebtedness until all such bonds and outstanding indebtedness have been fully paid and discharged.

§ 28. Right of way over public lands

There is hereby granted to the district the right-of-way for the location, construction and maintenance of flood control channels, ditches, waterways, conduits, canals, storm dikes, embankments, and protective works in, over and across public land of the State of California, not otherwise disposed of or in use, not in any case exceeding in length or width that which is necessary for the construction of such works and adjuncts or for the protection thereof. Whenever any selection of a right-of-way for such works or adjuncts thereto is made by the district the board thereof must transmit to the State Lands Commission, the Controller of the State and the recorder of the county in which the selected lands are situated, a plat of the lands so selected, giving the extent thereof and the uses for which the same is claimed or desired, duly verified to be correct. If the State Lands Commission shall approve the selections so made it shall endorse its approval upon the plat and issue to the district a permit to use such right-of-way and lands.

§ 29. [Section repealed 1976.]

§ 30. Claims for money or damages; law governing; other claims; procedure

Claims for money or damages against the district are governed by Part 3 (commencing with Section 900) and Part 4 (commencing with *Section 940) of Division 3.6 of Title 1 of the Government Code*, except as provided therein. Claims not governed thereby or by other statutes or by ordinances or regulations authorized by law and expressly applicable to such claims shall be prepared and presented to the governing body and all claims shall be audited and paid, in the same manner and with the same effect as are similar claims against the county.

§ 31. Property

The legal title to all property, except shares of stock in mutual water companies or corporations, as provided in *Section 17 of Article XVI of the California Constitution*, acquired under this act shall immediately and by operation of law vest in the district, and shall be held by the district, in trust for, and is hereby dedicated and set apart to, the uses and purposes set forth in this act. The board may hold, use, acquire, manage, occupy, and possess the property, as herein provided; and the board may determine, by resolution duly entered in their minutes that any real property, or interest therein, held by the district is no longer necessary to be retained for the uses and purposes thereof, and may thereafter sell, lease, or otherwise dispose of the property pursuant to this section.

Real property that, in the unanimous judgment of the board, has no access to a public road, or that consists of an easement for ingress and egress to property that, by the terms of the easement, will terminate when ingress and egress is supplied to the property by a public road, may be sold, leased, or conveyed by the board on terms prescribed by it.

The board may reconvey real property to the former owner by whom the property was conveyed, or from whom the property was condemned by the district, or the owner's successor in interest for fair market value. Fair market value shall be determined by a qualified real estate appraiser. However, the district may reconvey real property to the former owner or his or her successor in interest for less than fair market value if the district finds that a public purpose exists justifying that reconveyance for less than fair market value.

The board may by a majority vote exchange real property of equal value with any person, firm, or corporation for the purpose of removing defects in the title to real property owned by the district or where the real property to be exchanged is not required for district use and the property to be acquired is required for district use.

In all other cases, the board shall be governed in the sale, lease, or other disposition of real property by the requirements of law governing that action by counties; provided, however, that notice of the board's intended action shall be as prescribed in *Section 25363 of the Government Code*.

The board may by resolution prescribe a procedure for the leasing of real property owned by the district alternative to the requirements of law governing counties.

The board may by a majority vote sell, lease, or otherwise transfer to the state, the County of Santa Clara, or to any city, school district, or other special district within the Santa Clara Valley Water District, or exchange with the public entities, any real or personal property or interest therein belonging to the district upon the terms and conditions that are agreed upon.

The board shall establish regulations for the trade in, survey, sale, or other disposition of personal property held by the district and no longer necessary to be retained for the uses and purposes thereof; provided, however, that any sale of personal property having a sale value in excess of that value stated from time to time by Section 1041.6 of Article 2 of Subchapter 3 of Chapter 2 of Division 2 of the California Code of Regulations as a definition of "fixed assets," or any lower value as may be determined by the board, shall be made upon

public bid preceded by notice of the board's intended action given as prescribed in *Section 25363 of the Government Code*.

§ 32. Action to test validity of district

The district formed under this act in order to determine the legality of its existence, or any contract entered into by the district, may institute a proceeding therefor in the superior court of this State, in and for the County of Santa Clara, by filing with the clerk of said county a complaint setting forth the name of the district, its exterior boundaries, the date of its organization and a prayer that it be adjudged a legal flood control and water conservation and development district formed under the provisions of this act, or setting forth the name of the district, the parties to and nature of the contract, a copy of the contract, and a prayer that it be adjudged a legal contract. The summons in such proceeding shall be served by publishing a copy thereof once a week for four weeks in a newspaper of general circulation published in said county. The State of California shall be a defendant in such action, and consent therefor is given. Service of summons therein shall be made on the Attorney General. The Attorney General shall appear in such action on behalf of the State in the same manner as with appearances in civil actions. Within thirty (30) days after proof of publication of said summons shall have been filed in said proceeding, the State, any property owner or resident in said district, or any person interested may appear as a defendant in said action by serving and filing an answer to said complaint, in which case said answer shall set forth the facts relied upon to show the invalidity of the district, or the contract, and shall be served upon the attorney for said district before being filed in such proceeding. Such proceeding is hereby declared to be a proceeding in rem and the final judgment rendered therein shall be conclusive against all persons whomsoever, including the district and the State of California.

§ 33. Qualification of officers and employees; oath; compensation of directors

Each person elected or appointed to the office of director shall, within 10 days after receiving his or her certificate of election, or notice of appointment, qualify as such by taking and subscribing to an official oath. The director shall file his or her official oath with the clerk of the board.

The board may authorize each director to receive compensation not exceeding one hundred dollars ($100) per day for each day's attendance at meetings of the board, or committees thereof, or for each day's service rendered as a director by request of the board. No director may receive total compensation, other than for actual and necessary expenses, in excess of six hundred dollars ($600) per month.

Employees appointed by the board under this act, when required by the board of the district, shall execute bonds conditioned, executed, approved, filed, and recorded in the general manner and form provided by law for officers, other than supervisors, of the county, before entering upon the duties of their respective employments.

§ 34. Liberal construction

This act, and every part thereof, shall be liberally construed to promote the objects thereof, and to carry out its intents and purposes.

§ 34.5. Exemption from special assessment investigation, limitation and majority protest act

The provisions and procedures of law available under this act are not subject to "The Special Assessment Investigation, Limitation and Majority Protest Act of 1931."

§ 35. Partial invalidity

If any provision of this act, or the application thereof to any person or circumstance, is held invalid, the remainder of the act, or the application of such provision to other persons or circumstances, shall not be affected thereby.

EXHIBIT 3

Volume 1 of 3: Final Report Submittal Package

Volume 2 of 3: Final General Reevaluation Report and Environmental Impact Statement

Volume 3 of 3: Technical Appendices

March 2014

Berryessa Creek Element
Coyote and Berryessa Creek, California
Flood Control Project
Santa Clara County, California

FINAL REPORT

Prepared by:

US Army Corps
of Engineers
Sacramento District

In partnership with:

Santa Clara Valley Water District

0072

BERRYESSA CREEK ELEMENT
COYOTE AND BERRYESSA CREEKS, CALIFORNIA
FLOOD CONTROL PROJECT
SANTA CLARA COUNTY, CALIFORNIA

FINAL GENERAL REEVALUATION REPORT AND ENVIRONMENTAL IMPACT STATEMENT

Prepared by:

U.S. Army Corps of Engineers
Sacramento District
1325 J Street
Sacramento, CA 95814

In partnership with:

Santa Clara Valley Water District

5750 Almaden Expressway
San Jose, CA 95118-3686

With technical assistance from:

TETRA TECH

17885 Von Karman Avenue, Suite 500
Irvine, CA 92614

MARCH 2014

COVER SHEET*

Berryessa Creek Element
Final General Reevaluation Report/ Environmental Impact Statement
Santa Clara County, California

LEAD FEDERAL AGENCY: U.S. Army Corps of Engineers, Sacramento District

COOPORATING AGENCY: Santa Clara Valley Water District

ABSTRACT:

This document is in the format of an integrated General Reevaluation Report (GRR) and Environmental Impact Statement (EIS) and addresses the proposed modifications to the federally authorized Berryessa Creek Element of the Coyote and Berryessa Creeks, California flood control project located within the cities of San Jose and Milpitas in Santa Clara County, California. This GRR-EIS identifies, evaluates, and documents the alternatives evaluated as well as the potential direct and indirect environmental, social, and economic effects of the proposed action.

The Berryessa Creek Element, as authorized by Congress in 1990, is a single-purpose flood risk management project that includes mitigation of adverse effects on fish and wildlife habitat. The authorized project extends approximately 4.5 miles along Berryessa Creek from 600 feet upstream of Old Piedmont Road to 50 feet downstream of Calaveras Boulevard (Highway 237). The proposed modifications in this GRR-EIS include flood risk management primarily along 2.2 miles of Berryessa Creek extending from Interstate 680 (I-680) to Calaveras Boulevard. The more environmentally sensitive reach upstream of I-680 would be deferred due to lack of current economic justification.

The tentatively selected plan would provide capacity to convey median 0.01 exceedance probability discharge from I-680 to Calaveras Boulevard and would cost approximately $26 million. The plan would consist of an earthen trapezoidal channel section with varying bottom width and 2H:1V sideslopes. Free-standing concrete floodwalls would be constructed in the immediate vicinity of Montague Expressway as well as between the Piedmont Creek confluence and Calaveras Boulevard. The existing railroad trestle would be replaced with a triple barrel concrete box culvert.

Public Review and Comment: The public review period for the draft GRR-EIS began on March 8, 2013, and the official closing date for receipt of comments was April 21, 2013. All

comments received were considered and incorporated into the final GRR-EIS, as appropriate. For further information, please contact the U.S. Army Corps of Engineers at the following address: U.S. Army Corps of Engineers, Sacramento District; Attn: Tyler M. Stalker; 1325 J Street; Sacramento, California 95814-2922, or by e-mail: Tyler.M.Stalker@usace.army.mil or by phone at (916) 557-5107.

CONTENTS*

(Volume 2)

Note to reader: This document is in the format of an Integrated General Reevaluation Report (GRR) and Environmental Impact Statement/Environmental Impact Report (EIS). An asterisk (*) in the Table of Contents notes the sections that are required for compliance with the National Environmental Policy Act.

TECHNICAL APPENDICES

(Volume 3)

TABLES

FIGURES

ACRONYMS AND ABBREVIATIONS

AAHU	average annual habitat units
ac-ft	acre-feet
APE	area of potential effects
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
CALTRANS	California Department of Transportation
CDFW	California Department of Fish and Wildlife
cfs	cubic feet per second
CNP	conditional non-exceedance probability
CO	carbon monoxide
CWA	Clean Water Act
Corps	U.S. Army Corps of Engineers
EAD	expected annual damages
EGM	Economic Guidance Memorandum
EIS	environmental impact statement
EIR	environmental impact report
EM	Engineer Memorandum
EQ	Environmental Quality
ER	Engineer Regulation
ESA	Endangered Species Act
ESA	Environmental Site Assessment
ESU	evolutionarily significant units
FEMA	Federal Emergency Management Agency
GDM	General Design Memorandum
GIS	Geographical Information Systems
GRR	general reevaluation report
GRRC	General Reevaluation Review Conference
HEP	habitat evaluation procedure
HTRW	hazardous, toxic, and radiological waste
Ldn	day-night average sound level
LERRD	lands, easements, rights-of-way, relocations, and disposal areas
LPP	locally preferred plan
LRT	lightrail transit
LUST	leaking underground storage tank
µg/m3	micrograms per cubic meter
mg/l	milligrams per liter
NED	National Economic Development
NER	National Ecosystem Restoration
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program

NFP	Natural Flood Protection
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NO2	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Association
O3	ozone
OSE	Other Social Effects
PAC	Post-Authorization Change
PED	Preconstruction Engineering and Design
PM10	particulate matter
ppt	parts per thousand
PSP	project study plan
RED	Regional Economic Development
SCVWD	Santa Clara Valley Water District
SFRWQCB	San Francisco Bay Regional Water Quality Control Board
SHPO	State Historic Preservation Officer
SO2	sulfur dioxide
SPD	South Pacific Division
TMDL	total maximum daily load
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
VTA	Valley Transportation Authority
WRDA	Water Resources Development Act

POST AUTHORIZATION CHANGE SUMMARY

PAC 1. INTRODUCTION

This post authorization change (PAC) summary is prepared as the result of an interim general reevaluation study of the Coyote and Berryessa Creeks, California flood control project that identifies changes to the federally authorized project element for Berryessa Creek located in the cities of San Jose and Milpitas, California. These modifications include flood risk management primarily along 2.2 miles of Berryessa Creek.

The authorized project is undergoing reevaluation because detailed design and coordination with the Santa Clara Valley Water District (SCVWD), interested environmental groups, and community members after project authorization indicated that the project did not have economic justification or wide support in the community. During pre-construction studies in 1993, project refinements sought to alleviate adverse effects through the use of rectangular concrete channel to minimize removal of the riparian zone in the greenbelt reach compared to the previously authorized trapezoidal concrete channels. However, this refined project met with opposition from the community and was subsequently not considered for construction pending the findings of additional feasibility-level reevaluation studies. Furthermore, at that time, refined costs and benefits resulted in a project with costs that exceeded the benefits, thereby precluding Federal involvement. In 2001, the SCVWD requested that the Corps reevaluate flood risk management alternatives along Berryessa Creek to find a more economical and environmentally acceptable solution.

The Berryessa Creek Element being recommended for implementation, consistent with the original project authorization, would provide capacity to convey median 0.01 exceedance probability discharge from I-680 to Calaveras Boulevard. The more environmentally sensitive reach upstream of I-680 would be deferred due to lack of current economic justification.

The following provides a comparison of the authorized project to the NED Plan (ER-1105-2-100, Appendix G, Amendment #2, September 2007, par. G-16).

PAC 2. DESCRIPTION OF AUTHORIZED PROJECT

a. Project Location

The Berryessa Creek Element of the Coyote and Berryessa Creeks flood control project, as authorized by Congress in 1990, is a single-purpose flood risk management project that includes mitigation of adverse effects. As shown in Figure 1-2, the authorized project begins 600 feet upstream of the upstream face of Old Piedmont Road, to 50 feet downstream of the downstream face of Calaveras Boulevard Bridge.

b. Project Sponsor

The non-Federal sponsor for the project and general reevaluation study is the Santa Clara Valley Water District (SCVWD).

c. Authorized Project Features

The authorized project is a single purpose flood risk management project with an authorized total cost of $9,213,000 (prices at time of 1986 cost estimate). The project includes the following features:

- A 500-by-160-foot reinforced-concrete-walled sedimentation basin 600 feet upstream of Old Piedmont Road
- A box culvert under Old Piedmont Road
- A trapezoidal concrete-lined channel from Old Piedmont Road to Piedmont Road/Cropley Avenue with a bottom width of 8 feet and 2H:1V bank slopes (The existing 400-foot-long box culvert under the Piedmont Road/Cropley Avenue intersection would be retained. A service road along the east bank would be maintained, and the riparian vegetation along the west bank would be retained as much as possible.)
- Enlarged debris basin lined with concrete walls as a secondary sedimentation basin Downstream of Cropley Avenue
- Raised levees in greenbelt area
- A transition area leading into another trapezoidal concrete-lined channel downstream to Cropley Avenue that joins the existing concrete-lined channel at the downstream end of the greenbelt (approximately 600 feet upstream of Morrill Avenue)
- A trapezoidal concrete-lined channel from the existing concrete-lined channel at Highway 680 all the way downstream to Calaveras Boulevard
- A rock transition to transition flows from the concrete channel into the existing earth-bottomed channel at Calaveras Boulevard
- Riparian vegetation mitigation plantings at a rate of two plants per each plant removed in the Berryessa Creek Park and the greenbelt
- Landscape screening plantings at all street crossings to minimize the adverse aesthetic effect of the concrete-lined channel

PAC 3. AUTHORIZATION

The Coyote and Berryessa Creeks Flood Control Project was authorized to be carried out under Section 101(a)(5) of the Water Resources Development Act (WRDA) of 1990, Public Law 101-640.

PAC 4. FUNDING SINCE AUTHORIZATION

Funding information since authorization is shown in Table 1.

Table 1 Funding Since Authorization

Fiscal Year	Phase	Federal Appropriated Amount	Non-Federal
1991		$225,000	-
1992		$500,000	-
1993		$470,412	-
1994		$127,400	-
1995		$100,000	-
1996		$176,000	-
1997		-	-
1998		$322,088	$36,529
1999		-	$155,000
2000		$300,000	-
2001	Feasibility	$598,000	-
2002	Feasibility	$724,000	$450,700
2003	Feasibility	-	-
2004	Feasibility	$127,000	$467,000
2005	Feasibility	$367,000	$372,900
2006	Feasibility	$371,000	$345,300
2007	Feasibility	$100,000	-
2008	Feasibility	$704,000	$460,000
2008	PED	$433,000	-
2009	PED	$138,000	$30,000
2010	PED	$389,346	$22,688
2011	PED	$41,699	$750,000
2012	PED	$276,000	$214,000

PAC 5. CHANGES IN SCOPE OF AUTHORIZED PROJECT

USACE guidance defines changes in scope as increases or decreases in the outputs for the authorized purpose of a project (ER 1105-2-100, Appendix G, Amendment 2, paragraph G-11.c.). Outputs are the project's physical effects that have associated benefits.

The scope of the Berryessa Creek Element of the project falls within the scope of the authorized project. The economic reevaluation conducted to assess continued Federal interest in the authorized project has revealed that not all elements of the project are presently economically feasible. Subsequently, those FRM features located in the upstream extent of the project, although they remain authorized, are not being recommended for implementation at this time.

Table 2 presents the summation and comparison of the recommended plan to the authorized project. Those features not recommended will be placed into the deferred classification consistent with ER-1105-2-100 guidance.

PAC 6. CHANGES IN PROJECT PURPOSE

The project purpose of flood risk management (flood damage reduction) has not changed from the authorized project.

PAC 7. CHANGES IN LOCAL COOPERATION REQUIREMENTS

In the 1989 Chief of Engineers Report, the recommended cost-sharing requirements for the non-Federal sponsor were in accordance with WRDA 1986, as follows:

"Based on current laws and regulations, the basic requirements for non-Federal participation in flood control projects are as follow:

- *Provide a cash contribution equal to 5 percent of structural flood control features.*
- *Provide all LERRD.*
- *If the sum of the above two items is less than 25 percent of the costs assigned to flood control, non-Federal sponsors will pay the difference in cash. If it is greater than 25 percent, total non-Federal costs shall not exceed 50 percent of total project costs assigned to flood control. Contributions in excess of 50 percent will be reimbursed by the Federal Government to the non-Federal sponsor."*

The project was authorized in WRDA 1990 with these cost-sharing requirements. WRDA 1996, Pub. L. No. 104-303, § 202(a)(1)(B), 110 Stat. 3673 (1996) modified cost-sharing requirements for new flood risk management projects to a minimum cost-sharing requirement of 35 percent from the non-Federal sponsor of the total project cost .

PAC 8. CHANGES IN LOCATION OF PROJECT

The location has not changed. The authorized project extends from approximately 600 feet upstream of Old Piedmont Road to Calaveras Boulevard Bridge. As part of this GRR-EIS, the reach was separated in two separable geographic areas: upstream of I-680 and downstream of I-680. An incremental analysis was conducted on these separable reaches. Consideration of economic benefits for the reach upstream of I-680 was limited to those below the Sierra Creek confluence, within which the minimum flow criteria are exceeded (ER 1165-2-21). The analysis indicated that no flood risk management alternative upstream of I-680 is economically justified. Thus, the reach downstream of I-680 is proposed for implementation as a separable element of the authorized project.

PAC 9. DESIGN CHANGES

The 1990 authorized project was designed to provide a 100-year level of flood control to the surrounding cities of San Jose and Milpitas. The authorized project extends approximately 4.5 miles of Berryessa Creek from 600 feet upstream of Old Piedmont Road to 50 feet downstream to Calaveras Boulevard. This plan, as authorized, was designed using the freeboard design concepts in establishing the hydraulic design of project features. Risk and uncertainty concepts were not applied. The authorized project consisted of a sediment basin constructed upstream of Old Piedmont Road, modifications (deepening) of the existing sediment basin, earthen levees in the Greenbelt, and a concrete trapezoidal channel downstream of I-680.

This General Reevaluation Report (GRR) and Post Authorization Change Summary (PAC) provide a reaffirmation that the recommend modification to the Berryessa Project are consistent with that authorized by Congress and indicate continued Federal interest in the authorized Flood Risk Management (FRM) features. The HQUSACE guidance utilized for the development of this report is intended to be the "decision document" for budgeting of a construction new start project. In addition, it directed the U.S. Army Corps of Engineers, Sacramento District (District) is prepared to initiate preconstruction engineering and design activities subsequent to funding and entering into a Design Agreement. The GRR provides the economic analysis of the project.

The purpose of the ongoing reevaluation study is to assess the feasibility of modifying the Federally-authorized project to reduce flood risks in the Berryessa Creek study area. Within the primary purpose, the specific goal of this study is to identify a complete plan that will yield an economically justified and environmentally acceptable project. In comparison to the authorized plan, risk and uncertainty concepts were applied in the formulation of the NED Plan. The NED Plan was designed to convey the 0.010 exceedance probability event (nominally a "100-year" plan) with a 50 percent conditional non-exceedance probability (CNP). Based on interpolation, at an assurance level of 90%, the NED Plan would be able to contain the equivalent of about a 0.03 exceedance probability event ("33-year" flood).

Furthermore, unlike the authorized project, the NED Plan does not include any project component upstream of I-680; it consists of earthen levees and bridge modifications along approximately 2.2 miles of Berryessa Creek from the downstream face of I-680 to Calaveras Boulevard.

A comparison of the major design features of the NED Plan to the authorized project is provided in Table 2. As shown in the table, no flood risk management alternative upstream of I-680 was determined to be economically justified. Additional information on the incremental economic analysis completed for this GRR is presented in Section 3.7.4.3.

Table 2 Comparison of the Authorized Project and the NED Plan

Authorized Project (1987 Feasibility Report)				GRR Study (March 2013) NED Plan			
Reach	**Location**	**Major Design Feature**	**Description**	**Reach**	**Location**	**Major Design Feature**	**Description**
1	From 600 feet upstream of Old Piedmont Road to Old Piedmont Road	Primary sediment basin	Sediment basin with concrete walls, earth bottom, and outside dimensions of 500 feet by 160 feet	9	From 600 feet upstream of Old Piedmont Road to Old Piedmont Road	No flood risk management alternative is economically justified.	
2	From Old Piedmont Road to intersection of Cropley Avenue and Piedmont Road	Concrete-lined channel	Trapezoidal concrete channel with single service road on the east side of the creek, channel bottom width would be 8 feet with sideslopes of 2 feet horizontal by 1 foot vertical	8	From Old Piedmont Road to intersection of Cropley Avenue and Piedmont Road		
3	From intersection of Cropley Avenue and Piedmont Road to 1,000 feet upstream of Morrill Avenue (greenbelt area)	Stilling basin (secondary sediment basin in EIS) Levees Bank protection Channel stabilization	Existing stilling basin improved with concrete walls and enlarged to 144 feet by 80 feet (outer dimensions) Raise levees; inboard slope of 2 feet horizontal by 1 foot vertical; outboard slope of 1.5 feet horizontal by 1 foot vertical; levee on south side of creek is a raised road and levee top width would be 12 feet; on north side of creek, where levee is a grassed levee, top width could be as narrow as 6 feet; all levees inboard slope of 2 feet horizontal by 1 foot vertical; outboard slope of 1.5 feet horizontal by 1 foot vertical No structural bank protection No structural channel stabilization	7, 6 7 6	From intersection of Cropley Avenue and Piedmont Road to 1,000 feet upstream of Morrill Avenue (greenbelt area) Pedestrian Bridge to Cropley Avenue and Piedmont Road intersection Morrill Avenue to Pedestrian Bridge		
4	800 feet upstream of Morrill Avenue to Cropley Avenue	Secondary sediment basin Concrete-lined channel	No sediment basin in EIS Trapezoidal concrete channel with service road on either side of the creek	5	800 feet upstream of Morrill Avenue to Cropley Avenue I-680 to Morrill Avenue		
5	Cropley Avenue to I-680	Existing trapezoidal concrete-lined channel	No change		Cropley Avenue to I-680 I-680 to Morrill Avenue		
6	I-680 Bridge I-680 to Montague Expressway Montague Expressway to Piedmont Creek	I-680 Bridge Trapezoidal Concrete-lined channel Trapezoidal Concrete-lined channel Replacement (UPRR Trestle) Railroad Culvert	Remove sediment at downstream face Trapezoidal concrete channel, where right-of-way permits, service roads to be provided on each side of the creek Trapezoidal concrete channel, where right-of-way permits, service roads to be provided on each side of the creek Remove existing timber trestle; replace with triple 15-foot-by-12-foot concrete box culvert with wingwalls Construct transition to existing wingwalls	4 3	I-680 Bridge I-680 to Montague Expressway Montague Expressway to Piedmont Creek	I-680 Bridge Trapezoidal channel w/ cellular bank protection Trapezoidal channel w/ cellular bank protection Replacement (UPRR Trestle) Railroad Culvert	Remove accumulated sediment at downstream face Excavate 6- to 22-foot bottom width with cellular bank protection at 2H:1V sideslopes; construct 200 lineal feet of free-standing concrete floodwall to maximum height of 2 feet. Service roads to be provided on each side of the creek Excavate 12-foot bottom width with cellular bank protection at 2H:1V sideslopes. Service roads to be provided on each side of the creek Remove existing timber trestle; replace with triple 15-foot-by-12-foot concrete box culvert with wingwalls Construct transition to existing wingwalls

Table 2 Comparison of the Authorized Project and the NED Plan							
Authorized Project (1987 Feasibility Report)				**GRR Study (March 2013) NED Plan**			
Reach	**Location**	**Major Design Feature**	**Description**	**Reach**	**Location**	**Major Design Feature**	**Description**
		Ames Avenue Bridge	At Ames Avenue Bridge, excavate bottom width for concrete liner; construct abutment and pier protection			Ames Avenue Bridge	At Ames Avenue Bridge, excavate 12-foot bottom width earthen channel; construct abutment and pier protection
		Yosemite Drive Bridge	At Yosemite Drive Bridge, excavate bottom width for concrete liner; construct abutment and pier protection			Yosemite Drive Bridge	At Yosemite Drive Bridge, excavate 15-foot bottom width channel beneath bridge transitioning to 24-foot bottom width; construct abutment and pier protection
		Piedmont Creek	Construct transition to existing section			Piedmont Creek	Construct transition to existing structure
	Piedmont Creek to Los Coches Street Bridge	Trapezoidal Concrete-lined channel	Trapezoidal concrete channel, where right-of-way permits, service roads to be provided on each side of the creek	2	Piedmont Creek to Los Coches Street Bridge	Trapezoidal channel w/ cellular bank protection	Excavate 24-foot bottom width with cellular bank protection at 2H:1V sideslopes. Service roads to be provided on each side of the creek
		Los Coches Street Bridge	At Los Coches Street Bridge, excavate bottom width for concrete liner; construct abutment and pier protection			Los Coches Street Bridge	At Los Coches Street Bridge, excavate 24-foot bottom width; construct abutment and pier protection
	Los Coches Street Bridge to Approx. 50 feet downstream of Calaveras Boulevard	Trapezoidal Concrete-lined channel	Trapezoidal concrete channel, where right-of-way permits, service roads to be provided on each side of the creek	1	Los Coches Street Bridge to Approximately 50 feet downstream of Calaveras Boulevard	Earthen trapezoidal channel	From Los Coches Street Calaveras Boulevard, excavate 40-foot bottom width with cellular bank protection at 2H:1V sideslope; access road along left bank slope; free-standing concrete floodwalls to maximum height of 4 feet
		Calaveras Boulevard Bridge	Construct transition to existing section			Calaveras Boulevard Bridge	Construct transition to existing section
		Channel reach downstream of Calaveras Boulevard	Construct transition to downstream project			Channel reach downstream of Calaveras Boulevard	Construct transition to downstream project

PAC 10. CHANGES IN TOTAL PROJECT FIRST COSTS

As shown in Table 3, the authorized project costs totaled $9,213,000 at October 1986 price levels; adjusting for inflation to 2012, the estimated costs total increased to $19,721,000. The current first cost of the authorized project is estimated at $90,923,000. The increase in the current first cost of the authorized project primarily originates from the increase in unit costs of construction materials as compared to 1986 costs. In addition, the costs of contingency, planning, engineering, and design, and construction management were increased based on experiences with recent Corps contracts and reflect a conservative approach to the estimate.

Table 3 Comparison of Project First Costs

	Authorized Project					NED Plan (October 2014[3] Prices)	
		Mar 1986 Prices	Oct 2012 Prices[1]		GRR-EIS (Oct 2012 Prices)[2]		
Construction Costs		$5,828,872	$12,780,000		$25,890,000		$9,002,000
Contingency	25%	1,457,128	$3,195,000	35%	$8,991,000	22.51%	$2,282,000
Planning, Engineering, & Design	8%	583,000	$1,022,400	18.3 3%	$4,745,000	16.24%	$7,716,000
Construction Management/SA	7%	510,000	$894,600	11.6 9%	$3,027,000	10.62%	$1,122,000
Lands and Damages (LERRD)		834,000	1,829,000		$48,270,000		$13,078,000
Total First Cost		**$9,213,000**	**$19,721,000**		**$90,923,000**		**$27,200,000**

[1] Escalated with the Civil Works Construction Cost Indexing System (CWCCIS) – CWBS 11
[2] Alternative-comparison level estimate
3 Price level based on MII cost estimates

The costs associated with LERRD increased significantly. The cost estimates for the 1990 authorized project were limited to the land (2.5 acres) required for the sedimentation basin upstream of the Old Piedmont Road. The costs of the remainder of the right-of-way, currently in flood control use in existing improved and unimproved channels, were not included.

In this GRR-EIS, the LERRD costs included the acquisition of channel improvement easements (CIE) and temporary work area easements (TWAE) and use of existing rights-of-way (ROW) owned and/or controlled by the SCVWD, existing easements to public roads and highways, public utilities, railroads, and pipelines, and relocation of existing utilities/facilities. There are no federally-owned lands or other Federal projects in or partially in the study area. The SCVWD owns approximately 15.88 acres within the TSP/NED Plan study area. The approximate LERRDs required for construction and subsequent operation and maintenance of the authorized project and the TSP/NED Plan are summarized in the table below. More detailed information on the real estate requirements is presented in Appendix E.

Table 4 Real Estate Requirements				
Alternative	**Owned by SCVWD (ac)**	**Temporary Easement (ac)**	**Permanent Easement (ac)**	**Total Required Area (ac)**
Authorized Project	20.51	N.A.	N.A.	62.14[1]
NED Plan	15.88[2]	11.91	25.00	36.91

[1] Includes parcels upstream of I-680; total required area downstream of I-680 is approximately 29 acres.
[2] 4.31 acres – temporary easement; 11.57 acres – permanent easement
N.A. – information not available at the time of Final Report.

PAC 11. CHANGES IN PROJECT BENEFITS

Table 5 shows a comparison of the benefits presented in the 1987 Feasibility Report and benefits based on the reevaluation completed to support the recommended modifications to the authorized project.

As shown in the table, over 1,000 more structures (increase in multi-family residences) are currently at risk than shown in the 1987 Feasibility Report. In total, the study area has just under $2.3 billion worth of estimated damageable property. Factors leading to this increase include additional structures, general increases in valuation from 1986 to 2011, improvements in existing structures, and increased labor and construction costs in the area.

PAC 12. BENEFITS-COST RATIO

For the benefit-cost analysis in this GRR study, the project costs were amortized over the 50-year period of analysis using the current Federal discount rate of 3.75 percent. As shown in Table 5, the benefit-to-cost ratio for the authorized project, which includes unjustified elements located in the upper reach, is 3.1 to 1, while the ratio for the NED Plan is 8.5 to 1.

PAC 13. CHANGES IN COST ALLOCATION

Table 6 shows the allocation of cost among the project purposes for the authorized project as authorized in 1990; the authorized project with costs updated to the current price levels; and the NED Plan. The costs for the authorized project and the NED Plan were allocated to a single purpose of flood risk management.

Table 5 Comparison of Economic Results				
Category	**Authorized Project (1987 Feasibility Report)**			**General Reevaluation Study (August 2013)**
	Values in 1986 Prices	**Values at 2012 Factors[1]**	**Values in Oct 2012 Prices[2]**	**NED Plan (Oct 2012 Prices)**
Structures or Parcels in 500-year	1,728	1,728	2,979	2,979
Total Value of Damageable Property	122 million	267 million	2,274 million	2,274 million
Damage 100-year Event	21 million	46 million	590 million	527 million[3]
Damage 500-year Event	40 million	88 million	826 million	755 million[4]
Price Level	October 1986	October 2012	October 2012	October 2012
Interest Rate	8.625%	3.75%	3.75%	3.75%
Period of Analysis	100 years	50 years	50 years	50 years
Risk-Based	No	No	Yes	Yes
EAD – Without-Project (existing)	1.31 million	2.87 million	14.36 million	11.82 million
EAD – With-Project	0.04 million	0.09 million	0.77 million	0.89 million
Benefits (Future & FIA Included)	1.35 million	2.96 million	13.59 million	10.95 million
Annual Costs	0.98 million	2.15 million	4.33 million	1.30 million[5]
Net Benefits	0.37 million	0.81 million	9.29 million	9.65 million
B/C	1.4	1.4	3.1	8.5

[1] Escalated with the Civil Works Construction Cost Indexing System (CWCCIS) – CWBS 11
[2] Property values updated by Marshall & Swift, FY 12 discount rate and analysis period.
[3, 4] Total damages in economic impact areas (E and F) downstream of I-680.
[5] Based on alternative-comparison level costs.

Table 6 Cost Allocation and Cost Apportionment Comparison of Authorized Project and NED Plan

Item	Authorized Project				NED Plan	
	(1986 Prices)		(October 2012 Prices)		(October 2014 Prices[b])	
	Federal	**Non-Federal**	**Federal**	**Non-Federal**	**Federal**	**Non-Federal**
Construction[a] (Flood Risk Management)	$8,379,000		$42,653,000	-	$13,687,000	-
LERRD		$834,000	-	$48,270,000	-	$13,513,000
Total First Cost (Flood Risk Management)	**$8,379,000**	**$834,000**	**$42,653,000**	**$48,270,000**	**$13,687,000**	**$13,513,000**
Mandatory 5% Cash	-$461,000	$461,000	-$4,546,150	$4,546,150	-$1,353,000	$1,353,000
Subtotals	$7,918,000	$1,295,000	$38,106,580	$52,816,150	$12,334,000	$14,866,000
Percentage of Total Cost-Shared Amount	*86%*	*14%*	*42%*	*58%*	*45%*	*55%*
Additional Cash to Provide Minimum 35% Non-Federal Share of Total Project Costs	-$1,008,000	$1,008,000	NA	NA	NA	NA
Adjustment to Meet Maximum Non-Federal Share of 50%	NA	NA	$7,354,650	-$7,354,650	$1,266,000	-$1,266,000
Total Cost Shared Cost (Flood Risk Management)	**$6,910,000**	**$2,303,000**	**$45,461,500**	**$45,461,500**	**$13,600,000**	**$13,600,000**
Percentage of Total Cost-Shared Amount	*75%*	*25%*	*50%*	*50%*	*50%*	*50%*
Cultural Resources Preservation[c]					$137,000	
TOTAL FIRST COSTS	**$6,910,000**	**$2,303,000**	**$45,461,500**	**$45,461,500**	**$13,737,000**	**$13,600,000**

[a] Does not include IDC or OMRR&R
[b] Price levels based on MII cost estimate
[c] 100% Federal Cost.

PAC 14. CHANGES IN COST APPORTIONMENT

Also shown in Table 6 is the apportionment of costs between the Federal Government and the non-Federal sponsor. In the 1990 authorized project, the cost associated with LERRD was minimal compared to the total construction cost. As shown in the table, the non-Federal LERRD cost and the 5 percent minimum cash contribution totaled to less than 35 percent of the project cost. Based on the cost-sharing requirements under WRDA 1996, Pub. L. No. 104-303, § 202(a)(1)(B), 110 Stat. 3673 (1996) the minimum cost-sharing requirement from the non-Federal sponsor is 35 percent of the total project cost. Thus, an additional non-Federal cash contribution would be required for 65-35percent cost sharing between the Federal Government and non-Federal sponsor, respectively.

As shown in the table, with the costs associated with the LERRD, the non-Federal sponsor contributions would be 55 percent for the authorized project. Based on the cost-sharing requirements under WRDA 1986 (codified at 33 U.S.C § 2213(a)(3), the non-Federal sponsor's maximum cost-sharing cannot exceed 50 percent of the total project cost. Hence, a reimbursement for excess LERRD cost would be required to provide 50-50 percent cost sharing. Accordingly, the costs for the Authorized Project as well as the NED Plan have been apportioned to reflect a 50 percent contribution requirement from the non-Federal sponsor. A reimbursement for excess LERRD cost would be necessary to effect the appropriate cost-sharing requirements.

PAC 15. ENVIRONMENTAL CONSIDERATIONS IN RECOMMENDED CHANGES

An EIS is being prepared because of the modifications to the authorized project and new circumstances and information relevant to the environmental concerns previously identified in the EIS prepared with the 1987 Feasibility Report. This document supersedes the 1987 EIS. Comparison of the environmental effects between the various alternative plans is shown in Table 7.

Table 7 Comparison of Environmental Effects of Authorized Project and NED Plan		
Environmental Resource	**Authorized Project**	**NED Plan**
Geology, and Seismicity		
Effect	**No effect.**	**No effect.**
Significance	Not applicable.	Not applicable.
Mitigation	Not applicable.	Not applicable.
Topography and Soils		
Effect	Temporary soils disturbance during construction.	Temporary soils disturbance during construction.
Significance	**Less-than-significant with mitigation.**	**Less-than-significant with mitigation.**
Mitigation	Use of best management practices to minimize loss of soil.	Use of best management practices to minimize loss of soil.
Land Use, Socioeconomics, and Environmental Justice		
Effect	**No effect.**	**No effect.**
Significance	Not applicable.	Not applicable.
Mitigation	Not applicable.	Not applicable.
Air Quality		
Effect	ROG, NOx, CO, and PM emissions would temporarily increase due to operation of construction equipment and vehicles. Project exceeds BAAQMD air quality NOx thresholds.	Temporary increase in ROG, NOx, CO, and PM emissions due to operation of construction equipment and vehicles.
Significance	**Less-than-significant with mitigation.**	**Less-than-significant with mitigation.**
Mitigation	Compliance with BAAQMD mitigation. State mitigation fee payments for excess NOx emissions.	Compliance with BAAQMD mitigation.
Climate Change		
Effect	CO_2e emissions would occur during project construction.	CO_2e emissions would occur during project construction.
Significance	**Less-than-significant with mitigation.**	**Less-than-significant with mitigation.**
Mitigation	Compliance with BAAQMD mitigations.	Compliance with BAAQMD mitigations.
Water Resources and Quality		
Effect	Potential increase in sediment load, suspended solids, and nutrients due to soil erosion. Possible accidental spills or leaks from equipment or vehicles. Possible slight temporary increase in water temperature. Permanent effects to 2.42 acres of riparian habitat.	Potential increase in sediment load, suspended solids, and nutrients due to soil erosion. Possible accidental spills or leaks from equipment or vehicles. Possible slight temporary increase in water temperature.
Significance	**Less-than-significant with mitigation.**	**Less-than-significant with mitigation.**

Table 7 Comparison of Environmental Effects of Authorized Project and NED Plan		
Environmental Resource	**Authorized Project**	**NED Plan**
Mitigation	Use of best management practices to minimize soil erosion and accidental spills/leaks. Implementation of all requirements of regulatory agreements, permits, and plans.	Use of best management practices to minimize soil erosion and accidental spills/leaks. Implementation of all requirements of regulatory agreements, permits, and plans.
Biological Resources		
Effect	Temporary loss of grassland and loss of 2.42 acres of riparian habitat. Displaced wildlife during construction. Potential temporary disturbance of western pond turtle, Cooper's hawk, white-tailed kite, western big-eared bat, and Myotis bats	Temporary loss of grassland. Wildlife disturbed and displaced during construction. Potential temporary disturbance of western pond turtle, Cooper's hawk, and white-tailed kite.
Significance	**Less-than-significant with mitigation.**	**Less-than-significant with mitigation.**
Mitigation	Implementation of recommendation proposed by USFWS. Site restoration; reseed grasses, planting of wetland vegetation. Surveys conducted prior to construction to determine presence of species of concern. Specific avoidance measures implemented, if needed. Reestablishment of 2.63 acres of riparian habitat in the greenbelt area.	Surveys conducted prior to construction to determine presence of species of concern. Specific avoidance measures implemented, if needed.
Cultural Resources		
Effect	Disturbance of sites CA-SCL-593 and C-167. Changes to bridges, culverts, and trestle.	Disturbance of sites CA-SCL-593 and C-167. Changes to bridges, culverts, and trestle.
Significance	**Significant if determined eligible for listing in National Register.**	**Significant if determined eligible for listing in National Register.**
Mitigation	Cultural resources monitor onsite near CA-SCL-156 and P-43001136. Mitigation program for eligible sites. Possible Historic American Engineering Recordation for eligible bridges, culverts, or trestle.	Cultural resources monitor onsite near CA-SCL-156 and P-43001136. Mitigation program for eligible sites. Possible Historic American Engineering Recordation for eligible bridges, culverts, or trestle.
Traffic and Circulation		
Effect	Contribute to an overall increase in traffic volumes on the roadway network on a localized and temporary basis.	Construction activities would contribute to an overall increase in traffic volumes on the roadway network on a localized and temporary basis.
Significance	**Less-than-significant with mitigation.**	**Less-than-significant with mitigation.**
Mitigation	Develop a Traffic Control Plan prior to construction and coordinate all use of public roads with the City of Milpitas and City of San Jose, or other responsible agencies.	Develop a Traffic Control Plan prior to construction and coordinate all use of public roads with the City of Milpitas, or other responsible agencies.
Noise		
Effect	Increased noise levels during construction. Noise generated by construction equipment, haul trucks, and	Increased noise levels during construction. Noise generated by construction equipment, haul trucks, and

Table 7 Comparison of Environmental Effects of Authorized Project and NED Plan		
Environmental Resource	**Authorized Project**	**NED Plan**
	worker vehicles. Noise levels exceed local objectives.	worker vehicles. Noise levels exceed local objectives.
Significance	**Less-than-significant with mitigation.**	**Less-than-significant with mitigation.**
Mitigation	Implement measures to reduce adverse effect on sensitive receptors**.**	Implement measures to reduce adverse effect on sensitive receptors.
Recreation and Public Access		
Effect	Informal public access to the creek disrupted during construction. Quality of recreational experience in Berryessa Creek Park diminished during construction.	Informal public access to the creek disrupted during construction.
Significance	**Less-than-significant effect**.	**Less-than-significant effect.**
Mitigation	Not applicable.	Not applicable.
Aesthetics and Visual Resources		
Effect	Permanent change to visual character of the creek to include a concrete lined channel. Temporary visual effect of construction equipment.	Permanent change to visual character of the creek. Temporary visual effect of construction equipment.
Significance	**Less-than-significant with mitigation.**	**Less-than-significant with mitigation.**
Mitigation	Trees would be replanted on site. Disturbed areas would be reseeded with native grasses.	Disturbed areas would be reseeded with native grasses.
Hazardous, Toxic, and Radiological Waste		
Effect	Potential groundwater contamination from three HTRW sites downstream of I-680. Possible accidental spills or leaks from equipment or vehicles.	Potential groundwater contamination from three HTRW sites downstream of I-680. Possible accidental spills or leaks from equipment or vehicles.
Significance	**Less-than-significant with mitigation.**	**Less-than-significant with mitigation.**
Mitigation	Ongoing monitoring for groundwater contaminants. Implement Hazardous and Toxic Materials Contingency Plan, if needed. Use of best management practices to minimize soil erosion and accidental spills/leaks.	Ongoing monitoring for groundwater contaminants. Implement Hazardous and Toxic Materials Contingency Plan, if needed. Use of best management practices to minimize soil erosion and accidental spills/leaks.

PAC 16. PUBLIC INVOLVEMENT

Public involvement activities associated with the Berryessa Creek Element include public meetings, agency meetings, and distribution of the draft GRR-EIS for public review and comment.

A public scoping meeting was held in 2001, at the beginning of the general reevaluation. The meeting was publicized in a Notice of Intent (NOI) published in the Federal Register October 15, 2001. A Notice of Preparation was filed with the State Clearing House on October 29, 2001 and mailed to interested parties and residents in proximity to the project area. The SCWVD will be

preparing a separate Environmental Impact Report (EIR) in compliance with the California Environmental Quality Act (CEQA). The purpose of the scoping meeting was to continue the flow of information on the Berryessa Creek Element, while gathering additional information and community comments from citizens who live, work, and commute near the project area. The public was encouraged to submit written comments.

Additional public workshops were conducted in 2004 and 2005. The public raised concerns about flood risk management included various issues, such as flood damage to private and public properties and facilities, potential high maintenance costs for a flood control project along Berryessa Creek, the length of time required to complete the project, noise impacts on adjacent landowners during construction, and removing properties from the 100-year floodplains. Furthermore, there were concerns over the location and cost of property acquisition.

As previously discussed, full implementation of the authorized project was delayed because of local community concerns on the recommended concrete channel features, especially in the upstream reach. Issues of controversy included the likely damages to the riparian zone from the proposed trapezoidal concrete channel and loss of aesthetics, recreational values, and natural resources. Environmental issues included public concerns about the biological effects of the project on vegetation, wildlife, and fish, for example.

Coordinated with the U.S. Fish and Wildlife Service (USFWS), the State Historic Preservation Officer (SHPO) is ongoing. The Corps is working with the SHPO to negotiate treatment of affected historic properties to mitigate and resolve those effects.

Concerns from the public, as well as those of the participating resource agencies, helped guide the development and reformulation of the final array of alternative plans. Additional engineering, design, cost estimating, and analysis of potential impacts were developed for each alternative and ultimately resulted in the conclusions presented in this PACR summary and the GRR.

The draft GRR-EIS was circulated for a 45-day public review to Federal, State, and local agencies; organizations, and individuals who have an interest in the project. Public workshops were held during this 45-day period to provide additional opportunities for comments on the GRR-EIS. All comments received during this public review period were considered and incorporated into the final GRR-EIS, as appropriate. A comment and response appendix is included in the final GRR-EIS.

PAC 17. HISTORY OF PROJECT

The Berryessa Creek Element was authorized by the WRDA of 1990, Pub. L. No. 101-640, § 101(a)(5), 103 Stat. 4604 (1990), which approved construction of the project as described in the Chief of Engineer's Report on Coyote and Berryessa Creeks dated February 7, 1989. After Congressional authorization in WRDA 1990, discussions with the SCVWD and interested environmental groups and community members showed that the project did not have wide support in the community. Issues included the likely damages to the riparian zone from a trapezoidal concrete channel and loss of aesthetics, recreation, and natural resources. Pre-construction engineering and design efforts resulted in project refinements that had higher costs than benefits and work stopped in 1993. In 2001, the SCVWD requested that the Corps

reevaluate existing flooding potential along Berryessa Creek to reassess potential Federal interest to implement the authorized flood risk management measures. .Although construction of the Berryessa Creek portion of the project has not begun, the Coyote Creek portion of the project has been completed and was transferred to the SCVWD in 1996.

PAC 18. PROJECT SCHEDULE

The following table indicates the schedule for the remaining milestones for the study, design, and anticipated construction.

Table 8 Schedule of Project Milestones

Milestone/Item	Date
Feasibility Scoping Meeting	April 2004
Alternative Review Conference	May 2005
GRR Conference and Tour	July 2006
Draft GRR-EIS Report for Public and HQUSACE Circulation	Mar-Apr 2013
Public Meeting/Hearing for Draft GRR-EIS	April 2013
Final GRR-EIS Public Review	September2013
Final GRR-EIS Submittal to South Pacific Division	August 2013
MSC/SPD Commander's Approval	January 2014

PAC 19. APPROVAL AUTHORITY

The final GRR-EIS will be submitted to the Chief of Engineers. Once the final report is approved and a Record of Decision (ROD) signed, construction funds must be appropriated by Congress before a Project Partnership Agreement can be signed by USACE and the sponsor in order to begin construction.

PAC 20. SPONSOR RESPONSIBILITIES

The sponsoring agency, SCVWD, will be responsible to provide cash contribution of not less than 5 percent of the project cost; provide a minimum of 35 percent, but not to exceed 50 percent, of total project costs; provide all necessary lands, easements, rights-of-way, access routes, relocation of utilities necessary for project construction and subsequent operation maintenance of the project; and assume all responsibilities and costs for operation and maintenance of the project. Detailed non-Federal responsibilities are presented in Chapter 10 of the GRR.

PAC 21. CONCLUSIONS AND RECOMMENDATIONS

The analysis indicates that the NED Plan is Alternative 2A/d with annual net benefits of $9.65 million and a benefit-to-cost ratio of 8.5 to 1.

Recommend approval of Alternative 2A/d of the authorized Berryessa Creek Element of the Coyote and Berryessa Creeks, California flood control project, with deferral of the portion of the authorized project upstream from I-680 until further action is warranted. The total first cost of the project is currently estimated at $26,626,000 (under October 2012 prices). The Federal share is currently estimated at $13,380,000.

The scope of the proposed project modifications is substantially in accordance with the authorized project. Based on reevaluation of the project costs and the economic benefits, and consideration of the design refinements, the Berryessa Creek Element FRM project is economically justified and considered sound economic investments for the Government.

This report also recommends additional studies to investigate reduction of the residual flood risk in the vicinity of Berryessa Creek upstream of I-680, which may be undertaken as part of or coordinated with any future comprehensive investigation of the Berryessa and Coyote Creeks watershed, or a portion thereof.

It is recommended that this report be approved and that the project continue toward project implementation, subject to cost sharing, financing, and other applicable requirements of Federal and State laws and policies, including Public Law 99-663, the Water Resources Development Act of 1986, as amended by Section 202 of Public Law 104-303, the Water Resources Development Act of 1996, and in accordance with the following requirements, which the non-Federal sponsor must agree to prior to project implementation.

CHAPTER 1 – INTRODUCTION*

This document is in the format of an Integrated General Reevaluation Report (GRR) and Environmental Impact Statement (EIS). This document will serve to assess potential Federal interest and environmental compliance of the Berryless authorized project in support of a recommendation to budget and implement its construction.

This General Reevaluation Study is underway to determine the acceptability and feasibility of modifying a flood risk management project along Berryessa Creek that was authorized in 1990 but not constructed. It presents the results of efforts by the U.S. Army Corps of Engineers (Corps) in partnership with the Santa Clara Valley Water District (SCVWD) to define pertinent engineering, environmental, social, and economic concerns at a critical stage of the planning process. Agency decision makers will consider the material and findings to assess the status and direction of the reevaluation study.

This document addresses proposed modifications to the federally authorized Berryessa Creek Element of the Coyote and Berryessa Creeks, California flood control project within the cities of San Jose and Milpitas, California. These modifications include flood risk management primarily along 2.2 miles of Berryessa Creek. This GRR-EIS will support decision making by the Corps, SCVWD, and other responsible agencies to implement the proposed project modifications and ensure compliance with the National Environmental Policy Act (NEPA), and other pertinent laws and regulations. The SCWVD will be preparing a separate Environmental Impact Report (EIR) in compliance with CEQA. Potential direct and indirect environmental, social, and economic effects of the proposed action and alternatives are evaluated. This document supersedes the EIS prepared with the 1987 Feasibility Report. This document has been prepared by the Corps Sacramento District and the SCVWD, which are the Federal and non-Federal lead agencies, respectively.

1.1 SCOPE AND PURPOSE OF REEVALUATION STUDY

Following completion of the February 1989 Report of the Chief of Engineers and subsequent Authorization by Congress in the Water Resources Development Act (WRDA) of 1990 (detailed in Section 1.2.2, "Project Authorization," of this GRR), the Corps conducted pre-construction engineering and design studies in 1993 to refine the project. However, the authorized project was then-met with disfavor in the local community due to the design and excessively high costs of the concrete channel features. In 2001, the SCVWD signed a Reevaluation Cost-Sharing Agreement with the Corps to initiate this GRR effort to find a more environmentally-acceptable solution.

This GRR and PAC provide a reaffirmation that the recommend modification to the Berryessa Project are consistent with that authorized by Congress and indicate continued Federal interest in the authorized Flood Risk Management (FRM) features. The HQUSACE guidance utilized for the development of this report is intended to be the "decision document" for budgeting of a construction new start project. In addition, it directed the U.S. Army Corps of Engineers, Sacramento District (District) is prepared to initiate preconstruction engineering and design

activities subsequent to funding and entering into a Design Agreement. The GRR provides the economic analysis of the project.

The purpose of the ongoing reevaluation study is to assess the feasibility of modifying the Federally-authorized project to reduce flood risks in the Berryessa Creek study area. Within the primary purpose, the specific goal of this study is to identify a complete plan that will yield an economically justified and environmentally acceptable project that accomplishes the following:

- Reduces flood damages to populated areas.
- Reduces sedimentation and maintenance requirements.
- Provides access and recreation to the public, as feasible.
- Restore environmental values wherever possible through the study reach consistent with the flood reduction purpose of the project.
- Avoids and minimizes effects to riparian and aquatic habitat.
- Complements other Federal, state, and local plans and projects for Berryessa creek and vicinity.

1.2 BACKGROUND

The Coyote and Berryessa Creeks, California Flood Control Project was authorized by the Water Resources Development Act of 1990, Pub. L. No. 101-640, § 101(a)(5), 103 Stat. 4604 (1990), which approved construction of the project as described in the Chief of Engineer's Report on Coyote and Berryessa Creeks dated February 7, 1989. The Chief of Engineer's Report was transmitted by the Secretary of the Army to Congress in December 1989. After Congressional authorization in WRDA 1990, discussions with the SCVWD and interested environmental groups and community members showed that the project did not have wide support in the community. Issues included the likely damages to the riparian zone from a trapezoidal concrete channel and loss of aesthetics, recreation, and natural resources. Pre-construction engineering and design efforts resulted in project refinements that had higher costs than benefits, and work stopped in 1993. In 2001, the SCVWD requested that the Corps reevaluate flood risk management alternatives along Berryessa Creek to find a more economical and environmentally acceptable solution. The reevaluation of Berryessa Creek renewed public and non-Federal sponsor support for the project.

1.2.1 Location of Study Area

The Berryessa Creek watershed is located in Santa Clara County, California, south of San Francisco Bay. Berryessa Creek is a tributary to the Coyote Creek system, which flows into the southernmost end of San Francisco Bay. Berryessa Creek flows west out of the Diablo Range and into the residential neighborhoods of San Jose and Milpitas, finally turning north through

industrial portions of Milpitas before joining Lower Penitencia Creek. Figure 1-1 depicts the study area[1].

1.2.2 Project Authorization

A study of Coyote and Berryessa Creeks was initiated to focus on flood and related problems and solutions along lower Coyote Creek, downstream of Interstate 880, and on Berryessa Creek. The authorization, the Flood Control Act of 1941, Pub. L. No. 77-228, § 4, 55 Stat. 638 (1941), reads:

[1] Bing Maps (Microsoft Corporation 2011) were used to delineate the study area.

Figure 1-1 Study Area

"Section 4. The Secretary of War is hereby authorized and directed to cause preliminary examinations and surveys for flood control, to be made under the direction of the Chief of Engineers, in drainage areas, the United States and its territorial possessions, which include the following name localities: Coyote River and tributaries, California; San Francisquito Creek, San Mateo and Santa Clara Counties, California; Matadero Creek, Santa Clara County, California; and Guadalupe River and tributaries, California."

In June 1945, the Chief of Engineers commenced a flood control investigation of survey scope that combined the study of all the streams draining into San Francisco Bay south of the Dumbarton Narrows. This included the Guadalupe River, Coyote Creek, San Francisquito Creek, Berryessa Creek, and numerous other creeks addressed collectively as Guadalupe River and Adjacent Streams. Various studies, including the Guadalupe River Interim Feasibility Report, were completed under that authority.

In December 1989, the Chief of Engineers transmitted an Interim Feasibility Report for Coyote Creek and Berryessa Creek to Congress. The Coyote and Berryessa Creeks flood control project was authorized by the Water Resources Development Act of 1990, Pub. L. No. 101-640, § 101(a)(5), 103 Stat. 4604 (1990), which states::

"(a) Projects With Report of the Chief of Engineers. -- Except as provided in this subsection, the following projects for water resources development and conservation and other purposes are authorized to be carried out by the Secretary substantially in accordance with the plans, and subject to the conditions, recommended in the respective reports designated in this subsection:

> *(5) Coyote and Berryessa Creeks, California. -- The project for flood control, Coyote and Berryessa Creeks, California: Report of the Chief of Engineers, dated February 7, 1989, at a total cost of $56,300,000, with an estimated first Federal cost of $39,000,000 and an estimated first non-Federal cost of $17,300,000."*

In November 1993, Congress authorized an exception to Section 902 of the Water Resources Development Act of 1986. See National Defense Authorization Act for Fiscal Year 1994, Pub. L. No. 103-160, § 2855, 107 Stat. 1547 (1993).

1.2.3 Description of Authorized Project

The Berryessa Creek Element of the Coyote and Berryessa Creeks, California project, as authorized by Congress in 1990, is a single-purpose flood risk management project that includes mitigation of adverse effects on fish and wildlife habitat. As shown on Figure 1-2, the authorized project begins 600 feet upstream of the upstream face of Old Piedmont Road, to 50 feet downstream of the downstream face of Calaveras Boulevard Bridge.

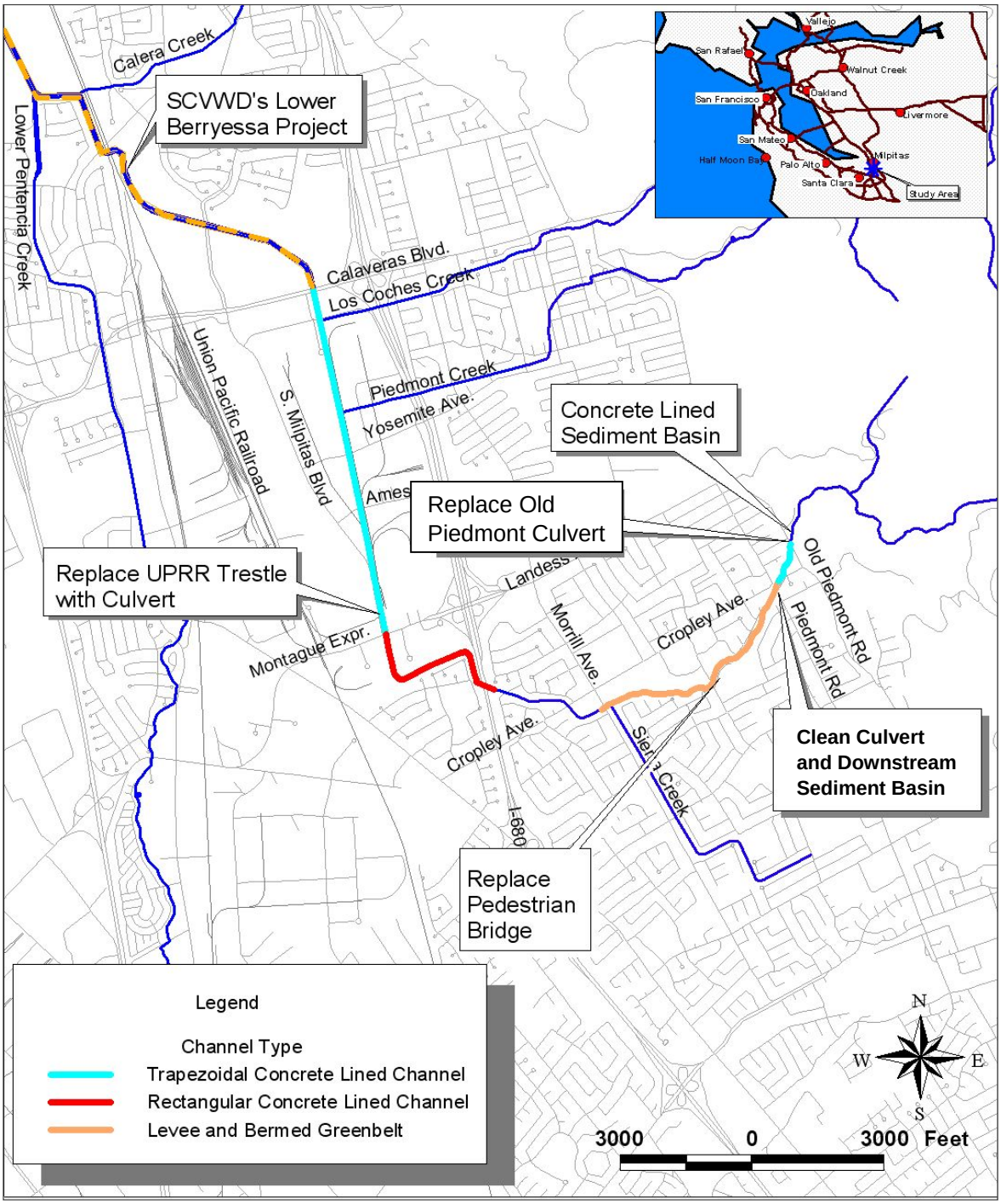


Figure 1-2 Authorized Project

The authorized project is a single purpose flood risk management project with an authorized total cost of $9,213,000 (1986 prices). The project includes the following features:

- A 500-by-160-foot reinforced-concrete-walled sedimentation basin 600 feet upstream of Old Piedmont Road
- A box culvert under Old Piedmont Road
- A trapezoidal concrete-lined channel from Old Piedmont Road to Piedmont Road/Cropley Avenue with a bottom width of 8 feet and 2H:1V bank slopes (The existing 400-foot-long box culvert under the Piedmont Road/Cropley Avenue intersection would be retained. A service road along the east bank would be maintained, and the riparian vegetation along the west bank would be retained as much as possible.)
- Enlarged debris basin lined with concrete walls as a secondary sedimentation basin Downstream of Cropley Avenue
- Raised levees in greenbelt area
- A transition area leading into another trapezoidal concrete-lined channel downstream to Cropley Avenue that joins the existing concrete-lined channel at the downstream end of the greenbelt (approximately 600 feet upstream of Morrill Avenue)
- A trapezoidal concrete-lined channel from the existing concrete-lined channel at Highway 680 all the way downstream to Calaveras Boulevard
- A rock transition to transition flows from the concrete channel into the existing earth-bottomed channel at Calaveras Boulevard
- Riparian vegetation mitigation plantings at a rate of two plants per each plant removed in the Berryessa Creek Park and the greenbelt
- Landscape screening plantings at all street crossings to minimize the adverse aesthetic effect of the concrete-lined channel

The authorized project also includes flood risk management and recreation measures on Coyote Creek. The Chief of Engineers' Report did not include any recreation measures on Berryessa Creek.

1.2.4 Status of Authorized Project

The authorized project element for Berryessa Creek has not been constructed. This GRR-EIS will address results of the reevaluation study and proposed modifications to the authorized project element for Berryessa Creek. The authorized project element for Berryessa Creek has not been constructed. This GRR-EIS will address results of the reevaluation study and proposed modifications to the authorized project element for Berryessa Creek . The PAC is considered a decision document for continued and future budgeting of the project. The economic reevaluation as required by ER 1105-2-100 and the budget EC assessed the continued Federal interest in the

Berryessa project. The project consists of two separable elements with features in the upper reaches deemed lacking benefits to offset project costs. Therefore those features cannot be recommended for implementation at this time and are deferred pending further analysis. The project being recommended for implementation is consistent with the original project authorization and assumes adequate delegated approval authority of the U.S. Army Corps of Engineers, Chief of Engineers to implement the project. Future budgeting for reevaluation and implementation will be reassessed as merited

Construction of the authorized project element for Coyote Creek has been completed. Therefore, throughout the remainder of this document, the term "authorized project" will refer only to the authorized, but unconstructed project element for Berryessa Creek.

1.3 STUDY/PROJECT PARTICIPANTS AND COORDINATION

The reevaluation study is being accomplished with close coordination with the local sponsor/partner, the SCVWD. The planning process is being coordinated with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS), and input has been sought from the San Francisco Bay Regional Water Quality Control Board (SFRWQCB), the U.S. Environmental Protection Agency (USEPA), and the California Department of Fish and Wildlife (CDFW) [to ensure compliance with environmental laws and regulations], the California Department of Transportation (CALTRANS), and other stakeholders in the affected community.

1.4 RELATED STUDIES AND REPORTS

The following studies and reports provided valuable reference information and were used in completion of this reevaluation study to date.

Gill & Pulver Engineers, Inc. 1982. *Berryessa Creek Preliminary Design Summary Report and Cost Estimate*

> In 1982, Gill and Pulver Engineers conducted a preliminary design and cost estimate study for the Berryessa Creek Flood Control Channel between Old Piedmont Creek in the City of San Jose and Calaveras Boulevard in the City of Milpitas. The study included a brief general description of the data and criteria used and the significant factors and alternatives considered.

Santa Clara Valley Water District. 1982. *Lower Penitencia Creek Planning Study (Coyote Creek to Montague Expressway)*. November 1982

> In November 1982, the Santa Clara Valley Water District concluded a planning study to address the flooding, erosion, sedimentation, and channel maintenance problems associated with the lower Penitencia Creek between Coyote Creek and Montague Expressway. Alternative solutions were studied, and the recommended alternative consisted of constructing channel modifications to increase the creek's capacity. Modifications included channel widening, channel concrete lining, culvert enlargement, and constructing earth levees and floodwalls. The proposed project was estimated at $5.4 million in 1982.

Gill & Pulver Engineers, Inc. 1983. *Section 205 Draft Report for Flood Control on Berryessa Creek, San Jose, Milpitas, Santa Clara County, California. Preliminary Designs for Channel Modifications (Old Piedmont Road to Calaveras Boulevard)*. January 1983

In January 1983, Gill & Pulver completed a study for the U.S Army Corps of Engineers, Sacramento District, to summarize the preliminary studies and cost estimates prepared for the Berryessa Creek Flood Control Channel between Old Piedmont Creek in the City of San Jose and Calaveras Boulevard in the City of Milpitas. Preliminary designs and estimates have been prepared for the 50-year, 100-year, and Standard Project Flood frequency for channel levee and for structure modifications to approximately 21,200 feet of existing channel.

U.S. Army Corps of Engineers, Sacramento District. 1983. *Section 205 Draft Report for Flood Control on Berryessa Creek, San Jose, Milpitas, Santa Clara County, California. Preliminary Designs for Channel Modifications (Old Piedmont Road to Calaveras Boulevard)*. February 1983

In February 1983, the U.S. Army Corps of Engineers, Sacramento District, revised the preliminary studies and cost estimates prepared for the Berryessa Creek by Gill & Pulver, Inc.

U.S. Army Corps of Engineers, Sacramento District. 1984. *Concrete Materials. Berryessa Creek, California*

In March 1984, the U.S. Army Corps of Engineers concluded field and office investigations and documented past laboratory tests and service record surveys covering the proposed materials for the concrete structures in the Berryessa Creek Element, Milpitas, California. The study provided a general description of available aggregate and other concrete materials sources.

U.S. Army Corps of Engineers, San Francisco District. 1987. *Interim Feasibility Report and Environmental Impact Statement, Coyote Creek and Berryessa Creek, Santa Clara County, California*

In November 1987, the U.S. Army Corps of Engineers, San Francisco District, prepared an interim feasibility report and an environmental impact statement for the flood damage reduction project on Coyote and Berryessa Creeks. The recommended plan for flood control on the Coyote Creek had a benefit/cost ratio of 1.6 and had reduction in future flood damages to public and private property, business activities, and reduction in future development costs. The plan included mitigation measures to minimize adverse environmental impacts on fish and wildlife habitat. The major adverse impacts were the loss of 13.6 acres of riparian vegetation along Coyote Creek and the removal of three potentially significant historic buildings. The recommended plan for flood control protection on Berryessa Creek had a benefit/cost ratio of 1.4 with benefits of flood damage reduction in public and private properties and business activities and the improvement of the Creek Park and greenbelt. The major adverse impact of the Berryessa Creek flood control project was the removal of riparian vegetation, for which planting of replacement trees were included as mitigation.

Harvey and Stanley Associates, Inc., and Kinetic Laboratories, Inc. 1988. *Lower Coyote Creek Fisheries Evaluation*

In 1988, an evaluation study was conducted by Harvey and Stanley Associates, Inc., and Kinetic Laboratories, Inc., on the fisheries of the Lower Coyote Creek. The study was prepared for the Santa Clara Valley Water District to investigate the impacts of the proposed flood control project. The study revealed that fisheries values in Coyote Creek had been substantially degraded by past development within the watershed. The impact of the proposed flood control project was relatively low on the fisheries in the Coyote Creek (between Montague Expressway and San Francisco Bay) compared to those impacts present due to urban development. No rare, threatened, or endangered fish species were present in Coyote Creek.

Northwest Hydraulics Consultants Inc. 1990. *HEC-2 Data Deck Development, Berryessa Creek, Santa Clara County, California*. May 1990

In May 1990, Northwest Hydraulic Consultants Inc. concluded the development of a HEC-2 data deck for Berryessa Creek, Santa Clara County, California, to be submitted to the U.S. Army Corps of Engineers, Sacramento District. The study area included a 4.2-mile reach beginning at Calaveras Boulevard and extending upstream of Old Piedmont Road.

Northwest Hydraulic Consultants Inc. 1990. *Sediment Engineering Investigation and Preliminary Hydraulic Design of the Berryessa Creek Flood-Control Project*. September 1990

In September 1990, Northwest Hydraulic Consultants Inc. concluded a sediment engineering investigation and preliminary hydraulic design of the Berryessa Creek Flood-Control Project. The study investigated existing sediment transport conditions through the 4.2-mile study reach. It also identified potential short- and long-term impacts with respect to sedimentation and channel stability. The preliminary hydraulic design was developed for flood control features to safely convey a 100-year discharge through the study reach under the imposed sediment load.

U.S. Army Corps of Engineers, Sacramento District. 1993. *Draft General Design Memorandum, Coyote and Berryessa Creeks, Volume I of II (Berryessa Creek), California*. November 1993

In November 1993, the U. S. Army Corps of Engineers completed the draft General Design Memorandum (GDM) for the Berryessa Creek flood control project. The draft GDM presented the results of engineering and design studies conducted for flood improvements along the Berryessa Creek element of the Coyote and Berryessa Creeks flood control project. The design and studies contained in the draft GDM were conducted to determine the most economical plan for safely conveying the design flood, mitigation measures for environmental impacts, and meeting government standards for the flood control improvements. The GDM outlines the basis of project design, provides recommendation for the sequence of construction, and summarizes cost and benefit data for the entire Berryessa Creek Element.

U.S. Army Corps of Engineers, Sacramento District. 1993. *Draft General Design Memorandum, Coyote and Berryessa Creeks, Volume II of II, California*. November 1993

This report presents the results of field and office investigations, laboratory test results, and service record surveys pertaining to the stone protection and proposed materials for the concrete structures in the Coyote and Berryessa Creeks flood control project. Included in this volume is an environmental assessment addressing the changes and refinements to the authorized project, description of real property requirements, and hydrologic report.

U.S. Army Corps of Engineers, Sacramento District. 1994. *Value Engineering Study on Coyote and Berryessa Creeks, Berryessa Creek Element, Santa Clara County, California*

In 1994, a value engineering study was conducted on the proposed project, which included new confluence structures where Los Coches Street and Piedmont Creeks intersect Berryessa Creek. The project also included the augmentation of existing levees of a greenbelt reach to achieve specified heights to maintain certain riparian vegetation requirements. The project also included reorientation of sediment basins from their previous design.

Kennedy/Jenks Consultants. 1996. *Phase II Hazardous Materials Investigation, Calaveras Boulevard to Old Piedmont Road, Berryessa Creek Flood Control Project*. February1996

In February 1996, Kennedy/Jenks conducted a Phase II Hazardous Materials Investigation for the Santa Clara Valley Water District to collect additional data at the sites of concern. This data was used to assess the potential presence of chemically-impacted areas within the project alignment. The investigation concluded that soil containing potentially hazardous concentrations of pesticide may be generated during construction if not remediated prior to construction. It was recommended that the Water District remediate or remove soils of elevated hazardous concentrations, which may require additional sampling to delineate these sites of high concentrations. It was also recommended that environmental monitoring and separation of impacted soil from non-impacted soil should be implemented during construction.

Kennedy/Jenks Consultants. 1996. *Preliminary Health Risk Assessment, Berryessa Creek Flood Control Project*. October 1996

In October 1996, Kennedy/Jenks prepared a preliminary health risk assessment for the Santa Clara Valley Water District in connection with the proposed flood control improvements along Berryessa Creek from Calaveras Boulevard in Milpitas to Old Piedmont Road in San Jose, California. The assessment concluded that for five chemicals, the calculated airborne concentrations at the water/air interface are above the Permissible Exposure Limits (PELs). This was not considered of concern due to the dilution effect that will occur before reaching the breathing zone. None of the calculated airborne chemical concentrations exceeded the PEL in the breathing zone. It was concluded that level D Personal Protective Equipment (PPE) is appropriate for construction activities along the portion of the Berryessa Creek studied.

Harvey, H.T. and Associates. 1997. *Santa Clara Valley Water District: California Red-Legged Frog Distribution and Status*. 1997

This 1997 report (H.T. Harvey and Associates) provides a general description of the California red-legged frog and its various life stages, the life history and ecology of the frog,

and the history and distribution of the frog within the Santa Clara Valley Water District. The report describes the current threats to this frog in the Bay Area.

City of Milpitas. 2000. *Berryessa Creek Trail and Coyote Creek Trail Feasibility Report*. May 2000

This feasibility report evaluates Berryessa Creek and Coyote Creek to determine the feasibility of constructing pedestrian and bicycle trails along these two creek corridors. The study analyzes the benefits of the trails to the community, describes feasible trail alignments, and provides budget estimates for designing and constructing the trails. This report builds upon the 1997 Trail Master Plan, which identified Berryessa Creek and Coyote Creek as the two top trail priorities in the City of Milpitas. The study concluded that a seasonal trail could be developed along the entire 5.10 miles of Coyote Creek and that a seasonal trail could be constructed along approximately 70 percent of the 5.45 miles of Berryessa Creek.

U.S. Army Corps of Engineers, Sacramento District. 2005. *Value Engineering Report, Berryessa Creek Flood Control Project, Santa Clara County, California*. May 2005.

In April 2005, The Value Engineering Team (representatives from the Corps and SCVWD) performed a Value Engineering Study on the Berryessa Creek Element. The team executed the following: identified, evaluated, and classified project features and functions; determined and evaluated values to each function; developed a FAST Diagram based on the classification and evaluation of each function; proposed remedial alternatives for each function; evaluated the plausibility of each proposal and selected the most viable proposals for submittal; and provided documentation for alternatives on original design and VE proposals, costs comparison, savings, and justification for the selected proposal. The Value Engineering Team identified 15 proposals/alternatives. Of these, five were carried forward for further analysis and/or incorporation into the alternative plans.

1.5 REPORT ORGANIZATION

The document has been divided into nine primary chapters, each dealing with a specific subject area relating to the project components, alternatives, and the planning process. As previously mentioned, chapters noted in the report by an asterisk (*) are listed in the Council of Environmental Quality's Regulations for Implementing the National Environmental Policy Act. Three appendices, Environmental, Engineering and Design, and Economics, provided under separate cover, include technical and supplemental information.

Chapter 1, Introduction, provides background information concerning the purpose of and need for the project modification, project authorization, and project status, as well as the scope of the reevaluation study. This chapter also notes linkages with other related studies and reports.

Chapter 2, Problems and Opportunities, identifies current and expected problems and opportunities in the Berryessa Creek study area based on the reevaluation of existing and expected future without-project conditions.

Chapter 3, Formulation of Alternative Plans, describes the Corps planning process with respect to the selection of candidate alternative plans for detailed analysis. In this chapter, planning goals

are set, objectives are established, and constraints are identified. This chapter also identifies a range of potential management measures that address specific problems identified in Chapter 2 and identifies various combinations to create a series of alternative plans that adequately address the goals and objectives established. Likewise, a discussion is also provided for why alternatives were eliminated from further consideration.

Chapter 4, Affected Environment, provides a detailed presentation of the existing environmental conditions within the study area. This chapter also includes a complete discussion of environmental resources that would be affected by implementation of project alternatives.

Chapter 5, Evaluation of Alternative Plans and Potential Environmental Consequences, qualitatively and quantitatively describes potential impacts on the environment as a result of implementation of the alternative plans relative to existing conditions.

Chapter 6, Comparison of Alternative Plans, explains the criteria applied to the alternative screening process and the rationale and methodology behind the identification of final alternatives for detailed evaluation. This chapter includes a comparison and analysis of the final array of alternative plans and preliminary selection of one alternative plan that best meets the authorized project's objectives.

Chapter 7, Details of Recommended Plan, summarizes the environmental, economic, and social benefits and costs of the recommended plan.

Chapter 8, Public Involvement, describes the numerous coordination and public involvement activities conducted throughout the course of the reevaluation study. These activities include information workshops, status reports, informal briefings, presentations, and correspondence with various resource agencies.

Chapter 9, Remaining Reviews, Approvals, Implementation, and Schedule, identifies the estimated project timeline for future actions, defines commitments and responsibilities, and verifies the fulfillment of procedural notice and review requirements.

Chapter 10, Recommendations, presents the study conclusions and recommendations by the District Engineer.

Chapter 11, List of Preparers, identifies the list of individuals and organizations that contributed to the preparation of this report.

Chapter 12, Document Recipients, lists the individuals and organizations that will receive a copy of the Final GRR-EIS.

Chapter 13, References, lists references including studies, reports, analyses, and other reference materials used in the preparation of this report.

Chapter 14, Index, includes an alphabetical listing of important terms, phrases, and acronyms to aid the reader in understanding the document.

TECHNICAL APPENDICES (Volume 3)

Appendix A, Environmental, includes resource information related to environmental studies along the study reach.

Appendix B, Engineering and Design, is broken into four parts covering hydraulic analysis, floodplain development, geomorphology and sediment transport assessment, and design and cost of alternatives.

Appendix C, Economics, presents information regarding the social and economic resources that exist in the vicinity of the study area. This appendix also provides analyzes the flood damages for both the with- and without-project conditions as well as with-project benefits.

Appendix D, HTRW Assessment, provides the findings, conclusions, and results of the HTRW assessment. This was conducted to determine the potential existing and historical influence of contamination from activities in the area and the need for further action by the Corps, SCVWD, or other parties.

Appendix E, Real Estate, provides the Preliminary Real Estate Plan, which presents the baseline real estate cost estimates based on the analysis and assumptions made during the process of formulating and developing the alternatives.

Appendix F, Traffic and Circulation Analysis, provides the description of the existing street and transit systems, traffic volumes and levels of service, bicycle and pedestrian facilities, and planned improvements in the study area. This appendix also evaluates transportation impacts relative to conditions projected to exist when construction activities would likely to occur.

CHAPTER 2 – PROBLEMS AND OPPORTUNITIES

Water resources projects are planned and implemented to solve problems, meet challenges, and seize opportunities. In the planning setting, a problem can be thought of as an undesirable condition, while an opportunity offers a chance for progress or improvement. The identification of problems and opportunities gives focus to the planning effort and aids in the development of planning objectives. Planning objectives are statements of what a plan is attempting to achieve; they communicate to others the intended purpose of the planning process. Problems and opportunities can also be viewed as local and regional resource conditions that could be modified in response to expressed public concerns.

This chapter identifies the problems and opportunities in the study area based on the assessment of existing and expected future without-project conditions. The main areas of concern include the continued flooding on Berryessa Creek and resulting flood damages in the watershed, creek instability, degradation of riparian habitat areas, limited available water to support healthy riparian habitats, and the loss of recreation opportunities. Opportunities addressing the problems that are identified as potentially having Federal interest include: reduction of flooding damages, restoration of riparian areas that are incidental to the flood reduction features, and provision of recreation amenities.

2.1 WATERSHED DESCRIPTION AND LOCATION

The Berryessa Creek drainage basin covers 22.4 square miles in northeastern Santa Clara County. Berryessa Creek flows westerly from its origin in Mt. Hamilton of the Diablo Range through the cities of San Jose and Milpitas. It then turns north and channels into Lower Penitencia Creek, which is a tributary to Coyote Creek that flows into San Francisco Bay. The watershed area in the Diablo Range has clay surface soils that are potentially highly erodible and are subject to slope failure, settlement, and sedimentation. The basin consists of a large proportion of flat valley and foothill areas that have been urbanized rapidly and a significant percentage of steep mountainous areas that are utilized primarily for agricultural and resource extraction purposes.

The study area extends approximately 4.5 miles along Berryessa Creek, beginning downstream where Berryessa Creek meets Calaveras Boulevard (Highway 237) and ending 600 feet upstream of Old Piedmont Road at the base of the Diablo Range (see Figure 1-2). For the purposes of this chapter, Berryessa Creek, both upstream and downstream of the study area, is described. The creek flows west out of the Diablo Range and runs through an area comprised of undisturbed grazing land shaded by mature sycamore and eucalyptus trees. At Old Piedmont Road, the creek enters a predominantly residential section of San Jose. From Piedmont Road to Morill Avenue, the creek flows through a riparian greenbelt that includes a park. From Morill Avenue, the creek continues to flow west through earth and concrete-lined channels maintained by the Santa Clara Valley Water District. The creek then abruptly turns north after flowing under the Interstate 680 (I-680) and continues on through earth channels until reaching Calaveras Boulevard.

The study watershed is divided by the I-680 located approximately midway in the study reach into two distinct study sub-watersheds. The I-680 in the vicinity of the study area is raised with concrete sound walls lining each side of the freeway. This creates a barrier which prevents overland flooding from continuing to the lower portions of the watershed. The only opening in this barrier is the existing Berryessa Creek culvert under the freeway.

2.2 DESCRIPTION OF BERRYESSA CREEK REACHES

2.2.1 Main Project and Hydraulic Reaches

The study area has been divided into nine main reaches for overall description, analysis, and reporting purposes, as shown by Table 2-1. These nine reaches also correspond to the hydraulic reaches and reach descriptions throughout most of this document including descriptions of alternatives. The reaches are shown on Figure 2-1, and are referred to as "project reaches."

2.2.2 Analysis-Specific Reach Designations

In addition to the project reach designation, three other reference methods are used in this document. This is primarily due to how respective study surveys and analyses were divided within the natural differences within and surrounding the Creek. These additional reach or area designations exist for low-flow surveys, habitat surveys, and the analysis of economic impact areas. The following tables indicate the Low-Flow Index Reaches (Table 2-2) and the Habitat Reaches (Table 2-3). Table 2-4 shows how the reach delineations used in the low-flow and habitat studies correspond to the nine reaches described in Table 2-1. Finally, the economic analysis, discussed in Section 2.3.2.3 identifies flood zones by Economic Impact Areas.

Table 2-1 Berryessa Creek Study Area Reaches

Reach No.[1]	Location	Length (feet)	Description
0	Confluence with Lower Penitencia Creek to approx. 50 feet downstream of Calaveras Boulevard (Stream Miles 0.00 to 1.68)	8,850	The creek is bordered by residential development on both sides and parallels the Union Pacific Railroad (UPRR) for much of this reach. The creek crosses the Hetch Hetchy pipeline near Hillview Avenue downstream of Calaveras Boulevard. This reach is currently part of another study and is not part of the modeled study reaches for this reevaluation.
1	Approx. 50 feet downstream of Calaveras Boulevard to Los Coches Street Bridge (Stream Miles 1.68 to 1.77)	500	The existing channel is a trapezoidal earth channel through a highly industrialized area of Milpitas.
2	Los Coches Street Bridge to Piedmont Creek (Stream Miles 1.77 to 2.18)	2,150	The existing channel is a trapezoidal earth channel through a highly industrialized area of Milpitas.
3	Piedmont Creek to Montague Expressway (Stream Miles 2.18 to 3.15)	5,150	The existing channel is a trapezoidal earth channel through a highly industrialized area of Milpitas.
4	Montague Expressway to I-680 (Stream Miles 3.15 to 3.81)	3,450	The existing channel is a trapezoidal earth channel very close to the Milpitas-San Jose city limits. More residential development is present along this

Table 2-1 Berryessa Creek Study Area Reaches			
Reach No.[1]	**Location**	**Length (feet)**	**Description**
			reach.
5	I-680 to Morrill Avenue (Stream Miles 3.814 to 4.43)	3,200	The reach between I-680 and Cropley Avenue is a trapezoidal concrete channel; the reach from Cropley Avenue to Morrill Avenue is a trapezoidal earth channel. This area is primarily residential and has poor access to the creek.
6	Morrill Avenue to Pedestrian Bridge (Stream Miles 4.43 to 5.02)	3,200	This reach is a combination of constructed channels. The downstream portion is a rectangular concrete channel; the middle a trapezoidal channel; the upstream portion a drop structure with concrete channel bottom. This reach includes the Sierra Creek confluence, the control structure, and the lower reaches of the Greenbelt area.
7	Pedestrian Bridge to Cropley Avenue & Piedmont Road Intersection (Stream Miles 5.02 to 5.45)	2,300	The existing channel is This reach includes the park, upper half of the Greenbelt area, and the sediment basin immediately below the Cropley Avenue and Piedmont Road intersection.
8	Cropley Avenue & Piedmont Road Intersection to Old Piedmont Road (Stream Miles 5.45 to 5.64)	1,000	This is an incised channel section that includes the Cropley Avenue culvert, and a segment of steep channel to the Old Piedmont Road Bridge.
9	Old Piedmont Road to Upper Project Boundary (600 feet from upstream face of Old Piedmont Road Bridge) (Stream Miles 5.64 to 5.74)	500	This short reach includes the most natural riparian habitat.
[1] The authorized project being reevaluated by the GRR study consists of Reaches 1 through 9; locations are approximate.			

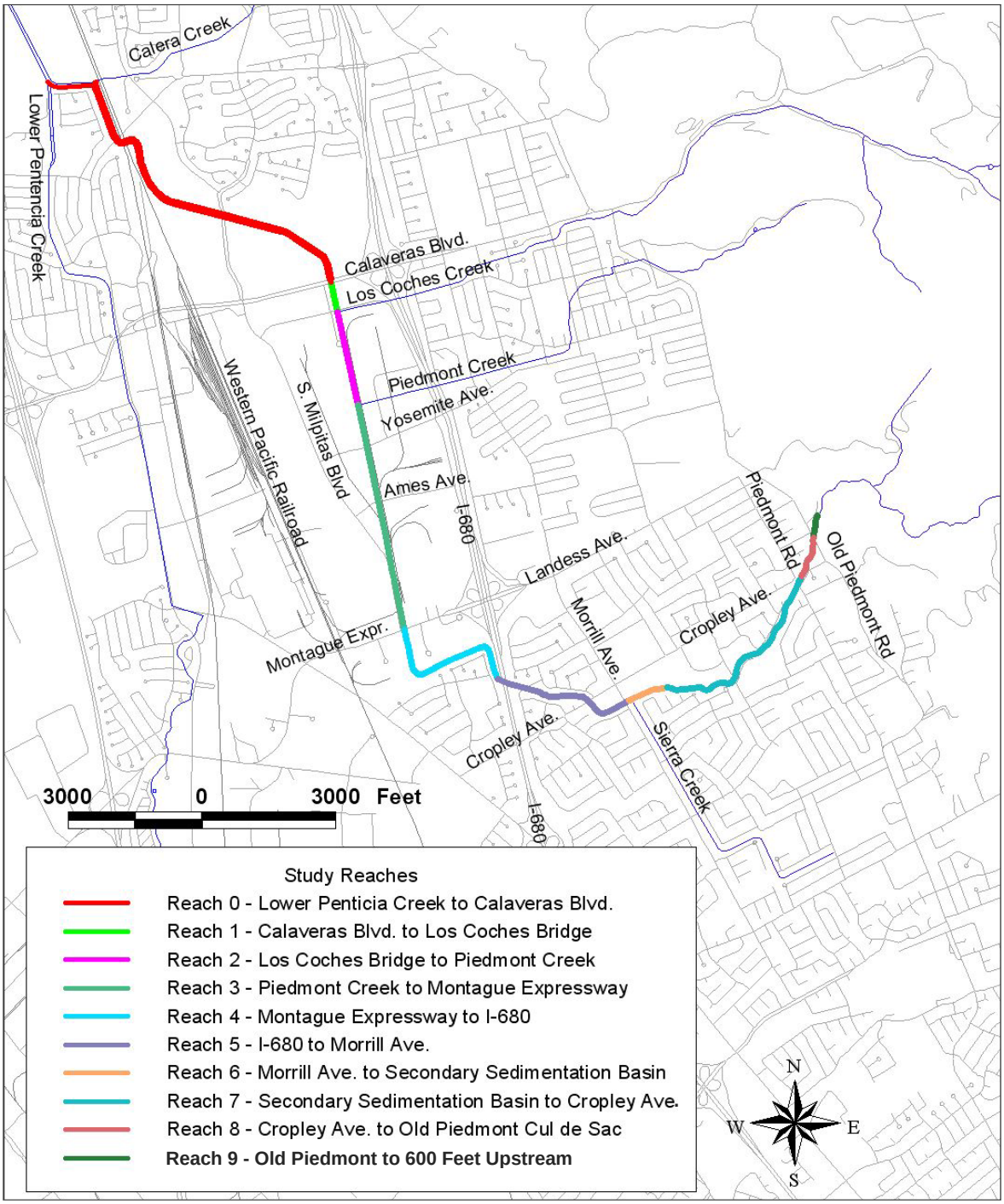


Figure 2-1 Berryessa Creek Study Area Reaches

Table 2-2 Low-Flow Index Reach Descriptions			
Reach No.	**Location**	**Length**	**Description**
1	Upstream of Old Piedmont Road	500 feet	Natural channel; forested with native and non-native species.
2	Old Piedmont Road to Piedmont-Cropley Culvert	700 feet	Artificial trapezoidal channel; unlined; steep dirt banks; no riparian.
3	Piedmont-Cropley Culvert	400 feet	Concrete box culvert.
4	Piedmont-Cropley Culvert to Drop Structure	4,700 feet	Natural channel; forested riparian although mowed in some areas; low levees present.
5	Drop Structure to Cropley Avenue	1,600 feet	Artificial trapezoidal channel; concrete-lined at corners; no riparian.
6	Cropley Avenue to I-680	2,000 feet	Artificial trapezoidal channel; concrete-lined.
7	I-680 to Calaveras Boulevard	11,500 feet	Artificial trapezoidal channel; unlined; steep dirt banks; no riparian.
Locations are approximate.			

Table 2-3 Habitat Reach Description			
Reach No.	**Location**	**Length**	**Description**
H-1	Coyote/Lower Penitencia Creeks Confluence to Berryessa/Lower Penitencia Creeks Confluence	7,100 feet	Artificial trapezoidal channel; tidally influenced; herbaceous wetland species present.
H-2	Berryessa/Lower Penitencia Creeks Confluence to Arroyo de Las Coches	6,400 feet	Artificial trapezoidal channel; very wide with sediment deposits forming floodplain and perennial flow; minimal riparian
H-3	Arroyo de Las Coches to Montague Expressway	7,200 feet	Straight artificial channel; no riparian; no perennial flow upstream of Piedmont Creek.
H-4	Montague Expressway to 100 feet upstream of Morrill Avenue	5,900 feet	Artificial trapezoidal channel with concrete lining; no riparian zone; no perennial flow.
H-5	100 feet upstream of Morrill Avenue to Old Piedmont Road	6,100 feet	Greenbelt; mostly natural channel with low levees; good riparian zone present.
H-6	Upstream of Old Piedmont Road	3,200 feet	Natural channel; well-developed riparian zone although dominated by eucalyptus at lower 200 feet; gravel/sand substrate with boulders and moderate amount of wood.
Locations are approximate.			

Table 2-4 Comparison of Low-Flow and Habitat Reaches			
Reach No.	**Location**	**Corresponding Low-Flow Index Reaches**	**Corresponding Habitat Reaches**
0	Confluence with Lower Penitencia Creek to Calaveras Boulevard (Stream Miles 0.00 to 1.68)	N/A	H2
1	Calaveras Boulevard to Los Coches Street Bridge (Stream Miles 1.68 to 1.77)	7	H2
2	Los Coches Street Bridge to Piedmont Creek (Stream Miles 1.77 to 2.18)	7	H3
3	Piedmont Creek to Montague Expressway (Stream Miles 2.18 to 3.15)	7	H3
4	Montague Expressway to Interstate 680 (Stream Miles 3.15 to 3.81)	7	H3
5	Interstate 680 to Morrill Avenue (Stream Miles 3.814 to 4.43)	~ 5, 6	H4
6	Morrill Avenue to Pedestrian Bridge (Stream Miles 4.43 to 5.02)	~ 5	H5
7	Pedestrian Bridge to Cropley Ave. & Piedmont Road Intersection (Stream Miles 5.02 to 5.45)	~ 4	H5
8	Cropley Avenue and Piedmont Road Intersection to Old Piedmont Road (Stream Miles 5.45 to 5.64)	2, 3	H5
9	Old Piedmont Road to Upper Project Boundary (Stream Miles 5.64 to 5.74)	1	H6
Locations are approximate.			

2.3 FLOODING AND FLOOD DAMAGE

2.3.1 Related Water Resources Projects

2.3.1.1 Coyote Creek Projects

Coyote Creek was the first element of the Coyote/Berryessa Flood Control Project to be implemented. Coyote Creek drains Santa Clara County's largest watershed, encompassing most of the eastern foothills, the City of Milpitas, and portions of the cities of San Jose and Morgan Hill. For many years, inadequate and unstable levees constructed by farmers existed along lower Coyote Creek providing uncertain protection to communities in Alviso, North San Jose, and Milpitas. Never intended to meet modern flood risk management criteria, the levees were unreliable and posed a great potential hazard to adjacent development. The Coyote Creek Project, authorized in 1990, was completed and turned over to the SCVWD in 1996. The project extends from San Francisco Bay to Montague Expressway. The project included levee construction, excavation of a parallel overflow channel, and extensive environmental mitigation designed in compliance with the Endangered Species Act.

Mitigation of impacts associated with the Coyote Creek Project was completed in 2000. Mitigation consisted of revegetating 22 acres of riparian forest habitat, of which twenty acres were planted to mitigate for project impacts, and the additional two acres were planted at the SCVWD's request (on behalf of the City of Milpitas to offset a portion of the impacts from the construction of the Tasman Drive Bridge Overcrossing). An additional 5.2-acre site and a 7-acre site of riparian forest habitat were planted and established downstream of Highway 237 to mitigate for project impacts. Therefore, a total of 32.2 acres of riparian forest habitat were planted to mitigate for the flood risk management improvements. In addition, the project included features designed to protect and improve habitat in an area of approximately 52 acres for the state- and Federally-endangered Salt Marsh Harvest Mouse and to mitigate for loss of salt pond habitat. The improvements included creation of seasonal wetlands and construction of a 16.5-acre brackish water bird pond. Environmental research conducted along the project has led and continues to lead to improvements in design for flood risk management projects for the SCVWD and others. Ongoing monitoring of the mitigation sites is conducted by the SCVWD.

2.3.1.2 Lower Berryessa Creek Project

Downstream of the authorized project, the SCVWD is concurrently investigating the need for improvements to existing flood risk management facilities (existing levees and floodwalls) for an approximately 8,800-foot reach along Berryessa Creek, from just downstream of Calaveras Boulevard downstream to Lower Penitencia Creek.

This 1.7-mile-long project is bordered by residential development on both sides and traverses the center of Milpitas in a highly developed area. Because flooding is a major problem in this area, a hydraulic analysis was performed in 1993 to assess the flood risk management capacity of the creek downstream of Calaveras Boulevard. The analysis showed the creek downstream of Calaveras Boulevard was unable to handle the design 1-percent or 100-year flood event. The primary objectives of this project include (1) providing flood control from the 100-year flood event; (2) improving access for creek maintenance; (3) improving the levees' durability; (4) enhancing environmental values; (5) improving water quality; (6) and providing recreational access to the public in cooperation with the City of Milpitas.

The SCVWD is currently evaluating existing creek conditions and developing alternatives that meet the project's objectives. These alternatives may include one or a combination of the following: increasing levee heights, constructing floodwalls or setback levees, and enlarging the creek. The Draft EIS/ER was made available for public review on June 28 through August 12, 2011. Construction is scheduled to begin in fall 2013. The Lower Berryessa Creek Project is assumed to be part of the without-project conditions for this study.

2.3.1.3 Upper and Lower Penitencia Creeks Projects

(a) Upper Penitencia Creek

Upper Penitencia Creek is a major tributary of Coyote Creek and drains a portion of the city of San Jose. The Upper Penitencia Creek project is approximately 4.2 miles long that begins at the confluence with Coyote Creek and ends at Dorel Drive. Over the past 20 years, Upper Penitencia

Creek has experienced severe flooding that resulted in damage to residential, commercial and industrial properties, as well as erosion of the creek's levees.

Because flooding is a major problem in this area, the Santa Clara Valley Water District requested the Corps to evaluate alternatives that would provide flood risk management in an environmentally sensitive manner. As a result, the Corps is preparing a feasibility study for Upper Penitencia Creek as authorized by Section 4 of the 1941 Flood Control Act (Public Law 77-228).

The primary objectives of the project are to:

- Provide flood control from a 1-percent or 100-year flood event
- Enhance native riparian and fisheries habitat
- Improve creek maintenance
- Improve water quality
- Provide recreational access to the public in cooperation with the City of San Jose

The Corps is currently evaluating existing creek conditions and will develop alternatives that meet the project's objectives. These alternatives may include a combination of the following:

- Modifications to floodplains
- Levees and floodwalls
- Bypass channels
- Bridge replacements and modifications
- Realignment of the creek

The preconstruction engineering and design phase was anticipated to begin in 2011, with construction anticipated to begin in 2015 (ESA 2011).

(b) Lower Penitencia Creek

Lower Penitencia Creek experienced severe flooding in the past especially in 1982 and 1983. Since then, channel modifications have been made to contain the 1-percent flood event with three feet of freeboard. This design significantly limits the overflow of Lower Penitencia into the adjacent floodplain of Berryessa Creek. Lower Penitencia Creek capacity is 6,700 cfs immediately downstream of Berryessa Creek, and 7,000 cfs at the confluence with Coyote Creek. The bank full capacity of Lower Penitencia Creek downstream of the Berryessa Creek confluence is about 10,000 cfs.

2.3.2 Historical and Existing Conditions

2.3.2.1 Historical Flooding

Flooding within the Berryessa Creek watershed and vicinity has occurred often during the past decades. Stormwater flooding inundating streets and yards is estimated to occur on an average of at least once every four years. Overflow channel flooding, causing damage to structures, infrastructure, etc., is estimated to occur along Berryessa Creek on the average of once every 10 to 20 years.

(a) Flood of 1982

The March 31, 1982, storm caused high rainfall and extensive flooding and damage to the east and central portions of San Jose and Milpitas and other areas. Flows overtopped the banks of Coyote Creek, Lower Penitencia Creek, Guadalupe River, and to a lesser degree, Berryessa Creek and South Babb Creek. Berryessa Creek overflowed its banks approximately 1,000 feet upstream of Calaveras Boulevard, but no specific damage estimates were reported. The estimated peak flow for Berryessa Creek above Calaveras Boulevard was 870 cfs, which is approximately a 2-year event. The recorded peak since 1970 was 1,002 cfs.

(b) Flood of 1983

Significant flooding occurred in Santa Clara County as a result of the storms of January 22-30, February 5-8, and February 28 through March 4, 1983. After the January flooding, the Governor of California issued a State of Emergency Declaration, and the President of the United States issued a Declaration of a Major Disaster for Public Assistance. Both documents included Santa Clara County and were extended to cover the storms of February and March. The inclusive dates of the declarations are January 21 through March 30, 1983.

The January storm caused flooding in many areas of the valley. On the east side of the valley, significant flooding occurred from Coyote Creek, Berryessa Creek, Lower Penitencia Creek, Upper Penitencia Creek, Los Coches Creek, and Sweigert Creek, causing property damage in the cities of San Jose and Milpitas.

Although no dollar value was recorded, Berryessa Creek experienced major flooding on January 22, 1983. Debris and sediment transported by the floodwaters blocked the culvert at Old Piedmont Road and impeded the flow through other culverts downstream, causing overbank and extensive street flooding. Overbanking also occurred immediately upstream and downstream of Montague Expressway and between Yosemite Drive and Calaveras Boulevard in Milpitas. It was reported that at least six businesses suffered water and sediment damage from flooding in this commercial/industrial area. Floodwaters eventually made their way westerly and flooded the streets and parking lots in the vicinity of Abel and Marylinn Streets in Milpitas. Berryessa Creek peak flows above Calaveras Boulevard were estimated to be 1,045 cfs, 210 cfs, and 300 cfs, for the January 22-30, February 5-8, and February 23-March 4, floods, respectively. The 1,045 cfs exceeded the historical peak flow recorded since the records began in 1970.

(c) Flood of 1998

On February 3, 1998, precipitation from a storm of an approximate 10-year return frequency caused flooding in several locations throughout Santa Clara County (Schaaf & Wheeler 1998). During high tide in San Francisco Bay, water from Berryessa Creek backed up into Calera Creek and overflowed through a low point in the levee adjacent to the Union Pacific Railroad tracks. Water from this levee breach and a coincident failure of a stormwater pump station caused flooding of up to four feet in the California Landing area of Milpitas.

2.3.2.2 Problem Areas

The descriptions and problems presented herein are a result of reviewing historic flood information, field inspections, professional judgment of the Project Delivery Team (PDT); technical analyses especially involving detailed hydraulic modeling of the system, and review of available data and reports. Table 2-5 provides information on the channel capacities by reach.

Table 2-5 Channel Flows and Capacities					
GRR Study Reach	**Description**	**FLO-2D Grid Element/HEC-RAS Station[1]**	**100-Year Flow [2] (cfs)**	**Channel Capacity (cfs)**	**Average Channel Capacity (cfs)**
9	Upstream Old Piedmont Road	Upstream 3106	1,430	420-2,140	1,430
6/7/8	Sweigert Creek – Old Piedmont Road	2850 – 3106	1,430	1,040 – 1,925	1,180
6	Crosley Creek – Sweigert Creek	2334-2850	1,530	590 – 2,330	1,110
6	Sierra Creek – Crosley Creek	1375-2334	1,740	1,030 – 1,440	1,100
5/6	Cropley Ave. – Sierra Creek	890-1375	2,140	1,410 – 1,870	1,580
5	I-680 – Cropley Avenue	43-890	2,140	2,500 – 3,140	3,000
4	Montague Expressway – I-680	21738 – 25575	2,140	830 – 3,140	2,000
3	Ames Avenue – Montague Expressway	18843 – 21738	2,780	1,350 – 3,500	2,500
3	Piedmont Creek – Ames Avenue	16654 – 18843	2,780	1,350 – 3,500	1,500
2	Los Coches Street – Piedmont Creek	14388 – 16654	3,880	840 – 2,250	1,500
1	Calaveras – Los Coches Street	13804 – 14388	4,990	1,600 – 2,550	1,600

[1]The Berryessa Creek channel was modeled using FLO-2D upstream of I-680 and HEC-RAS downstream.
[2] Source: NHC 2006

Figure 2-2 and Figure 2-3 depict the 0.01 and 0.002 exceedance probability event floodplain inundation maps, respectively, for Berryessa Creek. Please refer to Appendix B, Engineering and Design Appendix, for detailed descriptions of the analysis procedures and results that were used to help identify and describe the without-project flood conditions.

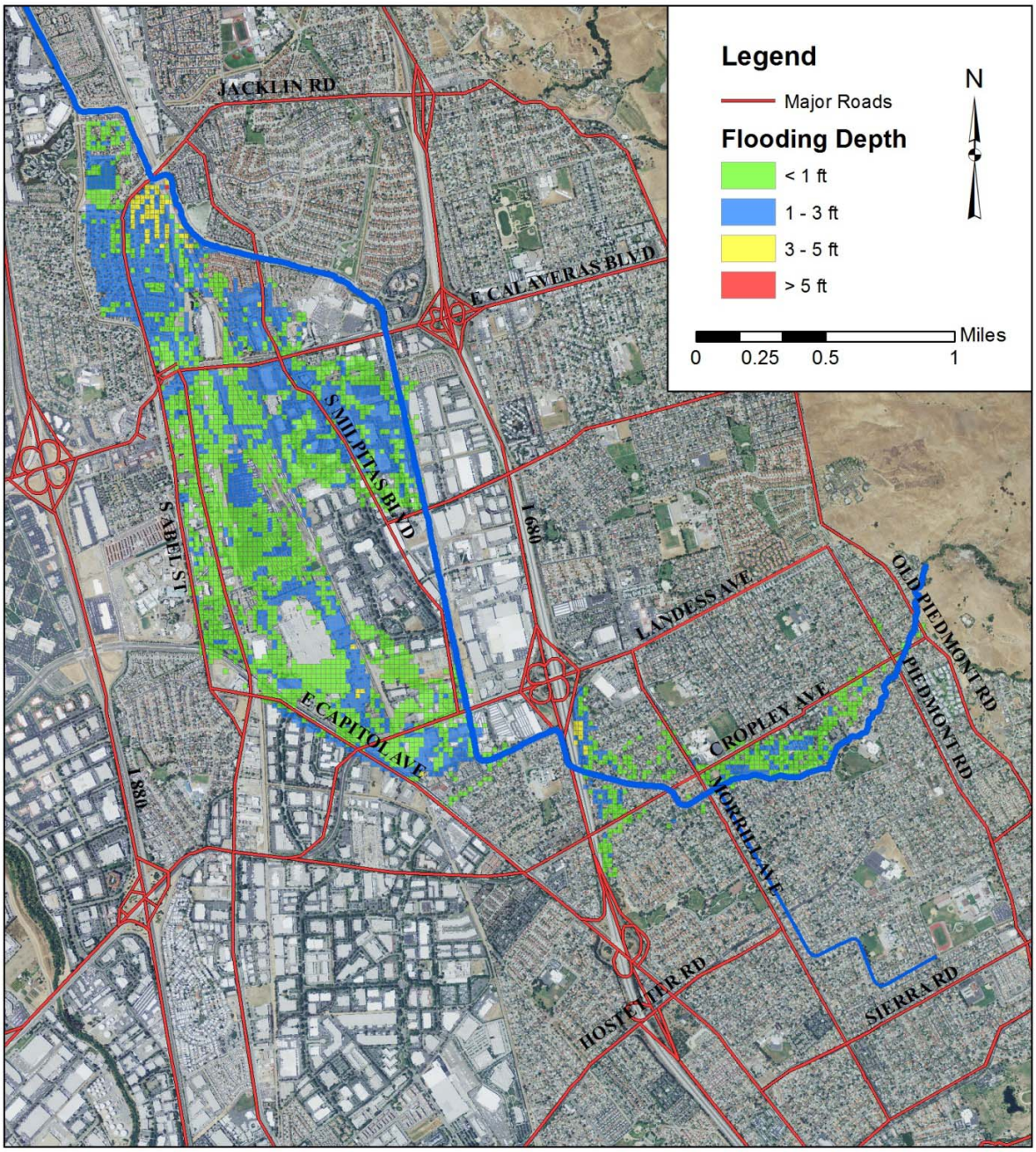


Figure 2-2 0.010 Exceedance Probability Event Floodplain

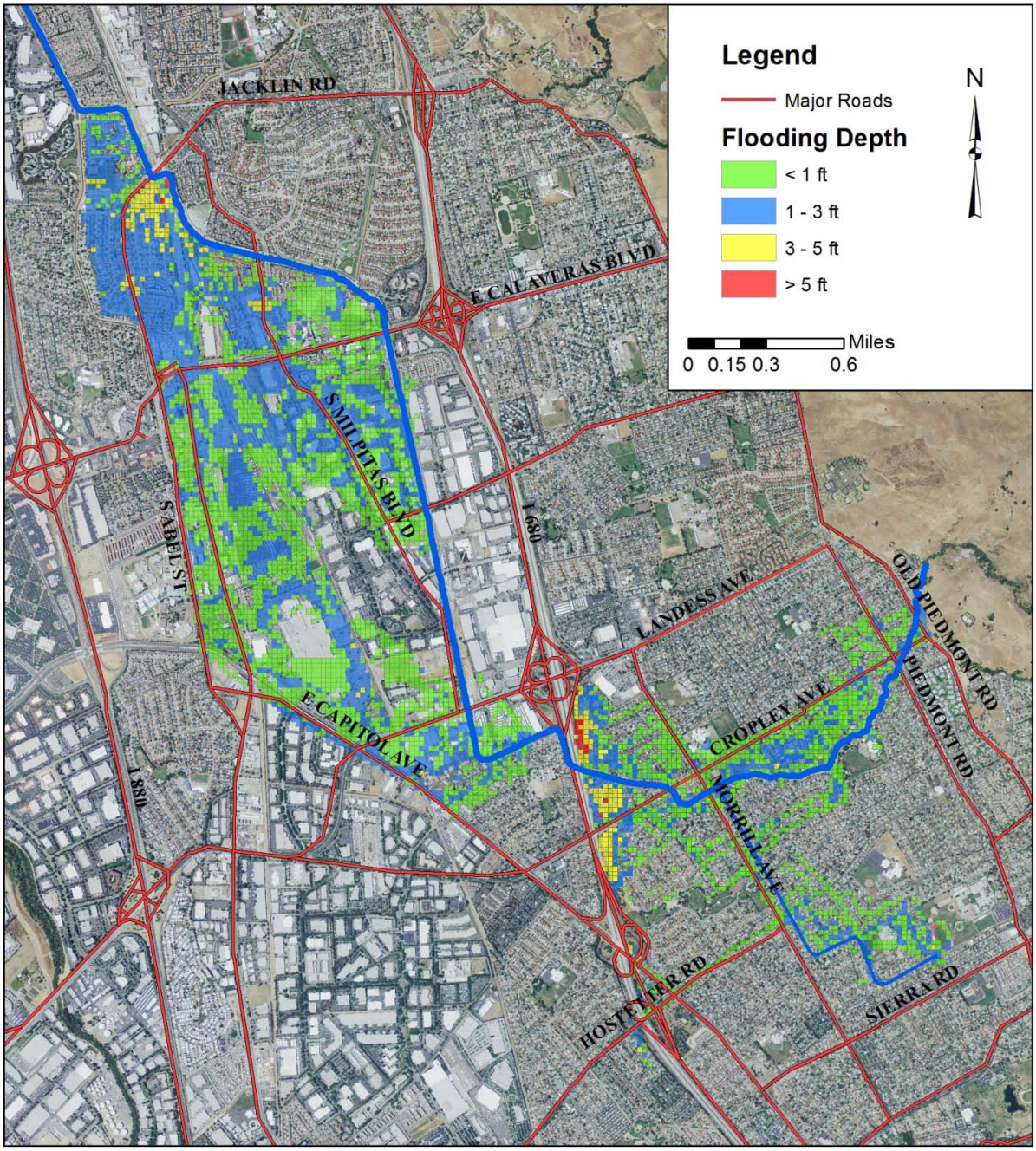


Figure 2-3 0.002 Exceedance Probability Event Floodplain

(a) Comparison of FEMA Floodplain with Current Corps' Reevaluation Study

Figure 2-4 compares the 0.010 exceedance probability without-project floodplain with the currently accepted FEMA 100-year floodplain. The FEMA floodplain is mapped on the following FEMA map panels.

- Panel 9 of 64 of City of San Jose, Santa Clara County California FIRM, Community Panel Number 060349 0009G, revised August 17, 1998
- Panel 10 of 64 of City of San Jose, Santa Clara County California FIRM, Community Panel Number 060349 0010E, revised August 17, 1998
- Panel 1 of 4 of the City of Milpitas, Santa Clara County, California FIRM, County Panel Number 060344 0001G, revised June 22, 1998
- Panel 3 of 4 of the City of Milpitas, Santa Clara County, California FIRM, County Panel Number 060344 0003G, revised June 22, 1998

The FEMA floodplain shows the results of a commingled floodplain resulting from Berryessa Creek overflows and a number of other contributing flood sources in the study area including Sweigert Creek, Sierra Creek, and Penitencia Creek. (The Penitencia Creek floodplain no longer occurs due to the Penitencia Creek Project.) Floodplains specific to the Upper Sweigert and Sierra Creeks are not part of the current study, although consideration was made to the capacity of the culvert inlets for discharges associated with Sweigert and Sierra Creeks that are conveyed to Berryessa Creek.

Sweigert Creek is conveyed entirely through a culvert under the urbanized portion of its floodplain to Berryessa Creek while Sierra Creek is conveyed partially through the urban area in a culvert then through an open channel to Berryessa Creek. The current study accounted for the capacity in the inlet to the Sweigert Creek culvert, conveying only the flow in the culvert to Berryessa Creek. Note that the inlet to the culvert is located outside of the study area; therefore the flooding from this source was not modeled. In addition, the current study included updating the FLO-2D modeling to include the Sierra Creek channel from its culvert outlet to Berryessa Creek. The flow in the Sierra Creek channel was allowed to break out the channel, and this flooding was included as part of the floodplain mapping.

Upstream of I-680, as seen in Figure 2-4, the without-project and FEMA floodplains generally agree, considering that the majority of the flooding to the southeast of the creek upstream of Morrill Avenue is the result of Upper Sierra Creek and Sweigert Creek flooding. However, the following differences were observed between the two floodplains. Except as noted above (commingling and independent tributary floodplains) and in the individual items below, the differences are due to the increased accuracy of the FLO-2D model as well as where the breakouts were assumed to occur in the older HEC-2 model.

- The current without-project floodplain shows a small amount of additional flooding from the Old Piedmont Road Bridge breakout to the northwest that is not present in the FEMA floodplain.

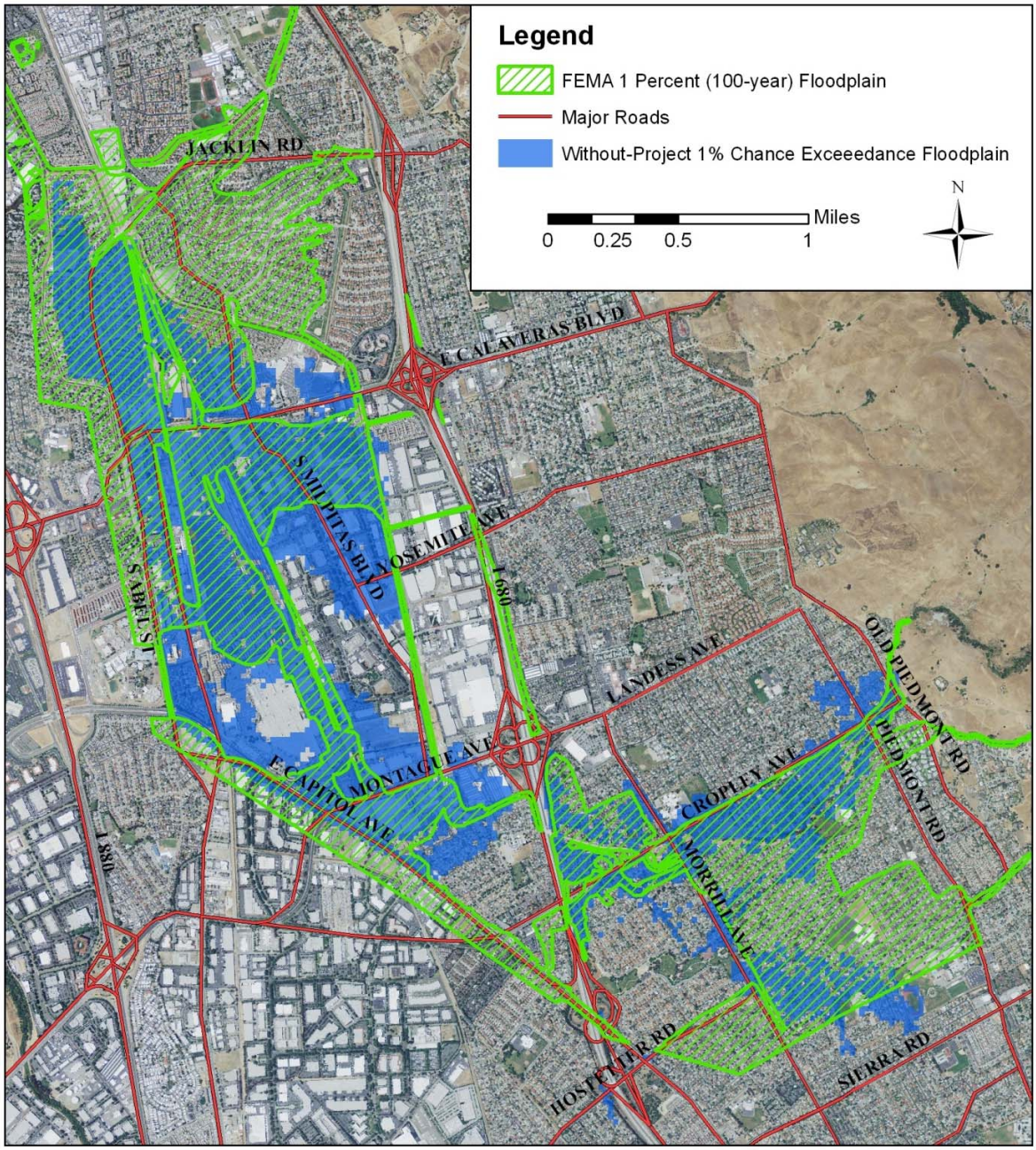


Figure 2-4 Comparison of the FEMA 100-Year Floodplain and Without-Project 0.010 Exceedance Probability Event Floodplain

- The current without-project floodplain shows a small amount of flooding to the north of Cropley Avenue upstream of Morrill Avenue.

- A small breakout from Berryessa Creek is present in the current without-project floodplain just downstream of the I-680 culvert.

- The breakout from upstream of Montague Expressway in the current without-project floodplain shows flooding to the northwest that is not in the FEMA floodplain. This flow follows the prevailing topography and is considered more accurate.

- The current without-project floodplain shows the area just north of Montague Expressway and east of Capitol Avenue to be flooded where the FEMA floodplain contains areas that are not flooded. The FEMA floodplain assumed that a railroad embankment contained flows in this area, whereas the area actually consists of low-lying land that receives water from surrounding and adjacent overflow areas.

- The current without-project floodplain shows breakouts near Yosemite Drive flowing to the northwest and west, compared to the FEMA floodplain. This flow follows the prevailing topography and is considered more accurate.

(b) Berryessa/Penitencia Creek Interaction

FEMA floodplain maps for both Berryessa and Penitencia Creeks indicate that limited interaction exists between the floodplains. Some commingled flow in Zone D, "undetermined, but possible," is shown near Montague Expressway and Capital Avenue resulting from an Upper Penitencia breakout; however the slope in the overall area would cause this flooding to be more likely due to Berryessa Creek. Throughout the overall area, both Berryessa and Penitencia Creeks have been rerouted to cut across the terrain. The same reason that Berryessa only floods to the west in the region would also be true for Penitencia Creek to a point.

Another area of commingled flow on the FEMA maps is due to a breakout from Lower Penitencia Creek at the extreme downstream end of the project. Topographic data covering the Upper Penitencia Creek and Berryessa Creek floodplains has been reviewed to evaluate the possibility of co-mingling floodplains. Topographic data (floodplain slopes and flow paths) and natural and man-made barriers (Lower Penitencia Creek, Capitol Avenue, and I-880) indicate that co-mingling floodplains will have no measurable impacts.

(c) Description of Reaches and Associated Problems

<u>Upstream of Old Piedmont Road (Reach 9)</u>

The authorized upper project limit is 500 feet above Old Piedmont Road. Erosion upstream of the study area and resulting sediment transport through this reach into the lower system is a major problem. Much of the sediment appears to come from hillside erosion. Stream bank erosion is also noted in several locations (NHC 2003). If no action is taken it is assumed that sediment will continue to be transported from this reach into the downstream reaches of

Berryessa Creek. The riparian habitat is likely to degrade with potential development of agricultural lands in the future.

Old Piedmont Road to Piedmont-Cropley Avenue Culvert (Reach 8)

The upper end of the reach is the Old Piedmont Road Bridge. The bridge has been overtopped several times, most noticeably in 1983. Floodwaters overtopping the bridge and road flood adjacent streets and yards and in some instances may inundate structures. However, not all the flow overtopping the bridge will escape into the floodplain; rather flow will split with some escaping and flowing down adjacent streets, with the remaining flow returning to the channel. Once flow escapes the channel at Old Piedmont Road and flows down adjacent streets, it was assumed that the flow would return to the channel further downstream, just upstream of I-680.

The bridge has an existing concrete apron and drop structure which likely precludes all fish passage. Downstream of the bridge the channel is steep, bends to the left, and shows noticeable degradation to the channel bottom and side slopes. The erosion along the right bank threatens the adjacent residential yards. The SCVWD service road follows the stream adjacent to the top of the left bank. Erosion of both bed and banks is likely to continue to occur in this reach.

The existing 400 feet Cropley and Piedmont Culvert at the downstream end of the reach is the major problem feature of the Berryessa Creek system above I-680. It is located diagonally under the intersection of Cropley Avenue and Piedmont Road. The 12-feet-by-7-feet reinforced concrete box (RCB) culvert capacity is currently significantly reduced due to sediment deposition throughout its length. During a 2004 site visit, it was 50- and 25-percent blocked at the upstream inlet and downstream outlet, respectively. The existing culvert capacity is therefore estimated capable of carrying less than the 2-percent event flow. The adjacent residences near the inlet of the culvert are threatened when flows overtop the headwall of the culvert. Velocities are estimated to exceed 5-6 feet per second (fps) some 1,600 feet down Cropley Avenue, flooding the street and yards. The overflows pond in the low residential areas along Berryessa Creek between Morrill Avenue and I-680 and inundate numerous structures. The culvert is located at a natural alluvial fan area where sediment deposition rates are commonly high (as the steep channel suddenly transitions to the flatter valley).

If flood damage reduction measures and other actions are not implemented, the existing conditions will likely degrade into the future with more stream bank erosion and sediment deposition at the Cropley Avenue culvert. The threat from overtopping of the Old Piedmont Road Bridge and the Cropley Avenue culvert will continue as will the associated flooding of residential structures adjacent to the stream and from Morrill Avenue to I-680. The velocities and depths of the overflows down Cropley Avenue also present a serious threat to the traffic and cross traffic from the numerous flooded intersections.

Piedmont-Cropley Culvert to Morrill Avenue, also called the Greenbelt Area (Reach 6 and Reach 7)

This upper end of Reach 7 begins just downstream of the Cropley Avenue culvert at the existing sediment basin. The creek flows through the only remaining floodplain with a moderate-to-high quality riparian community of grasses and trees until it reaches the park near the school at the lower limits of Reach 7. A pedestrian footbridge crosses the stream near the upper limits of Reach 8. The channel and floodplain are relatively stable throughout both reaches until the drop structure located upstream of Sierra Creek some 600 feet above Morrill Avenue. This lower segment is concrete-lined. A major control structure exists just upstream of the confluence with Sierra Creek. Flows through these two reaches are intermittent, although pools are present in the greenbelt for most of the year.

Continued maintenance activities in the floodplain such as mowing and clearing are degrading the riparian habitat and contributing to the erosion of the floodplain and stream banks. Uncontrolled public use is also damaging the stream banks.

Morrill Avenue to Highway 680 (Reach 5)

A concrete lined channel begins 150 feet upstream of the reach at Sierra Creek and continues to Morrill Avenue. The flow in Berryessa Creek will overflow at Morrill Avenue Culvert for the larger events due to the large inflow from Sierra Creek. Due to the configuration of the Morrill Avenue Bridge a headwall serves to direct overflows at the culvert away from the creek and down Morrill Avenue.

The flow overtopping the Morrill Avenue Culvert flows south of the channel and west toward I-680. North of the channel the Cropley-Piedmont culvert overflow flows west toward I-680, then south, back into the channel just upstream of I-680. I-680 is assumed to act as a barrier to flow in the downstream direction. From Cropley Avenue to I-680, the trapezoidal channel is concrete.

The flooding of residential structures in this reach is due to the overflows from Morrill Avenue and the Cropley Avenue culverts. If upstream actions are not taken to limit the Cropley Avenue culvert overflows, the flood threat to the low lying structures and associated contents in the vicinity of Berryessa Creek will continue.

I-680 to Montague Expressway (Within Reach 4)

The channel in this reach is earthen trapezoidal from under I-680 through the Montague Expressway Bridge. The two 90-degree bends are concrete-lined showing areas of bank erosion at the transitions. The channel through the 90-degree bends has the capacity to carry only a 20- to 25-year event with reasonable certainty. Flows breaking out of the main channel will flow to the areas of lowest elevation near Lower Penitencia Creek and continue north to its confluence with Berryessa Creek. These overflows will cause significant damage to commercial and industrial structures and contents. If no actions are taken, the future flood threat and bank erosion will continue.

Montague Expressway to Piedmont Creek (Reach 3)

This reach has an earthen, generally trapezoidal shaped channel with bank erosion along parts of the stream. The channel is estimated to have the capacity to carry the 25-year event with reasonable certainty. The existing conditions overflow occurring in the reach above the Montague Expressway limits the channel flows through this reach. Overflow from the channel is thus limited. The Union Pacific Railroad trestle crossing the channel is in poor condition. There is a breakout resulting from backwater at the trestle just downstream of Montague Expressway and another breakout near the Yosemite Drive Bridge. There is essentially no floodplain or riparian zone in this reach.

Piedmont Creek to Los Coches Creek (Reach 2)

The existing channel is generally of a trapezoidal shape with bank erosion occurring in various areas. The inflow from Piedmont Creek and a low 1,500-foot segment along the left bank result in channel overflows from an estimated 5-year event. The overflows cause shallow flooding but significant damage to nearby commercial and industrial buildings and their contents. There is essentially no floodplain or riparian zone in this reach.

Los Coches Creek to Calaveras Boulevard (Reach 1)

The existing channel is generally of a trapezoidal shape with bank erosion occurring in various areas. The inflow of Los Coches Creek adds to the limited capacity of the existing channel and the Calaveras Bridge capacity. However, the overflows from the upstream reach below Piedmont Creek somewhat limit the existing conditions flood threat in the reach. Still, under without project conditions, the Calaveras Boulevard Bridge could be overtopped from coincident Berryessa and Los Coches Creeks flows. There is essentially no floodplain or riparian zone in this reach.

2.3.2.3 Existing Without-Project Flood Damages

(a) Impact Areas

For economic evaluation and project performance purposes, the study area was divided into six economic impact areas. The impact areas delineations, as described below, were established to address changes in hydrology, hydraulics, and economic conditions throughout the study area. The delineations also took into consideration the types and locations of potential flood damage reduction measures and actions that may be formulated and evaluated during the next phase of the process. A map of the six impact areas is shown in Figure 2-5.

- *Impact Area A (73.90 acres)* lies farthest east and runs from Old Piedmont Road to the intersection of Cropley Avenue and Piedmont Road. Inundation in this impact area is limited to street flooding.

- *Impact Area B (132.14 acres)* includes Cropley Avenue and runs along the right bank from Piedmont Road to Morrill Avenue. The area is primarily residential.

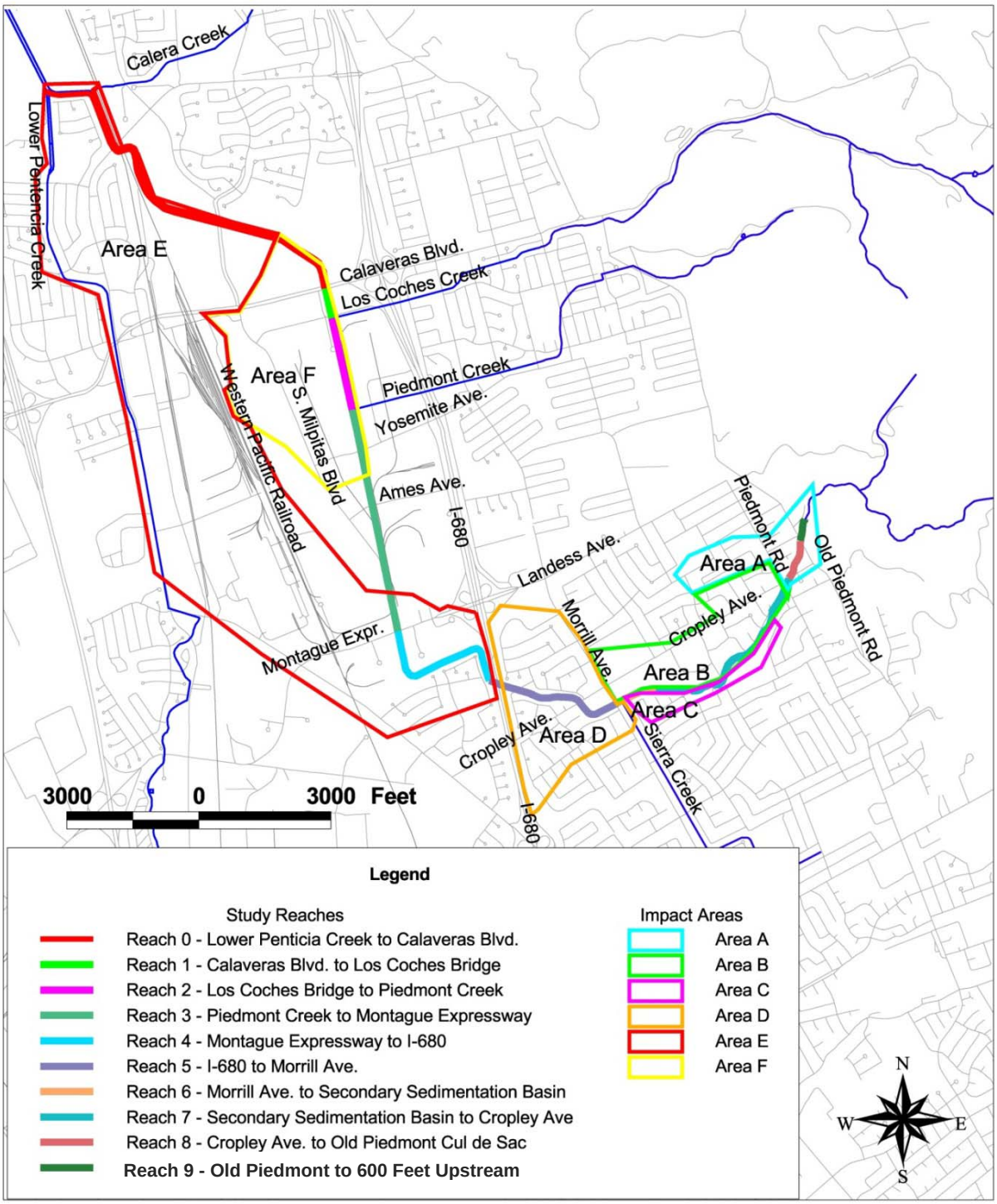


Figure 2-5 Economic Impact Areas

- *Impact Area C (30.53 acres)* runs along the left bank just past Majestic Elementary and Berryessa Creek Park downstream just east of Morrill Avenue.

- *Impact Area D (193.79 acres)* runs from Morrill Avenue to the I-680 Freeway. This area in San Jose is entirely residential.

- *Impact Area E (1,216.28 acres)* is the largest impact area in the study and begins just west of I-680. The area is bounded by Capitol Avenue, Abel Street, and Berryessa Creek. This area includes the Midtown region on Milpitas and includes residential, commercial, public, and industrial land uses.

- *Impact Area F (368.68 acres)* runs along a short section of the left bank of Berryessa from Yosemite Drive to near Los Coches Street and east of the Union Pacific railroad line. This impact area is highly industrial with many hi-tech firms in addition to some commercial and limited residential.

(b) Inventory

The structural inventory was based on data gathered from assessor's parcel data and on-site inspection of the structures within the floodplain. Structures were determined to be within the economic data area by using Geographical Information Systems (GIS) to compare the 0.002 exceedance probability floodplain boundary with the spatially referenced assessor parcel numbers (APN). Information from the assessor's parcel database (such as land use, building square footage, and address) was supplemented during field visits for each parcel within the floodplain. Parcels, with structures, were categorized by land use and grouped into the following structural damage categories.

- Single Family Residential includes all parcels represented by a single unit such as detached single family homes, individually owned condominiums, and townhouses.

- Multiple Family Residential includes residential parcels with more than one unit such as apartment complexes, duplexes, and quadplex units. Each parcel may have multiple structures.

- Commercial includes retail, office buildings, and restaurants.

- Industrial includes warehouses and light and heavy manufacturing facilities. This also includes many computer and bio-tech industries that are in the Milpitas area.

- Public includes both public and semi-public uses such as post office, fire department, government buildings, schools, and churches.

All parcels with structures were assigned to one of the listed categories. Some parcels have more than one physical structure and some structures, such as condominiums, are represented by multiple parcels. Table 2-6 displays the total number of parcels with structures by category. In

total, there are 1,000 more units at risk than shown in the 1987 Feasibility Report. The biggest difference is the inclusion of multi-family residences that have increased in the area[2].

Table 2-6 Structural Inventory

Economic Impact Area	Acreage	Number of Parcels with Structures within the 0.002 Exceedance Probability Floodplain by Land Use						
		Single Family Residential	Multiple Family Residential	Commercial	Industrial		Public	Total
					General	Tech		
Area A	73.90	64	0	0	0	0	0	64
Area B	132.14	96	287	0	0	0	1	384
Area C	30.53	14	0	0	0	0	0	14
Area D	193.79	378	105	0	0	0	0	483
Area E	1,216.28	723	1,110	95	22	17	15	1,982
Area F	368.68	1	0	14	8	25	4	52
Total	**2,015.32**	**1,276**	**1,500**	**109**	**30**	**42**	**20**	**2,979**
		Number of Parcels with Structures within the 0.010 Exceedance Probability Floodplain by Land Use						
Area A	73.90	35	0	0	0	0	0	35
Area B	132.14	77	257	0	0	0	1	335
Area C	30.53	12	0	0	0	0	0	12
Area D	193.79	231	26	0	0	0	0	257
Area E	1,216.28	589	1,050	82	22	16	13	1,772
Area F	368.68	1	0	14	8	25	4	52
Total	**2,015.32**	**945**	**1,333**	**96**	**30**	**41**	**18**	**2,463**

(c) Value of Damageable Property – Content Value

In addition to structures, building contents can also be at risk of flood damages. For this study, content values were estimated as a percentage of depreciated structure value based on land use. In the 1992 study, detailed content surveys were made to determine content percentages specific to the Milpitas/San Jose area. For this reevaluation study, additional content surveys were completed to confirm or adjust values used in the original study. Based on these survey results, the content percentages from the 1992 study are determined to be reasonable.

[2] New development that occurred since 1991 has been consistent with the FEMA requirements for first floor elevations, and is eligible for consideration as benefits in project justification. No adjustments are necessary due to the restrictions in Section 308 of WRDA 1990.

Total value of damageable property includes the structural and content values described for the parcels within the 0.002 exceedance probability floodplain. Table 2-7 shows the total structure and content values by category and economic impact area. In total, the study area has just under $2.3 billion worth of estimated damageable property. Total value of $1 billion for structures within the floodplain is over eight times the value presented in the 1987 feasibility study. Factors leading to these increases include additional structures, general increases in valuation from 1986 to 2011, improvements in existing structures, and increased labor and construction costs in the area.

Table 2-7 Value of Damageable Property within the 0.002 Exceedance Probability Floodplain $1,000s, October 2011 Prices

Structure Category	Area-A	Area-B	Area-C	Area-D	Area-E	Area-F	Total
SFR-Structure	11,700	17,600	2,400	63,300	123,300	400	218,700
SFR-Content	5,800	8,800	1,200	31,700	61,700	200	109,400
MFR-Structure	0	27,300	0	11,400	224,600	0	263,300
MFR-Content	0	13,600	0	5,700	112,300	0	131,600
Commercial-Structure	0	0	0	0	227,600	30,600	258,200
Commercial-Content	0	0	0	0	246,000	29,100	275,100
Industrial-General Structure	0	0	0	0	74,100	30,900	105,000
Industrial-Tech Structure	0	0	0	0	82,500	161,000	243,500
Industrial- General Content	0	0	0	0	97,100	40,400	137,500
Industrial-Tech Content	0	0	0	0	154,300	301,100	455,400
Public- Structure	0	8,300	0	0	30,300	14,200	52,800
Public- Content	0	3,700	0	0	13,600	6,400	23,700
Total Value	**17,500**	**79,300**	**3,600**	**112,100**	**1,447,400**	**614,300**	**2,274,200**

(d) Expected Annual Damage – Existing Without-Project Conditions

Expected annual damages (EAD) were estimated using the risk-based Monte Carlo simulation program HEC-FDA. The HEC-FDA program integrates hydrology, hydraulics, geotechnical, and economic relationships to determine damages, flooding risk, and project performance. Uncertainty is incorporated for each relationship, and the model samples from a distribution for each observation to estimate damage and flood risk. The model is described in detail in Appendix C, Economics. The Berryessa Creek model has the following relationships built for each economic impact area.

- Probability-Discharge (with uncertainty determined by period of record)
- Stage-Discharge (stage in the channel with estimated error in feet)
- Stage-Damage (computed internally within HEC-FDA)

The derived probability damage functions from the HEC-FDA model for each impact area is provided in Table 2-8. These damage values differ from the calculated damages by event shown in the stage-damage curves (detail in Appendix E, Economics) due to uncertainties in each relationship.

Table 2-8 Probability Damage Functions from the HEC-FDA Model
$1,000s, October 2011 Prices

Exceedance Probability	Total Damage by Economic Impact Area and Event					
	A	B	C	D	E	F
0.200	0	0	0	0	0	0
0.100	0	221	11	116	0	0
0.050	0	11,423	506	13,475	4,522	0
0.040	0	15,046	659	18,765	15,843	0
0.020	171	22,292	967	29,346	141,546	102,657
0.015	333	24,104	1,043	31,991	228,245	157,756
0.010	837	25,916	1,120	34,636	314,944	212,855
0.004	1,447	28,089	1,212	37,810	418,983	278,974
0.002	2,897	28,814	1,243	38,868	453,662	301,014
0.001	4,333	29,176	1,258	39,397	471,002	312,034

EAD, under existing without-project conditions, was estimated for each damage category for all six impact areas. Results are summarized in Table 2-9.

Table 2-9 Expected Annual Damage – Existing Without-Project Conditions
$1,000s, October 2011 Prices

Damage Category	EAD by Economic Impact Area						
	A	B	C	D	E	F	Total
Single Family Residential	20	282	37	1,008	987	3	2,337
Multi-Family Residential	0	453	0	178	518	0	1,149
Commercial	0	0	0	0	1,370	374	1,744
Industrial	0	0	0	0	1,792	6,071	7,863
Public	0	133	0	0	166	118	417
Automobile	2	136	4	185	251	0	578
Emergency	0.4	50	1	47	43	0	141
Total EAD	**22**	**1,054**	**42**	**1,418**	**5,127**	**6,566**	**14,229**

2.3.3 Future Without-Project Conditions

The future without-project condition is defined as that condition expected to exist over the 50-year period of analysis in the absence of any action taken (by the Federal government) to solve the identified problems. It consists of the base year (2017 – see Section 6.1.1) conditions projected to a future year when it is assumed that a proposed plan's construction would be complete and operating, and how conditions may change during this period if no Federal action takes place. Forecasting this condition is important to the evaluation and comparison of alternative plans and the identification of impacts (both beneficial and adverse) attributable to the proposed project.

For the purposes of this analysis, it is assumed that no new flood risk management project would be constructed on upper Berryessa Creek in the absence of a federally cost-shared and locally-supported project. The SCVWD's Lower Berryessa Creek Project is assumed to be part of the without-project conditions.

It is also assumed that the project will not be affected by a potential rise in sea level. A sensitivity analysis was conducted based on the highest possible sea level increase of 2.13 feet calculated for the South San Francisco Bay Shoreline Study. When that value is added to the downstream boundary in the hydraulic model downstream of the Berryessa project, the increase tapers off up to less than 0.5 feet downstream of Calaveras. The Calaveras crossing effectively resets flow conditions for the design event, so the slight increase for the maximum sea level rise scenario is not carried further upstream.

2.3.3.1 Expected Annual Damage – Future Without-Project Conditions

The City of Milpitas currently has a redevelopment plan for Midtown area, with some of the land lying within economic Impact Area E of this study. Primarily along the South Main and Abel Street corridors, the plan calls for renovation of many of the existing buildings and new high density residential and commercial construction on existing vacant acres near the light rail and proposed BART stations. Development is projected to be complete by 2020. The City of Milpitas' Transit Area Specific Plan borders Berryessa Creek at South Milpitas Blvd. The Transit Area Specific Plan is a plan for the redevelopment of an approximately 437-acre area in the southern portion of the City that currently includes a number of industrial uses near the Great Mall shopping center. Development is projected to be complete by 2030.

(a) Annual Damage

Future development was estimated to occur through the full build out (year 2020) for the Milpitas Midtown area. Future development for this area was entered into the HEC-FDA model and EAD values were calculated for the future without-project economic condition. Future hydrology was evaluated and the change in flow was determined to be insignificant. Therefore, all increases in EAD under future conditions were attributable to future growth. Both existing and future EAD estimates are displayed in Table 2-10. The average annual equivalent represents the present value of future damages amortized over the 50-year period of economic analysis at the fiscal year 2013 Federal discount rate of 3.75 percent. The "Total EAD Future" shown in the table is amortized over the period of analysis to arrive at average annual equivalent damages.

Table 2-10 Average Annual Equivalent Damages (Economic Impact Area E) – Future Without-Project Conditions $1,000s – October 2011 Prices, 50-Year Period of Analysis				
Damage Category	**Expected Annual Damages**			**Average Annual Equivalent at 3.75%**
	Existing	**Future Midtown**	**Total EAD Future (2020)**	
Single Family Residential	987	0	987	987
Multi-Family Residential	518	157	675	644
Commercial	1,370	6	1,376	1,375
Industrial	1,792	0	1,792	1,792
Public	166	0	166	166
Automobile	251	0	251	251
Emergency	43	0	43	43
Total EAD	**5,127**	**163**	**5,290**	**5,258**

(b) Project Performance

In addition to damages estimates, HEC-FDA reports flood risk in terms of project performance. Three statistical measures are provided, in accordance with ER 1105-2-101, to describe performance risk in probabilistic terms. These include annual exceedance probability, long-term risk, and conditional non-exceedance probability by events.

- Annual exceedance probability measures the chance of having a damaging flood in any given year.
- Long-term risk provides the probability of having one or more damaging floods over a period of time.
- Conditional non-exceedance probability indicates the chance of not having a damaging flood given a specific event.

Table 2-11 presents the project performance results for each impact area.

Table 2-11 Project Performance - Without-Project Conditions								
Economic Impact Area	Annual Exceedance Probability	Long-Term Risk			Conditional Non-Exceedance Chance by Events			
		10-Year Period	25-Year Period	50-Year Period	10%	2%	1%	0.2%
A	0.0336	29%	57%	82%	99%	31%	9%	1%
B	0.1964	89%	100%	100%	42%	20%	19%	18%
C	0.2461	94%	100%	100%	35%	18%	17%	17%
D	0.1967	89%	100%	100%	42%	20%	19%	18%
E	0.0696	51%	84%	97%	68%	27%	22%	18%
F	0.0292	26%	52%	77%	88%	83%	82%	79%

2.4 ECOSYSTEM DEGRADATION

2.4.1 Historical and Existing Conditions

Berryessa Creek has been modified from its historic condition and alignment. Berryessa Creek and other small streams from the Los Buellis Hills flowed out onto alluvial fans and had wide floodplains with frequently braiding channels. It is likely that extensive wetland habitats were present in the floodplains and in the flat lowlands of Lower Penitencia and Coyote Creeks. Berryessa Creek now flows approximately 2 miles further north and has a completely human-made channel shape and alignment below the greenbelt area. Downstream of the greenbelt, the vegetation consists of patchy annual grasses separated by bare dirt. Maintenance practices in this area include removal of vegetation and sediment from the bottom of the channel and the use of herbicides on the stream banks. Frequent spraying or mowing of creek bank vegetation prevents the establishment of riparian species. In general, the habitat quality and quantity is limited below the greenbelt, although the lowest end of Berryessa Creek has redeveloped marsh characteristics and vegetation and now provides a patch of habitat for a variety of wildlife species.

The stream is intermittent with flow in winter and low to no flow in summer. Winter flows tend to be turbid, due to sediment loading from the surrounding foothills and from bank erosion along the creek. Sources of summer flows include runoff from the watering of lawns, industrial discharges, and limited groundwater discharge. Low summer flows lead to stagnant water condition, low dissolved oxygen content, and higher water temperatures. The creek is completely dry in Reaches 2 through 6 during the summer and fall months.

Environmental problems affecting the creek include adjacent urban development and potential soil contamination; poor water quality; uniform aquatic habitat in trapezoidal or rectangular channels; limited flows in long reaches of the channel; lack of riparian zone; almost complete disconnection from the floodplain; water availability and sediment movement in the system minimizes aquatic vegetation/habitat from establishing; fish passage barriers; and poor aesthetic and recreational conditions for human use. More detailed information on without-project ecosystem conditions is presented in Sections 4.5 and 5.5 of this document.

Opportunities for environmental protection, improvement, and mitigation include riparian revegetation; creation of an inset vegetated floodplain within the channel and protection of the one remaining undeveloped floodplain (greenbelt); removal of concrete lining to allow riparian and upland revegetation; removal of fish passage barriers; creation of more diverse floodplain habitats such as wetlands and ponds in the greenbelt, protection of the moderate to high quality habitat upstream of Old Piedmont Road; removal of non-native species, cleanup of contaminated soils; and creation of public access and recreation via trails or viewing points.

2.4.2 Future Without-Project Conditions

Without a Federal project, it is likely that the SCVWD would continue their maintenance of the existing channel, including sediment removal and periodic bank and channel stabilization with rock or concrete. A local school group or other public group might undertake minor revegetation efforts in the greenbelt, but significant changes are not likely. The City of Milpitas may construct a bike/pedestrian trail downstream of I-680 along Berryessa Creek, and some minor revegetation could occur with trail construction to make the channel area more aesthetically pleasing. Existing sources of water pollution would be expected to remain the same. Erosion in the upper watershed would continue, with ongoing sediment deposition in the study area. Existing water temperatures in the creek would not be expected to change. Overall, however, the habitats of the study area will most likely decline slightly in quality, and most of the environmental problems would not be addressed.

2.5 RECREATION AND PUBLIC ACCESS

2.5.1 Related Recreation and Public Access Projects

In 1999, the City of Milpitas conducted a study to determine the feasibility of constructing pedestrian and bicycle trails along the Berryessa Creek (and Coyote Creek) corridors. This study analyzed the benefits of the trails to the community, described feasible trail alignments, and provided budget estimates for designing and constructing the trails. This study concluded that a seasonal trail could be developed along approximately 70 percent of the 5.45 miles of Berryessa Creek. The trail would extend from the confluence with Penitencia Creek to I-680 in San Jose and would be aligned along the creek corridor and along city streets. The route would connect many residential areas, schools, shopping districts, and employment centers in the northern section of the city and to the regional recreational opportunities found along the Coyote Creek Trail. The proposed Berryessa Creek Trail alignment includes two underpasses, two overpasses, three pedestrian/bicycle bridges, and numerous at-grade street crossings.

2.5.2 Historical and Existing Conditions

A greenbelt, including a park, extends from Cropley Avenue to about 600 feet upstream of Morrill Avenue. Children from adjacent schools and other residents use the greenbelt area for passive recreation such as walking and bird watching. The City of Milpitas would like to extend its bike trail system along the lower portion of the study area, downstream of I-680 (meeting with Mr. Greg Armendariz, City Engineer with the City of Milpitas, 6/13/05; City of Milpitas'

Berryessa Creek Trail and Coyote Creek Trail Feasibility Report dated 2001; Rene Langis, SCVWD, pers. comm. 7/12/00). Currently, most of the study area is gated and fenced off to public access. The City of San Jose does not anticipate additional recreational development in the areas adjacent to Berryessa Creek (meeting with Mr. Yves Zsutty, City of San Jose, 1/24/05; Metha Sizemore, City of San Jose personal communication, 2/7/02).

The upper study area upstream of Old Piedmont Road is privately owned and currently not accessible to the public but could be a scenic resource with the dense riparian zone and views to undeveloped agricultural lands upstream. The greenbelt is also a scenic area with its mature tree canopy. Downstream of the greenbelt, there is little to no aesthetic value to the trapezoidal channel.

2.5.3 Future Without-Project Conditions

Recreational opportunities within the watershed would remain substantially unchanged, and recreational experiences would not be enhanced. Recreational benefits both regionally and locally would not be attained. Furthermore, the opportunity to restore habitat resources and decrease the dependency on the automobile as a primary form of transportation would not be realized. The City of Milpitas may construct a bike/pedestrian trail downstream of I-680 along Berryessa Creek.

2.6 SUMMARY OF PROBLEMS AND OPPORTUNITIES

The analysis of a wide range of technical issues, numerous meetings, and site visits identified a number of problem areas in the study area that have resulted from a variety of natural and human-induced changes. These problems are summarized below.

- Flood damage on the left bank to commercial and industrial buildings/contents and to infrastructure as a result of channel overtopping in the vicinity of the Piedmont Creek confluence for flood events greater than the 0.10 exceedance probability. Depth of flooding of up to two feet can occur in the lower areas, causing significant damage.

- Flood damage on the left bank to commercial and industrial buildings/contents and to infrastructure as a result of channel overtopping downstream of I-680 in the vicinity of the 90-degree bends for flood events greater than the 0.04 exceedance probability. Depth of flooding of up to three feet can occur in the lower areas, causing significant damage.

- Flood damage to residential buildings/contents and to infrastructure as a result of the Cropley Avenue and Piedmont Road culvert overtopping from 0.04 or greater exceedance probability events and flowing down Cropley Avenue to the Morrill Avenue and I-680 vicinity. Depth of flooding of up to three feet can occur in the lower areas, causing significant damage.

- Risks to public safety resulting from flood flows from the Cropley Avenue and Piedmont Road culvert overflows from events of 0.04 exceedance probability or greater.

- Bank erosion and stability problems in the reach above the Cropley Avenue and Piedmont Road culvert and also below I-680 to Calaveras Boulevard.

- Perennial base flow conditions, critical to the needs of native vegetation, does not exist in the river corridor specifically in Reaches 2 through 6.
- Human activities have significantly impacted the area downstream of I-680 by modification of the natural channel via straightening and channel hardening throughout its reach.
- Public access for much of the Berryessa Creek system is limited by fences and lack of trails along the creek.

Based upon information obtained in the without-project assessment and understanding of public's concerns, opportunities were identified. These are summarized below.

- Provide publicly-acceptable and economically-justified flood risk management measures.
- Incorporate environmental protection features as part of the design of flood risk management features.
- Incorporate a recreational corridor associated with flood risk management features.

CHAPTER 3 – FORMULATION OF ALTERNATIVE PLANS

The process for the development and evaluation of alternatives to the authorized project was conducted in accord with standard Federal procedures for planning water resources projects (i.e., Principles and Guidelines), regulations (i.e., Corps' ER 1105-2-100), and laws, and the requirements of NEPA. An array of potential management measures and preliminary alternative project modifications was considered that would better meet the authorized project's objectives for flood control and environmental compliance and acceptability while avoiding and mitigating adverse effects to the maximum extent practicable. An array of alternative plans have been developed and evaluated to meet the specific planning objectives in consideration of the concerns of the resource agencies and other interested persons that were highlighted during the public scoping process. This chapter describes the plan formulation and evaluation criteria, screening of the management measures and preliminary alternatives, and criteria for the selection of the Recommended Plan/Proposed Action.

3.1 PLAN FORMULATION PROCESS

The plan formulation process was used to develop measures and elements used in solving identified problems and ultimately to develop an array of comprehensive alternatives from which a plan is recommended for implementation.

This chapter presents the rationale used thus far towards the development of a recommended plan. It describes the Corps iterative six-step planning process used to develop, evaluate, and compare the array of management measures and preliminary alternatives considered. The six steps used in the plan formulation process include:

1) The specific problems and opportunities to be addressed in the study are identified, and the causes of the problems are discussed and documented. Planning goals are set, objectives are established, and constraints are identified. This has been accomplished for the current study stage.

2) Existing and future without-project conditions are identified, analyzed, and forecast. The existing condition resources, problems, and opportunities critical to plan formulation, impact assessment, and evaluation are characterized and documented. This has been accomplished for the current study stage.

3) Alternative plans are formulated that address the planning objectives. An initial set of alternatives was developed and evaluated at a preliminary level of detail, and were subsequently screened into a more final array of alternatives. The public involvement program is used to obtain public input to the alternative identification and evaluation process. This has also been accomplished for the current study stage. Each plan is evaluated for its costs, potential effects, benefits, and compared with the No Action Alternative.

4) Alternative project plans are evaluated for their potential to meet specified objectives and constraints, effectiveness, efficiency, completeness, and acceptability. The impacts of alternative plans are evaluated using the system of accounts framework (National Economic Development, Environmental Quality, Regional Economic Development, Other Social

Effects) specified in the Principles and Guidelines and ER 1105-2-100. This has taken place for the final array of alternatives and Recommended Plan during this phase of study.

5) Alternative plans are compared with one another and the No Action Alternative. Results of analyses are presented (e.g., benefits and costs, potential environmental effects, trade-offs, risks and uncertainties) to prioritize and rank flood damage reduction alternatives. For the current study thus far, benefits and costs have been evaluated for the final array of alternatives, and a rationale is provided to justify selection of a recommended plan.

6) A plan is selected for recommendation, and related responsibilities and cost allocations are identified for project approval and implementation.

3.2 PLANNING CRITERIA AND OBJECTIVES

3.2.1 Planning Criteria

3.2.1.1 Federal Planning Criteria

The primary Federal goal in water and related land resources project planning is to contribute to national economic development (NED) consistent with protecting the Nation's environment pursuant to national environmental statutes, applicable executive orders, and other Federal planning requirements. Water and related land resource project plans shall be formulated to alleviate problems and take advantage of opportunities to contribute to this objective. NED contributions include increases in the net value of national output of goods and services and can be measured in terms of monetary outputs such as reductions in flood damages and emergency response costs. (P&G 1983)

Ecosystem restoration is also one of the primary missions of the Corps Civil Works Program. The Corps objective is to contribute to National Ecosystem Restoration (NER) through increasing the net quality and/or quantity of desired ecosystem resources. NER measurements are based upon changes in ecological resource quality as a function of improvement in habitat quality or quantity and expressed quantitatively in physical units or indexes (not monetary units). The Corps has reaffirmed its commitment to the environment by formalizing a set of Environmental Operating Principles applicable to all its decision-making and programs. These principles foster unity of purpose on environmental issues, reflect a new tone and direction for dialogue on environmental matters, and ensure that conservation, environmental preservation, and restoration are considered in all Corps activities.

Federal, State, and local environmental quality goals and policies are considered to evaluate the long-term effect that the alternatives may have on significant environmental resources. Significant environmental resources are defined by the Water Resources Council as those components of the ecological, cultural, and aesthetic environments which, if affected by the alternatives, could have a material bearing on the decision-making process. Avoidance of adverse impacts, followed by minimization and then mitigation of unavoidable, significant adverse impacts is the formulation direction that is called for within NEPA.

3.2.1.2 Local Planning Criteria

Use the SCVWD's Natural Flood Protection (NFP) objectives when evaluating the alternatives and selecting the preferred project alternative. These objectives and criteria became effective March 1, 2005 and apply to all of the Water District's Clean, Safe *Creeks and Natural Flood Protection Program* projects. They consist of the following nine objectives:

1) Flood control: Focuses on providing protection to lives and property against the potential damages from large floods

2) Ecology: Examines the potential to protect, enhance, or restore the natural resource benefits of streams and the watershed in ecological terms

3) Geomorphology/Stable channel: Addresses the ability to effectively manage the water and sediment from the watershed under both extremely high flows and routine low flows

4) Maintenance: Focuses on minimizing the long-term obligation of operating and maintaining capital projects once they are constructed

5) Watershed context: Assesses how appropriate a project is to its location within the watershed and the physical, ecological, and social contexts

6) Water quality and quantity: Addresses water supply related goals, including quality and quantity of surface and groundwater associated with streams

7) Local partner agencies: Measures how effectively a potential project meets goals of both the Water District and the partner communities affected by the project

8) Community Benefits: Addresses the full range of community benefits beyond flood control that might be integrated into a creek project.

9) Life-cycle costs: Examines project costs as a long-term investment rather than a one-time cost

3.2.2 Specific Planning Objectives

The Corps and SCVWD jointly developed the following objectives which provide the basis for potential modifications to complete the authorized project.

- Reduce flood damages from Berryessa Creek upstream of Calaveras Boulevard throughout the study reach, during the 50-year period of analysis beginning in 2017.

- Use environmentally sustainable design practices in addressing the flood risk management purpose of the project wherever possible within the study reach, including taking advantage of restoration opportunities that may be pursued incidental to the flood damage reduction purpose.

In addition, the alternatives developed during this study were formulated to meet all requirements for an integrated Corps GRR-EIS, the NEPA process, and other planning considerations identified below.

- Use the SCVWD's Natural Flood Protection (NFP) objectives, as identified in Section 3.2.1.2 above, when evaluating the alternatives and selecting the locally preferred project alternative.
- Coordinate closely with affected cities on their recreational projects to avoid design conflicts to the extent practical, and provide opportunities for cities to incorporate recreational features into the project.
- Reduce maintenance requirements especially due to sedimentation, primarily at the Cropley Avenue and Piedmont Road culvert and the sediment basin immediately downstream.
- Improve water quality by reducing sedimentation within the creek.
- Cooperate with the mutually beneficial goals of related plans, projects, and agencies.
- Fully coordinate with other Federal, State, local agencies, and stakeholders.

Recreation and ecosystem restoration are recognized and generally supported as project purposes by the Corps, but are not included in the existing Coyote and Berryessa Creeks, California project authorization. Adding these purposes to the authorized project would require additional authority from Congress, which would require a potentially lengthy process. Because no potential sponsor has supported adding any purposes to the authorized project, additional purposes have not been evaluated or proposed in this GRR. Instead, the Corps and the SCVWD have sought to provide an environmentally sensitive design and opportunities for future recreation improvements within the scope of the currently authorized flood risk management project. Recreation and ecosystem restoration could be added to the project as non-Federally funded betterments without additional Congressional authority.

3.2.3 Guidance on Levee Certification for the National Flood Insurance Program

Within the category of NED contributions that increase the net value of national output of goods and services, mentioned above, is the savings of administrative costs of the National Flood Insurance Program (NFIP) which establishes minimum Federal standards for floodplain management adopted by State and local governments. Any alternative that removes the flood insurance requirements established by the Federal Emergency Management Agency (FEMA) would accrue this benefit by reducing the number of policies required.

Technical and procedural guidance in support of certification determinations by the Corps for NFIP is provided in the Engineer Circular (EC) 1110-2-6067, dated 30 September 2008. This EC supplements and clarifies existing policy, procedural, and technical guidance on Corps-wide standard and procedures for certifying that a levee has been adequately designed and constructed to provide "100-year protection" (conveyance of the 1 percent event based on conditional non-exceedance probabilities). It also provides an overview of documentation requirements; outlines

an Independent Technical Review (ITR) process; and summarizes authority and funding mechanisms.

As defined in the EC: *"To be certified, a levee must have at least a 90 percent assurance of providing protection from overtopping by the 1 percent annual chance exceedance flood for all reaches of the levee system. If top of levee elevation is less than three feet above the expected FEMA base flood stage, then the levee can only be certified if the assurance (conditional non-exceedance probability or CNP) is 95 percent or greater. Top of levee elevation shall not be less than two feet above the expected FEMA base flood elevation, even if assurance is 95 percent or greater. As risk methodologies improve and more data are gathered, the two feet minimum requirement will be revisited. It is important to note that this assurance is only for containment; it does not include the probability of failure by any other mode or the combined probability of all failure modes."*

3.3 PLANNING CONSTRAINTS

Unlike planning objectives that represent desired positive changes, planning constraints represent restrictions that should not be violated. The planning constraints identified in this study are described in the following sections.

3.3.1 Limited Rights-of-Way

It is recognized that urban development and land use surrounds and abuts the Berryessa Creek right-of-way. Thus, planning efforts intend to minimize the purchase of temporary or permanent additional rights-of-way during the formulation of alternative plans. The high cost of lands in San Jose and Milpitas, lack of public and private acceptance, and time requirements for purchasing additional rights-of-way generally are major negatives associated with any given plan. For Berryessa Creek, it is recognized that construction activities will require purchase of temporary rights-of-way and in some cases permanent rights-of-way. However, alternatives involving any significant additional purchase of permanent rights-of-way for bypass channels, sediment basins, etc., should be avoided in the formulation process if possible.

3.3.2 Corps Policy on Minimal Flow Requirements for Cost Sharing

Under ER 1165-2-21, "Flood Damage Reduction Measures in Urban Areas," water damage problems associated with a natural stream or modified natural waterway may be addressed under the flood control authorities downstream from the point where the flood discharge is greater than 800 cfs for the 10-percent flood event under conditions expected to prevail during the period of analysis. Under certain circumstances, the Division Engineer may grant an exception to the 800 cfs, 10-percent flood discharge criteria if both of the following criteria are met.

- The discharge for the 1-percent flood event exceeds 1,800 cfs.
- The reason the 10-percent flood discharge is less than 800 cfs is attributable to a hydrologic disparity as defined in the reference.

ER 1165-2-21 specifies, "flood reduction measures … may be located upstream of the particular point where the hydrologic criteria (and area criterion, if appropriate) are met, if economically justified by benefits derived within the stream reach which does qualify for flood control improvement. Similarly, the need to terminate flood control improvements in a safe and economical manner may justify the extension of some portions of the improvements, such as levee tiebacks, into areas upstream of the precise point where Federal flood control authorities become applicable."

3.3.3 Public Health and Safety

The alternatives must be designed in consideration of public health and safety. In addition, flood control facilities and habitat improvements must be designed to prevent loss of life. For example, access structures must be included to allow egress from the open channels as water rises in the early flood stages. In addition, flood control structures should be designed to reduce the potential risk to public health and safety due to transience along the channel.

3.3.4 Endangered Species Act Compliance

Under the Endangered Species Act, any potential project would be required not to jeopardize the continued existence of threatened or endangered species or to destroy or adversely modify their designated critical habitat. Projects should be sited so that habitation by those species does not adversely impact the non-Federal sponsor's ability to maintain flood control function and perform maintenance on channels.

3.3.5 Clean Water Act Compliance

The Clean Water Act governs pollution control and water quality of waterways throughout the United States. Its intent, in part, is to restore and maintain the biological integrity of the nation's waters. Any potential project would be required to comply with State-adopted, USEPA-approved water quality standards contain in the San Francisco Bay Basin Plan. Further, any potential project would be required not to substantially increase suspended solids in and turbidity of the creek.

3.3.6 Heritage Values

The alternatives must be designed to protect cultural and historic resources. This protection will be accomplished primarily through increased flood control of all structures, including cultural and historic resources near the river.

The San Jose 2020 General Plan contains goals and policies which encourage historic preservation. In 1975, the City adopted the Historic Preservation Ordinance (Chapter 13.48 of the Municipal Code) that specifies the following actions:

- Establish an Historic Landmarks Commission
- Maintain an Historic Resources Inventory

- Preserve historic properties using a Landmark Designation process
- Require Historic Preservation Permits and provide financial incentives through Historic Property Contracts

Protection of heritage values also includes local tree removal ordinances. The City of Milpitas adopted a Tree and Planting Ordinance (Ord. 201.1) in 1988. The City recognizes substantial economic, environmental and aesthetic importance of the trees and plantings within the community and works to provide methods and procedures required to preserve plantings of significant size, age, and/or benefit to the community at large. The designation of "Heritage and Specimen Planting" refers to any tree, grove, shrub, hedge or other planting which is determined to have special significance to the community, generally defined by the following.

- A planting of historic value, unique quality, significant girth or height, or protected species identified in the development process as a City resource
- A planting designated by resolution of the City Council to be of historical value or community benefit
- A planting located on the Register of Cultural Resources

If any vegetation within the study area would require removal and qualifies as a "Heritage Specimen," then the appropriate local ordinances for tree removal or preservation shall be followed.

3.4 REVIEW OF PREVIOUS ALTERNATIVES AND AUTHORIZED PLAN

3.4.1 Previous Alternatives

This section describes the alternative plans previously considered for implementation to alleviate flood damages from Berryessa Creek. These alternatives were previously considered in the Feasibility Study on Coyote and Berryessa Creeks (USACE 1987).

3.4.1.1 Non-Structural

(a) Flood Insurance

The Federal Emergency Management Agency (FEMA) has directed the Federal Insurance Administration to provide federally subsidized flood insurance for those residences and businesses projected to be impacted by flooding, under the authority of the Flood Insurance Act of 1968, as amended, and provide emergency assistance, under the Flood Disaster Protection Act of 1973. This measure has been implemented in the study area and is part of the future without-project condition analysis.

(b) Flood Forecast, Warning, and Evacuation

This alternative allows the residents of the floodplain to escape from the flood-ravaged area. This is a low-cost alternative but was determined to be infeasible because there is not enough time lag

from when a storm hits to the flows rising rapidly in the system. This is mainly due to the surrounding industrial area and barren channel. With very little area available for ground infiltration (i.e. a lot of hardscape in the area) that as soon as the storm hits, runoff flows to the creek.

(c) Floodproofing

A plan was developed to floodproof large commercial structures by constructing a wall around their perimeters and to raise and relocate existing residential structures located in the 100-year floodplain. Approximately 193 commercial structures would be protected by the wall, and 420 residential structures would be raised. The total cost of the plan was estimated at $60 million with an annual cost of about $5.3 million (October 1986 price level; 8.625 percent interest rate). With annual benefits of $1.2 million, the plan was rejected with a benefit-to-cost ratio of 0.2.

(d) Removal of Existing Structures from the Floodplain

This alternative is extremely costly due to the large number of structures involved. Approximately 235 commercial structures and 420 residential structures are located within the 100-year floodplain. The value of these structures was estimated at $41 million (October 1986 price level). Furthermore, the area most severely impacted by flooding from Berryessa Creek consists of a large and cohesive community, which would resist relocation. This plan was determined to be economically infeasible and socially unacceptable.

(e) Protecting Movable, Damageable Property

Flood damage reduction is limited to property that can be moved or rearranged. When combined with a flood forecast, warning, and evacuation system, the rearrangement of movable, damageable contents within flood-prone structures provides a low-cost non-structural alternative. However, since there is not enough advance warning, properties would have to be relocated on a permanent basis. This alternative was determined as non-effective in reducing flood damages.

3.4.1.2 Channel Modification

(a) Rectangular Concrete Channel

This alternative proposed rectangular concrete-lined channels for the length of the project, except for the greenbelt, where a trapezoidal concrete-line channel was proposed. This plan was determined to be economically justified and carried forward for further analysis.

(b) Rectangular Concrete Channel with Articulated Concrete Matting

This alternative is similar to the plan described above, with the exception of the use of articulated concrete matting through the greenbelt area. This was eliminated from further consideration after it was determined that the design floodwater velocities exceeded those allowed by the matting.

(c) Earth Channel

This alternative proposed an earthen channel for the length of the project. Real estate constraints made this alternative physically infeasible and economically unjustified.

(d) Combination Channel

A combination of trapezoidal concrete and earthen channels was found to be economically unjustified due to the significant real estate requirements.

(e) Trapezoidal Concrete Channel Plan and Slope Protection

This alternative proposed offset levees utilizing the existing levees wherever possible along the length of the greenbelt as well as channel slope protection, in the form of riprap or gabions to stabilize the creek banks in a number of locations. This alternative was carried forward and analyzed along with the 1990 authorized project.

(f) Trapezoidal Concrete Channel Plan

This alternative proposed augmentation of existing levees as well. However, it does not have the slope protection component. This alternative was carried forward and analyzed along with the 1990 authorized project.

3.4.2 Authorized Project

This section describes the plan that was recommended in the 1987 Feasibility Report and subsequently became the authorized project. This plan was authorized for construction in the Water Resources Development Act of 1990.

Starting at the upstream project limit, approximately 600 feet upstream of Old Piedmont Road, the authorized plan would feature a 500-foot by 160-foot reinforced-concrete-walled sedimentation basin with earth bottom. This would transition to a box culvert under Old Piedmont Road. A trapezoidal reinforced-concrete-lined channel would lead out of the culvert and continue for about 800 feet to the existing 400-foot long box culvert under the intersection of Piedmont Road and Cropley Avenue. The bottom width would be 8 feet with side slopes of 1 vertical to 2 horizontal. The trapezoidal channel would be constructed with a single service road on the east side of the creek to save the riparian vegetation on the west bank.

An existing debris basin at the upstream portion of the greenbelt would be improved with concrete walls and enlarged to 144 feet by 80 feet. This basin would serve as a secondary sediment basin. A stilling basin is incorporated into the design of this sediment basin to reduce the stream flow velocity to a subcritical level. Throughout the remainder of the greenbelt (approximately 4,200 feet), the existing berms and levees would be augmented to bring them to the specified height for each section. On the south side of the creek, the levee top width would be 12 feet. On the north side of the creek, the top width could be as narrow as 6 feet. The inboard slope for all levees would be 2 feet horizontal to every 1 foot vertical. Within Berryessa Creek Park, the berms would be raised in accordance with the present landscape design.

From 600 feet upstream of Morrill Avenue, a short transition would lead into a trapezoidal concrete section flanked by a service road on either side of the creek. This would continue for a distance of approximately 1,550 feet downstream to Cropley Avenue. North of Cropley, an existing 1,800-foot trapezoidal concrete-lined channel, which continues to 100 feet upstream of I-680, would be utilized. At this point, another trapezoidal concrete channel would be constructed for a distance of 4,300 feet. Downstream of the railroad bridge and continuing for approximately 1,100 feet to the point where South Milpitas Boulevard veers west, a trapezoidal concrete channel would be built with no service roads due to the rigid right-of-way constraints. A 6,100-foot trapezoidal concrete channel, with a service road on each side of the creek, would continue from this point to the downstream project limit. From there, a rock transition would be constructed to the earthen trapezoidal channel immediately downstream of Calaveras Boulevard.

The purpose of the authorized plan was to provide flood control for flow events up to and including the design (100-year) flood event. The plan, as authorized, was designed using the freeboard design concepts in establishing the hydraulic design of project features. Risk and uncertainty concepts were not applied.

Table 3-1 presents the major design features of the authorized project. Figure 1-2 in Chapter 1 displays a schematic of the Project.

Table 3-1 Major Design Features of the Authorized Project				
Reach		**Location**	**Major Design Feature**	**Description**
1987 Feasibility Report	**GRR Study**			
1	9	From 600 feet upstream of Old Piedmont Road to Old Piedmont Road	Primary Sediment Basin	Sediment basin with concrete walls, earth bottom, and outside dimensions of 500 feet by 160 feet
2	8	From Old Piedmont Road to intersection of Cropley Avenue and Piedmont Road	Concrete-Lined Channel	Trapezoidal concrete channel with single service road on the east side of the creek, channel bottom width would be 8 feet with sideslopes of 2 feet horizontal by 1 foot vertical
3	7, 6	From intersection of Cropley Avenue and Piedmont Road to 1,000 feet upstream of Morrill Avenue (greenbelt area)	Stilling Basin (Secondary Sediment Basin in EIS)	Existing stilling basin improved with concrete walls and enlarged to 144 feet by 80 feet (outer dimensions)
			Levees	Raise levees; inboard slope of 2 feet horizontal by 1 foot vertical; outboard slope of 1.5 feet horizontal by 1 foot vertical; levee on south side of creek is a raised road and levee top width would be 12 feet; on north side of creek, where levee is a grassed berm, top width could be as narrow as 6 feet; all levees inboard slope of 2 feet horizontal by 1 foot vertical; outboard slope of 1.5 feet horizontal by 1 foot vertical
			Bank Protection	No structural bank protection
			Channel Stabilization	No structural channel stabilization
4	5	800 feet upstream of Morrill Avenue to Cropley Avenue	Secondary Sediment Basin	No sediment basin in EIS
			Concrete-Lined Channel	Trapezoidal concrete channel with service road on either side of the creek
5	5	Cropley Avenue to 100 feet upstream of I-680	Existing Trapezoidal Concrete-Lined Channel	No change
6	4, 3, 2, 1	100 feet upstream of I-		

Table 3-1 Major Design Features of the Authorized Project				
Reach		**Location**	**Major Design Feature**	**Description**
1987 Feasibility Report	**GRR Study**			
		680 to Calaveras Boulevard		
	4	100 feet upstream of I-680 and Montague Expressway	Concrete-Lined Channel	Trapezoidal concrete channel, where right-of-way permits, service roads to be provided on each side of the creek
	3	Montague Expressway downstream for 4,630 feet	Same	Same
	2, 1	4,630 feet downstream of Montague Expressway to Calaveras Boulevard	Same	Same

3.5 DESCRIPTION OF MANAGEMENT MEASURES

The plan formulation process proceeded with identification of potential management measures following review of (1) the without-project conditions in the affected environment, (2) problems and opportunities, and (3) the planning goals, objectives, and constraints that exist for this study and within the study area. Management measures are actions or stand-alone features that address a specific problem. There are numerous measures that can be utilized to solve problems or improve habitat depending upon site location, technical considerations, environmental conditions, and a host of other factors. Examples of typical measures developed in this study include the use of floodwalls, setback levees, and detention basins.

A wide variety of measures were initially identified early in the formulation process in order to address water and related land resource problems in the study area. These were considered and screened by the study team, and if appropriate, were subsequently carried forward into the formation of preliminary alternatives. The following section presents the list of management measures developed by the study team, their evaluation, and the measures screened as appropriate for combination into preliminary alternatives. They are grouped according to the categories of flood damage reduction, environmental protection/improvement, and recreation measures, as discussed in the following sections.

3.5.1 Flood Damage Reduction Measures

3.5.1.1 Non-structural Measures

- Relocation of existing structures (buy-out and removal)
- Floodproofing of existing structures
- Flood warning system
- Emergency response and preparedness

3.5.1.2 Structural Measures

- Detention/retention
- Set-back levees
- Rectangular concrete channel
- Trapezoidal concrete channel
- Trapezoidal earthen channel
- Bio-engineering methods
- Channel/bank stabilization
- Channel lining
- Raise/create levees
- Floodwall

- Bypass channel/pipe/box
- Raise, modify, replace bridge crossings
- Enlarge/modify channel culverts

3.5.2 Habitat Measures

- Plantings in channel
- Plantings on terraces
- Plantings on banks of channel
- Plantings on riparian fringe overbanks
- Wildlife corridor re-establishment
- Off-channel water storage for environmental purposes
- Low-flow modification for water supply to restored areas
- Channel widening and bank lay-back
- Aquatic habitat restoration
- Fish passage improvements
- Invasive species management
- Land acquisition
- Wetland construction
- Open water/marsh
- Non-native plant species eradication

3.5.3 Recreation and Public Access Measures

- Habitat buffer for recreational purposes
- Educational/cultural interpretive
- Parcourse
- Land acquisition for recreational purposes
- Recreation connectivity
- Park interface
- Trail interface
- Trail access
- Wildlife viewing

3.6 SCREENING OF MANAGEMENT MEASURES

3.6.1 Screening Criteria

Following identification of the management measures above, the Corps and SCVWD developed a set of criteria for the evaluation and screening of measures. Selection of practicable measures—and subsequently, alternatives—is based on assessments of (1) the effectiveness and/or applicability of a measure in meeting study objectives and constraints and (2) the measure's potential environmental, economic, and social effects. The following screening criteria were developed for group assessment of the management measures, and are refined from/consistent with the study objectives and constraints.

- Reduce flood damages
- Provide ecological functions/environmental values
- Provide natural physical stream functions and processes
- Avoid and minimize effects to riparian and aquatic habitat
- Minimize O&M especially due to sedimentation
- Integrate watershed processes
- Provide access and recreation to the public
- Cooperate with mutually beneficial goals of related plan, projects, and agencies
- Maximize community benefits beyond flood control
- Minimize life cycle costs
- Assumed community acceptability
- Property availability/rights-of-way
- Implementation cost

3.6.2 Rating of Management Measures

Following development of these screening criteria, the project delivery team evaluated the effectiveness of the various management measures thus far developed. Table 3-2 displays the results of the qualitative ratings developed for the measures, based on how effective they are in meeting the stated objectives (e.g. measures with a score of 3 as highly effective in meeting the objectives and a score of 0 as not effective in meeting the objectives) and how much they are affected by the constraints. For example, some of the assumptions in the exercise were that (1) 100-year flood control was desired; (2) a majority of a proposed alternative should be within existing rights-of-way or in rights-of-way that could be reasonably acquired; (3) maintenance access would be provided at least on one side with an 18-foot width; and (4) environmental protection/improvement features could provide a mitigation component to several different flood damage reduction alternatives.

3.6.3 Refinement of Measures by Reach

Refinement of measures took place to eliminate those that were (1) inappropriate for Federal participation or unsupported by non-Federal sponsorship, (2) had little to no potential for meeting study objectives, or (3) were less productive compared to other, more efficient elements. Measures eliminated from further study, therefore, included the following:

- Non-structural measures such as widespread buy-out within the floodplain and individual floodproofing – due to cost inefficiency. However, emergency response and preparedness information would in fact provide a viable component of any of the alternatives in order to help control ingress and egress, as well as provide assistance to those that are caught within flooded areas, and will therefore be carried forward.

- Plantings in channel bottom – due to increased channel capacity that would be required.

The effectiveness of the various management measures was then considered on a reach-by-reach basis in order to begin the process of identifying how the measures could be grouped into preliminary alternatives. The following list provides these refined measures that are developed into preliminary alternatives in the subsequent section.

3.6.3.1 Reach 9. Upstream of Old Piedmont Road

- Sediment source prevention/reduction by protective actions at the mine/quarry, hillside erosion areas, and bank erosion sites.

- Add seasonal aquatic habitat features, cascades, and pools.

3.6.3.2 Reach 8. Cropley Avenue Culvert to Old Piedmont Road

- Retrofit Old Piedmont Road Bridge by installing upstream levees and headwalls.

- Replacement of Old Piedmont Road Bridge.

- Concrete rectangular channel with service road remaining on the left bank.

- Widened trapezoidal channel with terrace for service road on left side. Geotech mats with grass to lined sideslopes and soft/earthen bottom.

- Clean out Cropley Avenue Culvert of sediment, maintain between events, add retaining/ headwall at upstream face for efficiency and safety.

- Add a second barrel to Cropley Avenue Culvert.

Table 3-2 Preliminary Management Measures, Planning Objectives, and Constraints

MEASURES AND PROJECT PURPOSE	OBJECTIVES									CONSTRAINTS	
	Flood control	**Ecological Functions**	**Physical Stream Functions and Processes**	**Minimize O&M**	**Watershed Integration**	**Agency Cooperation and Mutually Beneficial Goals**	**Maximize Community Benefits beyond Flood control**	**Minimize Life Cycle Costs**	**Assumed Community Acceptability**	**Minimize Loss of Property/ Rights-of-Way**	**Minimize Cost**
EXISTING AUTHORIZED PLAN	3	1	1	3	1	1	1	3	0	3	2
FLOOD DAMAGE REDUCTION MEASURES											
Relocation of existing structures (buy-out and removal)	3	2	1	2	2	2	1	1	1	1	1
Flood proofing of existing structures	3	1	1	2	2	2	1	1	1	2	1
Flood warning system	1	0	0	1	2	1	0	0	1	2	2
Emergency Response and Preparedness	1	0	0	0	0	2	3	1	3	1	1
Detention/retention	1	1	1	2 (u/s Piedmont offers sediment improvements)	2	1.5 (depends on whether impact existing habitat)	2	2	3	3	2
Levees	3	1 (higher if rest features added)	1.5 (depends on u/s or d/s and width)	2	1	2	1	2	2	2	2
Concrete channel	3	0	0	3	0	1 (still provides flood control)	1 (trail)	2	0	3	1
Trapezoidal earthen channel	3	1 (higher if rest features added)	1.5 (depends on u/s or d/s and width)	2	1	1	1	2	1	3	2
Floodwall	3	2	2	2	1.5	1.5	1	2	2	3	2
Bio-engineering methods	would be added as a subfeature in select locations, if appropriate										
Channel/bank stabilization	would be added as a subfeature in select locations, if appropriate										
Channel lining	would be added as a subfeature in select locations, if appropriate										
Grade control structures	would be added as a subfeature in select locations, if appropriate										
Bypass channel/pipe/box	3	1	1	1	1	2	1	1	1.5	1	0
Raise, modify, replace bridge crossings	would be added as a subfeature in select locations, if appropriate										
Enlarge/modify channel culverts	would be added as a subfeature in select locations, if appropriate										
HABITAT MEASURES											
Plantings in channel bottom	0	3	2	0	3	3	3	1	3	2 (may need additional r/w)	2
Plantings on terraces	0	3	1	0	3	3	3	1	3	2 (may need additional r/w)	2
Plantings on banks of channel	0	3	2	0	3	3	3	1	3	2 (may need additional r/w)	2
Plantings on riparian fringe overbanks	0	3	1	0	3	3	3	2	3	3	2
Wildlife corridor re-establishment and/or continuous corridor maintenance	0	3	2	1	3	3	3	1	3	2 (may need additional r/w)	2
Off-channel water storage for environmental values	0	2	1	1	2	3	3	1	3	1	1

Table 3-2 Preliminary Management Measures, Planning Objectives, and Constraints											
MEASURES AND PROJECT PURPOSE	**OBJECTIVES**									**CONSTRAINTS**	
	Flood control	**Ecological Functions**	**Physical Stream Functions and Processes**	**Minimize O&M**	**Watershed Integration**	**Agency Cooperation and Mutually Beneficial Goals**	**Maximize Community Benefits beyond Flood control**	**Minimize Life Cycle Costs**	**Assumed Community Acceptability**	**Minimize Loss of Property/ Rights-of-Way**	**Minimize Cost**
Low-flow modification for water supply to restored areas	0	2	2	1	3	3	3	1	3	3	2
Channel widening and bank lay-back	1	2	2	0	3	3	3	2	3	1	1
Aquatic habitat restoration	0	3	3	1	3	3	3	1	3	2	2
Fish passage improvements	0	3	3	1	3	3	3	1	3	3	2
Invasive species management	1	3	3	1	3	3	3	1	3	3	1
Land acquisition	0	3	2	1	3	3	3	1	3	1	1
Wetland construction	0	3	2	0	3	3	3	1	3	1	1

Effectiveness Legend: 3 = high; 2 = moderate; 1 = low; 0 = not effective / not applicable

3.6.3.3 Reach 7. Greenbelt Park to Cropley Avenue Culvert

- Clean out and maintain existing sediment basin immediately downstream of Cropley Avenue culvert.
- Enlarge sediment basin immediately downstream of Cropley Avenue culvert.
- Increase height of levees on one or both sides to pass design flows with reasonable certainty. Pave service roads.
- Replace riparian invasive species with native species, including grasses, trees, etc.
- Improve channel to more natural status including adding bank stability, cover, and creation of aquatic habitat.
- Develop seasonal wetland area in floodplain with stream connection. Excavated materials are used for increasing height of service roads.

3.6.3.4 Reach 6. Morrill Avenue to Greenbelt Park

- Replacement of pedestrian bridge at Messina Drive to maintain pedestrian access due to impacts from increased upstream channel conveyance.
- Replace existing drop structure upstream of Sierra Creek and replace with rock weirs for fish passage.
- Increase height of levees on one or both sides to pass design flows with reasonable certainty. Pave service roads.
- Replace riparian invasive species with native species, including grasses, trees, etc.
- Improve channel to more natural status including adding bank stability, cover, and aquatic habitat.
- Develop seasonal wetland area in floodplain with stream connection. Excavated materials are used for increasing height of service roads.

3.6.3.5 Reach 5. I-680 to Morrill Avenue

- Develop levees or similar means to funnel Cropley Avenue overflows directly back into Berryessa Creek to minimize damage to residential structures.
- Replace concrete channel segment with lined trapezoidal channel with grass-filled geotech mats and earthen bottom.
- Pave existing service roads.

3.6.3.6 Reach 4. Montague Expressway to I-680

- Implement enlarged trapezoidal channel within right-of-way using geotech mats, buried riprap toe downs, and earthen bottom. Sized to pass design flow with reasonable certainty. Side walls are grass with plantings along top of banks as space allows. Retain service road along right bank.

- Implement enlarged trapezoidal channel with channel wall, pilot channel and terrace along right bank within right-of-way. Sized to pass design flow with reasonable certainty. Service road along terrace and along top of right bank as space allows through reach. Channel is protected using geotech mats, buried riprap toe downs, and earthen bottom. Side walls are grass with plantings on terrace and along top of banks as space available.

- Implement enlarged trapezoidal channel with extended walls on sides to carry design flow within right-of-way. Sized to pass design flow with reasonable certainty. Channel is protected using geotech mats, buried riprap toe downs, and earthen bottom. Sloped side walls are grass with plantings placed along top of banks as space available. Service road along top of right bank.

- Using existing channel configuration, implement walls along both banks to pass design flow with reasonable certainty, all within right-of-way. Retain existing service roads.

- Pedestrian bridge crossing Berryessa Creek at apartments on left bank in vicinity of third 90-degree bend downstream of Highway 680. The bridge ties into the Milpitas Master Plan pedestrian/bike trail along the service road along Berryessa Creek right bank.

3.6.3.7 Reach 3. Piedmont Creek to Montague Expressway

- Implement enlarged trapezoidal channel within right-of-way using geotech mats, buried riprap toe downs, and earthen bottom. Sized to pass design flow with reasonable certainty. Side walls are grass with plantings along top of banks as space allows. Retain service road along right bank.

- Implement enlarged trapezoidal channel with channel wall, pilot channel and terrace along right bank within right-of-way. Sized to pass design flow with reasonable certainty. Service road along terrace and along top of right bank as space allows through reach. Channel is protected using geotech mats, buried riprap toe downs, and earthen bottom. Side walls are grass with plantings on terrace and along top of banks as space available.

- Implement enlarged trapezoidal channel with extended walls on sides to carry design flow within right-of-way. Sized to pass design flow with reasonable certainty. Channel is protected using geotech mats, buried riprap toe downs, and earthen bottom. Sloped side walls are grass with plantings placed along top of banks as space available. Service road along top of right bank.

- Using existing channel configuration, implement walls along both banks to pass design flow with reasonable certainty, all within right-of-way. Retain existing service roads.

- Using existing channel, implement levees (or wall if necessary on right bank) on both banks to carry design flow within right-of-way. Sized to pass design flow with reasonable certainty. Service roads along top of both banks.

- Implement enlarged channel with terraces along pilot channel with set-back levees along both top banks to carry design flow. Channel is lined with geotech mat with earth bottom. Assumes additional right-of-way as needed. Sized to pass design flow with reasonable certainty. Plantings on terraces with grass planting along sideslopes and levees. Service roads along top of both levees.

- Replace Railroad Bridge.

- Incorporate Milpitas Master Plan trail along Berryessa Creek right bank and would provide an additional beneficial point of access to the planned Milpitas BART station.

3.6.3.8 Reach 2. Los Coches Creek to Piedmont Creek

- Implement enlarged trapezoidal channel within right-of-way using geotech mats, buried riprap toe downs, and earthen bottom. Sized to pass design flow with reasonable certainty. Side walls are grass with plantings along top of banks as space allows. Retain service road along right bank.

- Implement enlarged trapezoidal channel with channel wall, pilot channel and terrace along right bank within right-of-way. Sized to pass design flow with reasonable certainty. Service road along terrace and along top of right bank as space allows through reach. Channel is protected using geotech mats, buried riprap toe downs, and earthen bottom. Side walls are grass with plantings on terrace and along top of banks as space available.

- Implement enlarged trapezoidal channel with extended walls on sides to carry design flow within right-of-way. Sized to pass design flow with reasonable certainty. Channel is protected using geotech mats, buried riprap toe downs, and earthen bottom. Sloped side walls are grass with plantings placed along top of banks as space available. Service road along top of right bank.

- Using existing channel configuration, implement walls along both banks to pass design flow with reasonable certainty, all within right-of-way. Retain existing service roads.

- Using existing channel, implement levees (or wall if necessary on right bank) on both banks to carry design flow within right-of-way. Sized to pass design flow with reasonable certainty. Service roads along top of both banks.

- Implement enlarged channel with terraces along pilot channel with set-back levees along both top banks to carry design flow. Channel is lined with geotech mat with earth bottom. Assumes additional right-of-way as needed. Sized to pass design flow with reasonable certainty. Plantings on terraces with grass planting along sideslopes and levees. Service roads along top of both levees.

- Incorporate Milpitas Master Plan trail and along Berryessa Creek right bank.

3.6.3.9 Reach 1. Calaveras Boulevard to Los Coches Creek

- Implement enlarged trapezoidal channel within right-of-way using geotech mats, buried riprap toe downs, and earthen bottom. Sized to pass design flow with reasonable certainty. Side walls are grass with plantings along top of banks as space allows. Retain service road along right bank.

- Implement enlarged trapezoidal channel with channel wall, pilot channel and terrace along right bank within right-of-way. Sized to pass design flow with reasonable certainty. Service road along terrace and along top of right bank as space allows through reach. Channel is protected using geotech mats, buried riprap toe downs, and earthen bottom. Side walls are grass with plantings on terrace and along top of banks as space available.

- Implement enlarged trapezoidal channel with extended walls on sides to carry design flow within right-of-way. Sized to pass design flow with reasonable certainty. Channel is protected using geotech mats, buried riprap toe downs, and earthen bottom. Sloped side walls are grass with plantings placed along top of banks as space available. Service road along top of right bank.

- Using existing channel configuration, implement walls along both banks to pass design flow with reasonable certainty, all within right-of-way. Retain existing service roads.

- Using existing channel, implement levees (or wall if necessary on right bank) on both banks to carry design flow within right-of-way. Sized to pass design flow with reasonable certainty. Service roads along top of both banks.

- Implement enlarged channel with terraces along pilot channel with set-back levees along both top banks to carry design flow. Channel is lined with geotech mat with earth bottom. Assumes additional right-of-way as needed. Sized to pass design flow with reasonable certainty. Plantings on terraces with grass planting along sideslopes and levees. Service roads along top of both levees.

- Increase Calaveras Bridge capacity to pass design flow with reasonable certainty by implementing upstream levees and heighten headwall.

- Increase Calaveras Bridge capacity to pass design flow with reasonable certainty by installing additional barrel/capacity through bridge.

- Incorporate Milpitas Master Plan trail and along Berryessa Creek right bank.

3.7 DESCRIPTION OF ALTERNATIVE PLANS*

The list of management measures above demonstrates a large number of components that could be applied to meet the objectives and constraints and address the problems and opportunities in the study area. Note that the measures are either mutually exclusive—as with either a trapezoidal earthen channel or a rectangular channel—or they are additive as potential components of certain overall channel modifications, as with enlarged culverts, recreation trails, or wetland areas. Thus, the *combination* of measures as the means by which to achieve the study objectives became the objective of the next phase of the plan formulation effort.

Three preliminary alternative plans were formulated from the screened management measures previously discussed. These alternatives were developed to encompass the broadest range of potential alternatives that could be formulated to address flood damage reduction opportunities in Berryessa Creek. Where justified and feasible, these alternatives were formulated to provide an opportunity for environmentally-sustainable design and future recreation consistent with the flood reduction purpose of the project. Each of these preliminary alternative plans is configured to address the planning goals and objectives defined by the study. Furthermore, each is formulated to provide a reasonable chance of containing the 0.01 exceedance probability event should it occur. A discussion of the preliminary alternative plans follows. Note that the key features presented in Section 3.7.1 were initially used in the development of preliminary alternative plans and were further refined in the development of the final array of alternatives.

3.7.1 Preliminary Alternative Plans

3.7.1.1 Alternative 1 – No Action Alternative

A "No-Action Alternative" is required pursuant to NEPA. Herein called the No-Action Alternative, and synonymous with the "without-project condition" described in Chapter 2, this alternative considers the future conditions in the study area in the absence of a federally cost-shared and locally supported project. Future conditions include:

- Commercial and industrial development especially in Milpitas per their Master Plan
- Continuance and likely increase of the existing flood threat to Milpitas and San Jose
- Continued loss of riparian habitat areas and native species in the floodplain and stream
- Greater O&M cost especially due to sediment deposition and bank erosion, flood fighting, and emergency costs

3.7.1.2 Alternative 2 – Earthen Trapezoidal Channel (Old Piedmont Road to Calaveras)

This plan provides flood damage reduction benefits along Berryessa Creek by incorporating channel and other improvements designed to convey the 0.01 exceedance probability event within banks and undeveloped floodplain areas. It includes a variety of measures and actions from upstream of Old Piedmont Road to just below Calaveras Boulevard where it transitions into the SCVWD channel and levee system presently under design. The plan includes features for environmental mitigation in the greenbelt area by improving riparian habitat. Downstream of I-680, the channel is designed with a trapezoidal shape with side-slopes protected by geotextile mats and native grasses. It has an earthen channel bottom. The alternative potentially reduces sediment transport entering the system from above Old Piedmont Road, thus assuring better project performance and reduced O&M costs. The existing service road alignments are retained but with the road surfaces hardened and adjacent areas re-vegetated. The design is consistent with the pedestrian and bike trail proposed in Milpitas Community Master Plan for Berryessa Creek (City of Milpitas 1999).

This alternative would protect and improve environmental and aesthetic features in the study area to provide an environmentally-acceptable alternative. The existing medium quality habitat above Old Piedmont Road and in the greenbelt would be protected to the maximum extent practicable. Any adverse effects of the project, such as tree removal, would be mitigated by re-vegetation in the floodplain and riparian zone of the greenbelt, which would further help prevent bank erosion. The channel downstream of the greenbelt would also be modified with aesthetic features such as vegetative screening as well as shading for the stream channel.

Figure 3-1 and Figure 3-2 depict a schematic of the key features and typical cross sections of the plan, respectively.

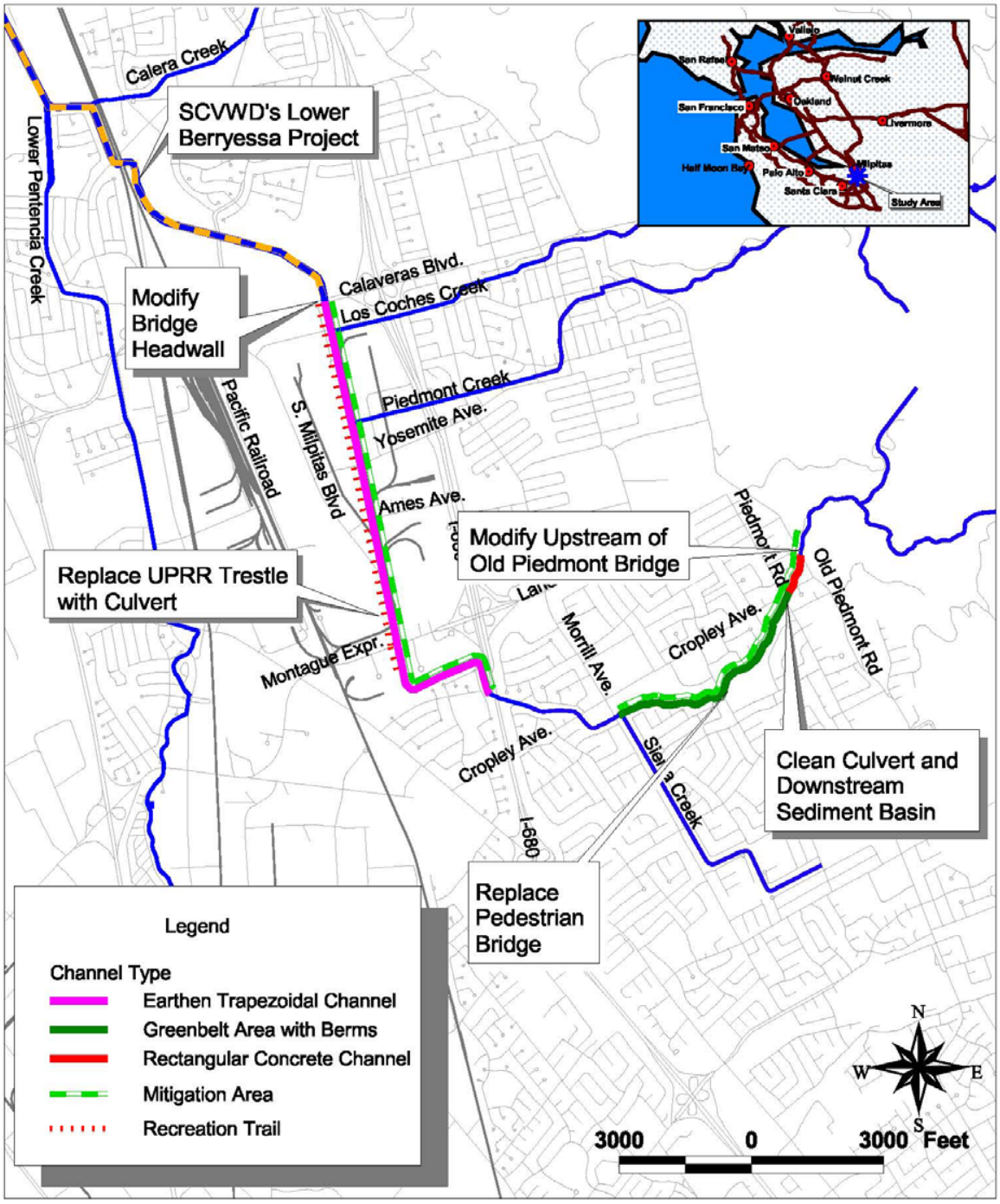


Figure 3-1 Alternative 2 – Earthen-Trapezoidal Channel with Mitigation (Old Piedmont Road to Calaveras Boulevard)

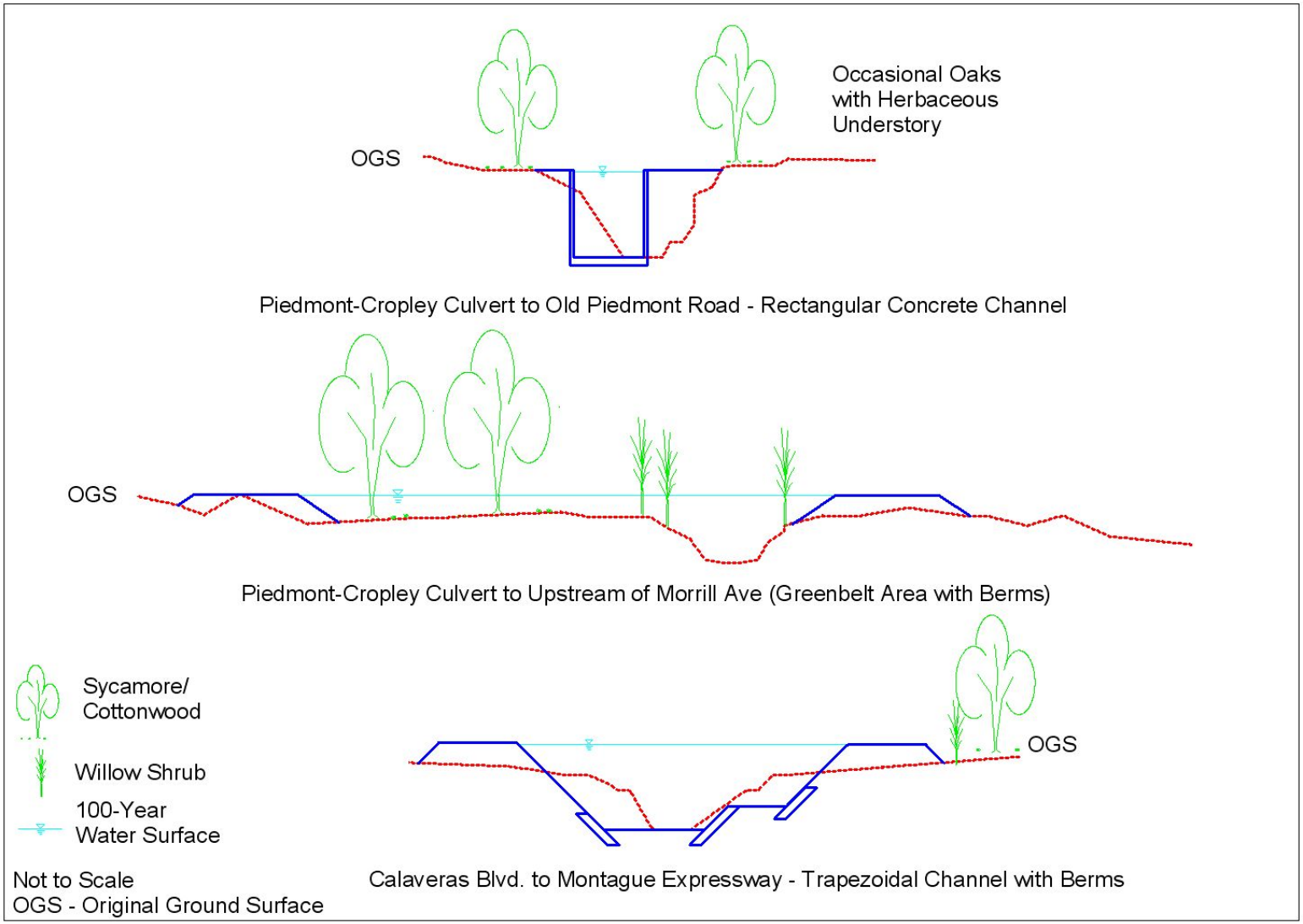


Figure 3-2 Alternative 2 – Typical Cross Sections

3.7.1.3 Alternative 3 – Earthen Terraced and Leveed Channel (Old Piedmont Road to Calaveras)

Similar to the first alternative, this plan provides flood damage reduction benefits along Berryessa Creek by incorporating channel and other improvements designed to convey the 0.01 exceedance probability event within banks and undeveloped floodplain areas. It also includes a variety of measures and actions from upstream of Old Piedmont Road to just below Calaveras Boulevard, where it transitions into the SCVWD channel and levee system presently under design. The plan adds another culvert at the Cropley Avenue and Piedmont Road intersection. The plan includes the same features for environmental mitigation in the Greenbelt area as the first alternative. Downstream of I-680, the channel is designed with an earthen bottom pilot channel, planted terraces along each side, and set-back levees on the top banks. The alternative requires additional ROW through these reaches. The channel is lined with geotextile mats and native grasses. The alternative potentially reduces sediment transport entering the system from above Old Piedmont Road, resulting in better project performance and reduced O&M costs. The existing service road alignments are retained, but with the road surfaces hardened and adjacent areas revegetated. The design is consistent with the Pedestrian and Bike Trail proposed in the Milpitas Community Master Plan.

This alternative would protect and enhance environmental and aesthetic features in the study area to provide an environmentally-acceptable alternative. The existing high quality habitat above Old Piedmont Road and in the greenbelt would be protected to the maximum extent practicable. Any adverse effects of the project, such as tree removal, would be mitigated by re-vegetation in the floodplain and riparian zone of the greenbelt, which would further help prevent bank erosion. The channel downstream of the greenbelt would also be modified with aesthetic features such as vegetative screening as well as shading for the stream channel.

Figure 3-3 and Figure 3-4 depict a schematic of the key features and typical cross sections of the plan, respectively.

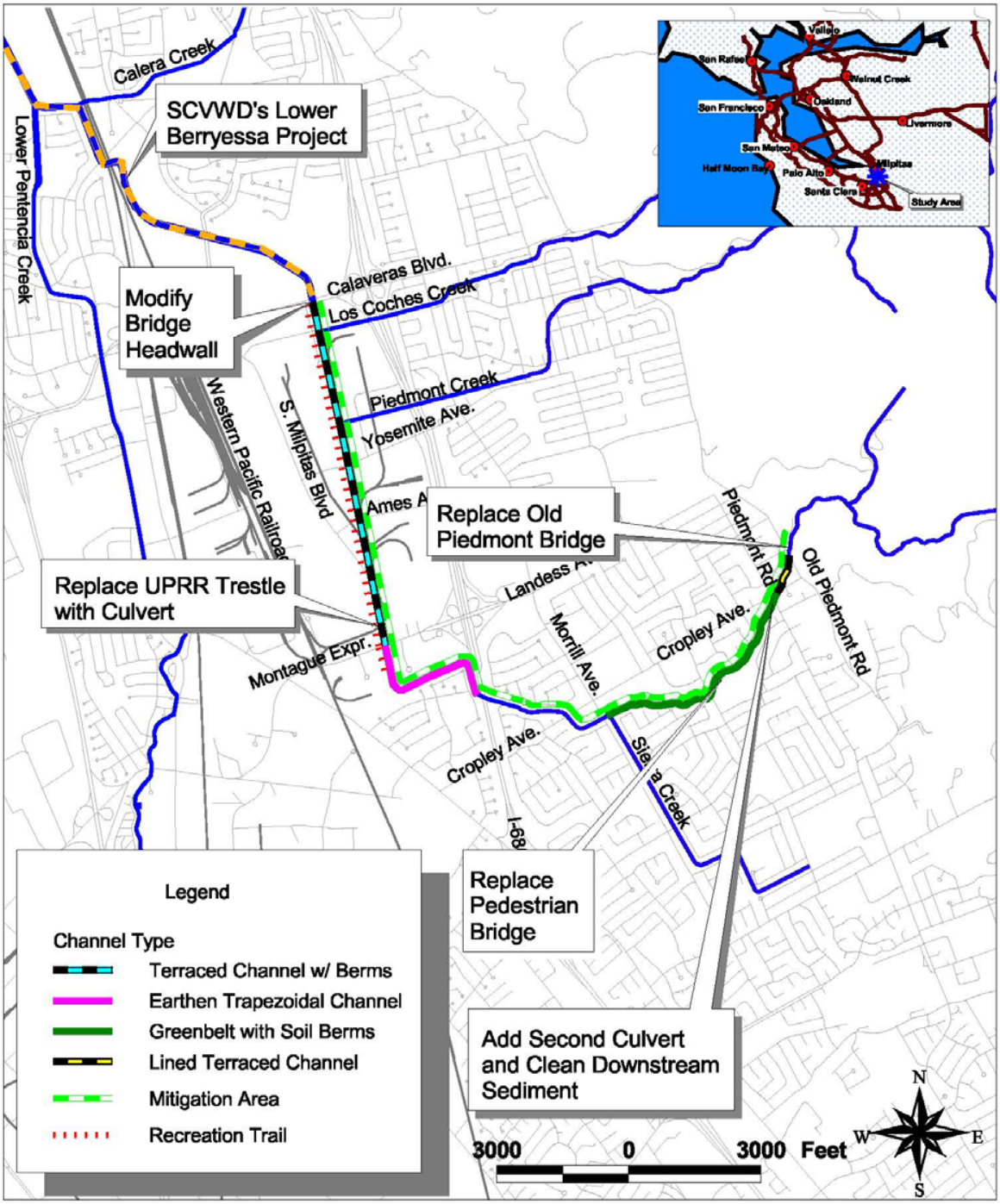


Figure 3-3 Alternative 3 – Earthen-Terraced and Leveed Channel with Mitigation (Old Piedmont Road to Calaveras Boulevard)

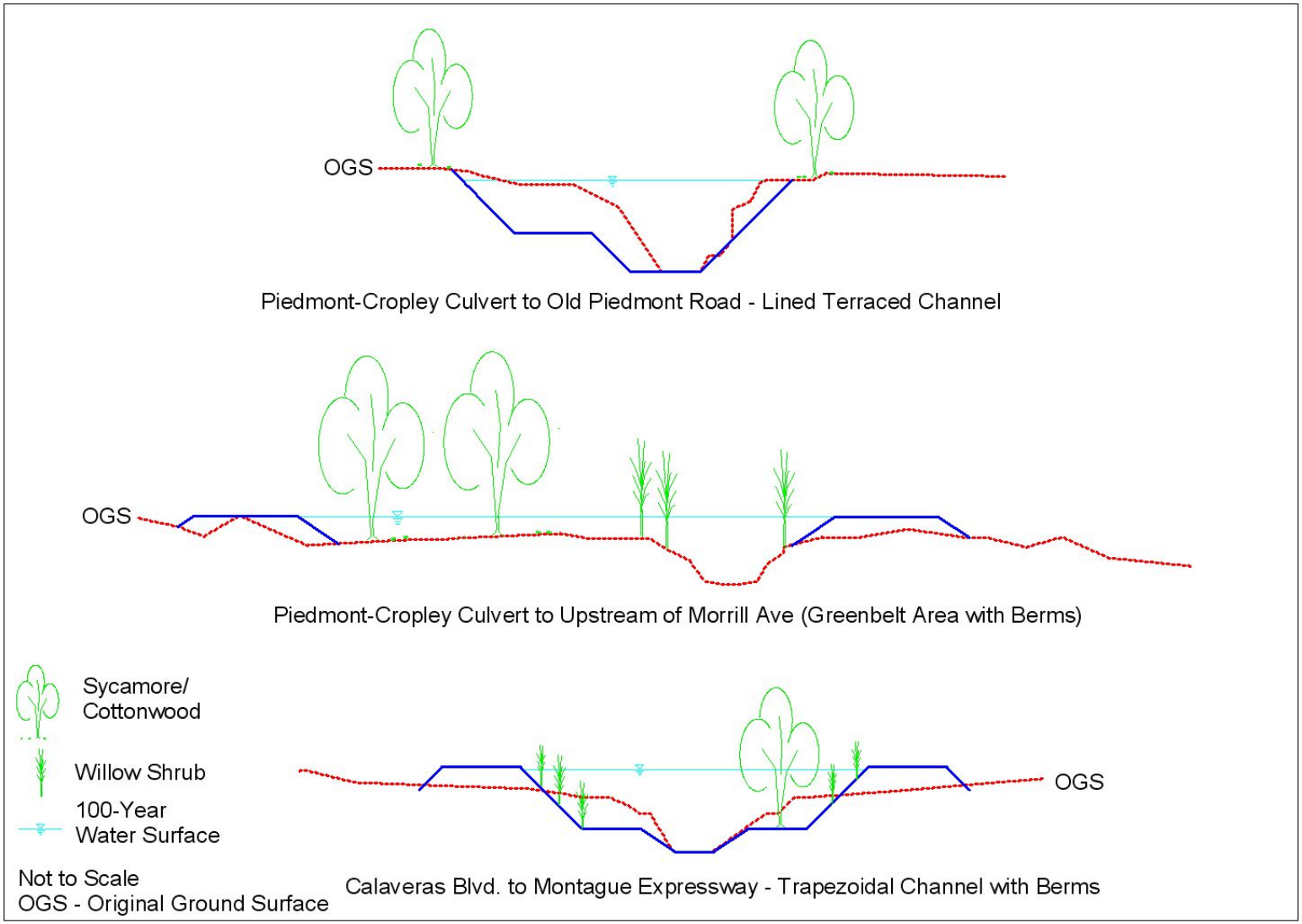


Figure 3-4 Alternative 3 – Typical Cross Sections

3.7.1.4 Alternative 4 – Earthen and Walled Terraced Channel (Highway 680 to Calaveras)

Unlike the other two alternatives presented, this alternative would provide flood control only from downstream of I-680 to Calaveras Boulevard. It would provide flood damage reduction benefits along Berryessa Creek by incorporating channel and other improvements designed to convey the 0.01 exceedance probability event within banks. It would transition into the SCVWD channel and levee system presently under design immediately below Calaveras Boulevard. The channel is designed with planted terraces and side walls to add capacity and bank protection within existing ROW. The channel is also protected with geotextile mats planted with native grasses. It will have an earthen channel bottom. The existing service road alignments would be retained but with the road surfaces hardened and with adjacent areas revegetated with riparian forest vegetation. The design is consistent with the Pedestrian and Bike Trail proposed in Milpitas Master Plan for Berryessa Creek.

This alternative would protect and enhance environmental and aesthetic features in the study area to provide an environmentally-acceptable alternative. The existing high quality habitat above Old Piedmont Road and in the greenbelt would be protected to the maximum extent practicable. Any adverse effects of the project, such as tree removal, would be mitigated by re-vegetation in the floodplain and riparian zone of the greenbelt, which would further help prevent bank erosion. The channel downstream of the greenbelt would also be modified with aesthetic features such as vegetative screening as well as shading for the stream channel.

Figure 3-5 and Figure 3-6 depict a schematic of the key features and typical cross sections of the plan, respectively.

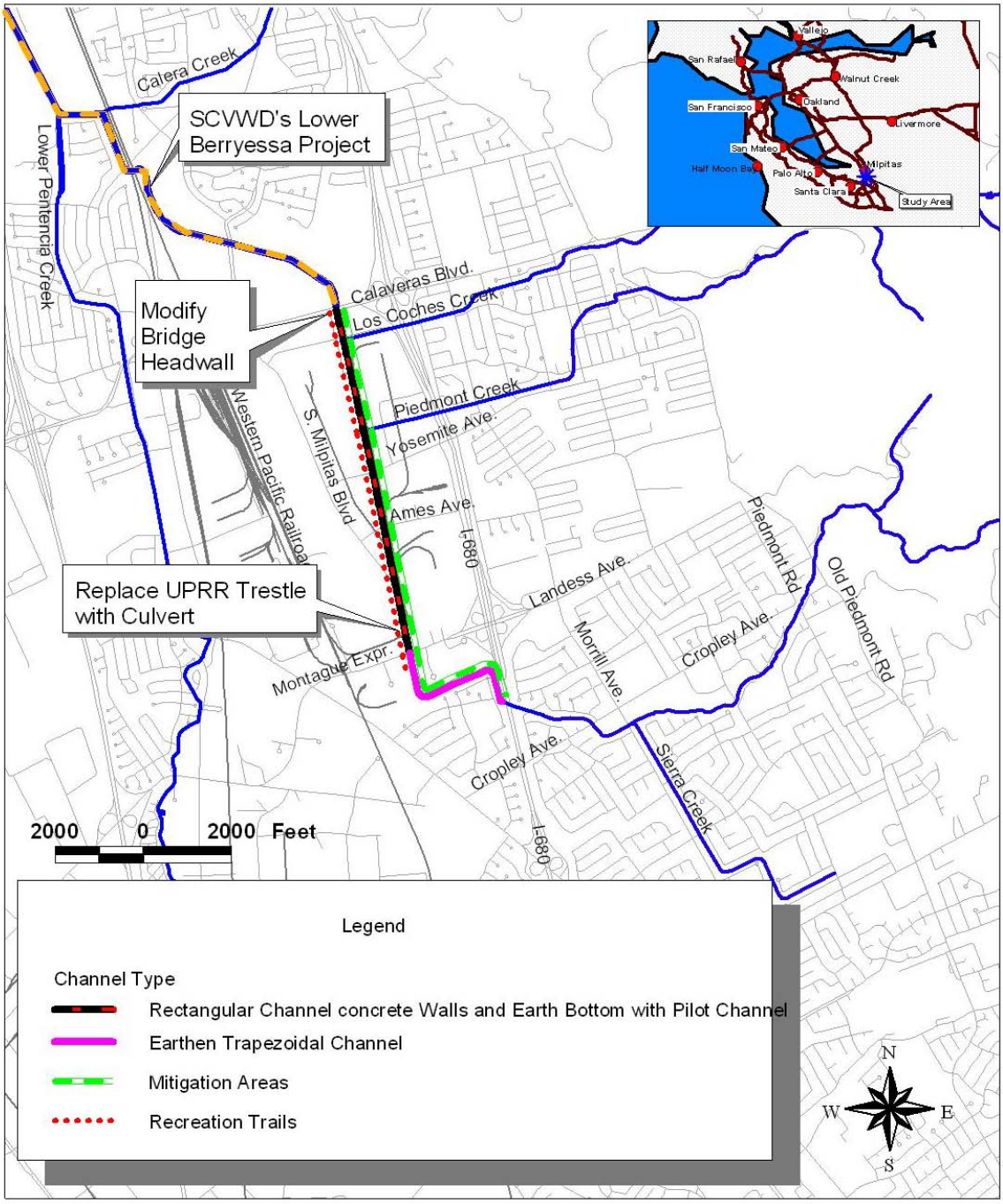


Figure 3-5 Alternative 4 – Earthen and Walled Terraced Channel (Highway 680 to Calaveras Boulevard)

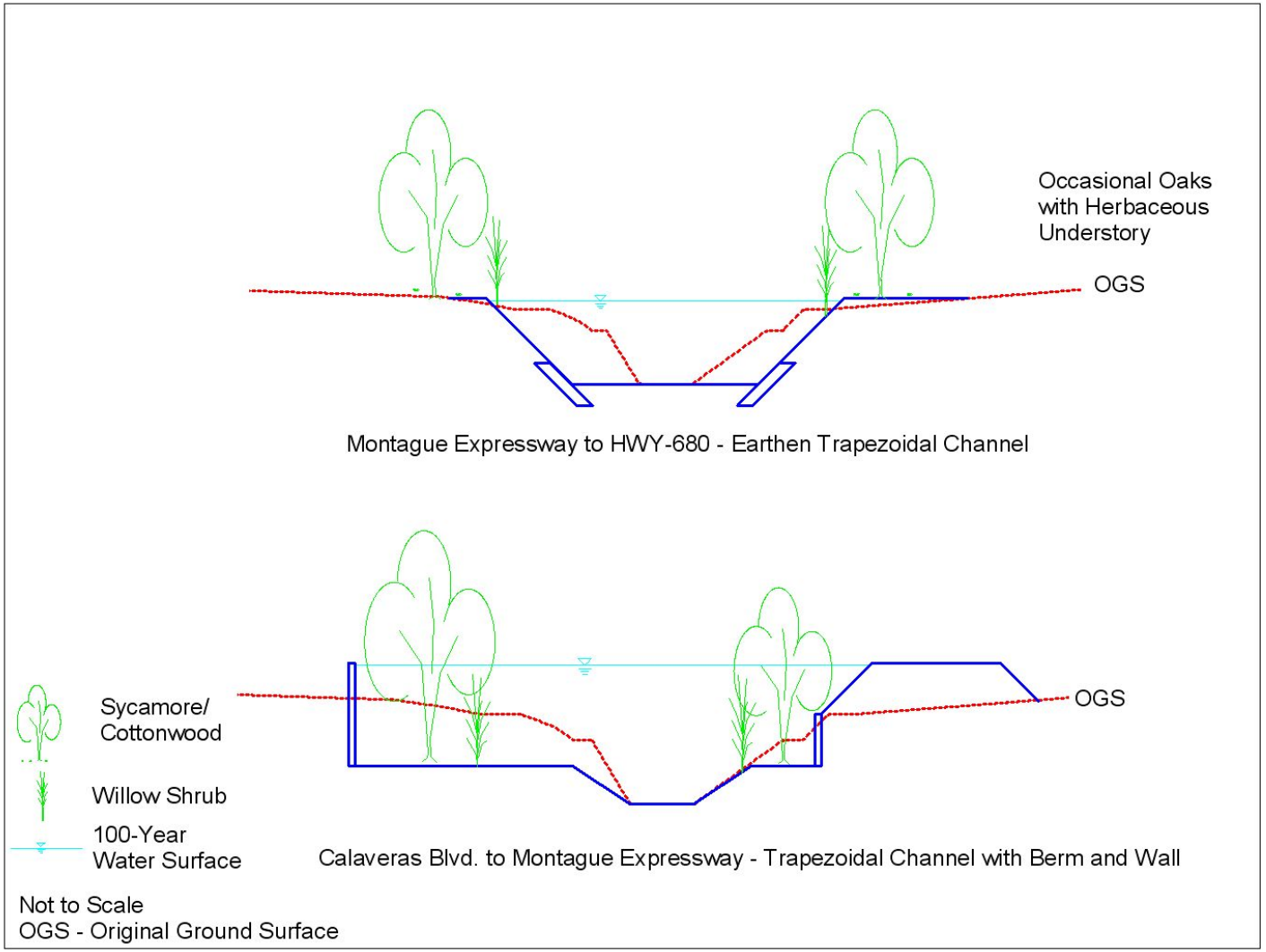


Figure 3-6 Alternative 4 – Typical Cross Sections

3.7.1.5 Non-Structural Alternatives

Based on the preliminary screening, it was determined that the previously identified non-structural measures were either economically infeasible or ineffective. It was determined that the relocations of existing structures from the floodplain as well as floodproofing of structures are extremely costly due to the large number of structures involved, thereby eliminating both measures from further consideration. It was also determined that a flood warning system would be a low-cost alternative. However, this plan was determined to be infeasible because of insufficient advance time for warning and evacuation since the study area is immediately below the foothills in the upper part of the watershed. There is no time lag from when a storm hits to the flows rising rapidly in the system, which is mainly due to the surrounding hardscaped area and barren channel. Limited area is available for ground infiltration such that as soon as the storm hits, runoff flows to the creek. Additional investigation resulted in an alternate non-structural measure that could be further pursued for implementation. This measure is the preparation of an emergency response plan that would provide for the dispatch of emergency services, and a framework within which local agencies would operate during a flood event. This does not alleviate or solve the issue of flood inundation; it simply seeks to provide for public safety and spot treatment of problem areas. Although a fairly efficient use of funds, emergency response does not reduce damages in the affected floodplain. An emergency response plan is not a complete solution to the flooding problems in the study area; however, this can be combined and incorporated into the Recommended Plan.

Certain components of an emergency response plan are already being implemented at the county and city level. Currently, the cities, county, and the SCVWD utilize the Emergency Broadcast System (EBS) and other forms of public information such as radio and television to transmit emergency and warning transmissions for the area. Also, a local emergency/information phone number (408.265.2600) has been established to answer the public's questions or receive important flood information from residents. The SCVWD's Emergency Operations Center (EOC) is located on the main campus at 5750 Almaden Expressway, San Jose, California. The EOC is responsible for carrying out the emergency response program. They also utilize a website to show where flooding is occurring.

3.7.2 Screening of Preliminary Alternative Plans

The screening process tests the performance of alternatives using criteria that identify whether an alternative is reasonable, i.e., an alternative that is technically and economically feasible and that meets the project's purpose and need.

In order to provide the level of detail necessary to compare the four preliminary alternative plans, additional engineering, design, cost estimating, and incremental analysis, were conducted.

3.7.2.1 Incremental Analysis of Flood Risk Reduction Component

An incremental analysis was conducted in 2006 to identify the economic justification of flood risk management components. Benefits were calculated on an incremental basis. The first was to determine the feasibility of separable geographic areas: upstream of I-680 consisting of areas A,

B, C, and D, and downstream of I-680 consisting of areas E and F. The second was to determine optimal project sizing.

The objectives of the incremental analysis were to determine if there is a Federal interest to construct a continuous project providing flood risk management to all impact areas, and determine the optimal size of project for such areas. For this analysis, benefits were evaluated for basic trapezoidal earthen channel improvements with varying capacity to reflect different sizing. Additional improvements such as levees and bridge improvements were included in some reaches or creek sections of the channel when needed to allow for full target conveyance.

It should be noted that the 2006 incremental analysis did not consider the effect of the Corps "800 cfs rule," which limits Corps participation in flood risk management on streams that do not meet minimum flow requirements. Because of the 800 cfs rule, the benefits in Areas A, B, and C were later excluded from the identification of the NED Plan. Additional information is presented in Section 3.7.4.3.

The analysis was based on the following methodology.

1) Identify locations of channel breakouts as discharge is incrementally increased

2) Identify floodplain associated with breakouts

3) Identify costs of structural improvements to preclude the breakouts

4) Identify flood damage reduction benefits from precluding the breakouts

5) Determine benefit-to-cost ratio and net benefits for each increment

Preliminary iterations ranged from the non-damaging event through the 95 percent conditional non-exceedance probability (CNP) for the 0.01 event (generally equal to the 50 percent CNP of the 0.002 event). It was determined that frequencies associated with increasingly larger discharges could generally be associated with the following frequency categories.[3]

- Project designed to pass flows (without uncertainty) equivalent to a minimum of 0.03
- Project designed to pass flows (without uncertainty) equivalent to a minimum of 0.02
- Project designed to pass flows (without uncertainty) equivalent to a minimum of 0.01
- Additional components to the 0.01 project design to meet project performance criteria of 90 percent CNP of the 0.01 event

[3] The probabilities (0.03, 0.02, and 0.01) refer to project performance and indicate the chance that the event is exceeded in any one year. Therefore, the previous nomenclature of the "100-year flood" is more properly defined as the flood having a 1 percent or **0.01 chance** of being exceeded in any one year. Similarly, the 0.03 flow was previously called the "33-year" flow, the 0.02 flow was previously called the "50-year" flow, and the 0.002 flow was called the "500-year" flow.

- Additional components to the 0.01 project design to meet project performance criteria of 95 percent CNP of the 0.01 event

Ten project increments (five events for each of the two separable areas) were run in HEC-FDA. The residual damages and benefits are presented in Table 3-3. Annual benefits shown in the table represent the difference between the without- and with-project equivalent annual damages for each increment. The incremental benefits show the difference between benefits from one increment to the next larger increment. The greatest incremental benefits occur with the first increment – the more frequent 0.03 exceedance probability – and again with the 0.01 exceedance probability event. The channel improvements would not only eliminate damages from the more frequent events but would also reduce the magnitude of damage for the larger residual events. Additional incremental analysis was determined to not be necessary to move forward with the formulation of the subsequent array of alternative plans. Hence, the damages and benefits shown in the following tables are in 2005 prices to reflect the results when the previous analysis was completed.

Table 3-3 Annual Benefits by Increment
$1,000s, October 2005 Prices, 5.375% Interest Rate, 50-Year Period of Analysis

Increment	Equivalent Annual Damage		Annual Benefits	Incremental Benefits
	Without-Project	With-Project		
Upstream of I-680 – Damage Areas A, B, C, and D				
Without-Project	581	581	0	0
Pass 0.03 exceedance probability	581	326	255	255
Pass 0.02 exceedance probability	581	280	301	46
Pass 0.01 exceedance probability	581	65	516	215
Meet 90% CNP	581	14	567	51
Meet 95% CNP	581	10	571	4
Downstream of I-680 – Damage Areas E and F				
Without-Project	9,863	9,863	0	0
Pass 0.03 exceedance probability	9,863	5,643	4,220	4,220
Pass 0.02 exceedance probability	9,863	3,981	5,882	1,662
Pass 0.01 exceedance probability	9,863	530	9,333	3,451
Meet 90% CNP	9,863	160	9,703	370
Meet 95% CNP	9,863	60	9,803	100

(a) Annual Costs

Project costs were developed for both the downstream and upstream of I-680 reaches. In addition, costs were estimated for different components and capacity sizing which provide different project performance for each incremental alternative. These components were identified to be able to pass specific frequencies of flow and are labeled as such in Table 3-4 and

Table 3-5. For the downstream reach, costs for each increment were based on the design of an incised channel (preliminary Alternative 2). It was decided that the relationship of benefits and costs for each capacity size analyzed for preliminary Alternative 2 would be representative of preliminary Alternatives 3 and 4, as well.

For the benefit cost analysis, these project costs need to be described in terms of annual costs. The project costs were amortized over the 50-year period of analysis using the current federal discount rate of $5^{3}/_{8}$ percent. Interest during construction was based on a two-year construction schedule assuming uniform expenditure over the period. Annual cost estimates are shown in Table 3-4 for the five increments upstream and in Table 3-5 for the five increments downstream.

Table 3-4 Annual Costs – Upstream Project Incremental Alternatives
$1,000s, October 2005 Prices, 5.375% Interest Rate, 50-Year Period of Analysis

	Incremental Alternatives –Upstream of I-680 Areas (A, B, C, and D)				
	Pass 0.050 Exceedance Probability Event	**Pass 0.030 Exceedance Probability Event**	**Pass 0.020 Exceedance Probability Event**	**Pass 0.010 Exceedance Probability Event**	**Pass 0.002 Exceedance Probability Event**
Construction Costs[1]	418	533	762	3,263	4,221
Contingency	126	160	228	979	1,266
Planning, Engineering and Design	63	80	114	490	633
Construction Management	33	43	61	261	338
LERRD	11	7	5	8	694
First Costs	**651**	**823**	**1170**	**5,001**	**7,152**
Interest During Construction	93	117	167	715	1,023
Investment Costs	744	940	1,338	5,716	8,175
Interest & Amortization	43	54	77	331	474
OMRRR	72	72	72	73	74
Annual Costs	115	126	149	404	548

[1]Includes environmental mitigation costs

Table 3-5 Annual Costs – Downstream Project Incremental Alternatives $1,000s, October 2005 Prices, 5.375% Interest Rate, 50-Year Period of Analysis					
	Incremental Alternatives –Downstream of I-680 Areas (E and F)				
	Pass 0.050 Exceedance Probability Event	Pass 0.030 Exceedance Probability Event	Pass 0.020 Exceedance Probability Event	Pass 0.010 Exceedance Probability Event	Pass 0.002 Exceedance Probability Event
Construction Costs[1]	356	1,073	2,166	9,667	16,524
Contingency	107	322	649	2,900	4,957
Planning, Engineering and Design	54	161	325	1,450	2,479
Construction Management	29	86	173	773	1,322
LERRD	9	13	15	25	2,715
First Costs	**555**	**1,655**	**3,328**	**14,815**	**27,997**
Interest During Construction	79	236	476	2,118	4,003
Investment Costs	634	1,891	3,804	16,933	32,000
Interest & Amortization	37	109	221	982	1,856
OMRRR	36	40	43	49	56
Annual Costs	73	149	264	1,031	1,912
[1]Includes environmental mitigation costs					

(b) Benefits

Savings in Flood Insurance Administration Costs

In addition to flood damages reduced, there is potential benefit from savings in the administration costs for the National Flood Insurance Program (NFIP). Any alternative that removes the FEMA requirement can claim this benefit by reducing the number of policies required. Economic Guidance Memorandum 05-07 lists the current operating cost per policy at $163. Based on the most recent FEMA data, Milpitas has 2,493 policies in force, and based on the total estimated number of structures inundated from various sources to include Berryessa and Penitencia Creeks within Milpitas, the participation rate for the area in the NFIP would be around 40 percent. Based on this participation rate, potential benefits from savings in NFIP administration costs may be around $160,000 for any alternative that would remove the existing structures in the Berryessa Creek Element from the 100-year FEMA floodplain. Based on Corps criteria, the only alternative that would completely remove the need for some flood insurance meets the 95 percent CNP of the 0.01 exceedance probability event. This alternative would add an additional $35,000 for upstream of I-680 and $125,000 for downstream of I-680. Including the future residential units in midtown, which would no longer be required to carry flood insurance with the project, and amortizing the future savings over the period of analysis, could add another $60,000 in benefits. For smaller projects, savings in flood insurance administration costs were limited by the residual flooding and were determined proportionally to the number of structures removed from the corresponding project floodplain.

Advance Bridge Replacement Benefits

For any alternative that requires major reconstruction or replacement of any bridge crossing and extends the useful life of that bridge, advance bridge replacement benefits can be claimed. For example, if bridge "A" has to be replaced in 10 years and the project extends its life by 50 years, part of the replacement cost can be taken as a benefit because the replacement extends its transportation purpose in addition to providing flood damage reduction. Calculation of replacement benefit is a function of interest rate, projected replacement bridge life, remaining bridge life, and cost of replacement. In total, four bridges need to be replaced upstream to be able to pass the 0.01 exceedance probability event. Downstream replacements, five in total, vary by frequency in terms of being able to pass a given flow; all need to be replaced to pass the 0.005 exceedance probability event.

Table 3-6 Advance Bridge Replacement Benefits
$1,000s, October 2005 Prices, 5.375%, 50-Year Period of Analysis

Upstream of I-680						
Increment	**Old Piedmont Road**	**Piedmont Road and Cropley Avenue**	**Morrill Avenue**	**Cropley Avenue**		**Total Benefits**
0.030	0	0	0	0		0
0.020	0	0	0	0		0
0.010	**18.0**	**36.4**	**20.9**	**16.8**		**92.1**
0.005	18.0	36.4	20.9	16.8		92.1
0.002	18.0	36.4	20.9	16.8		92.1
Downstream of I-680						
Increment	**Montague Expressway**	**UPRR Trestle**	**UPRR Culvert**	**Los Coches Street**	**Calaveras Boulevard**	**Total Benefits**
0.030	0	0	0	0	0	0
0.020	0	37.2	0	0	0	37.2
0.010	**64.1**	**37.2**	**0**	**0**	**0**	**101.3**
0.005	64.1	37.2	22.4	34.7	88.2	246.6
0.002	64.1	37.2	22.4	34.7	88.2	246.6

Additional Flood Related Risks

In addition to the monetary losses to categories listed above, flooding from Berryessa Creek could have other damage impacts and place many public services at risk , and if reduced would provide additional non-monetary benefit. Emergency costs (about 1 percent of total damages) evaluated in this study were limited to evacuation, relocation, and temporary assistance based on examples of similar flood risks found on other flood damage studies in Northern California. Administrative costs and increased public services such as police and fire were not included in these emergency cost estimates primarily due to lack of available data regarding any comparable historical flooding within the Bay Area. Nationwide, where depth of flooding and duration of event were much greater, some studies have estimated total emergency costs (including temporary relocation, evacuation, public administration, additional emergency healthcare and

increased labor) as high as 15 percent of the total without-project damages. While the emergency costs listed for Berryessa do not capture the total potential loss, these non-quantified losses are an incrementally-small portion of the overall losses and would not change the feasibility or formulation of any of the alternatives.

Potential traffic delays and temporary interruption in public services were also not quantified. I-680 runs through the study area but would not be closed from flooding along Berryessa Creek. However, flooding from Berryessa Creek could cut off access by non-motorized and other traffic to the proposed BART station, which would impair access to a key intermodal transportation center. Minor roads within the floodplain may be closed for short durations due to flooding, but alternate routes would not add significant time loss or additional resource consumption to the NED account.

The area could suffer from significant business losses which could be included as Regional Economic Development (RED) damages in the analysis. Because most of these income losses could not be included in the NED analysis, and therefore would not change the determination of the NED plan, RED benefits were not explicitly quantified as part of this study.

Other non-monetary risks could also occur from a flood event but are not included in the NED evaluation. General reductions in risks to health, safety, and public welfare are typically associated with flood conditions and are further reasons why flood control serves the Federal interest and the public good. Within the Berryessa Creek floodplain there are several elementary schools, two fire stations, a hospital, several medical clinics, police station and Milpitas City Hall that could lose vital public services due to flooding of at least one-foot above the first floor.

(c) Net Benefits

Based on preliminary analysis, there are several alternatives with positive net benefits indicating that flood damage reduction for Berryessa Creek can be justified and is in the Federal interest. Increments of various project size and location were analyzed to determine costs and benefits for alternatives listed in Table 3-7 and Table 3-8.

Table 3-7 Annual Benefits and Costs by Incremental Alternative (Upstream of I-680) $1,000s, October 2005 Prices, 5.375%, 50-Year Period of Analysis					
	Benefits and Costs by Incremental Alternative				
	Exceedance Probability*				
	0.050	**0.030**	**0.020**	**0.010**	**0.002**
Upstream of I-680 (Areas A, B, C, and D)					
First Cost	651	823	1,170	5,001	7,152
Annual Benefits Flood Damage Reduction	182	255	301	516	571
Savings in NFIP Administration Costs	0	0	0	22	32
Advanced Bridge Replacement	0	0	0	92	92
Total Annual Benefits	182	255	301	630	695
Annual Costs	115	126	149	404	548
Net Benefits	**67**	**129**	**152**	**226**	**147**
B/C Ratio	*1.6*	*2.0*	*2.0*	*1.6*	*1.3*
*Designed to convey the median discharge associated with the corresponding exceedance probability event.					

Table 3-8 Annual Benefits and Costs by Incremental Alternative (Downstream of I-680) $1,000s, October 2005 Prices, 5.375%, 50-Year Period of Analysis					
	Benefits and Costs by Incremental Alternative				
	Exceedance Probability*				
	0.050	**0.030**	**0.020**	**0.010**	**0.002**
Downstream of I-680 (Areas E, F)					
First Cost	555	1,655	3,328	14,815	27,997
Annual Benefits Flood Damage Reduction	3,293	4,220	5,882	9,333	9,803
Savings in NFIP Administration Costs	0	0	16	168	208
Advanced Bridge Replacement	0	0	37	101	247
Total Annual Benefits	3,293	4,220	5,935	9,602	10,258
Annual Costs	73	149	264	1,031	1,912
Net Benefits	**3,220**	**4,071**	**5,671**	**8,571**	**8,346**
B/C Ratio	*45.1*	*28.3*	*22.5*	*9.3*	*5.4*
*Designed to convey the median discharge associated with the corresponding exceedance probability event.					

Based on reasonable maximization of net benefits, the maximum upstream net benefits are $226,000 for the 0.01 exceedance probability increment. As shown in Table 3-7, the costs increase for the 0.01 exceedance probability design compared to the 0.02 exceedance probability design almost fourfold. This is due to the full replacement of the structures and adjacent channel sections at four bridge/culvert crossings in the 0.01 design upstream of I-680 compared to the lower-cost modifications to headwalls and adjacent channel sections in those same locations for the 0.02 design. Importantly, no increment exists between the two levels of discharge to optimize structural modifications. The Old Piedmont Road Bridge and Piedmont-Cropley culvert are the "first" locations where overtopping occurs in the upstream of I-680 reach. Once these crossings are replaced, increased conveyance would be necessary downstream to maintain channel capacity. The costs associated with the bridge/culvert modifications for each project increment (upstream of I-680) are presented in Table 3-9. As shown, the construction cost,

associated with the bridge/culvert modifications upstream of I-680, from the 0.02 exceedance probability design to 0.01 exceedance probability design increases almost five times. Based on reasonable maximization of net benefits, the incremental alternative that conveys the median discharge associated with the 0.01 exceedance probability event reasonably maximizes upstream net benefits at $226,000.

Table 3-9 Incremental Costs – Bridge/Culvert Modifications
$1,000s, October 2005 Prices

	0.050	0.030	0.020	0.010	0.002
	Incremental Alternatives – Upstream of I-680				
Bridge/Culvert Construction Cost	146.3	191.9	358.1	2,610.4	3,419.0
	Incremental Alternatives – Downstream of I-680				
Bridge/Culvert Construction Cost	14.2	278.9	996.4	2,706.8	8,592.5

As shown in Table 3-8, the costs increase for the 0.01 exceedance probability design downstream of I-680 compared to the 0.02 exceedance probability design almost fourfold. This is due to the full replacement of the structures and adjacent channel sections at two bridge/culvert crossings in the 0.01 exceedance probability design downstream of I-680 compared to the lower-cost modifications to headwalls and adjacent channel sections in those same locations for the 0.02 exceedance probability design. As previously mentioned, the Old Piedmont Road Bridge and Piedmont-Cropley culvert are the "first" locations where overtopping occurs in the upstream of I-680 reach. Once these crossings are replaced, increased conveyance would be necessary downstream to maintain channel capacity. Also shown is the increase of cost from the 0.01 exceedance probability design to the 0.002 exceedance probability design. This is due to the full replacements of all five bridge/culvert crossings in the 0.002 design compared to the two bridge/culvert crossing replaced in the 0.01 design. The costs associated with the bridge/culvert modifications for each project increment (downstream of I-680) are presented in Table 3-9. As shown, the construction cost, associated with the bridge/culvert modifications downstream of I-680, from the 0.02 exceedance probability design to the 0.01 exceedance probability design increases almost three times, and again increases from the 0.01 exceedance probability design to the 0.002 exceedance probability design almost three times.

The downstream net benefits, shown in Table 3-8, optimize at $8.57 million and are similar for the 0.01 and 0.002 exceedance probability increments, with costs approximately doubling for the 0.002 design frequency. Thus, the incremental alternative that conveys the median discharge associated with the 0.01 exceedance probability event reasonably maximizes downstream net benefits.

Based on these results, the preliminary NED plan (that reasonably maximizes net benefits) would include an upstream and downstream increment that conveys the median discharge associated with the 0.01 exceedance probability event.

3.7.3 Second Array of Alternative Plans

In order to provide the level of detail necessary to compare the resulting array of alternative plans, more detailed engineering, design, cost estimating, and analysis of potential project impacts were developed for each remaining alternative. The resulting information was utilized to make plan formulation decisions regarding the potential removal of alternatives from further consideration, or their progression into a final array of alternatives subject to further refinement and analysis.

Once the preliminary flood risk management optimization project conveyance size was determined based on flood damage reduction costs and benefits, a second array of alternative plans was developed and evaluated. Two levels of performance were evaluated for each alternative:

- Moderate performance based on previous economic optimization, providing 50 percent non-exceedance for the 0.01 exceedance probability event for the entire project reach – designated as Group A (i.e., Alternatives 2A, 3A, and 4A)

- NFIP-certifiable performance provided 90 percent non-exceedance for the 0.01 exceedance probability event for the entire project reach – designated as Group B (i.e., Alternative 2B, 3B, and 4B)

The second array of alternative plans is presented in Table 3-10.

Table 3-10 Second Array of Alternative Plans

Alternative	Description
1	No Action
2A	Incised Trapezoidal Channel – Moderate Performance
2B	Incised Trapezoidal Channel – NFIP-Certification Performance
3A	Terraced Trapezoidal Channel – Moderate Performance
3B	Terraced Trapezoidal Channel – NFIP-Certification Performance
4A	Walled Trapezoidal Channel – Moderate Performance
4B	Walled Trapezoidal Channel – NFIP-Certification Performance

The scenario for the Group A level of containment would include channel modification in addition to modification and/or complete replacement at bridge and culvert crossings. The modification or retrofitting work include shoring and transition structures (Cropley Avenue Culvert, Ames Avenue Bridge, and Yosemite Drive Bridge); headwall extensions with transition structure (Old Piedmont Road Bridge, Piedmont-Cropley Culvert, Morrill Avenue Culvert, UPRR Culvert, Los Coches Street Bridge, and Calaveras Boulevard Bridge); and bridge replacement (Old Piedmont Road Bridge, Piedmont-Cropley Culvert, Morrill Avenue, Cropley Avenue, UPRR Trestle and Montague Expressway Culvert). Modifications within channel reaches will include channel widening, bank stabilization, and levee/floodwall construction.

The scenario for the Group B level of containment would involve complete replacement of all bridges and culverts with the exception of the I-680 crossing and Ames Avenue and Yosemite

Drive crossings, which would require shoring/stabilization of existing abutments and construction of transition structures. Modifications within channel reaches will include excavation and construction of levees/floodwalls.

All project features upstream of I-680 (including both channel work and bridge and culvert modifications) are similar among the alternative plans. Likewise, structural modification and replacement scenarios downstream of I-680 are similar among the alternative plans; the alternatives differ only in the configuration of the channel reaches between the structures.

3.7.3.1 Alternative 1: No Action

The No Action Alternative is carried forward and analyzed to provide a basis from which to assess the advantages and disadvantages of the other study alternatives. This alternative assumes the likely future conditions in the study area without implementation of any of the action alternatives. Under this alternative, the authorized project would not be completed, objectives for flood control would not be met, and an unacceptable public health and safety hazard – flooding in the cities of Milpitas and San Jose – would continue to occur. As previously discussed, likely future conditions include:

- Commercial and industrial development especially in Milpitas per their Master Plan
- Continuance and likely increase of the existing flood threat to the cities of Milpitas and San Jose
- Continued loss of riparian habitat areas and native species in the floodplain and stream
- Greater O&M cost especially due to sediment deposition and bank erosion, flood fighting, and emergency costs

3.7.3.2 Alternative 2A: Incised Trapezoidal Channel – Moderate Performance

Alternative 2A provides flood damage reduction benefits along Berryessa Creek by incorporating channel and other improvements designed to convey the median discharge associated with the 0.01 exceedance probability event for the entire project reach. This alternative would provide flood control utilizing channel excavation and bridge modifications to increase conveyance in the project footprint that could be constructed within the existing right-of-way. Levees are extended, as needed, to maintain consistent capacity throughout the project. Alternative 2A would involve modification and/or replacement of bridge and culvert crossings and modification of channel reaches downstream of I-680 with an earthen trapezoidal shape.

3.7.3.3 Alternative 2B: Incised Trapezoidal Channel – NFIP-Certification Performance

Alternative 2B provides flood damage reduction benefits along Berryessa Creek by incorporating channel and other improvements designed to convey the median discharge associated with the 0.002 exceedance probability event for the entire project reach. Similar to Alternative 2A, this alternative would provide flood control utilizing channel excavation and bridge modifications to increase conveyance in the project footprint that could be constructed within the existing right-

of-way. Levees are extended, as needed, to maintain consistent capacity throughout the project. Alternative 2B would involve modification of structures and channel reaches downstream of I-680 with an earthen trapezoidal shape.

3.7.3.4 Alternative 3A: Terraced Trapezoidal Channel – Moderate Performance

Alternative 3A would provide a more environmentally-sensitive project with a smaller inner channel with a capacity on the order of a 2-year event or less. This alternative would allow for the construction of benches above the main channel that act as a floodplain. These benches may be vegetated. Due to the reduced main channel size, Alternative 3A would require higher levees than Alternative 2A in order to confine the same design flow. The project footprint encroaches on adjacent parcels, and additional right-of-way acquisition would be required for Alternative 3A. Project features upstream of I-680 are as described in Alternative 2A. The structural modifications downstream of I-680 are also similar with those described in Alternative 2A.

3.7.3.5 Alternative 3B: Terraced Trapezoidal Channel – NFIP-Certification Performance

Alternative 3B provides flood damage reduction benefits along Berryessa Creek by incorporating channel and other improvements designed to convey the median discharge associated with the 0.002 exceedance probability event for the entire project reach. Similar to Alternative 3A, Alternative 3B would provide a more environmentally-sensitive project with a smaller inner channel with a capacity on the order of a 2-year event or less. Alternative 3B would allow for the construction of benches above the main channel that act as a floodplain. Due to the reduced main channel size, Alternative 3B would require higher levees than Alternative 2B in order to confine the same design flow.

3.7.3.6 Alternative 4A: Walled Trapezoidal Channel – Moderate Performance

Alternative 4A takes the concepts from Alternative 3A (vegetated floodplain benches); however, instead of utilizing levees to confine the flows, concrete floodwalls would be extended vertically from the outer edges of the floodplain bench. This would allow Alternative 4A to be constructed within the existing right-of-way. In some locations, the right-of-way restrictions require adaptation of the typical section to accommodate the access road within the available right-of-way. In areas with limited right-of-way (e.g. in the vicinity of Montague Expressway), the access road would need to be located on the channel side of the floodwall to allow for additional conveyance area. Transition ramps would be needed in areas where the access road location changes.

3.7.3.7 Alternative 4B: Walled Trapezoidal Channel – NFIP-Certification Performance

Alternative 4B takes the concepts from Alternative 3B (vegetated floodplain benches); however, instead of utilizing levees to confine the flows, concrete floodwalls would be extended vertically from the outer edges of the floodplain bench. This would allow Alternative 4B to be constructed within the existing rights-of-way. Because Alternative 4B involves replacement of bridge and culvert crossings, which would create backwater conditions in the 0.01 flow profile (Alternative

4A), with open-span structures that would pass the discharge, the 0.002 water surface elevations are lower than those of 0.01 in much of the channel reach.

3.7.4 Screening of Second Array of Alternative Plans

Based on (1) results of the 2006 Alternative Formulation Briefing (AFB), (2) additional coordination with resource agencies and local stakeholders, and (3) revised Corps guidance and technical refinements, the second array of alternative plans was revised and further developed. Additional considerations and refinements include the following:

- Retention of the authorized project (hereinafter designated as Alternative 5) as an alternative was identified as a requirement at the AFB. In order to be policy-compliant, the authorized project must be included in the array of alternative plans and compared at the same level of analysis. The benefits and costs for the authorized project were updated using the same design as in the 1987 Feasibility Report. The authorized project is described in Section 1.2.3 and Section 3.4.2 of this GRR.

- Review and evaluation of the geomorphic design refinements presented by the SCVWD in July 2006. The proposed design includes step pools, invert modifications, bridge/culvert modifications, and floodplain terrace excavation, all upstream of I-680.

- Evaluation of a vegetated access road option for the northwest side of the creek at the Park Row condominiums in the Greenbelt reach upstream of I-680.

- Review and evaluation of alternative sediment basin configuration along Berryessa Creek upstream of I-680.

- Use of updated peak discharge values for the Piedmont Creek and Los Coches Creek tributaries.

- Adjustment of the downstream starting boundary condition based on the updated future conditions modeling of the adjacent downstream project (SCVWD's Lower Berryessa Creek Project).

- Incorporation of supplemental (greenbelt topography) survey into the baseline model.

- Utilization of risk and uncertainty principles in the development and refinement of the "B" alternatives. The goal of these alternatives is to ensure that the resulting designs were certifiable for the FEMA National Flood Insurance Program. This was accomplished using the criteria developed by EC 1110-2-6067, Certifications of Levee Systems for the National Flood Insurance Program, dated 30 September 2008.

- Adoption Draft ETL 1110-2-571 as interim guidance for vegetation-free zones along levees and floodwalls.

3.7.4.1 Refined Second Array of Alternative Plans

The results from the more detailed engineering analysis indicated that Alternatives 3A and 4A would provide the same flood control benefits at higher costs in comparison with Alternative 2A. Alternatives 3A and 4A are not potential NED plans and are not preferred by the SCVWD since they would not provide NFIP-certifiable performance. Since Alternatives 3A and 4A would not meet the Federal objective of maximizing net economic benefits, or the SCVWD objective of NFIP certification, neither are required to be considered in detail under NEPA since they do not meet the purpose and need for the project. Furthermore, neither Alternative 3A nor 4A provides any substantial environmental advantages compared to Alternative 2A. Therefore, Alternatives 3A and 4A were not carried forward for further consideration. Accordingly, Alternative 3B and 4B were redesignated as 3 and 4, respectively. The refined second array of alternative plans carried forward and analyzed is presented in Table 3-11.

Table 3-11 Refined Second Array of Alternative Plans

Alternative	Description
1	No Action
2A	Incised Trapezoidal Channel – Moderate Performance
2B	Incised Trapezoidal Channel – NFIP-Certification Performance
3	Terraced Trapezoidal Channel – NFIP-Certification Performance
4	Walled Trapezoidal Channel – NFIP-Certification Performance
5	Authorized Project

3.7.4.2 Project Costs

Project costs were refined for Alternatives 2A, 2B, 3, and 4, while project costs for Alternative 5 (authorized project) were updated to the 2008 price levels. Cost estimates are shown in Table 3-12.

Table 3-12 Annual Costs
October 2008 Prices, 4.625% Interest Rate, 50-Year Period of Analysis

	2A	2B	3	4	5
Upstream of I-680					
Construction	6,834,300	8,823,700	8,823,700	8,823,700	7,154,800
Contingency (30%)	2,050,300	2,647,100	2,647,100	2,647,100	2,146,400
PED (15%)	1,025,100	1,323,500	1,323,500	1,323,500	1,073,200
Construction Mgmt	546,700	705,900	705,900	705,900	572,400
LERRD	23,017,000	23,128,800	23,136,100	23,136,100	29,964,000
Total First Costs	**33,473,400**	**36,629,000**	**36,636,300**	**36,639,000**	**37,910,800**
Annualized First Costs	1,728,400	1,891,300	1,891,700	1,891,800	1,957,500
IDC (annualized)	206,800	226,300	226,400	226,400	234,200
OMRRR	93,800	95,400	95,300	95,100	93,800
Annual Costs	*2,029,000*	*2,213,000*	*2,213,400*	*2,213,300*	*2,285,500*
Downstream of I-680					
Construction	14,090,100	28,043,200	28,930,900	38,486,600	17,257,400

Table 3-12 Annual Costs October 2008 Prices, 4.625% Interest Rate, 50-Year Period of Analysis					
	2A	**2B**	**3**	**4**	**5**
Contingency (30%)	4,227,000	8,413,000	8,679,300	11,546,000	5,177,200
PED (15%)	2,113,500	4,206,500	4,339,600	5,773,000	2,588,600
Construction Mgmt	1,127,200	2,243,500	2,314,500	3,078,900	1,380,600
LERRD	45,209,600	53,015,700	109,282,800	42,957,700	41,091,200
Total First Costs	**66,767,400**	**95,921,900**	**153,547,100**	**101,842,200**	**67,495,000**
Annualized First Costs	3,447,500	4,952,900	7,928,400	5,258,600	3,485,100
IDC (annualized)	412,600	592,700	948,800	629,300	417,000
OMRRR	60,100	67,600	78,100	80,100	60,100
Annual Costs	*3,920,200*	*5,613,200*	*8,955,300*	*5,968,000*	*3,962,200*

3.7.4.3 Incremental Analysis of Net Benefits

Under Title 33 Code of Federal Regulations (CFR) Part 238 and ER 1165-2-21, water damage problems associated with a natural stream or modified natural waterway may be addressed under the flood risk management authorities downstream from the point where the flood discharge is greater than 800 cfs for the 0.10 exceedance probability flood events under conditions expected to prevail during the period of analysis.

This Federal Regulation, known as the "800 cfs rule," limits Corps involvement in flood risk management on small streams in urban areas. One effect of the rule is that economic benefits that occur upstream of the point where a 0.10 exceedance probability flood even discharge ("10-year peak flow") first exceeds 800 cfs cannot be used in identifying the NED Plan. In areas of hydrologic disparity, a 0.01 exceedance probability discharge of 1,800 cfs may be used as the minimum flow criterion, if an exception is granted. The NED Plan may extend upstream of the point where the minimum flow criterion is met if economically justified by benefits within the downstream reach, or if necessary to terminate proposed improvements in a safe and economical manner.

Based on the hydraulic analysis, the 10-percent flood event discharge along Berryessa Creek does not exceed 800 cfs until the confluence of Sierra Creek at Morrill Avenue (790 and 830 cfs for existing and future conditions, respectively). Further, Sierra Creek is also the most upstream hydrologic analysis node location where the 0.01 exceedance probability flood event discharge of 1,800 cfs is exceeded (2,100 and 2,140 cfs for existing and future conditions, respectively). Therefore, economic benefits upstream of the I-680 are limited to the reach below the Sierra Creek confluence, which corresponds to economic impact area D (Morrill Avenue to the I-680), within which the minimum flow criteria specified by 33 CFR 238 and ER 1165-2-21 are exceeded.

An incremental analysis was then conducted on the reaches upstream and downstream of I-680. Consideration of economic benefits for the reach upstream of I-680 was limited to those below

the Sierra Creek confluence (economic impact area D), within which the minimum flow criteria are exceeded. Table 3-13 shows the resulting net benefits.

Table 3-13 Net Benefits
October 2008 Prices, 4.625% Interest Rate, 50-Year Period of Analysis

Upstream of I-680					
	2A	**2B**	**3**	**4**	**5**
Annual Costs	2,029,000	2,213,000	2,213,400	2,213,300	2,285,500
Annual Benefits	262,600	334,900	334,900	334,900	334,900
Net Annual Benefits	**-1,766,400**	**-1,878,100**	**-1,878,500**	**-1,878,400**	**-1,950,600**
B/C Ratio	0.13	0.15	0.15	0.15	0.15
Downstream of I-680					
	2A/d	**2B/d**	**3/d**	**4/d**	**5**
Annual Costs	3,920,200	5,613,200	8,955,300	5,968,000	3,962,200
Annual Benefits	9,873,900	10,893,700	10,660,500	10,622,200	8,357,900
Net Annual Benefits	**5,953,700**	**5,226,500**	**1,705,200**	**4,654,200**	**4,395,700**
B/C Ratio	2.52	1.93	1.19	1.78	2.11

As shown above, the analysis indicated that no flood risk management alternative upstream of I-680 is economically justified. By comparison, all the alternatives downstream of I-680 were determined to be economically justified. The portions downstream of I-680 were designated as Alternatives 2A/d, 2B/d, 3/d, and 4d. Alternative 5 will remain and include both reaches upstream and downstream of I-680, as authorized.

3.7.5 Final Array of Alternative Plans

As shown in Table 3-13, Alternative 2A/d provides the greatest net benefits and a benefit-to-cost ratio of 2.52. Among the NFIP-certifiable alternatives, Alternatives 4/d and 2B/d provide the highest net benefits at $4.65 and $5.23 million, respectively, with benefit-to-cost ratios of 1.78 and 1.93 respectively. Alternative 3/d provides the lowest net benefit and benefit-to-cost ratio of the NFIP-certifiable alternative plans by a large margin. In addition, Alternative 3/d also has the highest implementation cost.

As part of the incremental analysis, each of the alternative plans downstream of I-680, as well as Alternative 5, was analyzed to determine the potential environmental effects that could result if the alternatives were implemented. The results indicated that the potential effects for Alternative 2B/d, 3/d, and 4/d would be similar except that Alternative 3/d and 4/d would include horizontal terraces suitable for planting trees or other vegetation. Alternative 3/d would produce approximately 6.7 acres for tree or shrub planting, while Alternative 4/d would produce approximately 8.1 acres. Alternative 3/d would provide more grassland acreage than Alternative 4/d. However, grassland is not a regionally significant resource that would justify the reduction in tree-plantable acreage and additional cost of Alternative 3/d.

It should be noted that the inverse relationship of project costs and tree-plantable acreages between Alternatives 3/d and 4/d is expected to remain as design refinements continue. Alternative 3/d will continue to require more land acquisition than Alternative 4/d, so the estimated cost for Alternative 3/d is expected to remain higher. With the lack of significant economic or environmental advantage relative to Alternative 4/d, Alternative 3/d was therefore eliminated from consideration for further analysis. As a result, the alternative plans carried forward as the final array are shown in Table 3-14. The project features comprising the final array of alternatives are summarized in the following sections. Figure 3-20 at the end of Section 3.7.5 shows a diagram summarizing the development and screening of individual alternatives from the preliminary alternative plans to the final array of alternative plans.

Table 3-14 Final Array of Alternative Plans

Alternative	Description
1	No Action
2A/d	Incised Trapezoidal Channel (Moderate Protection)
2B/d	Incised Trapezoidal Channel (FEMA-Certification Protection)
4/d	Walled Trapezoidal Channel (FEMA-Certification Protection)
5	Authorized Project

3.7.5.1 Vegetation Management Requirements

Design of Alternatives 2A/d, 2B/d, and 4/d adopted the vegetation management guidelines set forth in ETL 1110-2-571. Since the Corps and SCVWD would not have the ability to influence future planting or vegetation growth along the adjacent parcels located outside the project easements or rights-of-way, measures must be adopted in the design to avoid the potential for root intrusion that could potentially undermine the flood control works.

The proposed designs generally utilize the entire available channel easement, and in some areas the required 15-foot vegetation-free (obstruction-free) zone outside of the proposed levee toes or floodwalls would require acquisition of additional rights-of-way. The first method analyzed for a variance from the guidance was use of a root barrier along the project boundary. The second method sought to avoid a variance through construction of a floodwall in lieu of a levee, or the purchase of additional, permanent right-of-way that would be kept vegetation free throughout the project life (Tetra Tech 2011).

Preliminary costs were developed for both methods. Tree removal costs only account for trees outside the proposed permanent right-of-way; existing vegetation within the proposed right-of-way is assumed to be removed under either method. It was determined that the cost increase for constructing a floodwall in lieu of an earthen levee exceeds the cost of obtaining a temporary easement, removing the affected trees, and compensating the owner for the loss in value. Likewise, the cost of obtaining additional permanent right-of-way in the first method exceeds the cost of installing a root barrier, even without additional improvements (Tetra Tech 2011). Although obtaining a variance may be more cost-effective, the savings would be a small percentage of the overall project cost. Given the uncertainty regarding the outcome of the variance process, the Corps elected to eliminate alternative designs that would require an approved variance to ETL 1110-2-571.

3.7.5.2 Revised FLO-2D Inflow Methodology

The revised methodology accounted for the effects of upstream attenuation on breakout flows. The Upper FLO-2D model (upstream of I-680) was extended to encompass the urban channelized portions of Sierra Creek, a major tributary to Berryessa Creek. The revised methodology used FLO-2D to model both the channel and overbank flows in the Upper model and use an unsteady HEC-RAS model with FLO-2D for overbank flow in the Lower model (downstream of I-680). The methodology is presented in detail in Part II, Floodplain Development, of Appendix B.

Hydrologic inputs were developed assuming that no future improvements, federally or locally, are constructed on the Berryessa Creek system upstream of I-680. Future upstream improvements would be dependent upon the current Berryessa Creek Element being built first to avoid induced flooding; thus, the economic evaluation of the current Berryessa Creek alternatives cannot assume that future upstream improvements will be built. The local and tributary inflow hydrographs for the future without improvements were taken from the future conditions 2003 HEC-HMS model corresponding to the values published in the NHC hydrology report (NHC 2003). Alternative 2A/d was designed using the future without-improvement conditions hydrologic inputs.

Hydrologic inputs were also developed assuming that future improvements (i.e., bypass channel), under consideration by the SCVWD upstream of I-680, are constructed on the Berryessa Creek system. The local and tributary inflow hydrographs were taken from the future conditions 2006 HEC-HMS model corresponding to the values published in the NHC hydrology report (NHC 2006). The bypass channel design resulted in higher flow rates at I-680 subsequently resulting in Alternatives 2B/d and 4/d to be designed with a larger conveyance capacity, allowing both alternative plans to convey up to the 0.002 exceedance probability event. This methodology was performed to address SCVWD's preference that the Berryessa Creek Element remains NFIP-certifiable, even if future upstream improvements are made to convey 0.01 exceedance probability peak flows.

Benefits for each of the alternative plans were derived by comparing the damages from each to those of the No Action Alternative. It should be noted that although Alternatives 2B/d and 4/d were designed using different hydrologic assumptions all alternative plans were economically evaluated using the same assumptions (i.e. consistent with Corps planning process of no future upstream improvements). Alternatives 2B/d and 4/d resulted in no residual damages, since these alternatives were designed for a higher flow regime than was used in the economic evaluation.

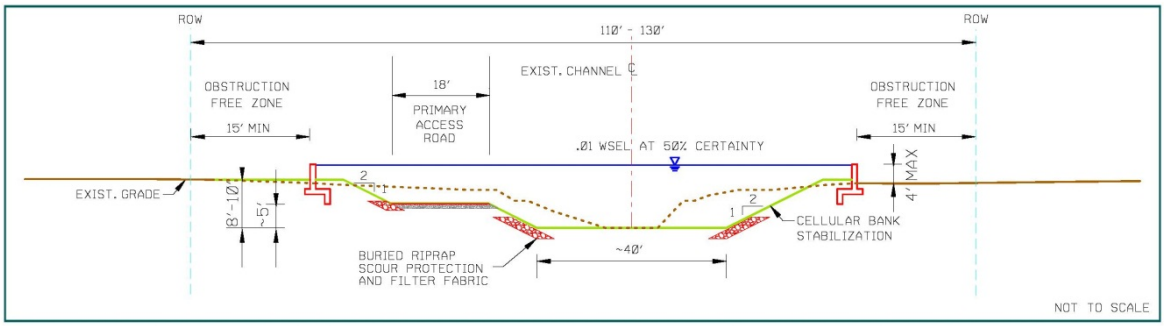
3.7.5.3 Alternative 1: No Action

As previously discussed, the No Action alternative assumes the future conditions in the study area without implementation of any of the action alternatives. Under this alternative, the authorized project would not be completed, and objectives for flood risk management would not be met.

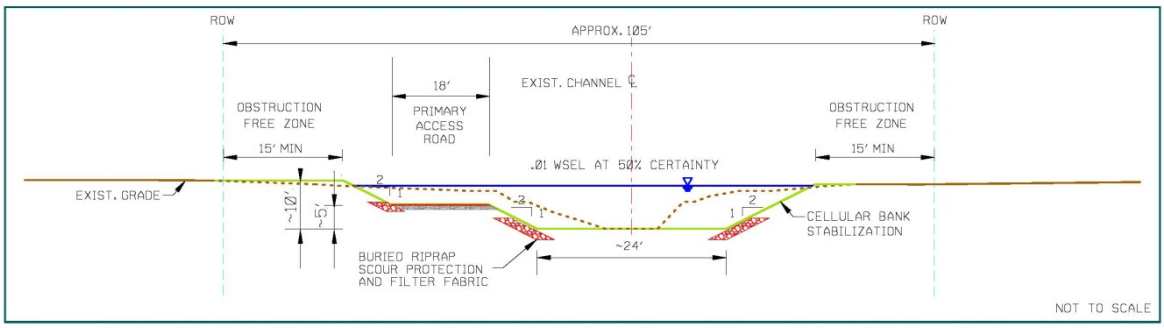
3.7.5.4 Alternative 2A/d: Incised Trapezoidal Channel (Moderate Protection)

Alternative 2A/d proposes an earthen trapezoidal channel section with varying bottom width. Free-standing concrete floodwalls would be constructed as needed due to real estate constraints, and an in-channel access road constructed where suitable. This alternative is designed assuming no project upstream of I-680, locally or federally developed, is in place. Typical sections showing the overall configuration of Alternative 2A/d are shown in Figure 3-7. The primary features of Alternative 2A/d are as follows:

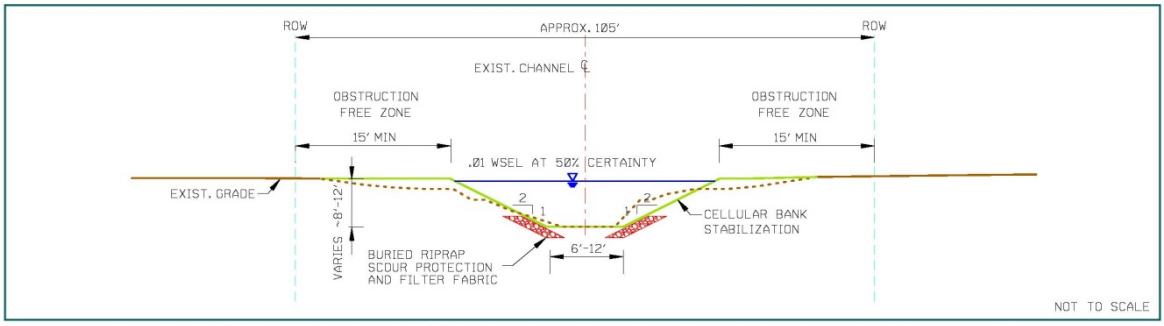
- Channel excavation and earthen levee construction to the water surface level of the 50 percent certainty, 0.01 exceedance probability event discharge from I-680 to Calaveras Boulevard
- 2H:1V sideslopes with cellular bank protection and buried riprap scour protection
- Free-standing concrete floodwalls in the immediate vicinity of Montague Expressway as well as between the Piedmont Creek confluence and Calaveras Boulevard
- Access road located along the left bank channel slope downstream of Yosemite Drive
- Replacement of UPRR trestle with triple box culvert
- Construction of transition structures at Montague Expressway, UPRR culvert, Los Coches Street, and Calaveras Boulevard
- Shoring of bridge abutments and construction of transition structures at Ames Avenue and Yosemite Drive to accommodate widened channel
- Utility relocations for storm drains entering the channel or running parallel to the channel located within the channel excavation areas



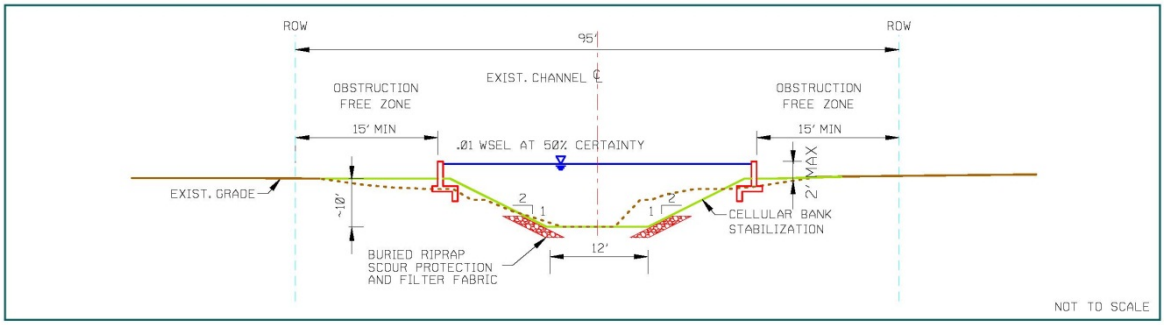
TYPICAL CROSS SECTION, CALAVERAS BLVD TO PIEDMONT CREEK (STA 130 TO 160)



TYPICAL CROSS SECTION, PIEDMONT CREEK TO YOSEMITE DR (STA 160 TO 170)



TYPICAL CROSS SECTION YOSEMITE DR TO I-680 (STA 170 TO 212 AND 214 TO 237)



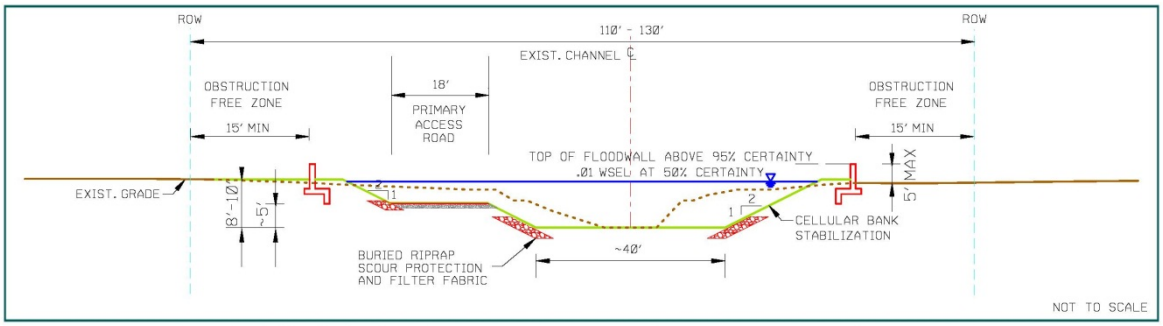
TYPICAL CROSS SECTION, MONTAGUE EXPY TO 200' UPSTREAM (STA 212 TO 214)

Figure 3-7 Alternative 2A/d Typical Sections

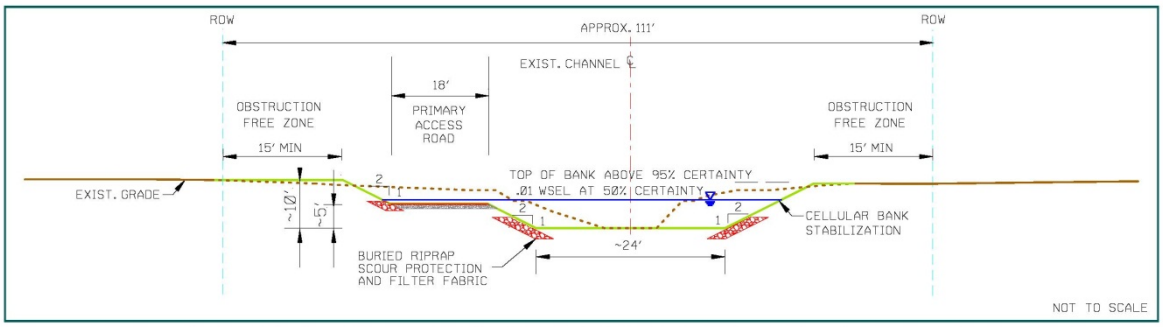
3.7.5.5 Alternative 2B/d (Incised Trapezoidal Channel (FEMA-Certification Protection)

Alternative 2B/d proposes an earthen trapezoidal channel section with varying bottom width. This alternative is designed assuming a bypass structure is in place along Berryessa Creek upstream of I-680. The structure will route high flows around the Greenbelt reach to reduce flooding in the upper watershed. The bypass structure will be developed and implemented by the SCVWD as a locally funded project. Typical sections showing the overall configuration of Alternative 2B/d are shown in Figure 3-8. The primary features of Alternative 2B/d are as follows:

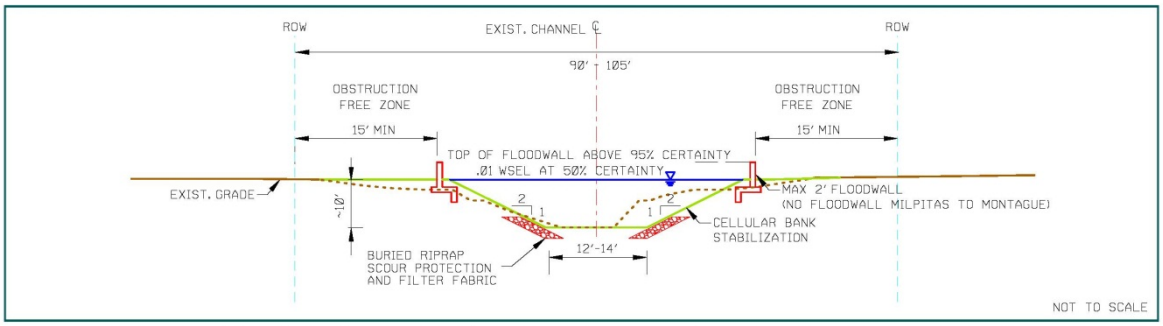
- Channel excavation and earthen levee construction to the water surface level of the 95 percent certainty, 0.01 exceedance probability event discharge from I-680 to Calaveras Boulevard
- 2H:1V sideslopes with cellular bank protection and buried riprap scour protection
- Free-standing concrete floodwalls in the immediate vicinity of Montague Expressway and between Yosemite Drive and Calaveras Boulevard
- Access road intermittently along one or both banks, within the channel (between the 0.1 and 0.04 exceedance probability events)
- Replacement of Montague Expressway culvert crossing with 60-foot span
- Replacement of UPRR trestle with triple 15-foot box culvert
- Replacement of UPRR culvert with 60-foot span
- Shoring of bridge abutments at Ames Avenue and Yosemite Drive to accommodate widened channel
- Replacement of Los Coches Street Bridge with 100-foot span
- Replacement of Calaveras Boulevard Bridge with 100-foot span
- Utility relocations, as required



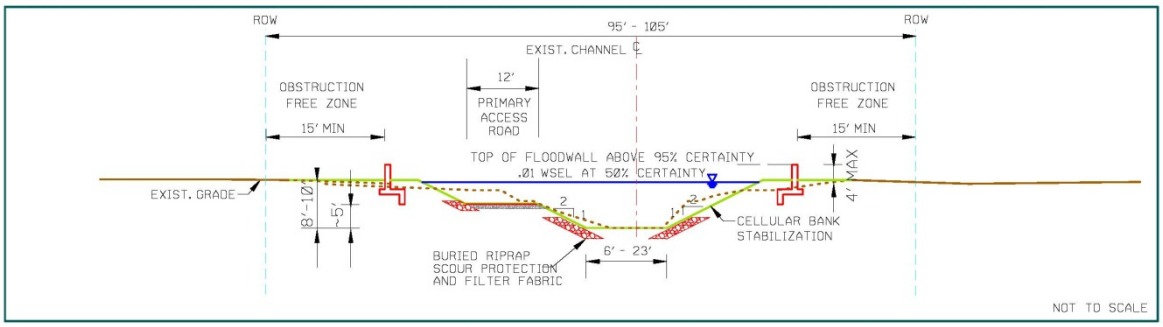
TYPICAL CROSS SECTION, CALAVERAS BLVD TO YOSEMITE DR (STA 130 TO 170)



TYPICAL CROSS SECTION, YOSEMITE DR TO MILPITAS BLVD (STA 170 TO 195)



TYPICAL CROSS SECTION MILPITAS BLVD TO I-680 (STA 195 TO 212 AND 230 TO 248)



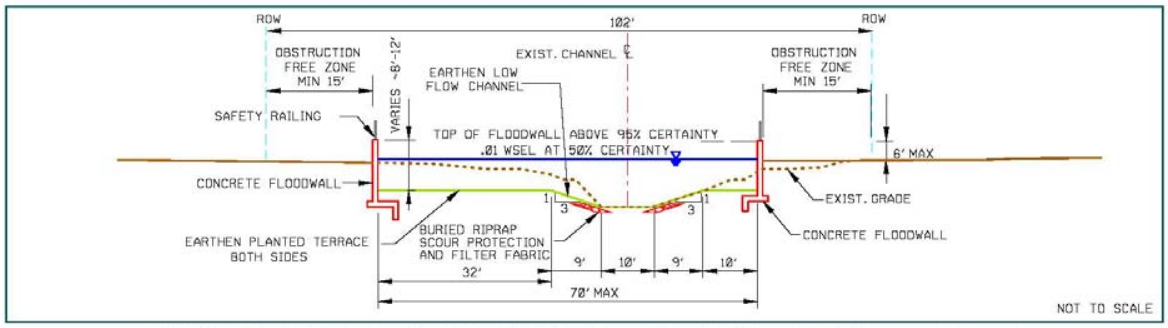
TYPICAL CROSS SECTION, MONTAGUE EXPY TO LAKEWOOD CT (STA 212 TO 230)

Figure 3-8 Alternative 2B/d Typical Sections

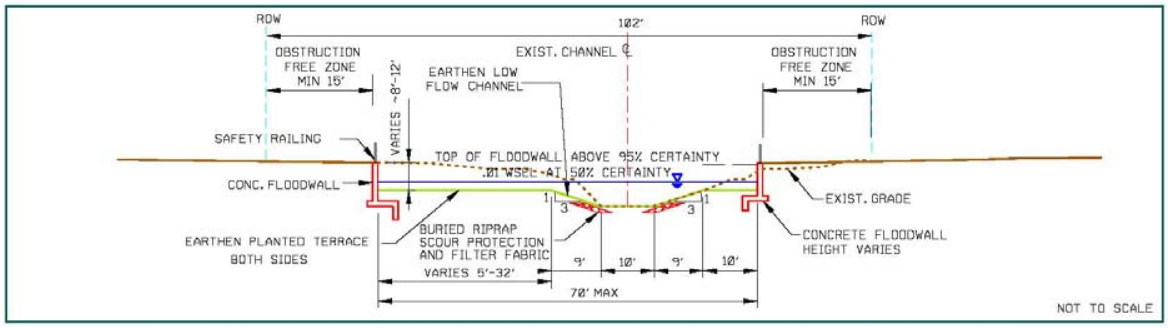
3.7.5.6 Alternative 4/d - Walled Trapezoidal Channel (FEMA-Certification Protection)

Alternative 4/d proposes an earthen trapezoidal channel section with varying bottom width. Alternative 4/d involves the construction of vertical concrete floodwalls to contain flows. Similar to Alternative 2B/d, this alternative is designed assuming a bypass structure is in place along Berryessa Creek upstream of I-680. The structure will route high flows around the Greenbelt reach to reduce flooding in the upper watershed. The bypass structure will be developed and implemented by the SCVWD as a locally funded project. The primary features of Alternative 4/d are as follows:

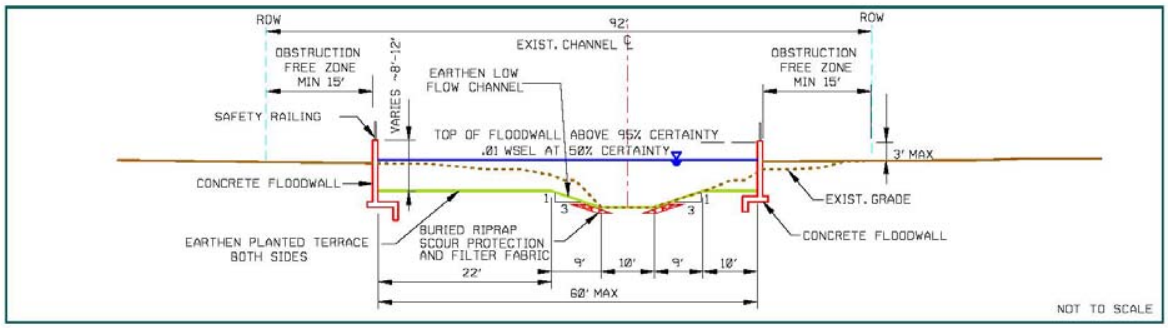
- Channel excavation and earthen levee construction to the water surface level of the 95 percent certainty, 0.01 exceedance probability event discharge from I-680 to Calaveras Boulevard
- Concrete retaining walls to the existing ground surface and above-ground floodwall extensions, as required
- 3-foot deep, 10-foot bottom width earthen low-flow channel with 3H:1V sideslopes
- Two vegetated floodplain benches, 32 feet wide on left bank and 10 feet wide on right bank, bounded by vertical concrete floodwalls
- Replacement of Montague Expressway culvert crossing with 60-foot span
- Replacement of UPRR trestle with triple 15-foot box culvert
- Replacement of UPRR culvert with 60-foot span
- Shoring of bridge abutments at Ames Avenue and Yosemite Drive to accommodate widened channel
- Replacement of Los Coches Street Bridge with 100-foot span
- Replacement of Calaveras Boulevard Bridge with 100-foot span
- Utility relocations, as required



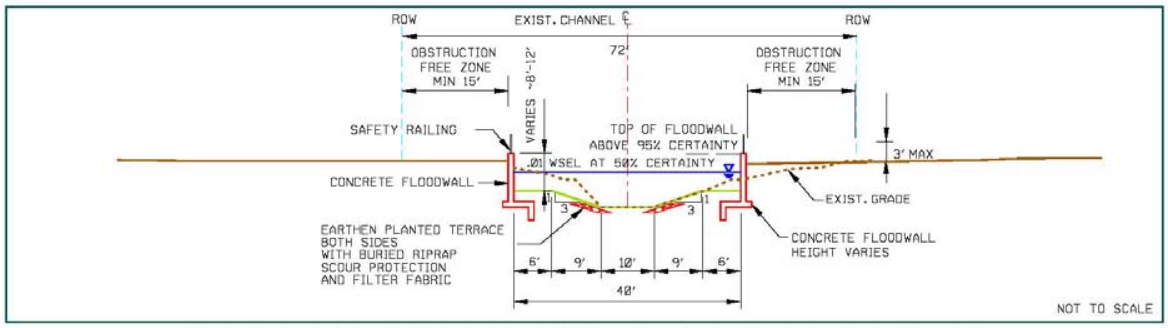
TYPICAL CROSS SECTION, CALAVERAS BLVD TO AMES AVE (STA 130 TO 182)



TYPICAL CROSS SECTION, AMES AVE TO MILPITAS BLVD (STA 182 TO 195)



TYPICAL CROSS SECTION, MILPITAS BLVD TO LAKEWOOD CT (STA 195 TO 230)



TYPICAL CROSS SECTION LAKEWOOD CT TO I-680 (STA 230 TO 248)

Figure 3-9 Alternative 4/d Typical Sections

3.7.5.7 Alternative 5: Authorized Project

The authorized project consists of a sediment basin constructed upstream of Old Piedmont Road, modifications (deepening) of the existing sediment basin, earthen levees in the Greenbelt, and a concrete trapezoidal channel downstream of I-680. Alternative 5 was not redesigned based on the current hydrology or Corps' vegetation management requirements.

3.7.5.8 Features Common to the Alternative Plans 2A/d, 2B/d, and 4/d

The following features were applied to all of the alternatives, as they form the minimum structural support for the flood risk management alternatives. Table 3-15, at the end of this section, summarizes the project features that make up each of the alternative plans.

(a) Channel Modifications

Channel widening is proposed in combination with floodwalls under the project alternatives to meet the desired level of performance for the alternatives. The channel excavation templates are depicted in the typical sections above. The extent of proposed armoring, including toe-down depths and armor rock gradation, may vary from section to section as the design is refined. In narrow reaches, the toe protection may be continuous to maintain the integrity of the channel. The channel profile may require grade control at bridge or utility crossing locations to prevent downcutting of the channel. Further geomorphic and sediment transport analyses may determine whether there is a need for additional grade control.

The typical sections for Alternatives 2A/d and 2B/d include an intermittent access road within the channel at the approximate level of the 0.1 to 0.04 exceedance probability event in order to increase the effective conveyance area within the available right-of-way for larger events and allow maintenance equipment to have closer access to the channel (Figure 3-10). Alternative levels for the access road may be considered as the design of the selected alternative proceeds. The access road surface would need to be graded and compacted to withstand flood flows, and a cross slope for drainage would be required. Although the access road location is generally shown on the left bank in the cross sections, it may alternatively be located on right bank if deemed appropriate during the design phase, and a secondary access road may be located along the opposite bank. Several tributaries enter the channel from the right, and access to local streets is required along both sides of the tributaries. Final placement should consider findings from additional utility investigations; the final access road configuration may vary from reach to reach.

Alternative 4/d includes vegetated floodplain terraces (Figure 3-11). Vegetation would need to be drought-tolerant and/or require irrigation for establishment. Selection of vegetation types should also account for the required root depth and the size of the inner channel. While the overall project configuration has been designed to fall within the existing public rights-of-way, the acquisition of several small parcel areas is required to maintain continuous access along the channel. These areas are shown in further detail in the accompanying plan/profile views in Part IV, Design and Cost of Alternatives, in Appendix B. Additionally, temporary construction easements, staging areas, and access routes are required for all three project alternatives.

Figure 3-10 Schematic View of Channel Configuration of Alternatives 2A/d and 2B/d

Figure 3-11 Schematic View of Floodwalls and Channel Configuration of Alternative 4/d

(b) I-680 Bridge

The I-680 Bridge marks the upstream extent of the project. Some debris is present at the downstream face of the bridge (Figure 3-12). This debris should be removed regularly to ensure that the conditions do not produce higher than anticipated water surface elevations along the channel banks downstream of the bridge. No modifications are proposed for the culvert except that any deferred maintenance will be performed by the local sponsor.

Figure 3-12 I-680 Bridge (Looking Upstream)

(c) Montague Expressway

Montague Expressway is a six-lane arterial crossing over a double-barrel 12-foot-by-10-foot culvert. The existing bridge allows sufficient capacity for Alternative 2A/d, provided the channel walls tie into the existing structure. For Alternatives 2B/d and 4/d, a replacement span of 70 feet would be required to contain the flow in the channel and prevent breakouts. The deck would be raised approximately 3 feet, requiring extensive roadway work, and the headwall would tie into upstream and downstream floodwalls (Figure 3-13). The maintenance road (not shown) would need to transition out of the channel and over the levees or floodwalls.

Figure 3-13 Schematic View of Montague Channel Excavation for Alternative 2B/d

(d) UPRR Trestle

The existing UPRR trestle is a timber railroad crossing with four sets of piers. There is some discrepancy in the deck height that significantly affects the existing capacity of the trestle (Tetra Tech 2005). Due to the condition of the existing structure, excavation around the bed or banks is assumed to be unacceptable, and complete replacement of the trestle is assumed under all project alternatives. A triple barrel concrete box culvert is included in the project scenarios, with replacement configurations applied and modeled using the 1990 authorized project designs (Figure 3-14).

Figure 3-14 Schematic View of UPRR Trestle Replacement for Alternative 2B/d

(e) UPRR Culvert

The channel transitions to a wider available right-of-way where Milpitas Boulevard veers away from the channel upstream of the UPRR culvert. The existing UPRR culvert is a triple 11-foot-by-11-foot box culvert that crosses Berryessa Creek at a skew angle of almost 60 degrees. The existing structure has sufficient conveyance to meet the requirements of Alternative 2A/d, provided the channel banks are tied into the existing concrete wingwalls. Alternatives 2B/d and 4/d include the complete reconstruction of the culverts with a 60-foot wide span (Figure 3-15). The cost estimates assume that a temporary shoo-fly structure would be needed during construction.

Figure 3-15 Schematic View of UPRR Culvert Replacement of Alternative 2B/d

(f) Ames Avenue Bridge

The Ames Avenue Bridge is a two-lane bridge with a single continuous pier. The span is approximately 80 feet; however, the existing ground blocks much of the cross section below the bridge deck. The existing bridge is retained under all project scenarios. The proposed channel modifications in this reach for Alternatives 2A/d and 2B/d include an access road on the overbank rather than within the channel. The design cross section under the bridge proceeds at 2H:1V from the outside of the span. Figure 3-16 shows the bridge along with a typical with-project scenario showing the maximum excavated footprint extending vertically down from the edge of the bridge deck and requiring some shoring to protect the bridge abutments.

Figure 3-16 Schematic View of Ames Avenue Bridge Modifications

(g) Yosemite Drive Bridge

Yosemite Drive carries a two-lane road over Berryessa Creek. Along the upstream face of the bridge, a major pipeline is supported by cantilevers (Figure 3-17). The span is approximately 80 feet with a single continuous pier; however, the existing ground blocks much of the cross section below the bridge deck. The existing bridge is retained under all project scenarios. The proposed channel modifications in this reach for Alternatives 2A/d and 2B/d include an access road on the overbank rather than within the channel. The design cross section under the bridge proceeds at 2H:1V from the outside of the span. The bridge is shown along with a typical with-project scenario showing the maximum excavated footprint extending vertically down from the edge of the bridge deck and requiring some shoring to protect the bridge abutments. The existing bridge is retained under all project alternatives.

In conjunction with the proposed channel excavation, the bridge passes the required channel flow using the existing deck and soffit heights. The depth and configuration of the existing foundation is unknown, and shoring or other stabilization of existing abutments is assumed to be required. Conservative estimates of the required materials have been included in the cost estimate.

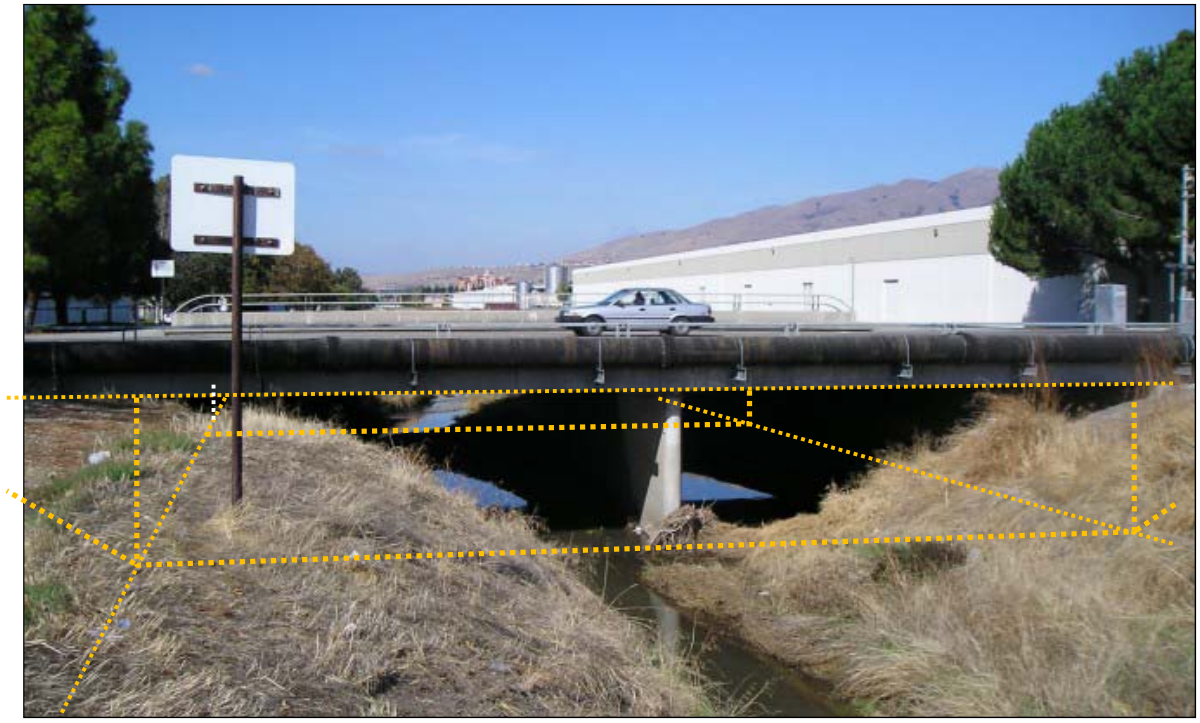


Figure 3-17 Schematic View of Yosemite Drive Bridge Modifications

(h) Los Coches Street Bridge

The Los Coches Street Bridge carries two lanes of traffic over a trapezoidal cross section with a single continuous pier at the center. The left side of the channel is concrete, and the right side of the channel is earthen. The Arroyo de los Coches tributary enters at the upstream face on the right bank.

The existing structure allows sufficient conveyance to accommodate Alternative 2A/d, provided the channel walls are tied into the existing structure. For Alternatives 2B/d and 4/d, complete replacement of the Los Coches Street Bridge with a 100-foot open, raised span would be required to provide the required conveyance capacity (Figure 3-18). Any modifications in the upstream channel would also necessitate reconstructing the Arroyo de los Coches confluence area. In addition, the existing pedestrian bridge cantilevered on the upstream face would need to be reconstructed, and some rerouting of the bicycle path may be required. Raising the deck requires extensive roadway work. The actual height of the existing deck is unknown and should be verified, as the original hydraulic survey data show a solid deck that appears to include the bridge rails.

Figure 3-18 Schematic View of Los Coches Street Bridge Replacement for Alternative 2B/d

(i) Calaveras Boulevard Bridge

The Calaveras Boulevard Bridge is an eight-lane divided roadway. The crossing comprises four 8-foot-high-by-11-foot wide culvert barrels. The outer two barrels are partially filled with the earthen sideslope that projects to the outside toe of the middle culvert barrels. Debris has accumulated to a depth of 1 to 2 feet within the inner two barrels. It is assumed that the apparent reverse grade through the culvert barrel is a result of deposition or survey error, and that the actual concrete invert is at a flat or downstream slope. The existing bridge provides sufficient conveyance to accommodate Alternative 2A/d, provided the sediment in the outer barrels is excavated, and the channel walls are tied into the existing structure. In order to provide the necessary conveyance capacity for Alternatives 2B/d and 4/d, the culvert barrels would need to be replaced by a 100-foot open span bridge. The bridge soffit would need to be raised several feet; however, an arched bridge or other configuration with a similar effective conveyance area may also be acceptable. Figure 3-19 shows the crossing along with a schematic view of the replacement scenario. The sideslopes would be 2H:1V to match the excavated channel footprint for Alternative 2B/d, and vertical abutments would be needed for Alternative 4/d. The downstream project is assumed to be constructed prior to the initiation of any of the project alternatives under consideration. The downstream project extends to the existing Calaveras Boulevard Bridge but does not include modifications to the structure itself; as such, the project improvements proposed for Alternatives 2B/d and 4/d include a transition to match the downstream project approximately 50 feet downstream of Calaveras Boulevard Bridge.

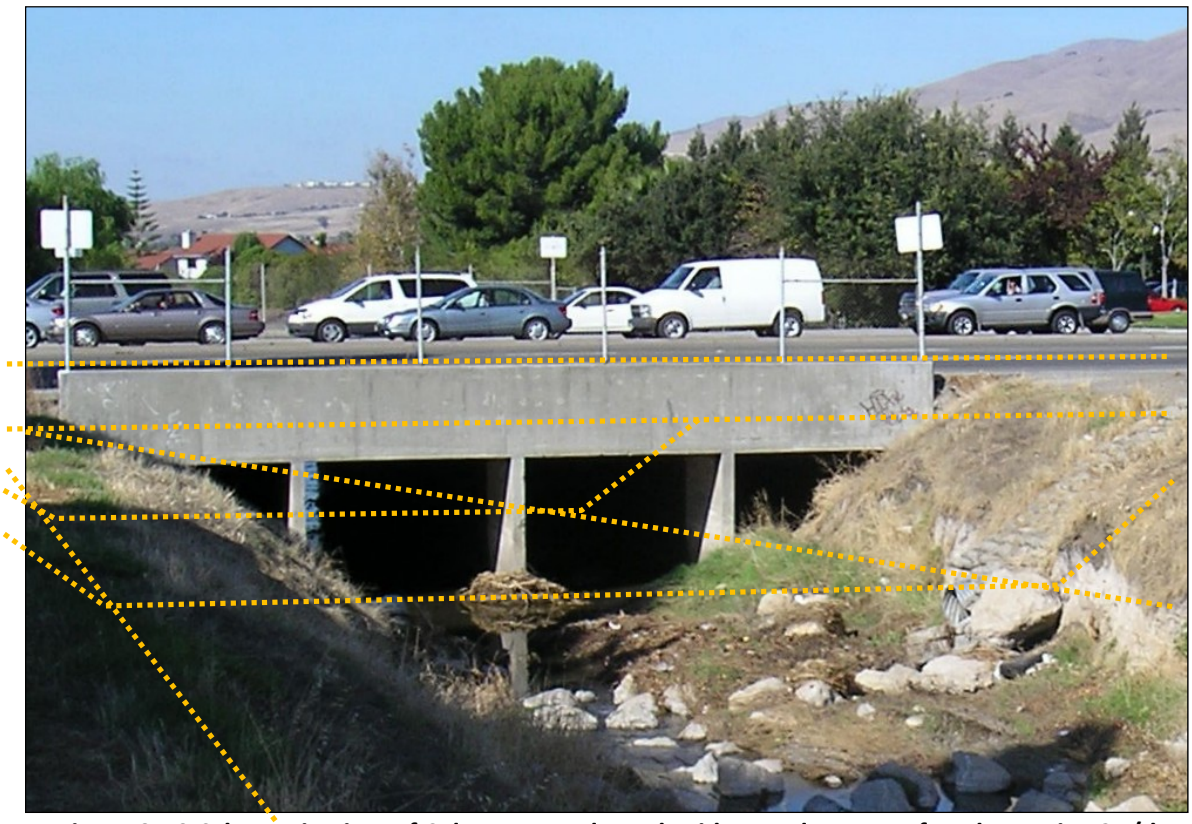


Figure 3-19 Schematic View of Calaveras Boulevard Bridge Replacement for Alternative 2B/d

Table 3-15 Summary of Project Alternative Features – 2A/d, 2B/d, and 4/d			
Reach/Structure	**Alternative Project Features**		
	Alternative 2A/d Incised Trapezoidal Channel	**Alternative 2B/d Incised Trapezoidal Channel**	**Alternative 4/d Walled Trapezoidal Channel**
I-680 Bridge (Sta 248+00)	Remove accumulated sediment at downstream face	Remove accumulated sediment at downstream face	Remove accumulated sediment at downstream face
Channel Reach from I-680 to Montague Expressway (Sta 248+00 – 210+90)	Excavate 6- to 12-foot bottom width earthen channel with cellular bank protection at 2H:1V sideslope; construct 200 lineal feet of free-standing concrete to maximum height of 2 feet	Excavate 6- to 22-foot bottom width earthen channel with cellular bank protection at 2H:1V sideslope and access road along left bank slope; construct free-standing concrete floodwall to maximum height of 4 feet	Excavate 10-foot earthen channel with 10 and 22-foot vegetated terraces and vertical concrete walls extending a maximum of 3 feet above existing ground
Montague Expressway Culvert (Sta 210+90)	Tie floodwall into existing headwall at upstream face of structure; construct transitions to existing wingwalls	Remove existing box culvert; construct raised 60-foot span bridge	Remove existing box culvert; construct raised 60-foot span bridge
Channel Reach from Montague Expressway to UPRR Trestle (Sta 213+90 – 206+05)	Excavate 12-foot bottom width earthen channel with cellular bank protection at 2H:1V sideslope	Excavate 14-foot bottom width earthen channel with cellular bank protection at 2H:1V sideslope; construct free-standing concrete floodwall to maximum height of 2 feet	Excavate 10-foot earthen channel with 10 and 22-foot vegetated terraces and vertical concrete walls extending a maximum of 3 feet above existing ground
UPRR Railroad Trestle Bridge (Sta 206+05)	Remove existing timber trestle; Construct triple 15-foot span by 12-foot rise concrete box culvert with wingwalls	Remove existing timber trestle; construct triple 15-foot span by 12-foot rise concrete box culvert with wingwalls	Remove existing timber trestle; construct triple 15-foot span by 12-foot rise concrete box culvert with wingwalls
Channel Reach from UPRR Trestle to UPRR Culvert (Sta 206+05 - 186+80)	Excavate 12-foot bottom width earthen channel with cellular bank protection at 2H:1V sideslope	Excavate 10 to 12-foot bottom width earthen channel with cellular bank protection at 2H:1V sideslope and access road along left bank slope	Excavate 10-foot earthen channel with 10- and 32-foot vegetated terraces and vertical concrete walls extending to existing ground
UPRR Railroad Culvert (Sta 186+80)	Construct transition to existing wingwalls	Remove existing triple box culvert; construct 60-foot span 12-foot rise bridge	Remove existing triple box culvert; construct 60-foot span 12-foot rise bridge
Channel Reach from UPRR Culvert to Ames Avenue (Sta 186+80 – 182+10)	Excavate 12-foot bottom width earthen channel with cellular bank protection at 2H:1V sideslope	Excavate 17-foot bottom width earthen channel with cellular bank protection at 2H:1V sideslope and access road along left bank slope	Excavate 10-foot earthen channel with 10- and 32-foot vegetated terraces and vertical concrete walls extending to existing ground
Ames Avenue Bridge (Sta. 182+10)	Excavate 12-foot bottom width channel beneath bridge; construct abutment and pier protection	Excavate 17-foot bottom width channel beneath bridge; construct abutment and pier protection	Excavate channel and construct walls beneath bridge; construct abutment and pier protection
Channel Reach from Ames Avenue to	Excavate 15-foot bottom width earthen channel with cellular bank protection at	Excavate 24-foot bottom width earthen channel with cellular bank protection at	Excavate 10-foot earthen channel with 10- and 32-foot vegetated

Table 3-15 Summary of Project Alternative Features – 2A/d, 2B/d, and 4/d			
Reach/Structure	**Alternative Project Features**		
	Alternative 2A/d Incised Trapezoidal Channel	**Alternative 2B/d Incised Trapezoidal Channel**	**Alternative 4/d Walled Trapezoidal Channel**
Yosemite Drive (Sta 182+10 – 168+80)	2H:1V sideslope	2H:1V sideslope and access road along left bank slope	terraces; construct concrete floodwall to extend maximum of 6 feet above existing ground
Yosemite Drive Bridge (Sta 168+80)	Excavate 15-foot bottom width channel beneath bridge transitioning to 24-foot bottom width; construct abutment and pier protection	Excavate 38-foot bottom width earthen channel beneath bridge; construct abutment and pier protection	Excavate channel and construct walls beneath bridge; construct abutment and pier protection
Channel Reach from Yosemite Drive to Los Coches Street (Sta 168+80 – 137+50)	Excavate 26-foot bottom width earthen channel with cellular bank protection at 2H:1V sideslope and access road along left bank slope	Excavate 38-foot bottom width earthen channel with cellular bank protection at 2H:1V sideslope and access road along left bank slope; construct free-standing concrete floodwall to maximum height of 5 feet	Excavate 10-foot earthen channel with 10- and 32-foot vegetated terraces; construct concrete floodwall to extend maximum of 6 feet above existing ground
Los Coches Street Bridge (Sta 137+50)	Construct transition to existing structure	Remove existing bridge; construct 100-foot span bridge with raised deck and 4-foot high solid bridge face	Remove existing bridge; construct 100-foot span bridge with raised deck and 4-foot high solid bridge face
Channel Reach from Los Coches Street to Calaveras Boulevard (Sta 137+50-131+05)	Excavate 40-foot bottom width earthen channel with cellular bank protection at 2H:1V sideslope and access road along left bank slope; free-standing concrete floodwalls to maximum height of 4 feet	Excavate 38-foot bottom width earthen channel with cellular bank protection at 2H:1V sideslope and access road along left bank slope; construct free-standing concrete floodwall to maximum height of 5 feet	Excavate 10-foot earthen channel with 10- and 32-foot vegetated terraces; construct concrete floodwall to extend maximum of 6 feet above existing ground
Calaveras Boulevard Bridge (Sta 131+05)	Construct transition to existing structure	Remove existing box culvert; construct 100-foot span bridge with raised deck	Remove existing box culvert; construct 100-foot span bridge with raised deck
Channel Reach Downstream of Calaveras Boulevard (Sta 131+05 – 129+80)	Construct transition to downstream project	Construct transition to downstream project	Construct transition to downstream project

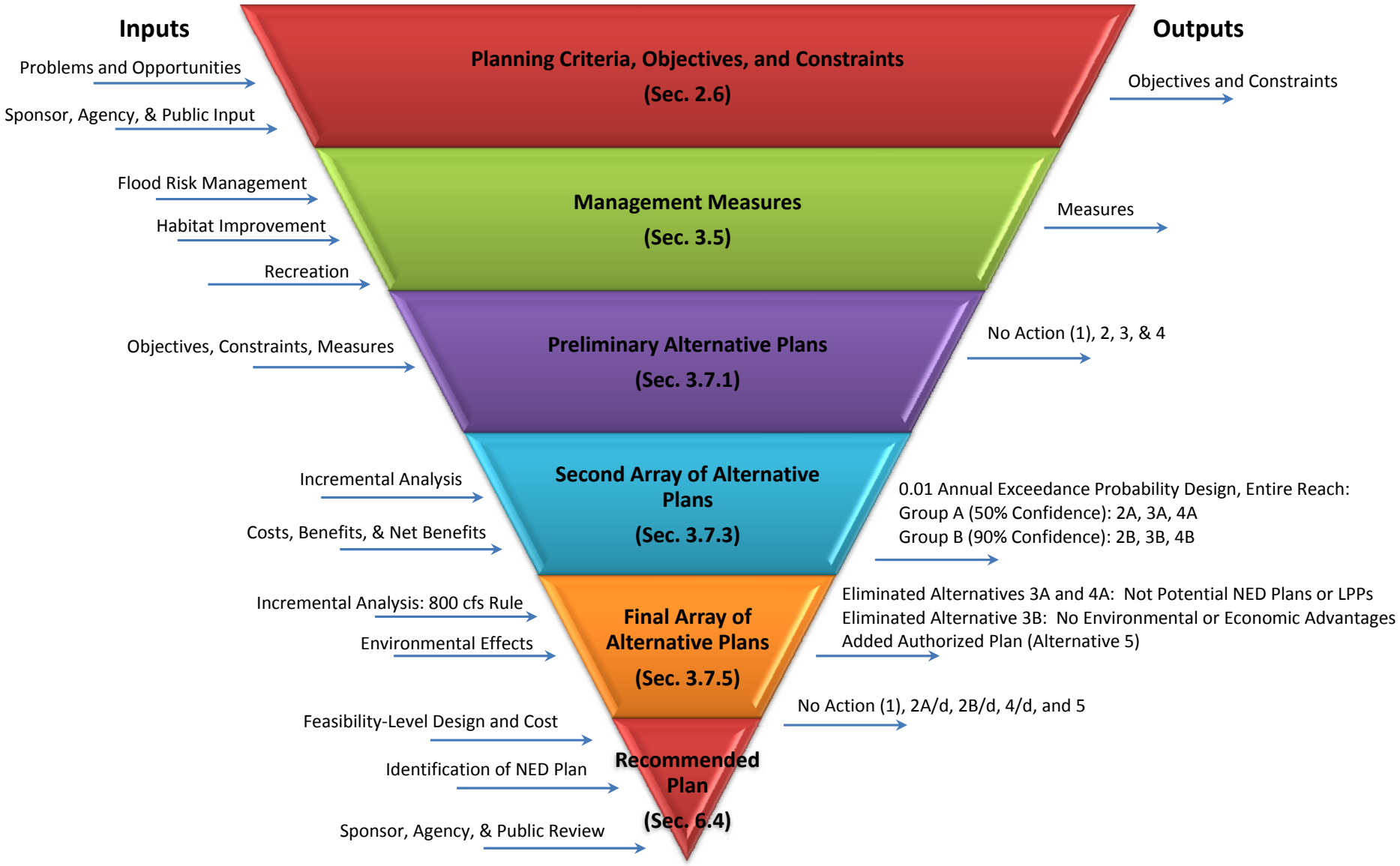


Figure 3-20 Alternative Formulation and Screening Diagram

3.7.6 Residual Flood Risk

Residual flood risk is regarded as what might happen when a flood event occurs that is larger than a design event. For example, if a levee is designed to provide protection from overtopping due to the 0.01 exceedance probability flood, then residual flooding would occur from an event that exceeds that design event. There is always the risk of residual flooding regardless of how large a project is built. Mitigating this risk can take the form of both structural and non-structural measures. Structural measures to mitigate risk are generally those alternatives that have been formulated and considered earlier in this report that increase the level of performance above the without-project condition. The economic evaluation comparing the project costs with the damage reduction benefits results in a tentatively recommended plan. Additional construction of structural measures to further reduce the residual risk could be undertaken by increasing the size of the tentatively recommended plan or by building additional flood risk management measures—for example if a project were extended upstream, or if a reservoir or diversion conveyance were constructed.

For Alternative 2A/d, approximately 370 structural parcels out of the more than 1,100 will experience flooding at the 0.002 mean frequency event. Flooding will cause property damage to slightly more than 200 of these parcels. Approximately 100 residential structures will be damaged by flooding. The average depth of flooded parcels is slightly below 0.4 feet with flood depths ranging from 0.01 feet to 2.17 feet. On the other hand, there is no residual flooding for Alternatives 2B/d and 4/d as their designs exceed the 0.002 exceedance probability event – the upper limit of the study's analysis.

Non-structural measures to mitigate residual risk are typically associated with: floodproofing using local flood walls, ring levees, and/or elevation of structures; source control using collection systems such as cisterns, detention swales, bioretention ponds, and/or filter strips; flood preparedness planning that includes flood warning systems in conjunction with a response plan, as described below; rezoning flood prone areas as well as upgrading building codes to reduce potential damages; and outright relocation of structures and infrastructure subject to flood risk.

3.7.6.1 Emergency Response and Preparedness

This is one of the preliminary non-structural measures kept as a viable component to be added to any structural alternative. While it does not reduce flood damages, it could reduce threats to health and safety through the specific implementation of features that would be combined and incorporated into any plan selected for recommendation.

As previously mentioned, certain components of an emergency response plan are already being implemented at the county and city level. Currently, the cities, county, and the SCVWD utilize the Emergency Broadcast System (EBS) and other forms of public information such as radio and television to transmit emergency and warning transmissions for the area. Also, a local emergency/information phone number (408-265-2600) has been established to answer the public's questions or receive important flood information from residents. The SCVWD's Emergency Operations Center (EOC) is located on the Main Campus at 5750 Almaden Expressway, San Jose, California. The EOC is responsible for carrying out the emergency response program. They also utilize a website to show where flooding is occurring.

As part of the existing emergency response plan, a framework within which local agencies would operate during a flood event would help define responsibility and locations for dispatch of emergency services. For example, closures could take place preventing ingress to areas of flooding at locations such as at Piedmont Road, Cropley Avenue, Morrill Avenue, Montague Expressway, Capital Avenue, Great Mall Drive, Yosemite, Drive, Los Coches Street, Calaveras Boulevard, Milpitas Boulevard, and other major crossings into and out of inundated areas.

The existing emergency response plan would also benefit from the identification of expected breakout areas and the associated floodplains that would be expected during flood events exceeding the design capacity of the Recommended Plan. The plan could include monitoring of these breakout locations during the early stages of a flood threat followed by implementation of the closure plan mentioned above, as appropriate. This non-structural component represents the information and recommendations to the relevant county and city departments rather than direct revisions to their emergency response plan.

3.7.6.2 Floodplain Management Plan

Pursuant to Section 402 of WRDA 1986, the SCVWD must prepare a Floodplain Management Plan (FPMP) designed to reduce the impacts of future flood events in the Berryessa Creek study area no later than one year after the date of signing the Project Partnership Agreement (PPA). This plan must be implemented within one year after project construction is complete. The primary focus of the FPMP should be to address potential measures (structural and non-structural), practices, and policies that will reduce the impacts of future residual flooding, help preserve levels of protection provided by the Corps project, and preserve and enhance natural floodplain values. The Corps further requires the preparation of a FPMP to follow procedures similar to the NFIP minimum standards.

CHAPTER 4 – AFFECTED ENVIRONMENT*

This chapter describes the environmental setting, consisting of the physical, biological, socio-cultural, and economic conditions in the area under investigation and the environmental relationships that exist within the Berryessa Creek. It also defines the significant resources and other environmental characteristics that would be affected by the final array of alternatives. The focus of the environmental analysis is the downstream segment from I-680 to Calaveras Boulevard.

Alternative 5 is the authorized project, which included the upstream segment from I-680 to Old Piedmont Road. For post-authorization studies, Corps policy requires that the authorized plan be retained in the final array of alternatives in order to evaluate and compare proposed changes to that plan. Alternative 5 would be used by the Corps for comparative reasons but is not a candidate for selection. Elements of the currently-authorized Coyote and Berryessa Creeks Project that are not approved under this GRR-EIS will be deferred indefinitely.

4.1 RESOURCES NOT EVALUATED IN DETAIL

Initial evaluation of the effects of the project indicated that there would likely be little to no effect on several resources. These resources are discussed in Sections 4.1.1 through 4.1.4 to add to the overall understanding of the area. These resources will not be considered more fully in this document. Sections 4.2 through 4.11 describe the existing conditions for the resources that may be significantly affected by implementation of the proposed alternatives.

4.1.1 Fisheries

4.1.1.1 Aquatic Habitats

Berryessa Creek's aquatic habitat generally degrades from upstream to downstream. Downstream of I-680 is a completely human-created channel with very little natural habitat. The downstream segment of Berryessa Creek has been highly altered to a trapezoidal channel and levees that are regularly maintained by removal of sediment and vegetation. The instream habitat diversity is extremely low and the riparian zone within this area provides little to no cover for the creek or wildlife habitat.

Upstream of I-680, in the greenbelt area, is moderately to highly disturbed, but has a higher habitat value because it remains a more natural stream alignment. Several large pools are present in the greenbelt with areas of habitat for a variety of amphibians. The majority of the substrate is sand, which might provide spawning habitat for some fish species (although not steelhead). The riparian vegetation lacks strata diversity, but has a large number of trees (including mature elderberry). Above Old Piedmont Road, is the least altered reach along Berryessa Creek, but has been altered due to livestock grazing and residential development at the lower end. There was a larger abundance and diversity of aquatic habitats including riffles, pools, runs, and boulder cascades compared to the greenbelt area. The riparian vegetation mimicked a natural stream corridor with a greater diversity of cover types, including good shading and overhanging vegetation for insect and detrital input into the stream.

4.1.1.2 Fish Populations

Berryessa Creek, from Calaveras Boulevard, is an intermittent stream with occasional flows in the winter, but middle reaches of the creek are dry throughout most of the year. The only portion of the creek with perennial flow and suitable habitat for small, warm water fish species is downstream of the confluence with Piedmont Creek. But even this reach has seasonally high water temperatures and low dissolved oxygen that would be lethal to anadromous fish and most other fish species during the summer months. The proposed project would have no effect on fisheries.

Potential use of Berryessa Creek by steelhead (*Oncorhynchus mykiss*) is limited by several physical conditions. Continuous flows of suitable depth (at least 7 inches) for adult steelhead passage occurred for only an estimated 2 to 5 days during the 2-year flow monitoring study. Reaches with a normally dry creek bed, low flows, sheetflows over concrete channels, poor spawning substrate, and physical barriers to passage preclude steelhead migration into Berryessa Creek.

4.1.2 Land Use and Socioeconomics

This section presents information regarding the social and economic resources that exist in the vicinity of the study area. A description of the population characteristics, including land use, population, ethnicity, housing trends, and employment rates. In addition, environmental justice issues are presented. The data presented herein are based on information obtained from the 2010 Census Bureau surveys for the Santa Clara County and for the tracts adjacent to the Berryessa Creek in the vicinity of the study area.

4.1.2.1 Land Use

Land uses in the Berryessa Creek area include agricultural, residential, industrial, and commercial. Specifically, the area upstream of the study area is agricultural land used for cattle grazing, while downstream the creek flows through developed areas of the cities of San Jose, Milpitas, and Alviso.

Currently, the San Jose area adjacent to Berryessa Creek is fully developed as a medium density residential community from Old Piedmont Road to Interstate I-680. The San Jose General Plan (1994) specifies that protection from a 0.01 exceedance probability flood (100-year flood) should be achieved in accordance with the Federal Flood Insurance Program design standards.

The creek flows through a rapidly expanding light industrial and commercial section of Milpitas from the Montague Expressway to the project boundary at Calaveras Boulevard. The City's Master Plan (1994) includes recreational and aesthetic values along the creek. Projections for future development in the Berryessa Creek study area include light manufacturing/industrial park and retail development. The City of Milpitas' TASP redevelopment plan is located adjacent to the study area along Montague Expressway. This area would be redeveloped in to mixed use, urban, and high density residential.

There is no farmland within the study area; therefore there would not be any adverse effects on agricultural resources. The land use in and around the study area, would not change as a result of construction of the proposed project. Therefore, the project would have no effect on land use.

4.1.2.2 Socioeconomics

The study area is in the heart of Silicon Valley. The Silicon Valley has largely recovered from the 2008-2009 recession. Job growth, income, and home values continue to increase and are near pre-recession levels (Joint Venture Silicon Valley 2013).

(a) Population

The study area lies within the cities of Milpitas and San Jose in Santa Clara County, California. Table 4-1 shows the 2010 population and household family structure for the Santa Clara County and the study area. The 2010 population living in the census tracts in the study area makes up approximately 1.8 percent of the Santa Clara County population.

Table 4-1 Population and Household Characteristics in the Vicinity of the Study Area

Jurisdiction	Population	Number of Households	Person per Household	Number of Families	Persons per Family
Santa Clara County	1,781,642	620,093	2.9	395,561	3.41
City of Milpitas	66,790	17,132	3.47	14,002	3.72
City of San Jose	945,942	276,598	3.20	203,681	3.62
Study Area	**34,320**	**9,824**	**21.42**	**6,694**	**22.58**
Tract 5043.15	6,562	1,966	3.52	1,692	3.78
Tract 5043.20	2,903	844	3.70	749	3.85
Tract 5044.10	4,431	1,221	3.71	994	4.03
Tract 5044.11	5,450	1,535	3.68	1,334	3.74
Tract 5044.14	5,092	1,509	3.77	1,321	3.82
Tract 5045.04	9,882	2,749	3.04	604	3.36

Source: 2010 U.S. Census Bureau

(b) Ethnicity

Table 4-2 shows the ethnic makeup of the county and the study area in 2010. The ethnic composition of the study area resembles but does not mirror that of the county as a whole. Most notable, the Asian population is higher within the study area while the white population is lower than that of the county as a whole.

Table 4-2 Ethnic Population Characteristics in the Vicinity of the Study Area

Jurisdiction	White	Black or African American	American Indian or Alaskan Native	Asian	Native Hawaiian or other Pacific Islander	Other	Hispanic or Latino	Two or more Races
Santa Clara	836,616	42,331	4,042	565,466	6,252	3,877	479,210	53,555

Table 4-2 Ethnic Population Characteristics in the Vicinity of the Study Area								
Jurisdiction	**White**	**Black or African American**	**American Indian or Alaskan Native**	**Asian**	**Native Hawaiian or other Pacific Islander**	**Other**	**Hispanic or Latino**	**Two or more Races**
County								
% of County Total	*35.2%*	*2.4%*	*0.2%*	*31.7%*	*0.4%*	*0.2%*	*26.9%*	*3.0%*
City of Milpitas	9,751	1,836	137	41,308	316	93	11,240	2,109
City of San Jose	371,382	27,508	2,255	300,022	3,492	1,820	313,636	25,827
Study Area	**7,311**	**1,230**	**136**	**20,631**	**148**	**702**	**5,464**	**1,143**
% of Study Area Total	*19.89%*	*3.35%*	*0.37%*	*56.12%*	*0.40%*	*1.91%*	*14.86%*	*3.11%*
Tract 5043.15	2,364	310	57	3,586	50	397	976	310
Tract 5043.20	463	34	4	1,961	9	5	338	92
Tract 5044.10	565	144	10	2,652	7	4	953	96
Tract 5044.11	2,131	146	33	2,720	21	283	802	268
Tract 5044.14	538	66	2	3,992	28	1	345	120
Tract 5045.04	1,250	530	30	5,720	33	12	2,050	257

Source: 2010 U.S. Census Bureau

(c) Housing

The housing within the study area is characterized by residential and public uses. Table 4-3 shows the housing data for the county and study area for 2010. The study area includes approximately 1.2 percent of the housing within the county and has a higher occupancy rate than the county as a whole. The housing units within the study area show a lower median value compared to the county as a whole. According to the California Employment Development Department, median price of existing homes sold in the county is $430,000.

Table 4-3 Occupancy Rates in the Vicinity of the Study Area					
Jurisdiction	**Households**	**Housing Units**	**Occupied Housing Units**	**Occupancy (%)**	**Median Value ($)**
Santa Clara County	565,863	631,920	604,204	97.7	446,400
City of Milpitas	17,132	17,364	17,132	98.7	372,900
City of San Jose	276,598	281,841	276,598	98.1	394,000
Study Area	**7,750**	**9,824**	**9,516**	**96.9**	**347,600**
% of County Total	*1.4%*	*1.6%*	*1.6%*	-	-
Tract 5043.15	2,007	1,966	1,919	97.6	341,400
Tract 5043.20	840	844	823	97.5	429,100
Tract 5044.10	1,187	1,221	1,191	97.5	320,200

Tract 5044.11	1,522	1,535	1,495	97.4	353,800
Tract 5044.14	1,429	1,509	1,451	96.2	459,100
Tract 5045.04	765	2,749	2,637	95.9	274,300

Source: 2010 U.S. Census Bureau

(d) Employment

Table 4-4 and Table 4-5 show the employment in Santa Clara County and the study area, respectively. The information was obtained from the 2010 U.S. Census Bureau surveys for the county and the tracts located within the vicinity of Berryessa Creek study area.

According to the California Employment Development Department, the unemployment rate in Santa Clara County was 8.4 percent in 2012.

Table 4-4 Industry Employment in Santa Clara County

	Population	Percent of Total
Santa Clara County		
Population (16 years and over)	1,308,666	-
Civilian Labor Force	878,106	67.1
Employed	843,912	64.5
Unemployed	34,194	2.6
Armed Forces	826	0.1
Not in Labor Force	429,734	32.8
Industry		
Agriculture, forestry, fishing and hunting, and mining	4,364	0.5
Construction	42,232	5.0
Manufacturing	231,784	27.5
Wholesale trade	25,515	3.0
Retail trade	83,369	9.9
Transportation and warehousing, and utilities	23,546	2.8
Information	39,098	4.6
Finance, insurance, real estate, and rental and leasing	38,715	4.6
Professional, scientific, management, administrative, and waste management services	131,015	15.5
Educational, health and social services	123,890	14.7
Arts, entertainment, recreation, accommodation and food services	49,186	5.8
Other services (except public administration)	29,987	3.6
Public administration	21,211	2.5

Source: 2010 U.S. Census Bureau

Table 4-5 Industry Employment in the Vicinity of the Study Area		
	Population	**Percent of Total**
Study Area		
Population (16 years and over)	24,327	-
Civilian Labor Force	14,908	61.3
Employed	14,282	58.7
Unemployed	626	2.6
Armed Forces	0	0.0
Not in Labor Force	9,419	38.7
Industry		
Agriculture, forestry, fishing and hunting, and mining	8	0.1
Construction	338	2.4
Manufacturing	5,890	41.2
Wholesale trade	420	2.9
Retail trade	1,192	8.3
Transportation and warehousing, and utilities	502	3.5
Information	777	5.4
Finance, insurance, real estate, and rental and leasing	597	4.2
Professional, scientific, management, administrative, and waste management services	1,617	11.3
Educational, health and social services	1,682	11.8
Arts, entertainment, recreation, accommodation and food services	478	3.3
Other services (except public administration)	421	2.9
Public administration	360	2.5

Source: 2010 U.S. Census Bureau

(e) Income

Table 4-6 shows median household income for residents within Santa Clara County, the cities of Milpitas and San Jose, and the study area from the data obtained from the 2010 U.S. Census Bureau surveys.

Table 4-6 Median Income in the Vicinity of the Study Area	
Jurisdiction	**Median Household Income ($)**
Santa Clara County	85,569
City of Milpitas	92,205
City of San Jose	78,660
Study Area	85,357

Source: 2010 U.S. Census Bureau

No actions associated with the proposed project would limit either current or future opportunities for agriculture, business, employment, or housing. Therefore, there would be no effect on the socioeconomics as a result of the proposed project.

4.1.2.3 Environmental Justice

In 1994, the President of the United States issued Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*. The objective of this EO include developing Federal agency implementation strategies, identifying minority and low-income populations where proposed Federal actions could have disproportionately high and adverse human health and environmental effects, and encouraging the participation of minority and low-income populations in the NEPA process.

Two types of data must be reviewed to evaluate environmental justice effects: minority populations and income levels. Minority data for census tracts located within the study area were obtained from the 2010 census. Countywide statistics were reviewed to determine the percentage of the population not classified as White and the percentage classified as Hispanic. Using the county average for comparison, each of the census tracts in the study area was evaluated to determine whether the minority and/or Hispanic population percentages were greater than the county average. If a census tract percentage exceeded the county average, the tract was evaluated for environmental justice effects based on its minority population.

Census data shows that 70 percent of the county's population is classified as not Hispanic or Latino, 35 percent of which is classified as White. Twenty-seven percent of the county's population is classified as Hispanic or Latino. No census track with in the study area had a greater than county average of minority and/or Hispanic population percentage.

The second criterion for an environmental justice analysis is income. Income data were obtained from the 2010 census and used in this analysis. To determine the locations of low-income populations, county income data were reviewed to determine the countywide percentage of households that have incomes below poverty levels. Then, the individual census tracts were evaluated to determine the percentage of households within the tract that incomes below poverty levels. If a census tract percentage exceeded the county average, the tract was included in the analysis based on income levels.

Based on the 2010 census, 4.9 percent of families in Santa Clara County have incomes below the poverty levels. Within the study area, one census tract (5044.10) was determined to have families with incomes below the poverty levels greater than the County average. Tract 5044.10, shown on Figure 4-1, has 9.1 percent of families with income below the poverty levels. No populations would be displaced as a result of project construction, and no local industry would be disrupted by project activities. There would be no disproportionately adverse effects to minorities or low-income populations.

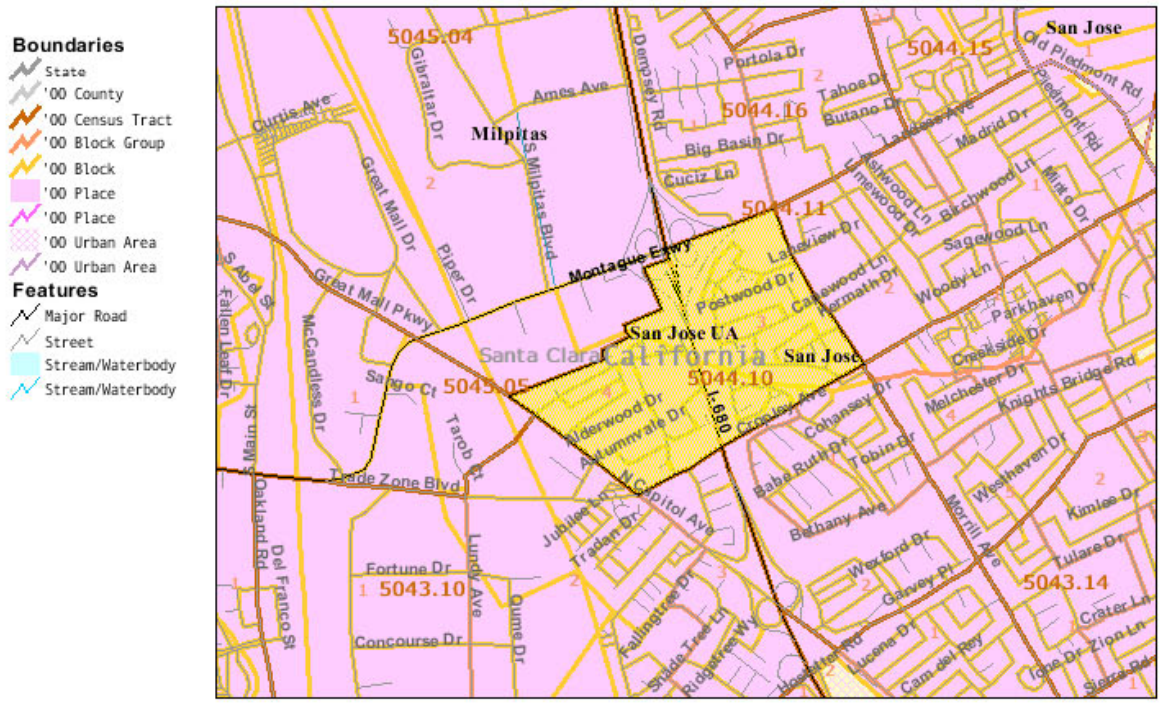


Figure 4-1 Census Tract 5044.10

4.1.3 Topography and Soils

4.1.3.1 Topography

The Berryessa Creek watershed (Figure 4-2) covers a 22.4-square-mile area and is located on the eastern side of the Santa Clara Valley near Milpitas, California. Approximately half of the watershed covers upland, mountainous areas, whereas the other half is located in the Santa Clara Valley. Mountainous areas of the watershed are largely undeveloped and used mainly for cattle grazing. Areas in the upper basin along tributary streams and in valleys exhibit tree cover consisting primarily of oak and madrone in the uplands and willows and sycamores in the riparian zone. Grasslands dominate much of the upper basin hill slopes away from drainage networks. In contrast, the lower part of the basin in Santa Clara Valley is heavily populated, consisting of residential housing tracts and light industry.

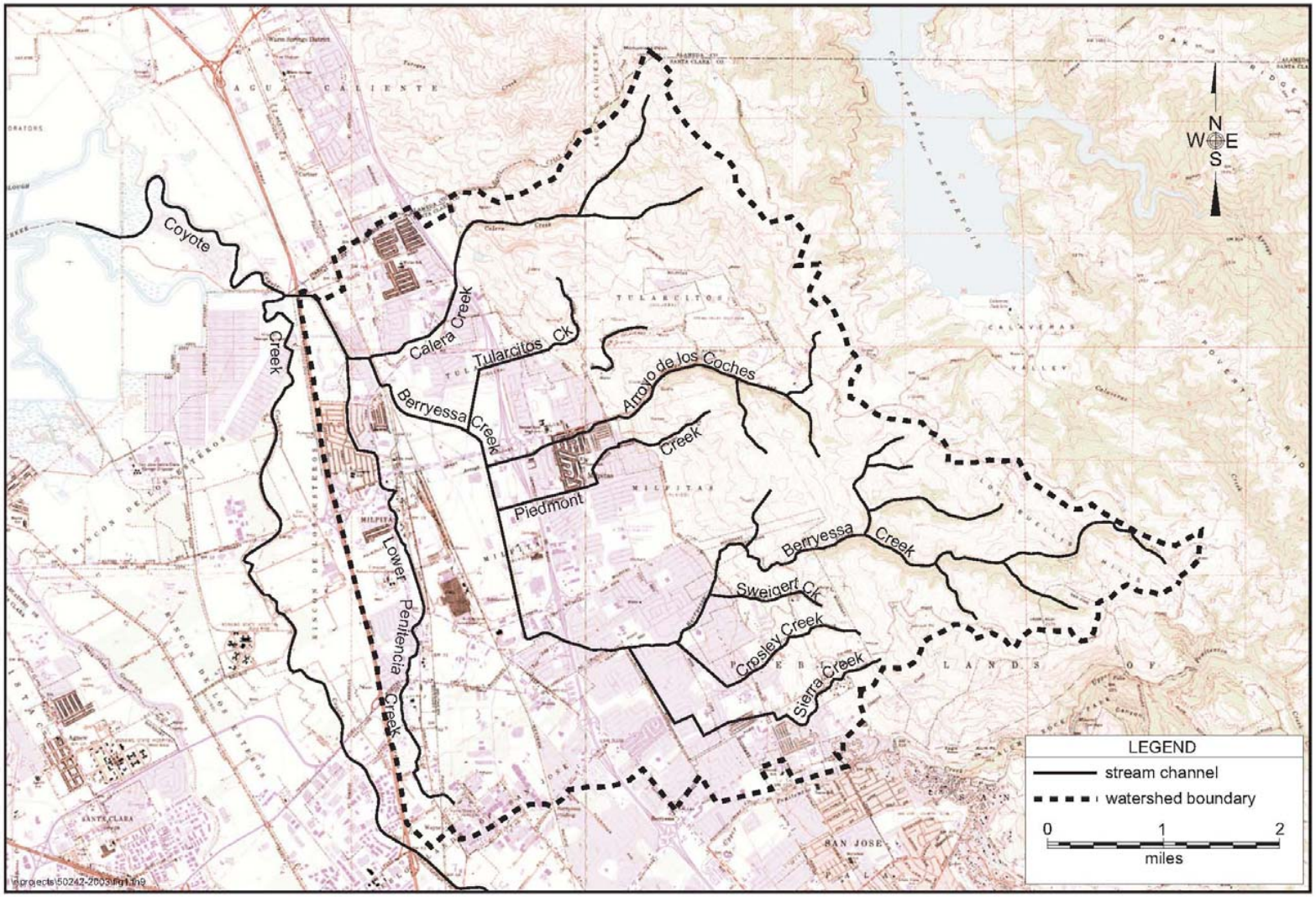


Figure 4-2. Berryessa Creek Watershed

Berryessa Creek flows west into the Santa Clara Valley then turns northeast to flow in a manmade channel until it reaches its terminus at the confluence with Lower Penitencia Creek. Major tributaries to Berryessa Creek are Arroyo de Los Coches and Calera, Crosley, Piedmont, Sierra, Sweigert, and Tularcitos Creeks. Monument Peak, at 2,594 feet, is the highest point in the Berryessa Creek basin, and the lowest point is an elevation of 3 feet at the confluence with Lower Penitencia Creek. There are no major reservoirs in the Berryessa Creek watershed. The downstream 3,500 feet of Berryessa Creek are affected by tidal action from the confluence with Lower Penitencia Creek to North Abel Street.

The removal of sediment within the channel and construction of the flood walls and/or levees would not change the overall topography of the area. Due to their size and nature, the proposed project would have no effect on the major topographic features in the area.

4.1.3.2 Soils

Specific soil series (soil types) in the study area are associated with Holocene deposits of specific age and manner of deposition. Soils in the study area were formed by either basin or alluvial deposition. Basin deposition consists of sediment that settles out of standing or slow-moving water. Alluvial fan deposition occurs when sediment is deposited by streams emanating from canyons onto alluvial valley floors or alluvial plains. Alluvial deposits typically result from debris flows, concentrated mudflows, braided stream flows, or overbank flooding (USGS, 2000).

Soil types in the study area include Mocho gravelly loam (1 to 3 percent slope), Mocho loam (1 to 3 percent slope), Mocho clay loam (1 to 3 percent slope), Sunnyvale clay loam (0 to 1 percent slope), Orestimba silty clay loam (0 to 1 percent slope), and Clear Lake clay (0 to 1 percent slope). The Mocho soil types are associated with steeper gradient stream reaches upstream of I-680. The Sunnyvale, Orestimba, and Clear Lake soil types are associated with shallower gradient stream reaches downstream of I-680. Historically, soils in the study area were suitable for agriculture, especially the cultivation of apricots, prunes, and peaches (USDA, 1958).

Construction of the proposed project would temporarily expose disturbed areas to erosion caused by wind or early-season rainfall events. Soil types have a moderate to high erosion potential; the active excavation and grading of soil during construction activities could result in erosion. Potential erosion during construction would be addressed through the implementation of BMPs. Further discussion of potential erosion concerns and the associated BMPs are addressed in Section 4.4, Water Resources and Quality.

Localized areas of the study area would be disturbed during construction due to channel excavation and earthen levees and floodwall construction. All suitable material from excavation would be reused in the study area to the extent feasible and all disposal material would be temporarily stockpiled at the staging area(s). All non-useable material would be disposed of by the contractor at a State-permitted disposal facility approved in writing by the Corps. As a result, the proposed project would have no effect on the overall soil conditions in and near the study area.

4.1.4 Geology and Seismicity

4.1.4.1 Geology

The project site is in the southeastern portion of the San Francisco Bay area in the Coast Range geomorphic province of California. Three prominent geologic blocks dominate the San Francisco Bay Area: the Santa Cruz Mountains (western block), the San Francisco Bay (central block), and the East Bay Hills/Diablo Range (eastern block). The site is located along the northern margin of the Santa Clara Valley, approximately five miles south of San Francisco Bay.

4.1.4.2 Seismicity

The project site is located in a seismically active part of northern California. The Santa Clara Valley and the Diablo Range are separated by the Hayward Fault zone, a branch of the San Andreas Fault zone. The Diablo Range was formed by uplifting along the fault zone, while the valley down faulted. These processes took place in the late Pliocene epoch several million years ago. Many faults exist in the San Francisco Bay Area, which are capable of producing earthquakes. Significant earthquakes, which have occurred in this area, are generally associated with crustal movements along well-defined active fault zones. Faults in the vicinity of the site with a moderate to high potential for surface rupture include the Hayward Fault, Calaveras Fault, San Andreas Fault, Greenville Fault, and Concord-Green Valley Fault. Figure 4-3 presents the locations of the fault systems relative to the project site.

The U.S. Geological Survey (2005) estimated the following probabilities of a magnitude 6.7 or greater earthquake occurring at the faults located in the study vicinity before 2032: Hayward Fault (27 percent), San Andreas Fault (21 percent), Greenville Fault (3 percent) and Concord-Green Valley Fault (4 percent). Moreover, using newly collected and updated theories of earthquake activity, the USGS has concluded that there is a 62 percent chance of at least one magnitude 6.7 or greater quake (capable of causing widespread damage) striking somewhere in the San Francisco Bay region before 2032 (USGS 2005).

Active faults have been mapped and are classified as A, B, or C type faults specifically for use with the California Building Standards Code. Faults are classified based on the magnitude of earthquakes typically associated with the fault, and the fault's slip rate. Type A faults cause the greatest potential destruction; Type C cause the least. The closest known active faults to the study area are listed in Table 4-7. In addition, the approximate distance to the study area, probable maximum moment magnitude that could be generated, fault class, and slip rate are identified.

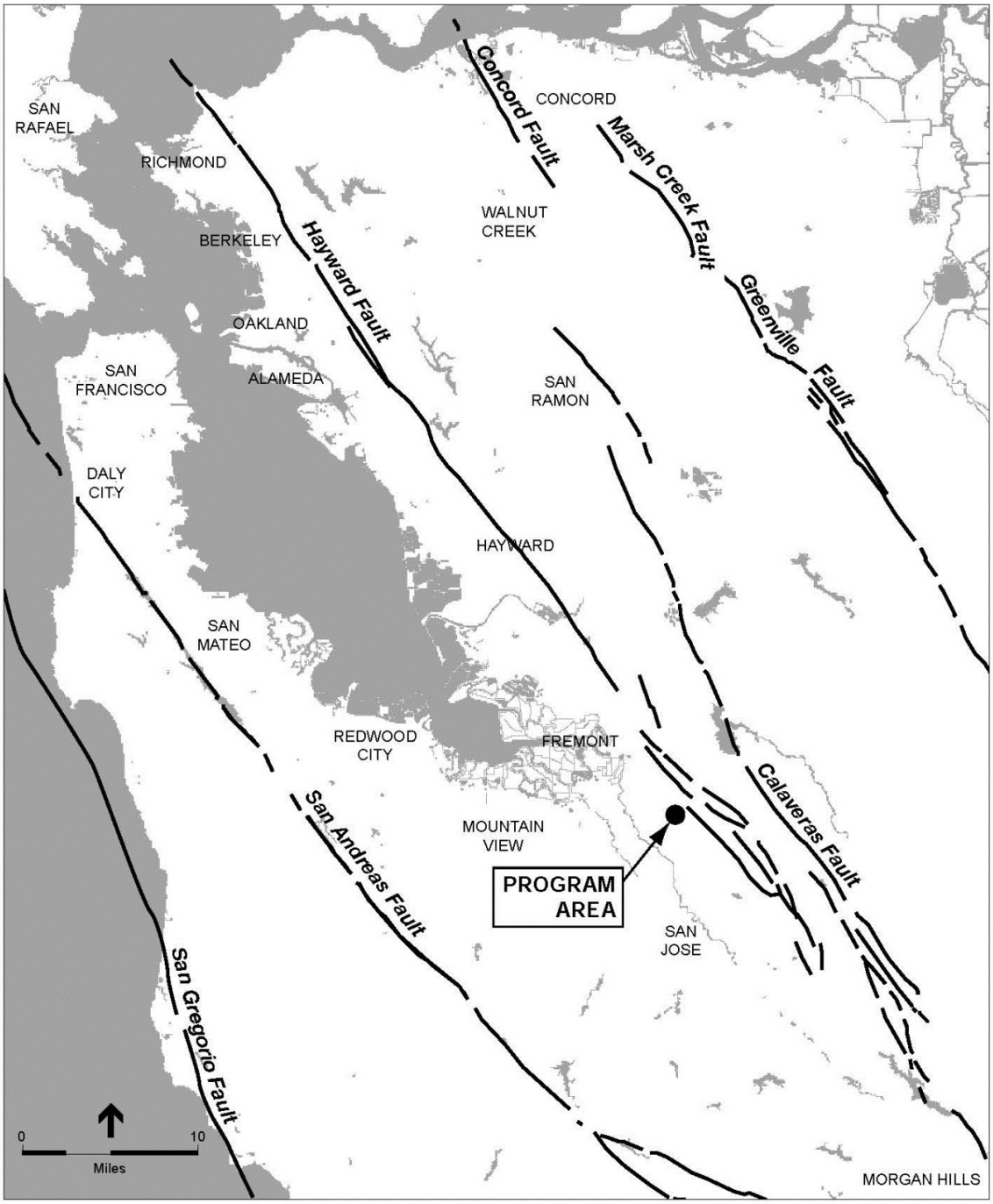


Figure 4-3 Fault Map

Table 4-7 Maximum Credible Earthquake Magnitudes				
Fault	**Estimated Distance from Project Site**	**Maximum Credible Earthquake2**	**Fault Class1**	**Slip Rate (mm/yr)**
Hayward Fault (Strike-Slip Fault)	1.2 miles	7.1	A	9
Calaveras Fault (Strike-Slip Fault)	4.7 miles	6.8	B	6
San Andreas Fault (Strike-Slip Fault)	15.6 miles	6.7	A	17
Greenville Fault (Strike-Slip Fault)	17.6 miles	6.9	B	2
Concord-Green Valley Fault (Strike-Slip Fault)	33.8 miles	6.8	B	4-5
Notes: 1 Faults with an "A" classification are capable of producing large magnitude (M) events (M greater than 7.0), have a high rate of seismic activity (e.g., slip rates greater than 5 millimeters per year), and have well-constrained paleoseismic data (e.g., evidence of displacement within the last 700,000 years). Class B faults are those that lack paleoseismic data necessary to constrain the recurrence intervals of large-scale events. Faults with a "B" classification are capable of producing an event of M 6.5 or greater. 2 The moment magnitude scale is used by seismologists to compare the energy released by earthquakes. Unlike other magnitude scales, it does not saturate at the upper end, meaning that there is no particular value beyond which all earthquakes have about the same magnitude, which makes it a particularly valuable tool for assessing large earthquakes. Sources: Cao et al. 2003; Jennings 1994; Petersen et al. 1996; data compiled by USACE in 2011				

4.1.4.3 Seismic Hazards

No active faults have been mapped within the study area by the California Geological Survey or U.S. Geological Survey (Jennings 1994). The study area is not located within the one of the Alquist-Priolo Earthquake Fault Zones, and therefore the Alquist-Priolo Earthquake Fault Zoning Act does not apply to this project (California Geological Survey 2007).

Seismic ground shaking is an unavoidable hazard for facilities within the Bay Area. It is likely the proposed project would experience at least one major earthquake within the life of the project. Design, construction, and maintenance must comply with the regulatory standards of the Corps, the latest industry standards and building code requirement for seismic design. The design and construction of the floodwalls and/or levees would meet or exceed applicable design standards for static and dynamic stability, seismic ground shaking, liquefaction, subsidence, and seepage, minimizing the potential for significant damage. Therefore, the existing geology and seismicity of the area would not affect the proposed project.

4.2 AIR QUALITY

4.2.1 Regulatory Setting

4.2.1.1 Federal

(a) Clean Air Act

The Clean Air Act (42 U.S.C. 7401, et seq.) delegates primary enforcement to the states, with direct oversight by the U.S. Environmental Protection Agency (EPA). The CAA which was last amended in 1990, requires EPA to set National ambient air quality standards (NAAQS) (40 CFR part 50) for pollutants considered harmful to public health and the environment. The CAA established two types of NAAQS. Primary standards were established to promote human health with an adequate margin of safety to protect those most vulnerable such as asthmatics, infants, and elderly persons. More stringent secondary standards were established to promote human welfare to prevent impaired visibility, building and crop damage, etc.

4.2.1.2 State

(a) California Clean Air Act

The California Air Resources Board (ARB) is the agency responsible for coordination and oversight of State and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA). The CCAA, which was adopted in 1988, required ARB to establish California ambient air quality standards (CAAQS). The standards for criteria pollutants established by CARB are generally more restrictive than the NAAQS. CARB has also established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, visibility-reducing particulate matter, and the criteria air pollutants described below. Differences in the standards are generally explained by the health effects studies considered during the standard-setting process and the interpretation of the studies. In addition, the CAAQS incorporate a margin of safety to protect sensitive individuals.

The CCAA requires that all local air districts in the State endeavor to achieve and maintain the CAAQS by the earliest practical date. The act specifies that local air districts should focus particular attention on reducing the emissions from transportation and area wide emission sources, and provides districts with the authority to regulate indirect sources (i.e., sources that are not stationary or regulated as a stationary source, such as construction sources).

Other CARB responsibilities include:

- Overseeing local air district compliance with California and Federal laws
- Approving local air quality attainment plans (AQAPs)
- Submitting State Implementation Plans (SIPs) to the U.S. Environmental Protection Agency (EPA)

- Monitoring air quality
- Determining and updating area designations and maps
- Setting emissions standards for new mobile sources, consumer products, small utility engines, off-road vehicles, and fuels

4.2.1.3 Local

The Bay Area Air Quality Management District (BAAQMD) has local jurisdiction over the study area. BAAQMD is responsible for bringing and/or maintaining air quality in the Basin within Federal and State air quality standards. Specifically, BAAQMD has the responsibility to monitor ambient air pollutant levels throughout the Basin and to develop and implement strategies to attain the applicable Federal and State standards.

The CAA and the CCAA require SIPs to be developed for areas designated as non-attainment (with the exception of areas designated as non-attainment for the state PM10 standard). For State air quality planning purposes, the Bay Area is classified as a serious non-attainment area for the 1-hour ozone standard. The "serious" classification triggers various plan submittal requirements and transportation performance standards. One such requirement is that the Bay Area update the Clean Air Plan (CAP) every three years to reflect progress in meeting the air quality standards and to incorporate new information regarding the feasibility of control measures and new emission inventory data.

The Bay Area 2010 CAP serves to:

- Update the Bay Area 2005 Ozone Strategy in accordance with the requirements of the California Clean Air Act to implement "all feasible measures" to reduce ozone
- Consider the impacts of ozone control measures on particulate matter, air toxics, and greenhouse gases in a single, integrated plan
- Review progress in improving air quality in recent years
- Establish emission control measures to be adopted or implemented in the 2010 to 2012 timeframe

4.2.2 Environmental Setting

Air quality is affected by the rate, amount, and location of pollutant emissions and the associated meteorological conditions that influence pollutant movement and dispersal. Atmospheric conditions (wind speed, wind direction, and air temperature) in combination with local surface topography (geographic features such as mountains and valleys) determine how air pollutant emissions affect local air quality.

Air pollution potential in the Santa Clara Valley is high. High summer temperatures, stable air, and mountains surrounding the valley combine to promote ozone formation. In addition to the

many local sources of pollution, ozone precursors from San Francisco, San Mateo, and Alameda Counties are carried by prevailing winds to the Santa Clara Valley. The shape of the valley tends to channel pollutants to the southeast. In addition, on summer days with low level temperature inversions, ozone can be recirculated by southerly drainage flows in the late evening and early morning and by the prevailing northwesterly winds in the afternoon. A similar recirculation pattern occurs in the winter, affecting levels of CO and particulate matter. This movement of the air up and down the valley increases the impact of the pollutants significantly.

4.2.2.1 Criteria Air Pollutants

The CAA established NAAQS for several air pollutants. The six non factors pollutants that are analyzed when examining air quality include ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), inhalable particulate matter (PM_{10} and $PM_{2.5}$ - particulates 10 microns or less in diameter and 2.5 microns or less in diameter, respectively), and lead.

4.2.2.2 Ambient Air Quality Standards

Areas are classified as either *in attainment* or in *non-attainment* with respect to State and Federal ambient air quality standards. These classifications are made by comparing actual monitored air pollutant concentrations to State and Federal standards. If a pollutant concentration is lower than the State or Federal standard, the area is considered to be *in attainment* of the standard for that pollutant. If pollutant levels exceed a standard, the area is considered a *non-attainment* area. If data are insufficient to determine whether a pollutant is violating the standard, the area is designated *unclassified*.

To implement Section 176 of the CAA, the EPA issued the General Conformity Rule which states that a Federal action must not cause or contribute to any violation of the NAAQS, or delay timely attainment of air-quality standards. In order to meet this CAA requirement, a Federal agency must demonstrate that every action that it undertakes, approves, permits or supports will conform to the appropriate state implementation plan (SIP). A conformity determination is required for each pollutant where the total of direct and indirect emissions caused by a Federal action in a non-attainment (or maintenance) area exceeds *de minimus* rates listed in the rule (40 CFR 93.153).

The California Clean Air Act established CAAQS which are more stringent than Federal standards and also includes pollutants not listed in the NAAQS. All Federal projects in California must comply with the stricter California air quality standards. The California and National Standards are summarized in Table 4-8.

The BAAQMD is in non-attainment status for ozone under both the California (CAAQS) and Federal standards (NAAQS), and also is in non-attainment under the California standard for particulate matter (PM10 and PM2.5). The BAAQMD is in attainment for all other listed air pollutants under both the California and Federal standards (Bay Area Air Quality Management District 2008).

Table 4-8 Air Quality Standards and Attainment Status

Pollutant	Averaging Time	State Standard	Federal Standard
Ozone	1 Hour 8 Hour	0.09 ppm 0.070 ppm	– 0.075 ppm
Carbon Monoxide	1 Hour 8 Hour	20 ppm 9.0 ppm	35 ppm 9 ppm
Nitrogen Dioxide	1 Hour Annual	0.18 ppm 0.030 ppm	0.100 ppm[a] 0.053 ppm
Sulfur Dioxide	1 Hour 3 Hour 24 Hour Annual	0.25 ppm – 0.04 ppm –	– 0.5 ppm 0.14 ppm 0.03 ppm
Respirable Particulate Matter (PM_{10})	24 Hour Annual	50 µg/m^3 20 µg/m^3	150 µg/m^3 –
Fine Particulate Matter ($PM_{2.5}$)	24 Hour Annual	– 12 µg/m^3	35 µg/m^3 15.0 µg/m^3
Lead	Monthly Quarterly	1.5 µg/m^3 –	– 1.5 µg/m^3

ppm = parts per million
µg/m^3 = micrograms per cubic meter

[a] To attain this standard, the three-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010).

Source: Bay Area Air Quality Management District 2011

4.2.2.3 Current Status

Existing air quality conditions in the study area can be characterized by monitoring data collected in the region. The air quality monitoring station closest to the project alignment is the San Jose Central station which monitors for ozone, CO, NO_2, SO_2, PM10, and PM2.5.

Recent air quality monitoring results from the San Jose Central monitoring station are summarized in Table 4-9. Table 4-9 incorporates San Jose's air quality data from the BAAQMD. The table shows the number of times each year that each station records pollutant concentrations in excess of the Federal or California air quality standards. The table also lists the highest annual reading for each pollutant at each station. As indicated in Table 4-9, the San Jose Central monitoring station has experienced no violations of the Federal or State standards from 2004-2008.

Table 4-9 Air Quality Data Summary

Pollutant	Standard[a]	Monitoring Data by Year				
		2004	2005	2006	2007	2008
Ozone						
Highest 1-hour average, ppm		0.090	**0.113**	**0.118**	0.083	**0.118**
Days over state standard	0.09 ppm	0	1	5	0	1
Highest 8-hour average, ppm		0.069	**0.080**	**0.087**	0.068	**0.080**
Days over state standard	0.070 ppm	0	1	5	0	3
Days over national standard	0.075 ppm	0	1	3	0	2
Nitrogen Dioxide (NO_2)						
Highest 1-hour average, ppm		0.073	0.074	0.074	0.065	0.080
Days over state Standard	0.18 ppm	0	0	0	0	0
Annual Average (ppm)		--	0.019	0.018	0.017	0.017
Carbon Monoxide						
Highest 8-hour average, ppm		2.96	3.11	2.92	2.71	2.48
Days over state/national standard	9.0/9	0	0	0	0	0
PM_{10}						
Highest 24-hour average, state/ national, $\mu g/m^3$		**58.1**/55.4	**53.5**/49.9	**73.2**/68.9	**69.1**/64.7	**57.3**/55.0
Estimated days over state/national standard[b]	50/150	24.5/0	11.5/0	11.5/0	18.1/0	6.1/0
$PM_{2.5}$						
Highest 24-hour average, $\mu g/m^3$		**51.5**	**54.6**	**64.4**	**57.5**	**41.9**
Estimated days over national standard[b]	35	14.4	16.2	7.6	9.1	5.1

[a] Generally, state standards are not to be exceeded and federal standards are not to be exceeded more than once per year.
[b] Measurements are collected every six days. "Estimated days" represent an estimated number of days that the standard would have been exceeded if levels were sampled every day of the year.

NOTES: ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter
Bold values are in excess of applicable standards.
-- There was insufficient data available to determine this value.

Source: Bay Area Air Quality Management District

4.2.2.4 Sensitive Receptors

Air quality does not affect every individual in the population in the same way, and some groups are more sensitive to adverse health effects than other groups. Population subgroups sensitive to the health effects of air pollutants include the elderly and the young, those with higher rates of respiratory disease such as asthma and chronic obstructive pulmonary disease, and subgroups with other environmental or occupational health exposures (e.g. indoor air quality) that affect cardiovascular or respiratory diseases. Land uses such as schools, children's day care centers, hospitals, and nursing and convalescent homes are the most sensitive to poor air quality because the population groups associated with these uses have higher susceptibility to respiratory distress. Parks and playgrounds are considered moderately sensitive to poor air quality because persons engaged in strenuous work or exercise also have increased sensitivity to poor air quality. However, exposure times are generally far shorter in parks and playgrounds than in residential

locations and schools, which typically result in lower levels of pollutant exposure. Residential areas are more sensitive to air quality conditions compared to commercial and industrial areas because people generally spend more time at their residences, with greater associated exposure to ambient air quality conditions.

The project area is in a highly developed area. Downstream of I-680 is a commercial/industrial area, the sensitive receptors include the employees of the businesses, residential neighborhood located adjacent to the creek and, Northwood Elementary School located approximately 700 feet from the creek. There are no licensed childcare facilities within 1,000 feet of the either project site (the analytic zone of influence of the BAAQMD CEQA Guidelines). There are no hospitals or convalescent homes in the project vicinity. A map of the sensitive receptor for the downstream of I-680 is located in Appendix A

The sensitive receptors in the upstream of I-680 include local residents and visitors, recreationists at Berryessa Creek Park, Majestic Way Elementary School located approximately 100 feet from the creek, and occasional wildlife. These sensitive receptors would only be effect if Alternative 5, the Authorized Project, is implemented. Alternative 5 is used by the Corps for comparative reasons but is not a candidate for selection.

4.3 CLIMATE CHANGE

4.3.1 Regulatory Setting

4.3.1.1 Federal

Currently, there are no Federal laws related to greenhouse gas emissions (GHG) and climate change that are directly relevant to this analysis. The Council on Environmental Quality (CEQ), which serves under the Executive Office of the President, published in February 2010 a Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions. The Guidance memorandum advised Federal agencies to consider the impacts of and opportunities to reduce GHG emissions caused by proposed Federal actions. The Guidance memorandum established the basis for evaluation of any proposed action to be the "*reasonably anticipated direct emissions of 25,000 metric tons or more of CO_2-equivalent (CO_2e) GHG emissions*".

4.3.1.2 State

The CARB is responsible for the development, implementation, and enforcement of California's motor vehicle pollution control program, GHG statewide emission estimates and goals, and development and enforcement of GHG emission reduction rules.

California is the second largest contributor of GHG in the U.S. and the sixteenth largest in the world (CEC 2006). During 1990 to 2003, California's gross state product grew 83 percent while GHG emissions grew 12 percent. While California has a high amount of GHG emissions, it has low emissions per capita. The major source of GHG in California is transportation, contributing 41 percent of the State's total GHG emissions (CEC 2006). Electricity generation is the second largest generator, contributing 22 percent of the State's GHG emissions. Emissions from fuel

use in the commercial and residential sectors in California decreased 9.7 percent over the 1990 to 2004 period (CEC 2006).

California has taken proactive steps, briefly described in Table 4-10, to address the issues associated with GHG emissions and climate change. A summary of the major California GHG regulations that will affect the project's GHG emissions are presented in Table 4-10.

Table 4-10 Summary of Relevant California GHG Regulations

Bill, Year	Description
Assembly Bill (AB) 4420, 1988	Directed California Energy Commission, in consultation with the CARB and other agencies, to "study and report…on how global warming trends may affect California's energy supply and demand, economy, environment, agriculture, and water supplies."
AB 1493, 2002	Requires CARB to develop and implement regulations to reduce automobile and light-truck GHG emissions. These stricter emissions standards apply to automobiles and light trucks beginning with the 2009 MY. Although litigation was filed challenging these regulations and EPA initially denied California's related request for a waiver, the waiver request has now been granted.
Executive Order (E.O.) S-3-05, 2005	The goal of E.O. S-3-05 is to reduce California's GHG emissions to: (1) year 2000 levels by 2010, (2) 1990 levels by 2020, and (3) 80% below the 1990 levels by 2050.
AB 32, California Global Warming Solutions Act of 2006	Sets overall GHG emissions reduction goals and mandates that CARB create a plan that includes market mechanisms and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Requires statewide GHG emissions be reduced to 1990 levels by 2020. (The 1990 CO2e level is 427 million metric tons of CO2e (CARB 2012a)). Directs CARB to develop and implement regulations to reduce statewide emissions from stationary sources. Specifies that regulations adopted in response to AB 1493 be used to address GHG emissions from vehicles. Requires CARB to adopt a quantified cap on GHG emissions representing 1990 emissions levels. Includes guidance to institute emissions reductions in an economically efficient manner and conditions to ensure that businesses and consumers are not unfairly affected by the reductions.
E.O. S-01-07, 2007	Requires the carbon intensity of California's transportation fuels to be reduced by at least 10% by 2020.
Senate Bill 97	This bill directed the Natural Resources Agency, in coordination with the Governor's Office of Planning Research, to address the issues through Amendments to the CEQA Guidelines. The revised Guidelines were adopted December 30, 2009 to provide direction to lead agencies about evaluating, quantifying, and mitigating a project's potential GHG emissions.

Source: CARB 2012a, 2012b, 2012c; Office of the Governor 2007

4.3.2 Environmental Setting

4.3.2.1 Global Climate Trends and Associated Impacts

The rate of increase in global average surface temperature over the last hundred years has not been consistent; the last three decades have warmed at a much faster rate—on average 0.32°F per decade. Eleven of the twelve years from 1995 to 2006 rank among the twelve warmest years in the instrumental record of global average surface temperature (going back to 1850) (IPCC 2007).

During the same period over which this increased global warming has occurred, many other changes have occurred in other natural systems. Sea levels have risen on average 1.8 millimeters per year (mm/yr); precipitation patterns throughout the world have shifted, with some areas becoming wetter and other drier; tropical cyclone activity in the North Atlantic has increased; peak runoff timing of many glacial and snow fed rivers has shifted earlier; as well as numerous other observed conditions. Though it is difficult to prove a definitive cause and effect relationship between global warming and other observed changes to natural systems, there is high confidence in the scientific community that these changes are a direct result of increased global temperatures (IPCC 2007).

4.3.2.2 California Climate Trends and Associated Impacts

Maximum (daytime) and minimum (nighttime) temperatures are increasing almost everywhere in California but at different rates. The annual minimum temperature averaged over all of California has increased 0.33°F per decade during the period 1920 to 2003, while the average annual maximum temperature has increased 0.1°F per decade (Moser *et al.* 2009). With respect to California's water resources, the most significant impacts of global warming have been changes to the water cycle and sea level rise. Over the past century, the precipitation mix between snow and rain has shifted in favor of more rainfall and less snow (Mote *et al.* 2005; Knowles *et al.* 2006) and snow pack in the Sierra Nevada is melting earlier in the spring (Kapnick and Hall 2009). The average early spring snowpack in the Sierra Nevada has decreased by about 10 percent during the last century, a loss of 1.5 million acre-feet of snowpack storage (DWR, 2008). These changes have significant implications for water supply, flooding, aquatic ecosystems, energy generation, and recreation throughout the state. During the same period, sea levels along California's coast rose seven inches (DWR, 2008).

Statewide GHG emissions in 2008 were approximately 477.74 million metric tons of CO_2e. Based on this estimate, statewide emissions would need to be reduced by approximately 50 million metric tons of CO_2e by 2020 to meet the AB 32 goal of achieving 1990 CO_2e levels (427 million metric tons of CO_2e) (CARB 2012a).

4.4 WATER RESOURCES AND QUALITY

4.4.1 Regulatory Setting

4.4.1.1 Federal

(a) Clean Water Act

The Clean Water Act (CWA) of 1972, as amended (EE U.S.C. 1251, et. seq.) is the Federal law regulating the quality of the Nation's waters and wetlands. Provisions of the CWA provide for delegation by the EPA of many permitting, administrative, and enforcement aspects of the law to state governments. In California, the State Regional Water Control Board (SWRCB) and its associated nine regional water quality control boards (RWQCB) implement various CWA programs, including the promulgation of Water Quality Control Plans (basin plans) containing California's water quality standards. Pursuant to the CWA, water quality standards are composed of two parts: (1) the designated beneficial uses of water and (2) criteria or objectives to protect

those uses from pollution and degradation. The San Francisco Bay Regional Water Quality Control Board administers the hydrological basin containing the San Francisco Bay estuarine system and freshwater tributaries.

In addition to the basin plans, the regional water quality control boards administer the EPA's National Pollutant Discharge Elimination System (NPDES) permits required by the Clean Water Act. California regulations require that discharges of stormwater associated with construction activity disturbing more than 1 acre must be permitted under a General Permit for Discharges of Storm Water Associated with Construction Activity, known as a Construction General Permit. This permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must list best management practices (BMPs) that the contractor will use to control storm water runoff and reduce erosion and sedimentation. A sediment monitoring plan is also required if the site discharges to a water body with impaired or limited water quality (State Water Resources Control Board 2005d).

Sections 404 and 401 of the Clean Water Act regulate the discharge of dredged or fill material into wetlands and waters of the United States. Both the Corps and the EPA have responsibility for administering the Section 404 program and typically issue permits for these regulated activities. Although the Corps does not issue itself permits for its own Civil Works projects, Corps regulations require the Corps to apply the guidelines and substantive requirements of Section 404 to its activities. The State Water Resources Control Board implements the Section 401 water quality certification program. The Section 401 Program is intended to complement Section 404 goals and to encourage basin-level analysis and protection of wetlands and riparian areas (State Water Resources Control Board 2005a). A Wetland Delineation is included in Appendix A Part I.

4.4.1.2 State

(a) Porter-Cologne Water Quality Control Act and Clean Water Act (Section 402)

The SWRCB and RWQCBs regulate discharges of waste into waters of the United States through NPDES permits, authorized under Section 402 of the CWA, and regulate discharges of waste into waters of the state through waste discharge requirements (WDRs), authorized under California's Porter-Cologne Water Quality Control Act (Porter-Cologne Act). The RWQCBs issue NPDES permits and WDRs to ensure that projects that may discharge wastes to land or water conform to water quality objectives and policies and procedures of the applicable water quality control plans. The Porter-Cologne Act defines waters of the state as "any surface water or groundwater, including saline waters, within the boundaries of the state."

The SWRCB General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order 2009-009-Division of Water Quality [DWQ]) is applicable to all land-disturbing construction activities that would affect 1 acre or more. NPDES permits involve similar processes, including submittal of notices of intent (NOI) to discharge to the San Francisco Bay RWQCB and implementation of BMPs to minimize those discharges. The San Francisco Bay Regional Water Quality Control Board may also issue site-specific WDRs, or waivers to WDRs, for certain waste discharges to land or waters of the state.

Construction activities subject to the general construction activity permit include clearing, grading, stockpiling, and excavation. Dischargers are required to eliminate or reduce non-stormwater discharges to storm sewer systems and other waters. The permit also requires dischargers to consider the use of post-construction permanent BMPs that will remain in service to protect water quality throughout the life of the project. Types of BMPs include source controls, treatment controls, and site planning measures.

(b) Water Quality Control Plan

The San Francisco Bay Regional Water Quality Control Board adopted the current Water Quality Control Plan (Basin Plan) for the San Francisco Bay in 2007. The Basin Plan is the master policy document that contains descriptions of the legal, technical, and programmatic bases of water quality regulation in the San Francisco Bay region. The Basin Plan establishes (1) beneficial uses for waters within the basin, (2) water quality objectives to protect those beneficial uses, and (3) implementation plans and strategies designed to achieve the water quality objectives (State Water Resources Control Board 2005d).

4.4.2 Environmental Setting

4.4.2.1 Water Quality

The stream is intermittent with flow in winter and low to no flow in summer. Winter flows tend to be turbid, due to sediment loading from the surrounding foothills and from bank erosion along the creek. Sources of summer flows include runoff from the watering of lawns, industrial discharges, and limited groundwater discharge. Low summer flows lead to stagnant water conditions, low dissolved oxygen content, and higher water temperatures. The creek is completely dry downstream of I-680 during the summer and fall months.

Berryessa Creek is not reported on the 303(d) list of impaired waters; lower Penitencia Creek was visually observed to have petroleum product odors and films during a January 1987 fisheries study (Harvey & Stanley 1988).

4.4.2.2 Water Temperature

Tetra Tech (2003) conducted temperature monitoring in Berryessa Creek in 2002. A wide variety of water temperatures occur in the creek, from 38.3 to 84.7°F, depending on the season and location. The creek was monitored in three reaches: Upper Reach, above Old Piedmont Road; Middle Reach, from Old Piedmont Road to Calaveras Boulevard; and Lower Reach, downstream of Calaveras Boulevard. The upper reach had significantly cooler water temperatures than the middle and lower reaches, although water was only present from November through early June. Average temperatures during the potential steelhead spawning season (December through March) were 48.3°F in the upper reach, 55.1°F in the middle reach, and 54.7°F in the lower reach. During the steelhead spawning season, temperatures are generally within the range tolerated by steelhead, although occasional high temperatures (up to 71.3°F in the lower reach) were recorded, corresponding to warm days in late winter.

Average summer temperatures were significantly higher, both as a result of warmer air temperatures and of reduced flow in the creek that can heat up much more quickly from solar radiation gain. Because there was no flow in the upper reach during the summer and early fall months, no temperatures were recorded, although the maximum temperature reached in early June was approximately 78°F. Averages temperatures in the middle and lower reaches were 69.7 and 69.9°F, respectively. Maximum water temperatures reached 84.7°F in the middle reach. In general, water temperatures are directly correlated with air temperature in Berryessa Creek. The high water temperatures during most of the year likely reduce the habitat available to native fish and amphibians, which prefer cooler temperatures. The upper reach is most conducive to native fish and amphibian habitat. Temperature also affects the assemblage of benthic macroinvertebrates, which serves as the prey base for native fish and amphibians. The Water Temperature Monitoring Report in Appendix A Part II.

4.4.2.3 Sensitive Aquatic Habitat

Sensitive aquatic habitat includes those habitats that are of special concern to resource agencies or that are afforded specific consideration through ESA, Section 404 and 401 of the CWA, the Porter-Cologne Water Quality Control Act, or the Magnuson Stevens Fishery Conservation and Management Act (as amended). These habitats are of special concern because they may be of high value to plant, wildlife, and fish species and may have a higher potential to support special-status species. They also provide other important ecological functions, such as enhancing flood and erosion control and maintaining water quality.

(a) Jurisdictional Wetlands and Waters of the United States

Approximately 2.65 acres of waters of the United States, including Berryessa Creek are present in the study area. These waters are regulated under Section 404 of the Clean Water Act, since they are tributaries, and/or are adjacent to tributaries to navigable waters of the United States. Any discharge of dredge or fill material into these jurisdictional waters are subject to compliance under CWA Section 404 and 401 (33 U.S.C. § 1251 et seq. [1972]). All waters of the United States are also considered waters of the State and are subject to regulation under the Porter-Cologne Water Quality Control Act.

Wetland vegetation was located immediately downstream of the Calaveras Boulevard Bridge and downstream of I-680 between Yosemite and Ames Avenues and covers an area of about 0.79 acres. The site is characterized as semi permanently flooded freshwater marsh. Wetlands vegetation at these sites was only found in the stream channel below the ordinary high water mark. The wetland sites are dominated by cattail, an obligate wetland species. Other wetland plant species include horsetail, watercress, and smartweed. These hydrophytic species are present in the low-flow channel in places where surface water is flowing or forms shallow, stagnant, intermittent pools during the dry season. Based on a review of aerial photography, the extent of wetland vegetation appears to vary slightly from year to year.

Wetlands are generally characterized by the presence of three basic parameters: soils, hydrology, and vegetation. Water is present at the surface or within the root zone for at least a portion of the growing season. As a result of the saturated conditions, the soils present in wetlands develop characteristics that are different from those of upland soils. Consequently, wetlands support

vegetative species that are adapted to living in wet conditions. However, hydric soils usually require hundreds of years for development. The stream channel alignment downstream of I-680 is artificial and was constructed in 1961. The presence of hydric soils was not verified.

4.4.2.4 Hydrology

(a) Sub basin Delineation

The Berryessa Creek and Lower Penitencia Creek drainage basins were divided into two general categories: urbanized and rural. Descriptions of these categories are provided below.

Urban Areas

The majority of urban development in the Berryessa Creek basin is located in the lower elevation and western portion of the basin within the Milpitas city limits. Essentially the entire Lower Penitencia Creek basin is urbanized. Single-family housing, apartment complexes, shopping centers, schools, and industrial areas create a high percentage of impervious cover. All conveyance features are improved to some degree. These features vary from slightly improved open channels to complex underground storm drain systems. Urban areas are characterized by ground slopes of about one percent (0.01 ft/ft). Soils maps of the area (USDA 1958) indicate that younger clays are interspersed with smaller amounts of old San Francisco Bay mud in the vicinity of the creeks. Much of the soil in the urban area is either clay or clayey loam and is associated with very low infiltration rates when wetted, resulting in high runoff potential. Closer to Coyote Creek, the soil becomes loamier and is characterized by better infiltration characteristics and moderate to high runoff potential.

Rural Areas

Under existing conditions, the higher elevation portions of the Berryessa Creek basin, representing the foothills area east of Old Piedmont Road, are either undeveloped or sparsely developed. The tributary channels in the upper basin wind through gently rolling grass-covered hills. The upper basin is characterized by slopes of five to six percent (0.05 to 0.06 ft/ft) with minimal impervious cover. The soils are shallow with high clay content. Stream channels are commonly flanked by brush and deciduous trees. The width of the riparian zone along these channels varies from several hundred yards in the channels of Berryessa Creek and Arroyo de Los Coches to a few yards on the smaller tributaries.

For hydrologic modeling purposes, the study area was divided into 39 subbasins. The rural zone was divided into 16 subbasins, representing the foothill basins of Berryessa Creek, Piedmont Creek, Sierra Creek, Crosley Creek, Sweigert Creek, Arroyo de Los Coches, Tularcitos Creek, and Calera Creek. The lower (urban) region was divided into 23 subbasins, each representing an area of similar flow patterns and urbanization. The drainage divides defining these subbasins were established by referencing U.S. Geological Survey quadrangles, county storm drainage design maps, field inspections, the Milpitas Master Drainage Plan, and consultations with City staff familiar with the area (Schaaf and Wheeler 2001; Delorme 2000).

(b) Breakout Flow Routing

The existing Berryessa Creek channel has insufficient capacity to convey all of the flow during large storm events. When floods greater than approximately a 5-year recurrence interval occur under existing conditions, flow overtops the banks and spills onto the floodplain at some locations. This allows significant attenuation of the flood hydrograph, reducing the peak flow downstream of breakout locations. Since the goal of the project is to reduce flooding by improving channel capacity, the hydrologic analysis assumed that Berryessa Creek would be able to convey all of the simulated design flows without overtopping. This is a necessary assumption to be able to predict appropriate peak flow rates for project design purposes along the entire length of the creek channel.

In the 2003 NHC hydrology report, several breakout flow locations were identified along tributary streams in the study area. A culvert on Piedmont Creek immediately upstream of I-680 was calculated to have a maximum capacity of 900 cfs; flows greater than 900 cfs would break out of the channel and travel north along South Park Victoria Drive, eventually entering Los Coches Creek. The culvert under I-680 on Los Coches Creek was calculated to have a maximum capacity of 800 cfs, and excess flows would break out and flow north along South Park Victoria Drive. Based on available topography and field investigations, the assumed overland flow path of the breakout flows from Los Coches Creek is west along Calaveras Boulevard. A portion of the breakout flow would enter Berryessa Creek at the Calaveras Boulevard Bridge, and the remainder of the flow would continue west along the roadway, ultimately reaching the Wrigley Creek subbasin. The reach of Tularcitos Creek downstream of I-680 was calculated to have a maximum capacity of 700 cfs. Flows greater than 700 cfs will overtop the channel and travel north. This flow would end up in Subbasin B20, which is drained by the Berryessa pump station.

(c) Discharges

The conversion of the GRR HEC-RAS Berryessa Creek model from steady to unsteady required the development of hydrographs representing various inflows to the Berryessa Creek Channel. The primary inflow hydrograph to the revised HEC-RAS model is the outflow from the I-680 culvert. The remaining inflow hydrographs consist of subarea runoff and tributary creeks. The inflow hydrographs were taken from the future conditions 2003 HEC-HMS model corresponding to the values published in the NHC (2003) hydrology report. Table 4-11 lists the peak discharges for each inflow hydrograph used in the without-project model, HEC-RAS inflow station, and HEC-HMS model nodes used to develop the inflow hydrographs.

Table 4-11 Discharges and Flow Change Locations Used as Model Input										
RAS Sta.	**HMS Node**	**Description**	**Peak Discharge by Exceedance (cfs)**							
			0.50	**0.20**	**0.10**	**0.04**	**0.02**	**0.01**	**0.005**	**0.002**
254+71	-na-	I-680 Outflow from FLO-2D model	490	701	953	1,145	1,403	1,544	1,610	1,771
218+32	B13 RM 3.73	Subarea B12	269	382	461	692	811	928	1,073	1,227
174+48	B15 RM 2.96	Subarea B14	96	149	176	245	275	317	361	414
166+54	B17 RM 2.76	Piedmont Creek	244	387	450	715	821	858	900	900
144+67	B17a RM 2.58	Los Coches Creek	264	429	559	833	868	928	911	951
141+21	B19 RM 2.43	Calaveras Blvd Overflow	0	0	0	0	197	400	400	400
124+03	B21 RM 2.21	Tularcitos Creek	208	332	408	595	652	660	678	685
89+53	B23 RM 1.52	Berryessa Pump	107	150	150	150	150	150	150	150
74+53	B25 RM 1.22	Wrigley-Ford Pump	251	378	432	432	432	432	432	432
59+53	B27 RM 0.94	Calera Creek	180	292	367	521	669	869	1,099	1,261
56+53	B29 RM 0.77	Abbot Pump	583	851	1,041	1,330	1,436	1,568	1,676	1,710
51+53	B31 RM 0.14	Jurgens Pump	127	150	150	150	150	150	150	150
49+74	B 33 RM 0.00	Cal Circle Pump	22	30	34	42	48	56	63	71

(d) Low-Flow Monitoring Survey

Two years of low-flow monitoring was performed on Berryessa Creek from March 2002 until February 2004. Five specific index reaches were surveyed. These reaches were previously identified in Table 2-2. Collectively, the five index reaches provided for an adequate representation of the flow conditions within the Berryessa Creek study area.

Flows were observed and documented including approximate flow width, flow depth, pool width, and pool depth along with characteristics such as braiding and substrate. The flow rates were calculated in cubic feet per second by multiplying a measured flow length, the flow width, and the flow depth (in feet) and dividing the product by the time it took a floating object to travel the measured length (in seconds). Other types of measuring devices, such as mechanical velocity meters, were unusable due to the lack of flow and minimal depths within the creek during most of the years.

With flow rates dependent on rain, fewer surveys were required during the dry (summer) months than the fall, winter, and spring months because of the lack of rainfall and the associated flow. Only following rain events were continuous flows observed throughout the entire five reaches. During other monitoring events, continuous flow was only observed in some reaches. The low-flow monitoring indicates that Berryessa Creek only possesses continuous flow during rain events and should be considered an intermittent creek. The reaches are described below.

Within the Berryessa Creek study area, Reach LF-1, upstream of Old Piedmont Road, most closely resembled a natural stream condition. The channel substrate consisted of gravel, sand, cobble, and boulders. The average flow rate for all sampling dates was 4.4 cfs with a maximum flow measurement of 66.6 cfs. Without the high flow events (>10 cfs), the average flow rate for this reach is reduced to 1.0 cfs. Pools present within the reach ranged from a maximum depth of 3 inches to over 2 feet, depending on flow conditions. Shallow pools were more clearly observed during low flows.

Reach LF-2, from Old Piedmont Road to the Piedmont-Cropley Culvert at Cropley Avenue, is channelized with a substrate of sands and fines throughout the reach. An active outfall was located approximately 200 yards downstream from the park bridge (350 yards upstream from Morill Road), which supplied water into the creek on a frequent basis. This reach only possessed continuous flow during and following rain events. During the driest times of the year, the outfall provided minimal amounts of water into the creek, which mostly consisted of urban runoff.

Reach LF-3, from Cropley Avenue to I-680, consisted of a concrete-lined trapezoidal channel that displayed flow only during rain events. Typically, Reach LF-3 had a very minimal amount of urban runoff that would be just enough to dampen half of the width of the channel bottom. No pools were observed.

Reach LF-4, from Montague Expressway to Ames Avenue, is a highly channelized soft-bottom channel with a silt and sand substrate. Like Reaches 2 and 3, this reach only had continuous flow during rain events, but pools are present during much of the year. An outfall located 50 yards downstream from Montague Expressway provided flow to the creek that averaged 2.7 cfs (during the site visits). On October 23, 2002, construction on the outfall diverted the runoff water that had been discharged into Berryessa Creek to another location. Post diversion, the water in this reach is only present during rain events.

Reach LF-5, from Piedmont Creek to Calaveras Boulevard, was a highly channelized soft-bottom channel with a substrate consisting mostly of sand and gravel mixed with a trace existence of cobble and boulders. This reach was the only reach within the project site that displayed continuous flow all year around. The average flow within this section was 14.4 cfs for all measured flows, which was provided mostly by the influence of Piedmont Creek and Los Coches Creek. Excluding high flow events, the average flow drops to 1.4 cfs. Habitats present were primarily glides with few deeper pools.

Average overall flow through Berryessa Creek for the 2 year period was 7.2 cfs. Excluding rain events, the average flow rate for Berryessa Creek was less than 1 cfs. In general, Berryessa Creek could be described as an intermittent creek that possesses continuous flow only during rainstorms and for a few hours or days following these rain events. Tributary flow and urban runoff from irrigation supply perennial flow to the lower end of the creek below Piedmont Creek. The dramatic rerouting and lengthening of the Berryessa Creek alignment has caused Berryessa Creek to become much more intermittent than has occurred historically when the alignment flowed directly west into Lower Penitencia Creek.

4.4.2.5 Groundwater Hydrology

In the past, removal of groundwater led to land subsidence in the Santa Clara Valley, especially in the Alviso District of San Jose. Several measures have been taken in recent years to supplement groundwater including the importation of water from outside the basin and the construction of water conservation reservoirs, which release water to streams and thereby replenish the aquifers.

The study area is generally characterized by relatively shallow groundwater. Sampling performed by Kennedy/Jenks showed groundwater in 14 of 26 borings at a depth of between 15 and 20 feet below ground surface. In the five monitoring wells installed, the groundwater was between 6.7 and 11.5 feet below ground surface. Kennedy/Jenks attributes the difference between the elevations established by the borings and the wells to a difficulty in determining the depth of the groundwater due to low permeability silts and clays as well as to higher precipitation prior to the sampling of the wells.

Groundwater quality was sampled by Kennedy/Jenks (1996) in Reach 7. Halogenated organic compounds were detected including TCE; PCE; 1,1-DCA; 1,1-DCE; and freon-113. Petroleum hydrocarbons as diesel were detected in one well. Treated groundwater appears to be discharged from Jones Chemical Company near Montague Expressway.

4.4.2.6 Hydraulics and Floodplains

(a) Hydraulic Analysis

HDR, Inc. developed a without-project HEC-RAS model of the Berryessa Creek channel extending from just above Old Piedmont Road to the confluence with Penitencia Creek (HDR, 2004a)[4]. The model was developed using existing HEC-2 data, where available, with the addition of new data where needed. The HEC-RAS model utilized the lateral weir capability of the program to determine the location and magnitude of breakouts from the channel. Breakouts were determined for the 0.20, 0.10, 0.05, 0.04, 0.02, 0.01, 0.005, and 0.002 exceedance probability events. The without-project model was further refined by Tetra Tech, Inc. during the alternative analysis portion of this reevaluation study. The without-project HEC-RAS model is detailed in Part I, Hydraulic Analysis of Alternatives of Appendix B.

Key Assumptions

Channel Maintenance

Due to heavy sedimentation within the creek, the channel invert is continuously changing in the natural reaches. Existing channel conditions were assumed to be the state of the channel during the 2001 SCVWD topographic survey except near bridge crossings. The existing condition was updated to reflect the 2004 SCVWD thalweg and cross section surveys in the Greenbelt reach.

[4] Hydrology was not updated for with-project scenarios; the 2003 NHC hydrology report applies to both the with- and without-project conditions. Watershed delineations, rainfall-runoff relations, and peak flow hydrology were not updated for the 2012 hydraulic analysis. Discharges used as input into the hydraulic model are taken from the future conditions values published in the NHC hydrology report (2003).

SCVWD has a stream maintenance program that requires removal of debris and sediment at various locations along the creek. SCVWD obtains permits for stream maintenance from regulatory agencies that are expected to last for ten years. Actual stream maintenance varies from year to year, but includes sediment removal activities designed to restore flood conveyance capacity, vegetation management in and around streams and canals, and bank protection.

For the hydraulic analysis, it was assumed that the channel is in its maintained state with the sedimentation basin downstream of Piedmont-Cropley cleaned out and the invert of bridges the same as those in the USACE model. The channel invert upstream and downstream of most bridge crossings was reduced down to the invert contained in the USACE model to simulate a maintained channel. These assumed conditions of the model were agreed upon between the Corps and the SCVWD.

Channel Levees

The hydraulic analysis does not reflect levee breaches. It was assumed that due to the minimal levee heights, breaching the levee would have an insignificant impact on floodplain delineation.

Lower Berryessa Creek

The HEC-RAS model below Calaveras Boulevard is modeled using the HEC-RAS model for the SCVWD's Lower Berryessa Creek Project. A key assumption in the SCVWD model is that the designated alternative for the lower project has proceeded to a 60-percent level of design, and no major change to the designated alternative are anticipated. The HEC-RAS model provided contains channel improvements to contain the 0.01 exceedance probability event. The model simulates levees on the left and right banks with elevations higher than the calculated water surface elevations preventing breakout flooding. The current channel geometry is different from the Lower Berryessa Creek Project-designated project in that, should flows higher than the existing channel capacity occur, then the flow would not be contained and breakouts would occur. For purposes of this analysis, the 60-percent design for the Lower Berryessa Creek Project was used for the lower reach. No changes were made to the SCVWD 60-percent design HEC-RAS model except for minor changes in hydraulic modeling parameters to facilitate unsteady flow modeling and revision of stationing to match those used in the GRR study's HEC-RAS model.

Results

Hydraulic Parameters

The average hydraulic parameters for the without-project conditions discharges between each set of bridge or culvert crossings are shown in Table 4-12. These parameters are shown graphically in Figure 4-4 and Figure 4-5.

The parameters show that the highest velocities are encountered in the trapezoidal reach between the UPPR trestle and culvert. In addition, higher, localized velocities are observed between the Ames Avenue and Yosemite Drive bridges. A comparison of the 0.50 to the 0.01 exceedance probability event parameters in Figure 4-5 indicate that the bridges and culverts upstream of

Yosemite Avenue cause the flows to backup, increasing the flow depths upstream for the 0.01 exceedance probability event. Detailed information is presented in Part I, Hydraulic Analysis of Alternatives of Appendix B.

Table 4-12 Without-Project Hydraulic Results

Bounding Bridge or Culvert		Exceedance Probability			
		0.50		0.01	
From	To	Vel (ft/s)	Depth (ft)	Vel (ft/s)	Depth (ft)
I-680	Montague Expressway	5.2	3.2	6.1	3.4
Montague Expressway	UPRR Trestle	6.4	4.3	7.0	6.2
UPRR Trestle	UPRR Culvert	6.4	3.4	8.1	5.3
UPRR Culvert	Ames Avenue	4.7	3.7	6.0	5.2
Ames Avenue	Yosemite Drive	6.3	3.2	7.3	3.9
Yosemite Drive	Los Coches Street	5.8	3.6	5.7	3.0
Los Coches Street	Calaveras Boulevard	7.3	3.2	5.3	4.0

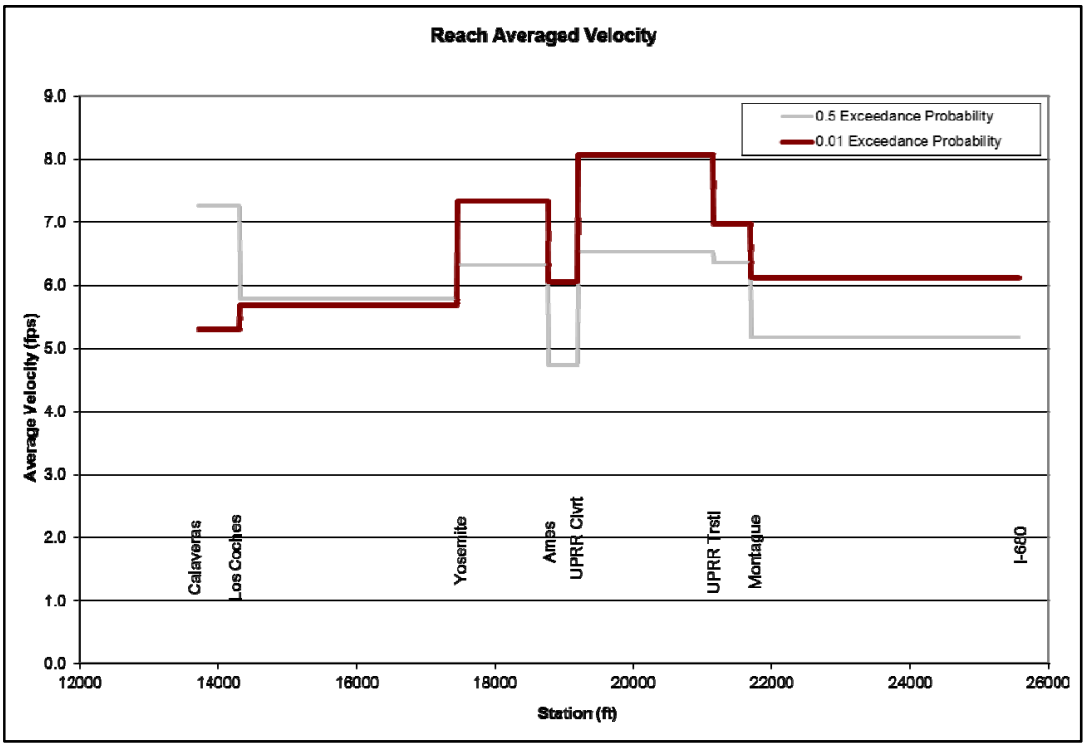


Figure 4-4 Average Channel Velocities between Bridges and Culverts

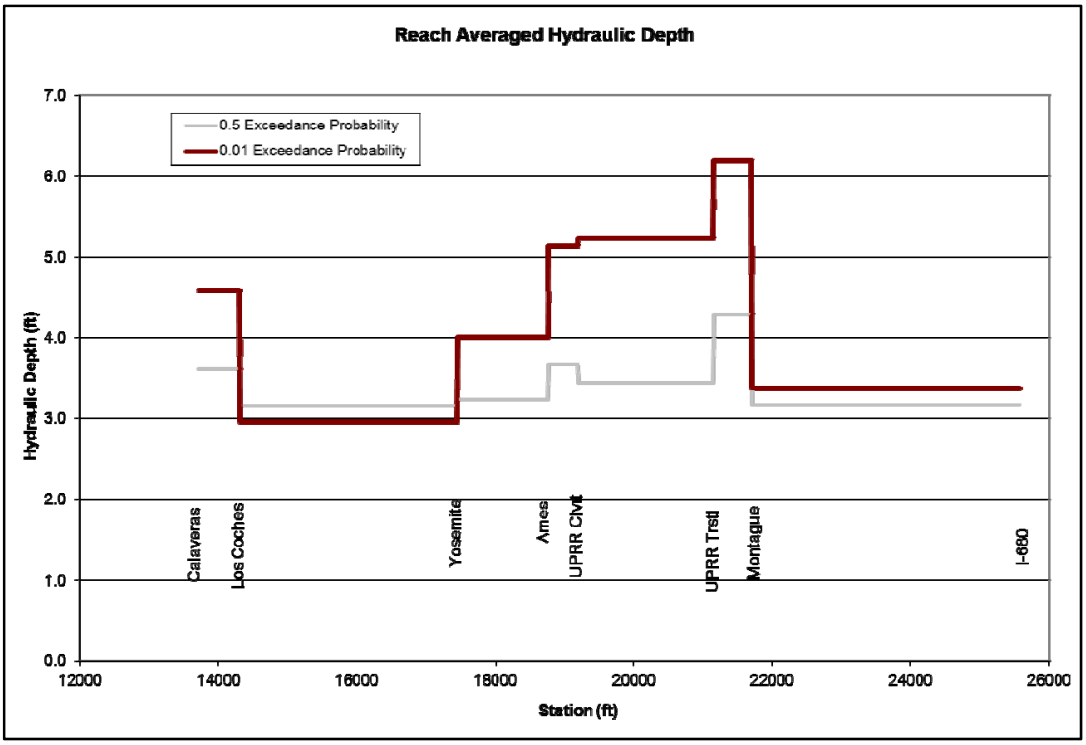


Figure 4-5 Average Hydraulic Depth between Bridges and Culverts

(b) Floodplain Development

Floodplains for Berryessa Creek were developed for the 0.20, 0.10, 0.04, 0.02, 0.01, 0.005, and 0.002 exceedance probability events. The project study reach for Berryessa Creek extends from upstream of the Old Piedmont Road in the City of San Jose to just upstream of the Calaveras Boulevard in the City of Milpitas. Floodplains for the 0.01 and 0.002 exceedance probability events are shown in Figure 2-2 and Figure 2-3, respectively. The remaining floodplain maps are presented in Part II, Floodplain Development, of Appendix B.

The study area watershed was divided into two distinct sub-areas by the I-680 embankment located approximately midway through the study reach. The embankment forces breakout flow upstream to either pond in low areas along the embankment or return to the creek channel. Thus, the embankment was used to divide the study area into two separate floodplains, each modeled with a separate FLO-2D model. The first floodplain encompasses the study area from Old Piedmont Bridge to the I-680 embankment and is referred to as the Upper Model. The second floodplain encompasses the study area downstream of the I-680 embankment to Calaveras Boulevard (with the modeling extending to Penitencia Creek) and is referred to as the Lower Model.

The methodology used for modeling Berryessa Creek overflows was determined through discussions with the Corps Sacramento District and the SCVWD. The original GRR methodology was built on the premise of using the available F3 pre-Feasibility Scoping Meeting without-project conditions (pre-FSM) report steady state HEC-RAS channel (HDR 2004b) and HEC-HMS watershed modeling (NHC 2003, 2006) coupled with FLO-2D for overbank

modeling. The study methodology was extensively revised in 2010 to account for the effects of upstream attenuation on breakout flows. It was determined that the Upper FLO-2D model should be extended to encompass the urban channelized portions of Sierra Creek, a major tributary to Berryessa Creek. The study methodology was revised to use FLO-2D to model both the channel and overbank flows in the Upper Model and use an unsteady HEC-RAS model coupled with FLO-2D for overbank flow in the Lower Model.

4.4.2.7 Geomorphology and Sediment Transport

(a) Geomorphology

There is a distinct difference between the profile of Berryessa Creek in the uplands and on the alluvial fan within the Santa Clara Valley. Figure 4-6 shows the profile for the entire length from the estuary downstream from the confluence with Coyote Creek, upstream to the headwaters. Within the valley reach, which coincides with the study area, the channel gradient averages less than 1 percent. In contrast, the upland reach averages over 6 percent.

Within the study area, the gradient follows the expected pattern of downstream reduction, with one exception. Starting at the upstream end of the project reach, channel gradients are listed below.

- Old Piedmont Road to Cropley Avenue 0.0271
- Cropley Avenue to D/S of Piedmont Sediment Basin 0.0180
- D/S of Sediment Basin to U/S of Sierra Cr. Drop 0.0156
- Drop Structure to Cropley Avenue 0.0135
- Cropley Avenue to I-680 0.0106
- I-680 to Montague Expressway 0.0035
- Montague Expressway to Calaveras Boulevard 0.0049

The channel leaves the uplands at a gradient of about 3 percent and gradually reduces to a slope on the order of 1 percent at I-680. However, below I-680, the gradient abruptly decreases by a factor of 3 to 0.35 percent between I-680 and Montague Expressway. Below Montague Expressway, the slope increases to approximately 0.5 percent.

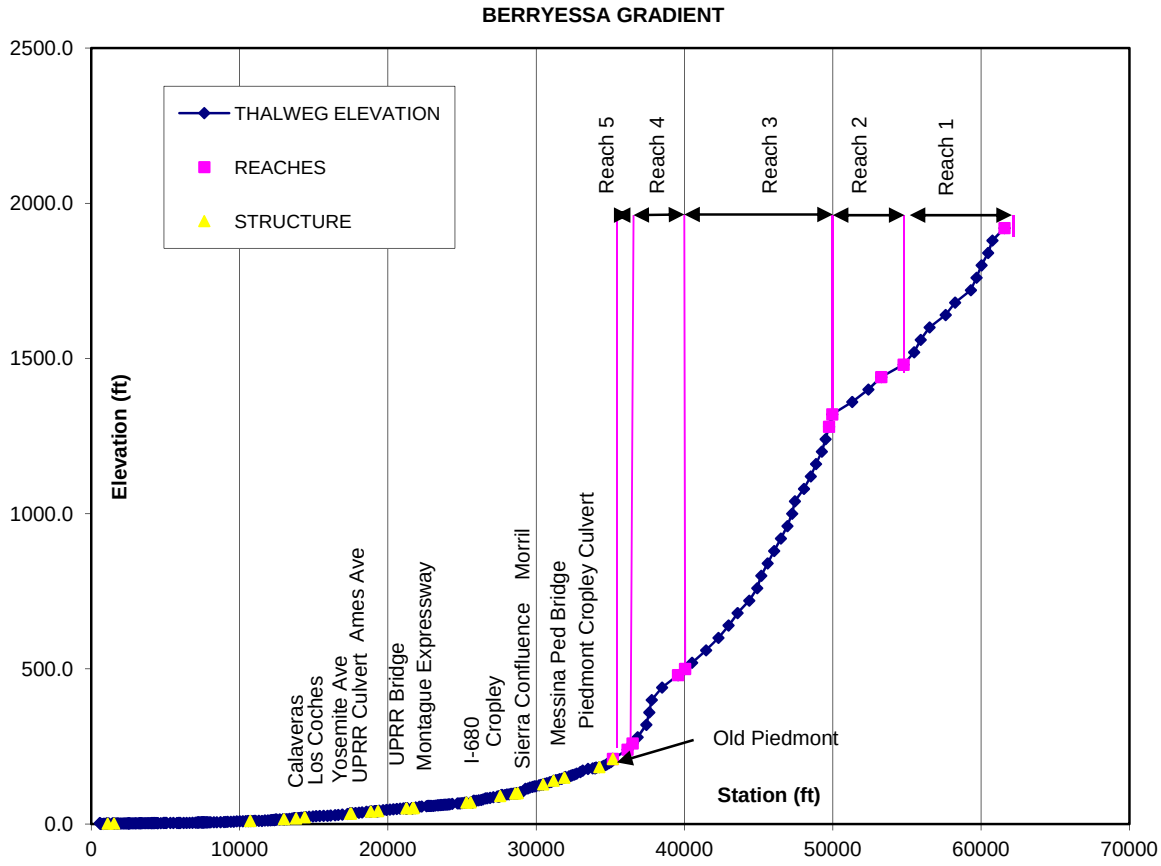


Figure 4-6 Berryessa Creek Profile from the Estuary to the Headwaters

There are numerous bed controls throughout the project reach. These are formed by bridges or box culverts with concrete bottoms, drop structures, and segments of channels lined with concrete. Figure 4-7 identifies locations on the project reach profile that act as grade controls.

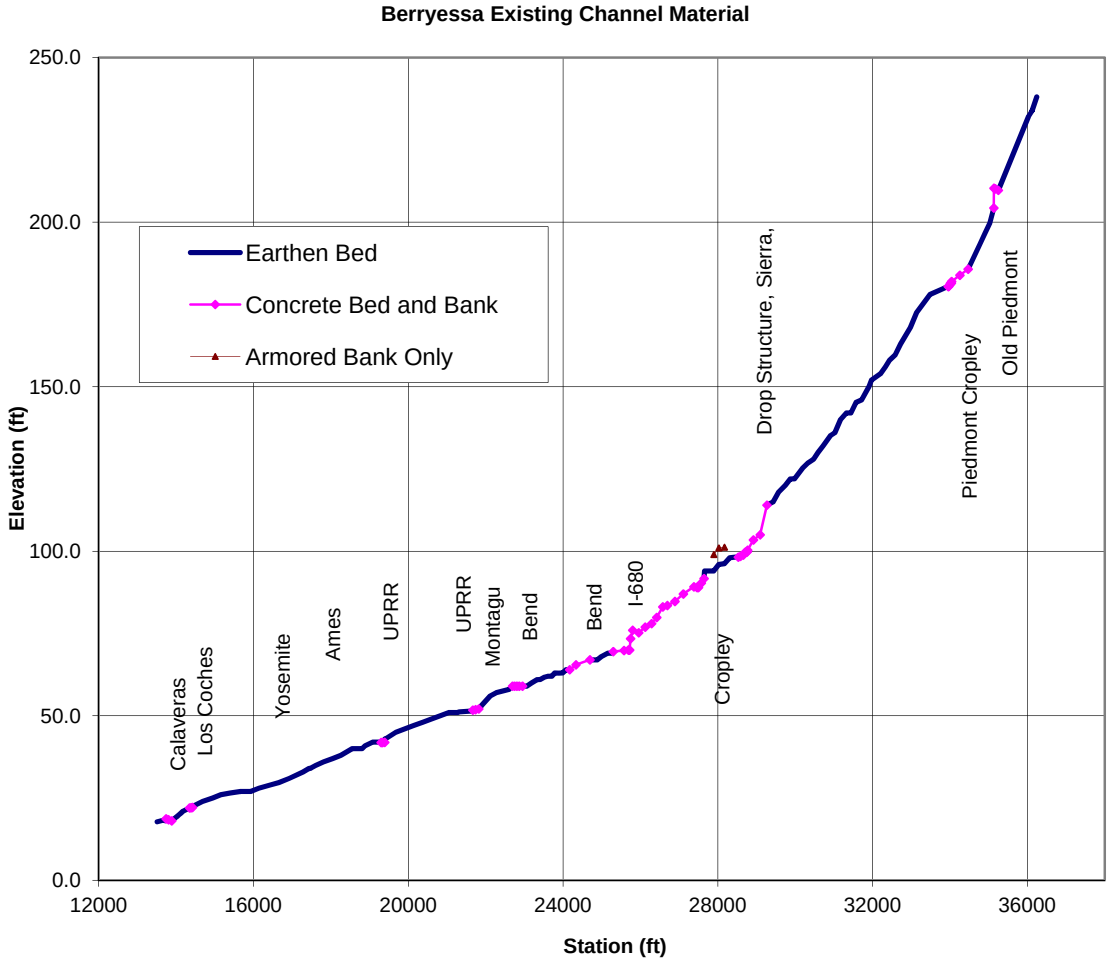


Figure 4-7 Location of Current Bed Controls within the Project Reach

The stream through the upper watershed was divided into five segments. For the upper 1.3 miles, the gradient averages 6.5 percent. For about a mile, the gradient flattens to 3 percent. The gradient increases for the next two miles, averaging 8 percent with a gradual decrease in the downstream direction. The gradient then picks up as the stream crosses the Hayward Fault zone and passes through the "canyon" reach. The average gradient thought this segment is 8 percent with a portion of the stream near the center of the reach with a gradient of 15 percent. In the downstream 1,500 feet above Old Piedmont Road, Berryessa Creek transitions from the uplands to the alluvial fan with an average gradient of 4 percent.

Within the study area, Berryessa Creek occupies a constructed channel that is heavily constrained by bridges, bank protection, channel lining and other constructed features. Thus, channel dimensions are more a result of these influences as opposed to natural geomorphic processes. For description of the channel geometry, the project reach was divided into six subreaches. Descriptions of each reach are provided in Part III, Geomorphic and Sediment Transport Assessment, of Appendix B.

Sediment Transport Model

Previous analyses of the sediment budget (NHC 1990), geomorphology (NHC 2001), and sediment transport (NHC 2003) for the without-project condition of Berryessa Creek indicated two potential problems. The first was potential areas of deposition and the second was potential areas of degradation.

An overall estimate of the sediment yield for Berryessa Creek was developed by NHC (1990). The results of this analysis indicated the following sediment yields:

Berryessa Creek at Old Piedmont Road	=	9,900 tons/year
Sweigert, Crosley, and Sierra Creeks	=	1,900 tons/year
Piedmont Creek	=	700 tons/year
Arroyo de los Coches	=	3,200 tons/year

The values provided for the tributaries are at their confluence with Berryessa Creek. The total yield is 15,700 tons/year. If a unit weight of 100 lbs/ft^3 is assumed for sediments, this would represent 11,600 cubic yards per year.

A sediment budget performed by NHC (1990) estimated that the mean annual inflowing sediment load at Calaveras Boulevard to be 9,200 tons/year or 6,800 cubic yards per year applying the previous conversions. This budget was based on deposition of 6,700 tons/year of sediment between Piedmont Road and Calaveras Boulevard. The study utilized a value of 5,000 cubic yards per year of sediment removal in the project reach. It should be noted that this earlier study had a value of 23,800 cubic yards of sediment removed in 1983 between Sierra Creek and Calaveras Boulevard, whereas values reported in more recent reports (NHC 2001) indicate no sediment removal in 1983. If this large volume of removal is not included, the average annual rate for the 10 year period referenced would be 2,620 cubic yards per year or 3,200 tons/year (NHC assumed 90 lbs/ft^3 for deposited sediments). The sediment budget would then indicate 12,400 tons/year of sediment passing Calaveras Boulevard.

Estimates of sediment yield and budget were provided in NHC (2003) based on integration of the HEC-6T simulated bed material load yields for the single storm events to determine average annual yields utilizing the method described by Mussetter *et al*. (1994). This resulted in an average annual bed material yield at Old Piedmont Road of 2,500 to 3,000 tons per year. The overall budget identified a total of 170 tons per year of net erosion from the reach, indicating the project reach is currently slightly degradational. This minimal amount of degradation translates into an average of 0.05 inches per year if spreads out over the entire reach. The sediment budget presented did not indicate it accounted for sediment removal that takes place at several locations

throughout the reach. The budget also did not provide an indication of the simulated tributary inflows and how or if they were accounted for in the budget.

If the 9,900 tons per year average annual sediment yield at Old Piedmont Road is assumed to be 35 percent bed material load (sand, gravel, and cobble) and 65 percent wash load (silts and clays), the resulting average annual bed material supply at the upstream end of the project is 3,500 tons. This is in fairly close agreement with the HEC-6T study which indicated an average annual upstream loading on the order of 2,500 tons per year. In terms of the sediment balance in the reach, the HEC-6T modeling by NHC indicated a slight degradational trend. However, the modeling did not appear to include the sediment removal in the analysis. Accounting for sediment removal increases the degradational trend by several thousand tons per year. An overall degradational trend is supported by comparisons of the 1968 and 1998 channel thalweg profiles (NHC 2001). Comparison of these profiles indicates that the 1998 profile is at or below the 1967 profile throughout the project reach. Continued sediment removal prevents the areas of deposition from being revealed on the profile comparison.

Because of the highly manipulated nature of the Berryessa Creek channel within the study area, its ability to transport sediment varies widely. Though there are segments of considerable deposition that require sediment removal to maintain flood conveyance capacity, there are areas with higher sediment transport capacity that result in channel degradation. This is supported by the comparison of the 1967 and 1998 thalweg profiles presented by NHC (2001). The HEC-6T sediment modeling results show similar behavior with a slight overall trend for degradation, but a mixture of aggradation and degradation scattered throughout the study area.

The HEC-6T model results indicated that the bed material load from a single 0.01 exceedance probability event would be on the order of 13,000 tons at Old Piedmont Road, which is on the order of four to five times the estimated average annual bed material loading. During this event, the maximum predicted aggradation is over 4 feet at the Piedmont/Cropley culvert and over 2 feet just upstream of the Ames Avenue Railroad trestle. At all other locations the aggradation is on the order of one foot or less. The maximum predicted degradation is 2 feet in the Greenbelt reach just downstream of the sediment basin and just over one foot about 500 to 1,000 feet upstream of Los Coches Street. Based on these results the modeling indicates a mixture of aggradation and degradational areas. Though the actual historic profiles indicate primarily equilibrium or degradational reaches, the model did not appear to account for the sediment removal in the aggradation areas. If all sediment deposits indicated by the model results are removed, the required sediment removal would be on the order of 3,700 cubic yards per year.

4.5 BIOLOGICAL RESOURCES

4.5.1 Regulatory Setting

4.5.1.1 Federal

Biological resources are protected by numerous Federal regulations. The following Federal laws related to biological resources are relevant to this analysis.

(a) Endangered Species Act

The U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) have jurisdiction over species listed as threatened or endangered under the Federal Endangered Species Act (ESA) of 1973, as amended and candidate species proposed for listing. The ESA protects listed species from harm, or "take," which is broadly defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." For any project with a Federal nexus that affects a listed species, the Federal agency must consult with the USFWS and/or NMFS Fisheries under Section 7 of the ESA. The USFWS issues a Biological Opinion and, if the project does not jeopardize the continued existence of that species, issues an "incidental take statement."

(b) Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (FWCA) of 1958, as amended ensures that fish and wildlife receive consideration equal to that of other project features for projects that are constructed, licensed, or permitted by Federal agencies. The FWCA requires that the views of USFWS, NMFS, and the applicable state fish and wildlife agency (in this case, the California Department of Fish and Wildlife [CDFW]) be considered when impacts are evaluated and mitigation needs determined.

(c) Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 implements a series of international treaties that provide for migratory bird protection. The MBTA authorizes the Secretary of the Interior to regulate the taking of migratory birds. The act provides that it shall be unlawful, except as permitted by regulations, “to pursue, take, or kill any migratory bird, or any part, nest or egg of any such bird…” (16 USC 703). This prohibition includes both direct and indirect acts, although harassment and habitat modification are not included unless they result in direct loss of birds, nests, or eggs. The current list of species protected by the MBTA includes several hundred species and essentially includes all native birds. Permits for take of nongame migratory birds can be issued only for specific activities, such as scientific collecting, rehabilitation, propagation, education, taxidermy, and protection of human health and safety and personal property.

4.5.1.2 State

(a) California Endangered Species Act

Pursuant to the California Endangered Species Act (CESA), a permit from CDFW is required for projects that could result in the take of a plant or animal species that is State-listed as threatened or endangered. Under CESA, "take" is defined as an activity that would directly or indirectly kill an individual of a species. The CESA definition of take does not include "harming" or "harassing," as the Federal ESA definition does. Therefore, the threshold for take is higher under CESA than under ESA. The project proponent will coordinate with CDFW to discuss CESA compliance requirements and, if required, will apply to CDFW for take authorization under Section 2081 of the CDFW Code.

(b) California Fish and Wildlife Code Sections 3503 and 3503.5—Protection of Bird Nests and Raptors

Section 3503 of the California Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 specifically states that it is unlawful to take, possess, or destroy any raptors (i.e., species in the orders Falconiformes and Strigiformes), including their nests or eggs. Typical violations of these codes include destruction of active nests resulting from removal of vegetation in which the nests are located. Violation of Section 3503.5 could also include failure of active raptor nests resulting from disturbance of nesting pairs by nearby project construction. This statute does not provide for the issuance of any type of incidental take permit.

(c) California Fish and Wildlife Code—Fully Protected Species

Protection of fully protected species is described in Sections 3511, 4700, 5050, and 5515 of the California Fish and Wildlife Code. These statutes prohibit take or possession of fully protected species and do not provide for authorization of incidental take of fully protected species.

4.5.2 Environmental Setting

4.5.2.1 Vegetation and Wildlife

Berryessa Creek has discontinuous patches of wildlife habitat. The study area downstream of I-680 has poor to non-existent wildlife habitat due to channelization. Moderate quality habitat can be found upstream of I-680 in the greenbelt section and near Old Piedmont Road. Field surveys conducted in the study area have documented some of the common species that inhabit the area. Bird species observed include: the great egret (*Ardea alba*), black-crowned night heron (*Nycticorax nyticorax*), western scrub jay (*Aphelocoma californica*), mallard (*Anas platyrhynchos*) and mourning dove (*Zenaida macroura*). Amphibians found in the creek include: Pacific treefrog (*Hyla regilla*) and western toad (*Bufo boreas*). Mammals observed include: ground squirrels (*Ostospermophilus beecheyi*) and muskrat (*Ondatra zibethicus*). Berryessa Creek is located adjacent to highly urbanized areas; feral cats (*Felis domesticus)* were also observed (SCVWD 2005).

Vegetation downstream of I-680 consists of patchy annual grasses separated by bare dirt. The SCVWD maintains this area of the channel. Maintenance practices include removal of vegetation and sediment from the bottom of the channel and the use of herbicides on the stream banks. Frequent spraying or mowing of creek bank vegetation prevents the establishment of riparian species. Table 2-3 in Section 2.2.1 identifies the delineation of the study area into six reaches. Reach H-1 is downstream of the study area. Reaches H-2 through H-4 are located downstream of I-680 and H-5 through H-6 are located upstream of I-680. The vegetation types within these reaches are described below.

(a) Downstream of I-680

In Reach H-2, the riparian zone is very minimal, but the channel is much wider and emergent wetland species are present. Species include cattails, floating primrose willow (*Ludwigia peploides*), hyssop loosestrife (*Lythrum hyssopifolia*), watercress (*Rorippa nasturtium aquaticum*), brooklime (*Veronica americanum*), and knotweed (*Polygonum* sp.). A few very sparse trees are also present.

In Reach H-3, the riparian zone is minimal to non-existent, with weedy annuals such as rabbit foot grass (*Polypogon monspeliensis*) and barnyard grass (*Echinochloa crusgalli*). This reach has the highest banks (levees) and is entrenched in a narrow ditch.

In Reach H-4, the riparian zone is very similar to Reach H-3. The bank slopes are dominated by weedy annuals such as spiny sow thistle (*Sonchus asper*), dock (*Rumex* sp.), and perennial rye grass (*Lolium perenne*). This reach has the least vegetation present and the most channel alteration (concrete).

(b) Upstream of I-680

Vegetation upstream of I-680 would only be effect if Alternative 5, the authorized project, is implemented. Alternative 5 is used by the Corps for comparative reasons but is not a candidate for selection.

In Reach H-5, the riparian zone ranges from mostly bare dirt to forest in the greenbelt. Dominant species in the greenbelt include blue elderberry, California black walnut (*Juglans californica*), English walnut (*Juglans regia*), Coast live oak (Q*uercus agrifolia*), and willows. Mowed grass is present within and adjacent to the riparian zone.

In Reach H-6, upstream of Old Piedmont Road, the riparian vegetation is diverse, including willows (*Salix* sp.), western sycamore (*Platanus racemosa*), Fremont cottonwood (*Populus fremontii*), and blue elderberry (*Sambucus mexicana*). The herbaceous species included many non-natives such as pennyroyal (*Mentha pulegium*) and Canada thistle (*Cirsium arvense*). The lower end of this reach is dominated by eucalyptus, which may be a cause of the subsurface flow at the lower end of the reach, due to high rates of evapotranspiration.

4.5.2.2 Special Status Species

Special-status species addressed in this section include plants and animals legally protected or otherwise considered sensitive by Federal, State, or local resource conservation agencies and

organizations. The following list provides more specific descriptions of the categories for sensitive species and their habitats:

- Plant and wildlife species are listed by CESA and/or ESA as "rare," "threatened," or "endangered."
- Plant and wildlife species are considered by ESA as "candidates for listing" or "proposed for listing.
- Wildlife species are identified by CDFW as "California Species of Special Concern" because declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction; however, these species receive no formal protection under the California Fish and Game Code.
- Plants are considered by the California Native Plant Society (CNPS) to be "rare," "threatened," or "endangered."

Searches of the California Natural Diversity Database (CNDDB), CNPS database, and USFWS database were conducted to identify all special-status plant and wildlife species that may occur in the project region. The likelihood of each species' occurrence at the project element sites was then assessed in more detail based on the species' known distribution (i.e., the locations and recency of recorded occurrences) and the types and quality of habitat present at each project element site. There were no records of special status species animals or plants within the Berryessa Creek study area.

(a) Special Status Plants

A search of the CNDDB and the CNPS database identified two special-status plant species that may occur in the study area. No suitable habitat exists within the study footprint to support any special-status species. Table 4-13 lists each special-status plant species along with its regulatory and CNPS listing status, habitat requirements, and the potential for the species to occur within the study area.

Table 4-13 Special Status Plants Species with Potential to Occur in the Study Area

Species Name	Status	Habitat	Potential to Occur in Study Area
Plant			
Contra Costa goldfields *(Lasthenia conjugens)*	FE/--/1B.1	Vernal Pools. Usually occurs in wetlands, but occasionally found in non wetlands.	Unlikely to occur within the study area. Documented occurrence in Concord.
California sea blite *(Suaeda californica)*	FE	Endemic to the coastal zone of California.	Unlikely to occur; no suitable habitat is in study area.
(FE) Federal Endangered Species (1B) CNPS Plants Rare, Threatened, or Endangered in California and elsewhere			

(b) Special Status Fish and Wildlife

A search of the CNDDB and the USFWS database identified 22 special-status wildlife species and critical habitat with some potential to occur in the study area. No suitable habitat exists within the study footprint to support any special-status species. Table 4-14 summarizes the regulatory listing status, habitat requirements, and the potential for occurrence for each species.

Table 4-14 Special Status Species with Potential to Occur in the Study Area

Species Name	Status	Habitat	Potential to Occur in Study Area
Invertebrates			
Conservancy fairy shrimp *(Branchinecta conservatio)*	FE	Occur in vernal pools.	Unlikely to occur; no vernal pools are within the study area.
Bay checkerspot butterfly *(Euphydryas editha bayensis)*	FT	All habitat exits on shallow, serpentine-derived or similar soils.	Unlikely to occur; no suitable habitat is in study area.
Vernal pool tadpole shrimp *(Lepidurus Packardi)*	FE	Occur in vernal pools.	Unlikely to occur; no vernal pools are within the study area.
Fish			
Delta smelt *(Hypomesus transpacificus)*	FT, SE	Found in the brackish and freshwater habitat of the northeastern San Francisco Estuary.	Unlikely to occur; no suitable habitat is in study area.
Steelhead, Central California Coast *(Oncorhynchus mykiss)*	FT	Requires cold, freshwater streams with suitable gravel for spawning.	Unlikely to occur; no suitable habitat is in study area.
Steelhead, Central Valley *(Oncorhynchus mykiss)*	FT	Requires cold, freshwater streams with suitable gravel for spawning; rears seasonally in inundated floodplains, rivers, tributaries, and Delta	Unlikely to occur; no suitable habitat is in study area.
Chinook salmon, Central Valley spring-run *(Oncorhynchus tshawytscha)*	FT	Requires cold, freshwater streams with suitable gravel for spawning; rears seasonally in inundated floodplains, rivers, tributaries, and Delta	Unlikely to occur; no suitable habitat is in study area.
Reptiles			
Western Pond Turtle *(Actinmys marmorata)*	CSC	Shallow, flowing streams, with some cobble-sized substrate	Low. This species was not identified during surveys of the study area. Know to occur downstream of the study area.
Alameda whipsnake *(Masticophis lateralis euryxanthus)*	FT, ST	Chaparral, northern coastal sage scrub and coastal shrub cropping	Unlikely to occur; no suitable habitat is in study area.
Amphibians			
California tiger salamander *(Ambystoma californiese)*	FT, ST	Ponds, streams, drainages, and associated uplands	Unlikely to occur; no suitable habitat is in study area.
California red-legged frog *(Rana aurora draytonii)*	FT	Dense, shrubby, or emergent riparian vegetation and aquatic habitat	Unlikely to occur; no suitable habitat is in study area.
Birds			

Table 4-14 Special Status Species with Potential to Occur in the Study Area			
Species Name	**Status**	**Habitat**	**Potential to Occur in Study Area**
Cooper's hawk (*Accipiter cooperii*)	CSC	Nests in deciduous riparian forests, forges in open woodland.	Low; no suitable forging or nesting habitat is within the downstream of I-680 study area. Potential nesting habitat in the upstream of I-680 study area.
Tricolored blackbird *(Agelaius tricolor)*	CSC	Colonial nester in emergent freshwater marshes; heavy cattail, tulle growth.	Low; marginal nesting habitat is in study area. Known to occur downstream of the study area.
Western Burrowing Owl *(Athene cunicularia hypugaea)*	CSC	Found in open, dry annual or perennial grassland, deserts and scrublands characterized by low-growing vegetation, subterranean nester in small mammal burrows.	Unlikely to occur, no suitable habitat is in study area.
Western snowy plover *(Charadrius alexandrines nivosus)*	FT	Nest near tidal waters, forges in sandy coastal beaches salt ponds and gravel bars.	Unlikely to occur; no suitable habitat is in study area.
California clapper rail *(Rallus longirostris obsoletus)*	FE, SE	Requires saltwater marshes with tidal sloughs and forages in tidal mud flats. Usually associated with pickleweed.	Unlikely to occur; no suitable habitat is in study area.
California least tern *(Sterna antillarum brownie)*	FE, SE	Forges in shallow estuaries and lagoons	Unlikely to occur; no suitable habitat is in study area.
White Tailed Kite (*Elanus luecurus)*	FP	Large areas of open grasslands, meadows, marshes, dense-topped trees for napping.	Low; no suitable forging or nesting habitat is within the downstream of I-680 study area. Potential nesting habitat in the upstream of I-680 study area.
Mammals			
Townsend's big-eared bat (*Corynorhinus twonsedii*)	CSC	Roosts in caves, old building, and occasionally under bridges. Forages in edge habitats along streams and areas adjacent to and within a variety of woodland habitats.	Low. Some of the overpasses adjacent to the study area may provide suitable roosting habitat, however, this species is extremely sensitive to human disturbances.
San Francisco dusky-footed woodrat *(Neotoma fuscipes annectens)*	CSC	Forest habitats of moderate canopy and moderate to dense understory. May prefer chaparral and redwood habitats. Constructs nests of shredded grass, leaves, and other material. May be limited by availability of nest-building materials.	Unlikely to occur; no suitable habitat is in study area. Known to occur downstream of the study area.
Salt marsh harvest mouse *(Reithrodontomys raviventris)*	FE, SE	Breeds and forges primarily in pickleweed marshes. Uses adjacent upland areas with tall vegetation for cover.	Unlikely to occur; no suitable habitat is in study area.
San Joaquin kit fox *(Vulpes macrotis mutica)*	FE, ST	Inhabits arid climates, like desert scrub, chaparral, and grasslands.	Unlikely to occur; no suitable habitat is in study area.

(FE) Federal Endangered Species
(FT) Federal Threatened Species
(FP) State Fully Protected
(SE) State Endangered Species
(ST) State Threatened Species
(CSC) California Species of Special Concern

Reptiles

Western Pond Turtle (*Clemmys marmorata*)

Western pond turtles, including both the northwestern (species *marmorata*) and southwestern (species *pallida*) subspecies, are State-listed species of concern. Western pond turtles occur in a variety of permanent and intermittent aquatic habitats such as ponds, marshes, rivers, streams, and ephemeral pools. Pond turtles require suitable basking and haul-out sites, such as emergent rocks or floating logs, which they use to regulate their temperature throughout the day. In addition to appropriate aquatic habitat, these turtles require an upland oviposition site in the vicinity of the aquatic habitat, often within 200 meters. Nests are typically dug in grassy, open fields with soils that are high in clay or silt fraction. Egg laying usually takes place between March and August. While turtles may be active all year along the coast, the turtles are more likely to be active between April and October in interior locations in the Central Valley. A variety of suitable habitats for this species are present within the Coyote Creek watershed. These habitats include aquatic, riparian woodland, and adjacent upland. Adults have been observed at various locations in Coyote Creek (Santa Clara County, 2005). The stream channel downstream from Los Coches Creek has a small, constant flow throughout the year, and may provide suitable aquatic habitat for the western pond turtle.

Amphibians

California Red-Legged Frog *(Rana aurora draytonii)*

The California red-legged frog is the largest native frog in the western United States, ranging from 1.5 to 5 inches in length. The California red-legged frog was listed by USFWS as threatened in 1996. The *Recovery Plan for the California Red-legged Frog (Rana aurora draytonii)* was established on May 28, 2002 and critical habitat was designated on April 13, 2006. There is no critical habitat within the Berryessa Creek study area.

The California red-legged frog occupies a fairly distinct habitat, combining both specific aquatic and riparian components. The adults require dense, shrubby, or emergent riparian vegetation closely associated with deep (greater than $2^{1}/_{3}$-foot deep) still or slow moving water.

The historic range of the California red-legged frog extended along the coast from the vicinity of Point Reyes National Seashore, Marin County, California, and inland from the vicinity of Redding, Shasta County, California, southward to northwestern Baja California, Mexico. California red-legged frogs have been documented in 46 counties in California, but now remain in only 238 streams or drainages in 31 counties. California red-legged frogs are still locally abundant within portions of the San Francisco Bay area and the central coast. There is no recent scientific estimate on the rate of the decline, but many of the remaining populations appear to be declining at a rapid rate (USFWS Sacramento, 2004). Principal causes of the decline are habitat

loss, and the introduction of non-native predators such as the sunfish, crayfish, and bullfrog (Jennings, 2006).

Wildlife surveys of Berryessa Creek have been carried out on an intermittent basis by SCVWD biologists since 1997. No California red-legged frogs have been observed in Berryessa Creek during these surveys. Frog species identified included bullfrogs (*Rana catesbeiana*), and Pacific treefrogs (*Hyla regilla*) (SCVWD, 2005).

Surveys for the California red-legged frog and foothill yellow-legged frog (*Rana boylii*) were conducted in 2006 for SCVWD. Mark R. Jennings, an expert recognized by various resource agencies on herpetology, conducted the assessments using current protocols (USFWS, 2005). The survey report is in Appendix A, Part III. The result of the found Pacific treefrogs (*Hyla regilla*) and California toads (*Bufo boreas halophilus*) to be common in several sections of the upstream of I-680 stream channel, especially in urbanized areas where residents water their lawns on a regular basis. The upstream of I-680 stream channel itself was poor habitat for CRLFs due to its intermittent nature, lack of deep (>2 feet) pools of water, and the presence of many raccoons throughout the area surveyed.

A breeding population of CRLFs was discovered in 3 of 5 grouped ponds located in the middle part of the drainage near the easternmost San Jose City Boundary. The ponds are located below a major spring on a hillside approximately 160 feet above the creek and 800 feet south of the creek proper. However, because of the distance from the Berryessa Creek proper and the intermittent nature of the creek itself (it apparently flows less than 7 months out of the year during normal rainfall years), no juvenile CRLFs are able to colonize the main creek channel. Since CRLFs do not inhabit the main channel of Berryessa Creek and CRLFs are unable to colonize the stream course, the proposed project in upper Berryessa Creek will not have any adverse effects on the species. Additionally, the project site is located in a densely urbanized area with many roads, fences, and foraging raccoons between the project site and the ponds with CRLFs.

Birds

Tricolored Blackbird *(Agelaius tricolor)*

The tricolored blackbird is a State-listed species of concern. This species is endemic to California and breeds mostly in the Central Valley, although breeding in the Sierra Nevada has also been documented. Tricolored blackbirds breed between mid-April and late July. They are also colonial nesters utilizing freshwater marsh vegetation such as cattails, tulles, and blackberry thickets. The cattails habitat within the creek is not likely dense enough for breeding. CNDDB reports known occurrences of this species within the City of Milpitas, approximately four and a half miles away.

Western Burrowing Owl (*Athene cunicularia hypugaea*)

The western burrowing owl is a State-listed species of concern. Burrowing owl habitat consists of annual and perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Suitable habitat also includes trees and shrubs if the canopy cover is less than 30 percent of the ground cover. Burrowing owls use burrows constructed by other animals such as California ground squirrels and may also use manmade structures such as culverts, debris piles, and holes beneath pavement. Burrowing owls are the only owl species that nests underground and are fairly tolerant of human presence. Within the Coyote Creek watershed, burrowing owls may be found in open grasslands with short vegetation (Santa Clara County, 2005). The grasslands in the project area below I-680 may contain suitable nesting and foraging habitat for the western burrowing owl. Surveys for burrowing owls were conducted during 2006 by SCVWD biologists. No owls were observed during these or any other previous surveys (SCVWD 2005, 2007).

White-Tailed Kite (*Elanus luecurus*)

The white-tailed kite is a fully protected species according to the California Fish and Wildlife Code. White-tailed kites nest in riparian forest and oak woodland habitats, and forage in a variety of open habitats such as grasslands and marshes. White-tailed kites feed primarily on small mammals including voles, pocket mice, and harvest mice. Potential nesting habitat is located in riparian corridors in the Coyote Creek watershed, including Berryessa Creek (Santa Clara Valley Transportation Authority, 2004). The riparian trees and shrubs in the greenbelt area may provide suitable nesting or foraging habitat for the white-tailed kite.

Mammals

San Francisco Dusky-Footed Woodrat *(Neotoma fuscipes annectens)*

The San Francisco Dusky-footed woodrat is a California species of special concern and is a medium-sized native rodent. Dusky-footed woodrats are widespread in chaparral, woodland, and forest habitats with well-developed undergrowth, where their conical stick houses are often visible. These houses (or middens) may be as much as six feet tall, and contain multiple chambers used for sleeping and food storage. Houses are usually occupied by single adults or females with young and can be used by successive generations of woodrats. Woodrat houses provide cover for many other animal species, including small mammals, reptiles, amphibians, and arthropods. Woodrats feed primarily on the foliage of evergreen broadleaf plants such as oaks, coffeeberry (*Rhamnus californica*), Mexican elderberry, toyon, and gooseberry (Ribes spp.). Reproduction occurs from February through September. Suitable habitat for San Francisco dusky-footed woodrat occurs within ; however, this species has not been documented within the study area.

Western Big-Eared Bat (*Plecotus townsendii*) and *Myotis* Bats

A variety of bat species, including the western big-eared bat, the Yuma myotis (*Myotis yumanensis*), the long-legged Myotis (*Myotis volans*), and the Pacific long-eared Myotis (*Myotis evotis*), may occur in the Coyote Creek watershed, including Berryessa Creek. The Yuma myotis is a Bureau of Land Management designated sensitive species. They use abandoned

buildings and the underside of bridges for roosting and foraging (Santa Clara Valley Transportation Authority, 2004). A survey for bats completed in 2005 did not identify the presence of any bats roosting under bridges within the Berryessa Creek study area (Johnston, 2005).

4.6 CULTURAL RESOURCES

4.6.1 Regulatory Setting

4.6.1.1 Federal

(a) National Historic Preservation Act

Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (16 U.S.C. 470 et seq.), and it's implementing regulations Protection of Historic Properties (36 CFR 800) require Federal agencies to consider the potential effects of their proposed undertakings on historic properties. Historic properties are cultural resources that are listed in, or are eligible for listing in, the National Register of Historic Places (NRHP) (36 CFR 800.16[l]). Undertakings include activities directly carried out, funded, or permitted by Federal agencies. Federal agencies must also allow the State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on the proposed undertaking and its potential effects on historic properties.

Federal agencies typically comply with Section 106 by performing the following actions:

- Initiating the Section 106 process (36 CFR Section 800.3) by identifying the undertaking (Federal action that could affect historic properties) and consulting parties such as the SHPO, Native American tribes, interested members of the public, and State and local agencies;
- Defining an area of potential effects (APE), the geographic area in which the undertaking could affect historic properties in consultation with the SHPO;
- Identifying historic properties, resources eligible for inclusion in the NRHP (36 CFR Section 800.4) within the APE;
- Assessing the effects of the undertaking on historic properties within the APE (36 CFR Section 800.5); and
- Resolving adverse effects on historic properties, if any (36 CFR Section 800.6). Adverse effects are resolved by identifying ways to minimize or avoid impacts on historic properties. Typical actions taken to resolve adverse effects include excavation of archaeological sites to retrieve materials before damage occurs, documentation (in photographic form) for historic buildings before they are altered, or preservation of such resources in place when possible.

4.6.1.2 State

CEQA requires that for public or private projects financed or approved by public agencies, the effects of the projects on historical resources and unique archeological resources must be assessed. Historical resources are defined as buildings, sites, structures, objects, or districts that have been determined to be eligible for listing in the California Register of Historical Resources. Properties listed in the NRHP are automatically eligible for listing in the California Register.

4.6.2 Environmental Setting

"Cultural resource" is a term that refers to the imprint of human occupation left on the landscape. This imprint is manifested in the form of prehistoric and historic archeological sites, and historic buildings, structures, and objects. Archeological sites consist of artifacts, plant and faunal remains, trash deposits, and many types of features. Artifacts are anything that was manufactured or modified by human hands. Features can include structural remains, fire pits, and storage areas. Prehistoric artifacts include flaked stone tools such as projectile points, knives, scrapers, and chopping tools; ground stone implements such as manos and metates; plain and decorated ceramics; and features or facilities that include subterranean and above ground architectural units, hearths, granaries and storage cistern, and trash deposits known as middens.

Historic archeological sites reflect occupation after the advent of written records. Material remains on historic archeological sites include refuse dumps, structure foundations, roads, privies, or any other physical evidence of historic occupation. Refuse consists of food waste, bottles, ceramic dinnerware, and cans. In a number of historic archeological situations, privies are important because they often served as secondary trash deposits. There is usually a strong interplay between historic archeological sites and written records. The archeological data are frequently used to verify or supplement historic records. Historic structures minimally include industrial facilities; roadways, bridges; and water transport or detention systems such as canals, ditches, aqueducts, pumps, and dams. Historic buildings include commercial, residential, agricultural, and ecclesiastical buildings.

4.6.2.1 Prehistory

Geologic evidence indicates that local estuaries and marshland began to appear in the region less than 8,000 years ago. As a result of the changing environment before that time, it is difficult to gain a clear picture of the prehistoric area around the San Francisco Bay region. Older sites may be buried under layers of sediment, and prehistoric information has likely been lost due to urban sprawl in the cities and suburbs of San Jose and Milpitas. Shell mounds and cemeteries have been discovered beneath existing buildings in some areas of San Jose and Milpitas, with other sites likely buried under businesses and the suburbs (Munzel 2000).

Although not tested for age, the Holiday Inn site in downtown San Jose reveals that there was a strong native presence in the region. SCI-128 was minimally investigated in 1973 and then in more depth in 1977. However, the results are largely out of context due to construction activities that destroyed much of the site as well as any integrity remaining. Archeologists were permitted to screen a small amount of the estimated 900 cubic meters of midden bulldozed from the site. The screening revealed a minimum of 29 individual skeletons although as many as 65 skeletons may have existed. Construction efforts make exact determinations impossible.

The Santa Theresa Complex in Santa Clara Valley encompasses two sites, SCI-64 and SCI-106. Surveys and testing within the south Bay area have revealed hundreds of sites with research potential, but these two sites have been investigated for age to help determine potential occupation dates. The SCI-64 lower component yielded a radiocarbon date of 6590 ± 200 B.P. when it was tested in 1977 and 1978. In 1979, the nearby SCI-106 site was radiocarbon tested and revealed dates as early as 4399 ± 570 B.C. Despite this information, a precise prehistory of the south Bay area may still be premature.

4.6.2.2 Ethnohistory and Ethnography

The early inhabitants of Santa Clara County were the Costanoan. The name Costanoan comes from the Spanish word costaños, which means "coast people." Before 1770 A.D., speakers of Coast Miwok, Patwin, Bay Miwok and Costanoan languages such as Tamyen, Matsun, and Chochenyo occupied the region. The Costanoan culture did not survive the Spanish and American invasions, but explorers, priests, and settlers duly recorded their earlier presence. In 1973, more than 200 persons of Costanoan descent were estimated within the region historically occupied by the Costanoan (Levy 1978).

In 1770 A.D., the Costanoan population was estimated to range between 7,000 and 10,200 people. The basic unit of the Costanoan was the triblet, with one or more socially linked villages and smaller settlements within a recognized territory. A chief and council of elders advised the triblet and community.

Subsistence activities of the Costanoan included both hunting and gathering methods. The region was nearly ideal for occupation due to the mild climate and abundant plant and animal resources. Natives gathered berries, greens, and bulbs like soap root, and they also harvested seeds and nuts, especially the acorn. They hunted a wide range of animals including elk, deer, pronghorn and various small mammals, and they also collected shellfish and caught various fish from the variety of bodies of water in the area.

The Costanoans made good use of the abundant rocks and minerals in the area, fashioning projectile points and knives from obsidian, using cinnabar for pigment, and also using Franciscan and Monterey chert (Moratto 1984).

4.6.2.3 History

Santa Clara County is named for Mission Santa Clara, which was established in the region in 1777. Before that, in 1769, Gasper de Portolá explored the region and found large native groups in the area. Portolá is credited with discovering San Francisco Bay while his original mission was to take possession and fortify the ports of San Diego and Monterey. In 1777, Europeans continued to settle the Milpitas area as the expedition led by Juan Baptista de Anza arrived overland (Hoover *et al.* 1990).

The Spanish settled the area, and land grants were mapped out for incoming settlers. In 1849, the City of San Jose was named the state capital, as well as the county seat for Santa Clara County, one of the original 27 counties of California. The name "San Jose" is Spanish in origin, referring to Saint Joseph, husband of the Virgin Mary. San Jose is often a popular place name in Spanish-speaking countries (SCVWD 2003).

The area of Milpitas was also explored during the de Anza expedition. Berryessa Creek was named for the family of Nicolas Berryessa, although the spelling often differs. Berryessa was granted the land grant Milpitas, through which the creek flows. The family came directly from Spain and settled in the Santa Clara Valley on May 6, 1834, and in 1842, Jose Reyes Berryessa received the land grant San Vicente (SCVWD 2003).

In 1835, 4,457 acres of land were granted to José Maria de Jésus Alviso, and he built the Rancho Milpitas, which occupied the central and southern portions of Milpitas. The city of Milpitas gained its name from Alviso's ranch, and the word itself comes from the Mexican-Indian phrase meaning "place where the corn grows." Alviso referred to his own ranch as his "corn patch," covering several square miles (Munzel 2000).

Those who followed Alviso to settle Milpitas included Michael Hughes, Joseph Weller, Dudley Wells, Joseph Murphy, Joseph Scott, and Frederick Creighton. Weller School, Murphy School, and Scott Creek all owe their names to these various individuals. Creighton started the first store in Milpitas on Mission Street, later known as Main Street. Hotels, stores, and restaurants followed as Milpitas grew despite setbacks such as the 1910 fire.

In 1867, progress continued in Milpitas as the Western Pacific Railroad built a depot near St. John's Catholic Church. Agriculture had become a booming business in Milpitas, which had become famous for peas, spinach, asparagus, beans, and strawberries. As a result of agricultural needs, the Santa Clara Valley Water Conservation District was formed in 1929 to see to the demands of farmers. Seven reservoirs were completed by 1936 while the population of the area continued to skyrocket and the demands on water for agriculture and residential use rose, as did flooding issues. Droughts in 1976 and 1977, as well as severe flooding in 1982, 1983, 1986, and 1995, contrast the various needs of the region (SCVWD 2003).

4.6.2.4 Records and Literature Search

The Corps requested a records and literature search of the area of potential effects (APE) from the Northwest Information Center at California State University, Sonoma, and the results were received on October 23, 2001. The search concentrated on a broad area that was presumed to be large enough to cover the future project footprint. The search identified three sites in the APE on the Calaveras Reservoir 7.5-minute topographic map (CA-SCL-156, SCL-157, and P-43-001136) and two sites on the Milpitas 7.5-minute topographic map. Site CA-SCL-593 contained a burial that was eroding out of the creek bank. In 1987 Richard Stradford from the San Francisco District and local archeologist Robert Cartier excavated the burial. Their work was limited to the burial recovery. They recorded the site, but did not completely define the site boundaries. The other site was a highly disturbed unrecorded midden deposit, temporarily designated as C-167 by the Northwest Information Center. The proximity of C-167 to CA-SCL-593 suggests that they may be the same site. In addition to the search from the Northwest Information Center, the National Register, the California Register, the California Historical Landmarks, and the California Points of Historical Interest were checked, all without results.

Basin Research Associates, Inc. recorded the two sites CA-SCL-156 and SCL-157 in 1974. SCl-156 was recorded as having only one flake and two shells. The location, an open field, was probably a former orchard. SCl-157 was only one flake found on fill material near a housing

tract. Neither was worthy of being recorded as a site and should have been recorded as isolated finds. The third site, designated by a primary number P-43-001163 according to the California State Parks revised recording system, was a Native American reburial site conducted by Archaeological Resource Management in 1999. The reburial is approximately 50 feet from Berryessa Creek on property that is owned by the Santa Clara Valley Water District.

Altogether, 30 archeology surveys have been conducted and recorded in or near the APE. The APE has been nearly 100 percent surveyed. Berryessa Creek has been entirely surveyed, as well as much of the adjacent open space. Areas that will need to be surveyed center on some of the proposed detention basin locations in the southern part of the APE.

Twelve bridges, culverts, and railroad trestles have been identified in the study area that could be affected to some degree by the alternatives. Most of these structures were constructed fairly recently, but at a minimum the Old Piedmont Road Bridge and the Piedmont-Cropley culvert would need to be evaluated for their potential eligibility to the National Register.

4.7 TRAFFIC AND CIRCULATION

This section discusses the regulatory setting, and describes the local and direct access route to be used during construction, current capacities, traffic volumes, and levels of service for various roadway segments in and near the study area are identified.

4.7.1 Regulatory Setting

4.7.1.1 Federal

(a) Title 23 of the U.S. Code (USC)

Federal statutes specify the procedures that the U.S. Department of Transportation must follow in setting policy regarding the placement of utility facilities within the rights-of-way of roadways that received Federal funding. These roadways include expressways, most State highways, and certain local roads. In addition, 23 USC 116 requires State highway agencies to ensure proper maintenance of highway facilities, which implies adequate control over non-highway facilities, such as utility facilities. Finally, 23 USC 123 specifies when Federal funds can be used to pay for the costs of relocating utility facilities in connection with highway construction projects.

(b) Title 23 of the Code of Federal Regulations (CFR)

Federal Highway Administration (FHWA) regulations require that each state develop its own policy regarding the accommodation of utility facilities within the rights-of-way of such roads. After FHWA has approved a state's policy, the state can approve any proposed utility installation without referral to FHWA, unless utility installation does not conform to the policy.

Federal regulations do not dictate specific levels of operation or minimum delays, however, which are primarily established by local jurisdiction.

4.7.1.2 State

(a) California Streets and Highways Code

The California Streets and Highways Code authorize the California Department of Transportation (Caltrans), to control encroachment within the State highway right-of-way. Encroachments allow temporary or permanent use of a highway right-of-way by a utility, a public entity, or a private party.

Caltrans's Right of Way and Asset Management Program is primarily responsible for acquisition and management of property required for State transportation purposes. Transportation purposes may include highways, mass transit guideways and related facilities, material sites, and any other purpose that may be necessary for Caltrans operations. The responsibilities of the Right of Way and Asset Management Program include managing Caltrans' real property for transportation purposes, reducing the costs of operations, disposing of property no longer needed, and monitoring right-of-way activities on Federally assisted local facilities.

4.7.2 Environmental Setting

This section describes the environmental setting as it pertains to traffic and circulation. The study area is located in Santa Clara County, California, south of San Francisco Bay. This section describes highways and local roads in the vicinity of the study area, roadway segments, and classification criteria.

4.7.2.1 Functional Classification

Santa Clara Country uses a roadway classification system for long-range planning and programming. Roadways are classified based on the linkages they provide and their function, both of which reflect their importance to the land use pattern, traveler, and general welfare. The functional classification system recognizes differences in roadway function and standards between urban/suburban areas and rural areas. The following paragraphs define the linkage and functions provided by each class.

- **Freeways:** Operated and maintained by Caltrans, these facilities are designed as high-volume, high-speed facilities for intercity and regional traffic. Access to these facilities is limited, and in some cases on- and off-ramps are metered during peak-hour periods to reduce congestion caused by merging cars and trucks.

- **Arterials:** Major Arterials (four to six lanes) and Minor Arterials (four lanes)—are the principal network for through-traffic within a community and often between communities.

- **Collectors:** These two-lane facilities function as the main interior streets within neighborhoods and business areas. Collectors serve to connect these areas with higher classification roads (i.e., arterials, expressways, and freeways).

- **Local Streets:** These facilities are two-lane streets that provide local access and service. They include residential, commercial, industrial, and rural roads.

4.7.2.2 Level of Service

To evaluate a roadway's operational characteristics, a simple grading system is used that compares the traffic volume carried by a road with that road's design capacity. Roadways adjacent to the study area fall with in Santa Clara County, the City of Milpitas, and the City of San Jose jurisdiction. Roadways under Caltrans' jurisdiction are also adjacent to the study area. Each of these jurisdictions has adopted standards regarding the desires performance level of traffic conditions on the circulation system within its jurisdiction. A measure called "Level of Service" (LOS) is used to characterize traffic conditions. LOS is a measure of quality of operational conditions within a traffic stream based on service measures such as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience. Six LOS from A (best) to F (worst), define each type of transportation facility. Each LOS represents a range of operating conditions and the driver's perception of those conditions. These LOS thresholds, reflect at the local jurisdiction level through the County and City General Plans, define the minimum levels of acceptable traffic conditions.

Most analysis, design or planning efforts typically use service flow rates at LOS C or D or higher to ensure acceptable operating service for facility users. LOS E generally is considered unacceptable for planning purposes unless there are extenuating circumstances or attaining a higher LOS is not feasible or extremely costly. For LOS F, it is difficult to predict flow due to stop-and-start conditions. Levels of service are typically described in terms of traffic operating conditions for intersections and would be similarly applicable to roadway conditions as shown Table 4-15.

Table 4-15 Regulatory Criteria for Roads and Intersections

Level of Service (LOS)	Description of traffic conditions
A	Conditions of free flow; speed is controlled by the driver's desires, speed limits, or roadway conditions.
B	Conditions of stable flow; operating speeds beginning to be restricted; little or no restrictions on maneuverability from other vehicles.
C	Conditions of stable flow; speeds and maneuverability more closely restricted; occasional backups behind left-turning vehicles at intersections.
D	Conditions approach unstable flow; tolerable speeds can be maintained but temporary restrictions may cause extensive delays; little freedom to maneuver; comfort and convenience low; at intersection, some motorists, especially those making left turns, may wait through more than one or more signal changes.
E	Conditions approach capacity; unstable flow with stoppages of momentary duration; maneuverability severely limited
F	Forced flow conditions; stoppages for long periods; low operating speeds.
Source: Highway Capacity Manual. Transportation Research Board, Washington, D.C. 2000	

LOS thresholds are based on daily volumes, number of lanes and facility type. These definitions and metrics are general transportation industry standards found in the Highway Capacity Manual (HCM), American Association of State Highway and Transportation Officials (AASHTO) and Institute of Transportation Engineers (ITE) guidelines and nomenclature.

4.7.2.3 Freeways

Interstate 880, Interstate 680 and State Route (SR) 237 provide regional access to the Berryessa Creek study area.

- **Interstate 880 (I-880)** is a six to eight lane north-south freeway in the vicinity of the Berryessa Creek study area. It connects the cities of Milpitas and San Jose with regional destinations such as Oakland and Fremont on the north and Campbell on the south. The average daily traffic (ADT) on I-880 in the vicinity of SR 237 is 133,000 to 174,000 vehicles per day. I-880 has interchanges with Calaveras Boulevard (SR 237), Montague Expressway and Great Mall Parkway near the study area.

- **Interstate 680 (I-680)** is an eight lane north-south freeway that runs parallel to I-880. Interstate 680 connects the cities of Milpitas and San Jose on the south to regional destinations such as Fremont on the north and the Pleasanton-Livermore Tri Valley area to the north east. In the vicinity of the Berryessa Creek study area, I-680 has interchanges with Jacklin Road, SR 237 and Montague Expressway. The average daily traffic on I-680 near SR 237 is 147,000 to 152,000 vehicles per day.

- **Calaveras Boulevard (SR 237)** is a major east-west signalized arterial roadway in the City of Milpitas, east of I-880. It runs for approximately 1.5 miles from I-880 on the west to I-680 on the east and serves as a regional freeway-to-freeway connector. It is a four to six lane road fronted mostly by retail and commercial uses. It continues east of I-680 to join Piedmont Road. The average daily traffic on SR 237 is 126,000 to 131,000 vehicles per day near its interchange with I-680.

4.7.2.4 Arterials, Collectors, and Local Roads by Jurisdiction

- **Montague Expressway** is a six to eight lane east-west expressway in the cities of Milpitas and San Jose. It runs for approximately 1.6 miles between I-880 and I-680. Montague Expressway has signalized intersections at South Main Street/Oakland Road, McCandless Drive/Trade Zone Boulevard, Great Mall Parkway/East Capitol Avenue and South Milpitas Boulevard.

  During the a.m. peak period from 6:00 a.m. to 9:00 a.m., one westbound through lane is restricted for high-occupancy vehicle (HOV) use; during the p.m. peak period from 3:00 p.m. to 7:00 p.m., one eastbound lane is restricted for HOV use. The HOV lanes are located east of the I-880 interchange and continue until just west of the I-680 interchange. The HOV lanes are currently in a three-to-five year trial period, but are assumed to still be in operation when the 2017 Berryessa Creek modifications take place.

- **Great Mall Parkway** is a major six-lane east-west arterial roadway in the city of Milpitas. It provides access to the Great Mall and the Great Mall Transit Center. It forms a signalized intersection with Montague Expressway.

- **Jacklin Road** is a four-lane east-west minor arterial roadway that connects to I-680 on the east and North Milpitas Boulevard on the west. West of North Milpitas Boulevard, Jacklin Road curves to become North Abel Street.

- **Abel Street** is a minor north-south arterial roadway that runs approximately 2.5 miles to connect to Milpitas Boulevard on the north and Main Street on the south. It serves a variety of land uses to the east and west.

- **Milpitas Boulevard** is a four-lane north south minor arterial roadway that joins Dixon Landing Road on the north and ends at Montague Expressway on the south.

- **Main Street** is a two to four lane collector roadway that joins Weller Lane on the north. It merges into Abel Street south of Great Mall Parkway and joins Montague Expressway. It becomes Oakland Road south of Montague Expressway.

- **Cropley Avenue** is a two to four lane east-west minor arterial roadway in the City of San Jose. The land use along Cropley Avenue is primarily residential. It forms a four lane overpass over I-680 and a signalized intersection with Morrill Avenue. It joins East Capitol Avenue on the west and runs approximately 1.8 miles to join Piedmont Road on the east.

- **Morrill Avenue** is a two-lane major collector roadway with a center two-way left turn lane. It is fronted primarily by residential uses on both sides. This segment will not be affected by the project.

- **Piedmont Road** is a two-lane north south minor arterial roadway that connects to East Calaveras Boulevard on the north and Penitencia Creek Road on the south. This segment will not be affected by the project.

- **Old Piedmont Road** is a two-lane local street that dead ends near Landess Avenue. It serves residential uses on the northeast edge of San Jose.

- **Los Coches Street** is a two-lane local street that joins Milpitas Boulevard to the west and curves to become Sinclair Frontage Road on the east.

- **Yosemite Avenue** is a four-lane minor collector roadway that joins Piedmont Road on the east and curves into Gibraltar Drive on the west. It provides access to residential areas in east Milpitas and offices west of I-680.

- **Ames Avenue** is a two-lane local street that provides access to the Ames Industrial Park including technology companies. It joins Sinclair Frontage Road on the east and Milpitas Boulevard on the west.

4.7.2.5 Roadway Segments

Table 4-16 shows the roadway segments analyzed and the existing LOS. Study area roadways range from two to six lanes and have speed limits from 35 to 55 miles per hour. The study area roads provide access to the industrial and residential uses in the vicinity of the project.

Table 4-16 Roadway Segments

Intersection	AM Peak		PM Peak	
	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
1. Jacklin Road & I-680 Northbound Ramps	N/A		B	16.2
2. Jacklin Road & I-680 Southbound Ramps	N/A		B+	11.5
3. Calaveras Boulevard/ I-880 NB Ramps	B	12.6	B	16.8
4. Calaveras Boulevard/ Abel Street	D+	38.1	D	44.1
5. Calaveras Boulevard & Milpitas Boulevard	D	40.2	D	44.1
6. Great Mall Parkway & I-880 NB Ramps	C	27.1	C+	20.3
7. Great Mall Parkway & Abel Street	D	40.7	D+	36.7
8. Montague Expressway & Capitol Avenue	D	49.7	E+	56.6
9. Montague Expressway & Milpitas Boulevard	D	39.6	D+	35.1
10. Montague Expressway & I-680 Northbound Ramps	D	40.5	D	46.2
11. Montague Expressway & Main Street/Old Oakland	E	68.1	D-	54.8
12. Montague Expressway & Trade Zone Boulevard	F	94.8	F	81.4

The intersection of Montague Expressway and Trade Zone Boulevard operates at LOS F during both the AM and PM peak hours. The intersection of Montague Expressway and Main Street/Old Oakland operates at LOS E during the AM peak hour, while the intersection of Montague Expressway and Capitol Avenue operates at LOS E+ during the PM peak hour. All other study intersections operate at LOS D or better. Figure 4-8 shows the study intersections and roadway segments.

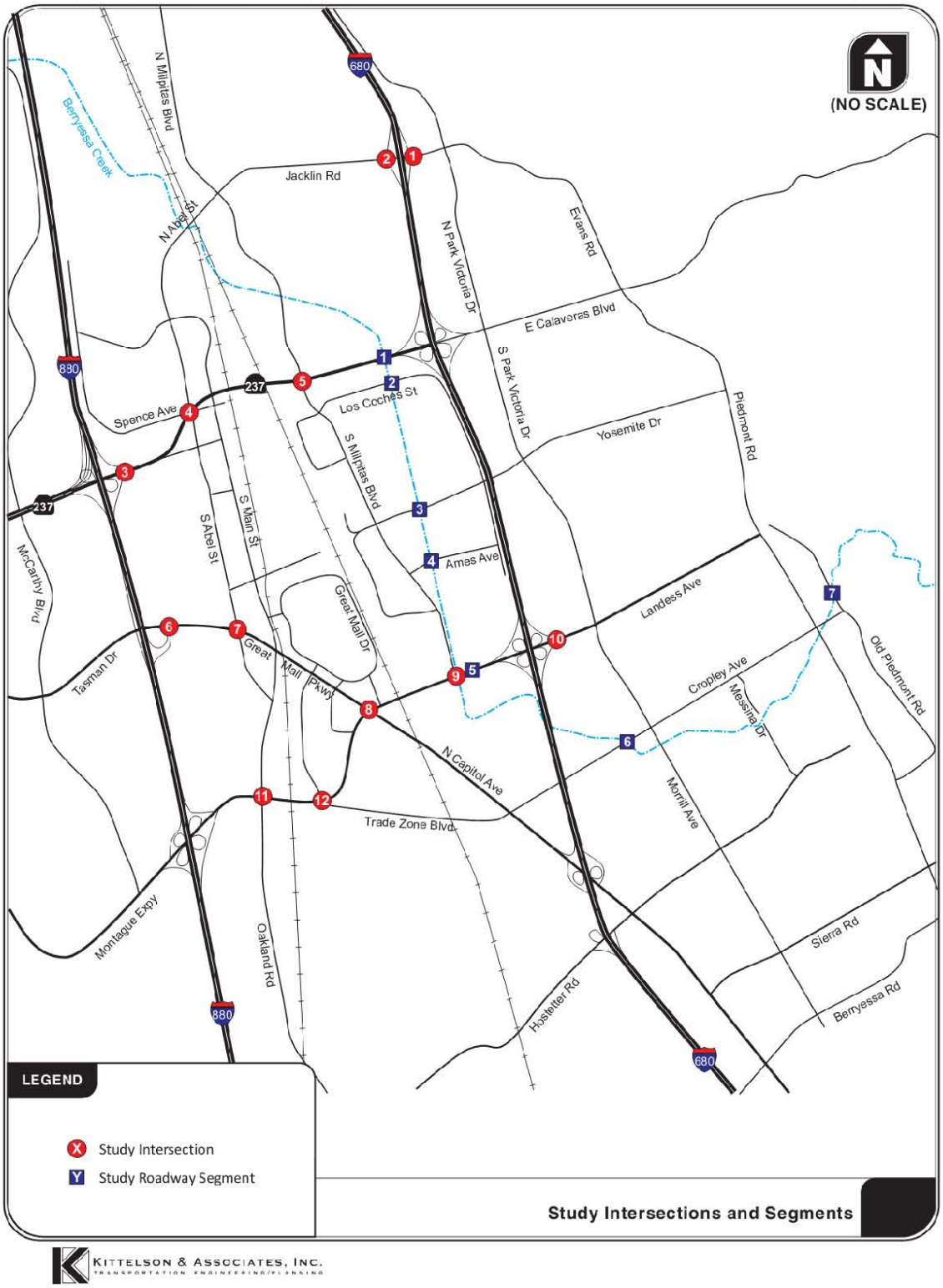


Figure 4-8 Study Intersections and Segments

4.7.2.6 Public Transit Facilities

Regional and local bus service in the study area is provided by the Santa Clara Valley Transportation Authority (VTA). The following VTA transit bus routes use streets and bus stops in the study area.

- **Route 46** operates between the Great Mall transit center and the Milpitas High School. The route uses Montague Expressway, Calaveras Boulevard, and Jacklin Road. On weekdays, it operates from 6:00 a.m. to 8:00 p.m. at frequencies of 30 minutes. On Saturdays, it operates from 8:00 a.m. to 7:00 p.m. at frequencies of 60 minutes. On Sundays, it operates from 9:00 a.m. to 6:00 p.m. at frequencies of 60 minutes. It crosses Berryessa Creek at Montague Expressway east of Milpitas Boulevard.

- **Route 47** operates between the Great Mall transit center and the McCarthy Ranch Shopping Center via Montague Expressway, Park Victoria, and Calaveras Boulevard. On weekdays, it operates from 6:00 a.m. to 10:00 p.m. at frequencies of 30 minutes. On Saturdays, it operates from 8:00 a.m. to 8:00 p.m. at frequencies of 30 minutes. On Sundays, it operates from 9:00 a.m. to 8:00 p.m. at frequencies of 30 minutes. It crosses Berryessa Creek at Calaveras Boulevard west of I-680 and Montague Expressway east of Milpitas Boulevard.

- **Route 70** operates between the Great Mall transit center near Great Mall Parkway in Milpitas and the Capitol LRT station near Capitol Expressway in San Jose. On weekdays, it operates from 5:00 a.m. to 11:00 p.m. at frequencies of 20 minutes. On weekends, it operates from 6:00 a.m. to 10:00 p.m. at frequencies of 30 minutes. It crosses Berryessa Creek at Montague Expressway just east of Milpitas Boulevard and Morrill Avenue south of Cropley Avenue.

- **Route 71** operates between the Great Mall transit center near Great Mall Parkway in Milpitas and the Eastridge Transit Center near Capitol Expressway in San Jose. On weekdays, it operates from 5:00 a.m. to 10:00 p.m. at frequencies of 30 minutes. On weekends, it operates from 7:00 a.m. to 9:00 p.m. at frequencies of 30 minutes. It crosses Berryessa Creek at Montague Expressway east of Milpitas Boulevard and Piedmont Road south of Cropley Avenue.

- **Route 104** Express operates between Deer Creek Road in Palo Alto and the Penitencia Creek Transit Center south of Berryessa Road in San Jose. On weekdays, two buses provide westbound service—from Penitencia Creek to Deer Creek—during the a.m. peak, from 6:00 a.m. to 8:00 a.m. Eastbound service is offered in the p.m. peak between 4:00 p.m. and 6:00 p.m. The route crosses over Berryessa Creek at Montague Expressway and Milpitas Boulevard.

- **Route 180** Express operates between the Fremont BART station and the San Jose Diridon Transit Center. On weekdays, it operates from 5:00 a.m. to 12 midnight at frequencies of 15 minutes. On Saturdays, it operates from 6:00 a.m. to 12 midnight at frequencies of 30 minutes. On Sundays, it operates from 7:00 a.m. to 12 midnight at frequencies of 30 minutes. Route 180 crosses over Berryessa Creek at Montague Expressway east of Milpitas Boulevard.

- **Route 217** AC Transit Route 217 connects the Fremont BART with the Great Mall Transit Center. On weekdays, it operates from 5:00 a.m. to 11:00 p.m. at frequencies of 30 minutes. On weekends, it operates from 7:00 a.m. to 8:00 p.m. at 40 minute headways. It crosses Berryessa Creek at Calaveras Boulevard, just east of Milpitas Boulevard.

- **Regional Transit** Regional and local light rail transit (LRT) service is also provided by VTA through the Alum Rock-Santa Teresa LRT line. The proposed VTA Bus Rapid Transit (i.e., Valley Rapid) will not serve the study area (8). A Bay Area Rapid Transit (BART) station at Montague Expressway and Capitol Avenue has recently begun construction and is slated to be completed by 2018. Depending on the exact construction schedule, the modifications at Berryessa Creek may impact BART's construction efforts.

4.7.2.7 Pedestrian and Bicycle Facilities

In addition to conventional on-street pedestrian and bicycle facilities, the City of Milpitas offers several recreational trails. These trails typically run along the creeks, including the Berryessa Creek.

4.8 NOISE

4.8.1 Regulatory Setting

Federal and state governments provide guidelines for construction noise in regards to worker protection and, for this project, traffic noise. Jurisdictions in California are required to have noise elements in their general plans; the noise elements used are planning guides to ensure that noise levels are compatible with adjacent land uses. Most jurisdictions also have noise ordinances, which serve as enforcement mechanisms for controlling noise. The proposed project is located in the vicinity of two convergent jurisdictions: the City of San Jose and City of Milpitas.

The cities of San Jose and Milpitas both have noise elements in their general plans. San Jose has established the objectives of 55 decibels (dB) (average day/night noise level) as the long-term exterior noise level and 60 dB as the short-term exterior noise level (City of San Jose 2005). Milpitas has established a standard to "avoid residential . . . exposure increases of more than 3 dB or more than 65 dB at the property line, whichever is more restrictive" (City of Milpitas 1994).

The City of Milpitas noise standards will be applied to this project because it is the closest jurisdiction with the most restrictive noise ordinance. Section V-213-3 of the Municipal Code provides restriction on the time of day noise can be produced in residential areas and limits construction noise to only occur within the hours of 7:00 a.m. to 7:00 p.m. daily except holidays (City of Milpitas 2008).

Construction noise from the project may impact noise sensitive receptors. These noise sensitive receptors consist of both human receptors and wildlife receptors. There are no established criteria available for the wildlife species known to occur in the study area. Many regulatory agencies recommend using 60 dBA L_{eq} hourly levels as the threshold for determining significant impacts for sensitive bird species at the edge of suitable habitat

4.8.2 Environmental Setting

Noise is generally defined as sound that is loud, disagreeable, or unexpected. Sound, as described in more detail below, is mechanical energy transmitted in the form of a wave caused by a disturbance or vibration. Because of the ability of the human ear to detect a wide range of sound pressure fluctuations, sound pressure levels are expressed in logarithmic units called decibels (dB).

Noise levels adjacent to the creek are typical of urban residential and industrial areas. Numerous roads and highways cross the creek downstream of Morrill Avenue. Vehicular traffic along the major arterials and railroads are the primary noise sources in the study area.

Noise levels from vehicular traffic in the study area range from 60 to 80 day-night average sound level (Ldn), based on information contained in the Midtown Milpitas Specific Plan and the Capital Corridor Light Rail Project EIRs. The upper end of this range may be expected during peak hours adjacent to I-680, while the lower values would be expected near arterials. One railroad runs parallel to the creek approximately 0.6 miles to the west of the lower study area. Noise levels due to freight operation adjacent to the track can be in excess of 70 Ldn; however, they decrease to 60 Ldn approximately 300 feet from the track.

The noise-sensitive land uses in or near the study area include residential areas, Majestic Way Elementary School, and Berryessa Creek Park. The sensitive receptors upstream of I-680 include local residents and visitors, students and faculty at the school, recreationists at the park, and occasional wildlife. In the more commercial/industrial area downstream of I-680, the sensitive receptors include the employees of the businesses, a few residents, and occasional wildlife.

4.9 RECREATION AND PUBLIC ACCESS

4.9.1 Regulatory Setting

Public recreation facilities in the project vicinity are provided by the County and area cities, consistent with their land use planning policies.

4.9.2 Environmental Setting

A greenbelt, including a park, extends downstream from Piedmont Avenue to about 600 feet upstream of Morrill Avenue. Residents, recreationist and commetuers use the greenbelt area for walking and bicycling, despite the fact that much of the greenbelt area is SCVWD right-of-way and is not officially open to the public. A gated maintenance road runs along the south side of Berryessa Creek between Piedmont Road and Morrill Avenue. Regardless of the gates, recreationist use the maintenance road as a bicycle trail and to access the Majestic Way Elementary School. There is open access (without gates) to the greenbelt area via a pedestrian bridge that connects the end of Messina Drive to Berryessa Creek Park on the south side. There are also no gates or fences to restrict public access along Parkhaven Drive on the north side of Berryessa Creek. The City of San Jose does not anticipate additional recreational development in the areas adjacent to Berryessa Creek (Metha Sizemore, City of San Jose pers. comm. 2/7/02).

The City of Milpitas would like to extend its bike trail system along the lower portion of the study area, downstream of I-680. Milpitas has proposed a bike trail along lower Berryessa Creek from the confluence of Coyote and Penitencia Creeks upstream to the pedestrian/bicyclist overpass at I-680. If constructed, such a trail would provide access to five city parks located within one-quarter mile of the creek corridor. The proposed Berryessa Creek Trail would link with the Hetchy Hetchy Trail and would provide direct access to the Community Center, City Library, and Town Center shopping and theater district (City of Milpitas 2001).

The upper study area upstream of Old Piedmont Road is privately owned and currently not accessible to the public but could be a scenic resource with the dense riparian zone and views to undeveloped agricultural lands upstream. The greenbelt is also a scenic area with its mature tree canopy. Downstream of the greenbelt, there is little to no aesthetic value to the trapezoidal channel.

4.10 AESTHETICS AND VISUAL RESOURCES

4.10.1 Regulatory Setting

There are no Federal or State laws and regulations associated with aesthetics and visual resources. Although local jurisdictions are not required to address visual resources as a separate topic in their general plans, several of the required general plan elements—including land use, conservation, and open space—relate indirectly to the aesthetic issues faced by communities as they manage their growth. General plans may also contain additional elements on topics of concern to the local community; common themes that bear on aesthetics and visual resources include recreation and parks, community design, and heritage or cultural resources.

4.10.2 Environmental Setting

Aesthetic resources are those natural resources, landforms, vegetation, and man-made structures in the environment that generate one or more sensory reactions and evaluations by the viewer. The regional viewshed in the Berryessa Creek area includes large areas of residential, commercial, and industrial development with some open areas and natural hillsides to the east. There are no State-designated visual resources such as scenic roadways in or near the study area.

The more meandering portions of Berryessa Creek upstream of I-680 support a band of riparian vegetation through this urbanized portion of San Jose. Residents consider the natural riparian greenbelt along the creek as an attractive amenity that helps to offset the effects of urbanization on the area's aesthetic quality. The downstream portion of Berryessa Creek is generally aesthetically unappealing, with bare ground, eroding slopes, or concrete linings.

The viewers upstream of I-680 include local residents and visitors, students and faculty at the school, recreationists at the park, and motorists. In the more commercial/industrial area downstream of I-680, the viewers include the employees of the businesses, a few residents, and motorists.

4.11 HAZARDOUS, TOXIC, AND RADIOLOGICAL WASTE

4.11.1 Regulatory Setting

4.11.1.1 Federal

The policy of the Corps regarding HTRW sites is presented in Engineering Regulation 1165-2-132, developed in response to the Federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended. This policy stipulates that each civil works project must include a phased and documented review to provide early identification of known and potential HTRW sites that may be affected by a proposed Federal project. In addition, the non-Federal sponsor must ensure cleanup of any identified HTRW prior to initiation of a Corps civil works project. When HTRW sites are identified, response actions must be acceptable to the U.S. EPA and applicable State regulatory agencies.

4.11.1.2 State

(a) Worker Safety Requirements

The California Occupational Health and Safety Administration (Cal/OSHA) assumes primary responsibility for developing and enforcing workplace safety regulations within California. Cal/OSHA regulations pertaining to the use of hazardous materials in the workplace (Title 8 of the California Code of Regulations [CCR]) include requirements for safety training, availability of safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and preparation of emergency action and fire prevention plans. Cal/OSHA enforces regulations for hazard communication programs that contain training and information requirements, including procedures for identifying and labeling hazardous substances, communicating hazard information related to hazardous substances and their handling, and preparation of health and safety plans to protect workers and employees at hazardous-waste sites. The hazard communication program requires that employers make Material Safety Data Sheets available to employees and document employee information and training programs. Construction activities near high-priority installations located underground, such as the natural gas pipelines that penetrate the levee, are regulated by CCR Title 8, Section 1541 (8 CCR 1541).

4.11.2 Environmental Setting

For purposes of this section, the term "hazardous materials" refers to both hazardous substances and hazardous wastes. A "hazardous material" is defined as "a substance or material that…is capable of posing an unreasonable risk to health, safety, and property when transported in commerce" (49 CFR 171.8). California Health and Safety Code Section 25501 defines a hazardous material as follows:

> "Hazardous material" means any material that, because of its quantity, concentration, or physical, or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. "Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material which a handler or the administering agency has a reasonable basis

for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

"Hazardous wastes" are defined in California Health and Safety Code Section 25141(b) as wastes that:

> because of their quantity, concentration, or physical, chemical, or infectious characteristics, [may either] cause, or significantly contribute to an increase in mortality or an increase in serious illness[, or] pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

4.11.2.1 Reported Hazardous Waste Sites

Since there have been significant releases of hazardous materials in the past, the site reconnaissance was performed using guidelines set forth in the EPA rule concerning "All Appropriate Inquiries," the ASTM 1527-05, to locate any continuing or potential releases of hazardous materials. The use of ASTM 1597-05 is to identify recognized environmental conditions in order to establish the presence or likely presence of hazardous substances or petroleum products under conditions that indicate a likely release, a past release or a material threat of a release of those substances.

ASTM E 1527-05 requires that an Phase 1 Environmental Site Assessment consist of diligently conducting a reasonable search of all available information, performing a site reconnaissance and interviewing people who are knowledgeable about the current and past uses of the project site and surrounding area, its waste disposal practices and its environmental compliance history. The Phase 1 ESA is located in Appendix D.

4.11.2.2 Current Assessment

On June 21, 2011, USACE conducted site reconnaissance. The site reconnaissance was conducted using the EDR Data Map - Corridor Study generated by Environmental Data Resources Inc. The reconnaissance consisted of locating the sites with potential recognized environmental conditions (REC) and also walking the length of the creek. The scoping and the time factor prohibited obtaining access to buildings. During site reconnaissance USACE found the following:

1. Two gas stations, approximately 570 feet from the study area, which had historical releases, but the environmental sites are considered closed or no further action (NFA) is warranted.

2. Four industrial sites, approximately 1,080 feet from the study area, that had been listed as having releases but have changed hands since the listing. These are OEVCON Construction Co. which is now Grace Alliance Church, COMAC, now Iron Mountain Co., Landmark Labels now Emotion Co., Intersil Corp., now Peoples Associates, and "Industrial Building", now ODI.

3. One residential site was reported to have a release, presumably during construction, but this is not currently evident since the construction phase is complete and homes occupy the site. The site, located at 1260 Dempsey Rd, east of Interstate 680, is under land use controls. While this is counted as a REC, it is not considered to be close enough to affect the proposed project at Berryessa Creek.

4. Three industrial sites were listed as having released a hazardous substance (HS) and are still under the same company name: Flex interconnect Vector Fabrication, KML Engineering Corp., and Cordova Printed Circuits. These facilities were located all in the same court. Although they backed up to the creek, these facilities now are clean and exhibit no threat of a release.

5. One listed site, Kaiser Experimental Labs 1600 S. Main St., could not be located, but the presumed address is now a vacant lot. This site shows signs of distressed vegetation, which is a REC, but it is approximately 4,920 feet from the creek, and will not likely affect construction.

6. Other sites investigated, but were not listed in the EOR Report, include a CFN Gas Station, which is located within 100 feet of the creek, a distribution plant, which has an AST and a UST on site, a processing plant, which has five USTs.

7. There are many instances of transformers in the region studied. None of them is considered to be a REC, partly because they appear to be in good condition, secure, either by height above ground or by locked cabinets, and because they no longer contain PCBs.

The final segment of the reconnaissance involved walking along the creek. The creek and the immediate surroundings appear to be routinely maintained, since only two instances of discarded materials could be found. The 1-gallon container of antifreeze is not considered to be a REC due to its small size, and it was empty or nearly empty. There are a few bridges and a few power transmission lines that cross the creek. The properties that are immediately adjacent to the creek consist mostly of commercial structures, but there are also a few residential neighborhoods in the vicinity.

CHAPTER 5 – EVALUATION OF ALTERNATIVE PLANS AND POTENTIAL ENVIRONMENTAL CONSEQUENCES*

5.1 INTRODUCTION

This chapter discusses the potential effects of the alternative plans on the significant environmental resources described in Chapter 4. The environmental conditions for each resource are compared with future conditions with each alternative plan in place. Both beneficial and adverse effects are considered, including direct effects during construction and indirect effects resulting from the alternatives. The basis of significance (criteria) for each resource is used to evaluate the significance of any adverse effects, and measures are proposed to avoid, minimize, or mitigate any significant adverse effects for each resource.

The basis of significance is based on NEPA requirements. The Corps has integrated NEPA requirements into its regulations, policies, and guidance. Engineering Regulation 1105-2-100, "Planning Guidance Notebook," April 2000, establishes the following significance criteria:

- Significance based on institutional recognition means that the importance of the effect is acknowledged in the laws, adopted plans, and other policy statements of public agencies and private groups. Institutional recognition is often in the form of specific criteria.

- Significance based on public recognition means that some segment of the general public recognized the importance of the effect. Public recognition may take the form of controversy, support, conflict, or opposition expressed formally or informally.

- Significance based on technical recognition means that the importance of an effect is based on the technical or scientific criteria related to critical resource characteristics.

For this GRR-EIS, these three NEPA criteria apply to all resources and are not repeated under each resource. The CEQA requirements were also considerd since they are more specific to the resource and are listed in Appendix G of the CEQA Guidelines. The CEQA criteria relevant to an urban setting, as well as other agency criteria and thresholds of significance that apply to each resource, are identified under the appropriate resource.

The focus of the environmental analysis is on the downstream segment from I-680 to Calaveras Boulevard. Alternative 5 is the authorized project, which included the upstream segment from I-680 to Old Piedmont Road. For post-authorization studies, Corps policy requires that the authorized plan be retained in the final array of alternatives in order to evaluate and compare proposed changes to that plan. Alternative 5 would be used by the Corps for comparative reasons but is not a candidate for selection. Elements of the currently-authorized Coyote and Berryessa Creeks Project that are not approved under this GRR-EIS will be deferred indefinitely.

5.2 AIR QUALITY

5.2.1 Methodology

Emissions from the proposed project are entirely due to construction activities. To evaluate the appropriate level of air quality analysis, preliminary emission estimates were used to determine if levels may exceed the annual BAAQMD thresholds. Air emissions from construction-related activities were calculated by inputting construction-related data from Section 5.7 into the Sacramento Metropolitan Air Quality Management District's (SMAQMD) Road Construction Emissions Model (Road Mod) Version 7.1.1 (2012). The model was run two times to generate emission values for the following construction activities: (1) floodwall construction and other construction activities, and bridge construction downstream of I-680 starting in 2017, and (2) floodwall construction and embankment stabilization, and bridge construction upstream of I-680 for construction starting in 2017. Model results are provided in Appendix A, Part IV.

The model is calibrated for road construction projects and is the most accurate for modeling the excavation activities downstream of I-680. The modeling was conducted based on Alternative 2B/d as a maximum footprint for alternatives downstream on I-680 and Alternative 5 as an overall maximum alternative footprint. The modeling assumed that all construction activity would begin in 2017 and completed in two construction seasons, approximately 23 months. The estimated equipment to be used, volume of material, and disturbance acreages were compiled to determine the data to input into the emissions model. The emission calculations are based on standard vehicles emissions rates built into the model.

The Road Construction Emissions Model provided emission estimates for reactive organic gases (ROG), nitrogen oxides (NO_X), carbon monoxide (CO), carbon dioxide (CO_2), particulate matter less than 10 microns (PM_{10}) and particulate matter less than 2.5 microns ($PM_{2.5}$). ROG and NO_X are precursors to ozone formation. The emissions values for PM_{10} and $PM_{2.5}$ consist of a combination of exhaust particles, especially diesel exhaust, and fugitive dust. Federal standards refer to volatile organic compounds (VOC) instead of ROG, but both of these types of emissions are ozone precursors and function similarly in ozone formation.

Annual emissions were calculated based on assumptions on the type of construction equipment required. Construction activities and associated assumptions associated with air quality are estimated based on the current level of design and the activities and emissions may change based on the contractor. The contractor would coordinate with the air quality board prior to the start of construction.

5.2.2 Basis of Significance

Adverse effects on air quality were considered significant if an alternative would result in any of the following:

- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Conflict with or obstruct implementation of the applicable air quality plan;
- Expose sensitive receptors to substantial pollutant concentrations; or
- Not conform to applicable Federal and State standards, and local thresholds on a long term basis.

The BAAQMD adopted CEQA Guidelines in June 2010, which were revised in May 2011. On March 5, 2012, the Court issued a ruling in *California Building Industry Association v. Bay Area Air Quality Management District* (Superior Court Case No. RG10548693). Pursuant to the ruling, the Court found that the adoption of the BAAQMD's CEQA Guidelines is a "project" requiring CEQA review. No CEQA review was conducted for the CEQA Guidelines prior to their adoption. Therefore, the Court set aside adoption of the BAAQMD CEQA Guidelines for determining the significance of air quality and greenhouse gas emissions. The Court also ordered BAAQMD to take no further action to disseminate those standards before performing CEQA review related to issuing the standards. While adoption of the thresholds was set aside until an environmental evaluation is conducted, the BAAQMD's GHG significance criteria, as outlined in their CEQA Guidelines, are supported by extensive studies and analysis (see http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx). Pursuant to its discretion under CEQA Guidelines section 15064 (b) ("lead agencies may exercise their discretion on what criteria to use"), the analysis used in this document relies on methodologies provided in the updated 2010 BAAQMD CEQA Guidelines.

The CEQA thresholds of significance were obtained from the BAAQMD CEQA Guide to Air Quality Assessment (BAAQMD 2010), which lists a threshold of 54 pounds per day or 10 tons per year for ROG, NO_X, and $PM_{2.5}$ construction emissions and a PM_{10} threshold of 82 pounds per day or 15 tons per year. There are no quantitative thresholds for construction dust emissions; instead, impacts are considered less than significant if the BAAQMD Best Management Practices are employed to control dust during construction activities, including demolition and excavation.

The BAAQMD TAC threshold is an increased cancer risk of more than 10 in 1,000,000 for a person with maximum exposure potential and increased non-cancer risk of 1.0 Hazard Index (chronic or acute). The BAAQMD also has a concentration threshold of 0.3 μg/m3 for $PM_{2.5}$. These thresholds are applicable to both construction emissions and operations emissions. Unlike the volume-based thresholds for criteria air pollutants, the TAC thresholds are used for specific receptor locations when a risk analysis is required for specific project components, such as stationary sources or the use of diesel-powered equipment, including construction equipment.

The 2010 BAAQMD CEQA Guidelines recommend analyzing localized CO concentrations for projects that would increase traffic volumes at affected intersections to more than 44,000 vehicles per hour. However, given the minimal increase in vehicle trips due to newly required maintenance activities, the proposed project would not affect local CO concentrations during operations Therefore, CO concentrations have not been quantified in this analysis.

BAAQMD considers projects that exceed these criteria air pollutant standards also to result in a cumulatively considerable air quality impact upon the region. According to BAAQMD, no further cumulative analysis should be required beyond the analysis of whether a proposed project's impacts would contribute considerably to ambient levels of pollutants or GHGs.

5.2.3 Impacts and Mitigation Measures

5.2.3.1 Alternative 1 (No Action)

Under the No Action Alternative, no construction activities would occur. Existing sources of air pollution would be expected to remain the same. Air quality would continue to be influenced by local and regional emissions from vehicles, local commercial and industrial land uses, and climate and geographic conditions.

Prior to implementing measures to reduce flood the current level of risk would remain for flooding in Milpitas and San Jose. The magnitude of the impact of flooding resulting from a flood event would depend on the severity of the storm. Cleanup actions in the event of a flood would require heavy use of construction equipment that would result in short-term, temporary emissions. Depending on the severity and extent of flood damage, emissions from cleanup activities could be minor or extensive.

5.2.3.2 Alternative 2A/d (Incised Trapezoidal Channel –Moderate Protection)

Construction of floodwalls, replacement of the UPRR Trestle Bridge, and excavation of the channel under Alternative 2A/d would result in temporary and short-term generation of ROG, NOx, PM_{10}, $PM_{2.5,}$ and CO emissions from excavation, vegetation clearing, grading, motor vehicle exhaust associated with construction equipment, construction, employee commute trips, material transport, material handling and other construction activities. Annual emissions were calculated based on assumptions on the type of construction equipment required. Construction activities and associated assumptions associated with air quality are estimated based on the current level of design and the activities and emissions may change based on the contractor. The contractor would coordinate with the air quality board prior to the start of construction.

Modeling was based on Alternative 2B/d (Table 5-1) since impacts would be greater than Alternative 2A/d. Actual emissions (tons per construction period) for Alternative 2A/d would be approximately 1 percent less than the modeled emissions for Alternative 2B/d due to a shorter construction period. Based on the estimated presented in Table 5-1, Alternative 2A/d would not produce emissions that are greater than GCR *de minimums* values for criteria pollutants. The estimated worst-case annual emission generated from implementation of Alternative 2A/d would not exceed Federal or BAAQMD thresholds. Alternative 2A/d would not violate air quality

standards or conflict with BAAQMD air quality plan; therefore, this impact would be less than significant.

The project would result in short-term generation of criteria pollutants concentrations, including diesel exhaust emissions, from the use of off-road construction equipment required for site preparation and other activities, and on-road haul and dump trucks used for hauling materials. Mobile equipment could operate within 100 feet to residents adjacent to the study area near Los Coches Street and Lakewood Drive. The duration of mobilized equipment used near sensitive receptors located near the study area would be approximately a few weeks in the two season construction period. Because sensitive receptors would not be exposed to substantial pollutants and emissions are below BAAQMD thresholds, the impact would be less than significant.

The proposed project is a short-term construction project. Operation and maintenance of proposed project would be similar to current maintenance practices. As a result, there would be no additional long-term increase in regional emissions of criteria pollutants associated with maintenance activities and vehicle trips. The proposed project would conform to applicable Federal and State standards, and local thresholds on a long term basis. This impact would be less than significant.

(a) General Conformity

The Federal CAA requires Federal agencies to ensure that their actions conform to applicable implementation plans for the achievement and maintenance of the NAAQS for criteria pollutants. To achieve conformity, a Federal action must not contribute to new violations of NAAQS, increase the frequency or severity of existing violations, or delay timely attainment of standards in the area of concern (for example, a state or a smaller air quality region).

The proposed project is located in an area that is in non-attainment status for ozone under both the CAAQS and Federal standards NAAQS, and also is in non-attainment under the California standard for particulate matter (PM_{10} and $PM_{2.5}$). As shown in Table 5-1, the proposed project would not produce emissions that are greater than the GCR *de minimus* values for criteria pollutants. Therefore, the proposed project falls into conformity with the EPA-approved State Implementation Plan and a written Conformity Determination is not required.

5.2.3.3 Alternative 2B/d (Incised Trapezoidal Channel– FEMA Certified Protection)

As described in Alternative 2A/d, annual construction emissions that would occur in Alternative 2B/d would result primarily from equipment operation associated with the construction of bridges, culverts, flood walls, and the excavation of the channel. Emissions associated with this alternative were calculated based on duration, estimated total fill material required, vegetation clearing, grading, motor vehicle exhaust associated with construction equipment, construction, employee commute trips, material transport, material handling, and other construction activities. Table 5-1 shows air emissions from construction activities based on results of the modeling.

Table 5-1 shows air emissions from construction activities based on results of the modeling. Alternative 2B/d would not produce emissions that are greater than GCR *de minimus* values for

criteria pollutants. The estimated worst-case annual emissions generated from implementation of Alternative 2B/d would not exceed Federal or BAAQMD thresholds. Alternative 2B/d would not violate air quality standards or conflict with BAAQMD air quality plan; therefore, this impact would be less than significant.

Table 5-1 Alternative 2B/d Air Emissions from Construction of Downstream Activities

	Criteria Pollutant Emissions					
	ROG	CO	NO_X	PM_{10}	$PM_{2.5}$	CO_2
Activity beginning in 2017	1 lbs/day <1 ton/year	4.8 lbs/day <1 ton/year	45.7 lbs/day 4.8 ton/year	11.0 lbs/day 2.3 ton/year	2.6 lbs/day <1 ton/year	10,290 lbs/day 1,100ton/year
2010 BAAQMD Project Construction Thresholds	54 lbs/day	N/A	54 lbs/day	82 lbs/day	54 lbs/day	N/A
Federal Conformity Rule Thresholds	50 ton/year	100 ton/year	50 ton/year	100 ton/year	N/A	N/A
Exceed Thresholds	**No**	**No**	**No**	**No**	**No**	**No**

ROG = reactive organic gases
CO = carbon monoxide
PM10 = particulate matter less than 10 microns
NOx = nitrogen oxides
CO2= carbon dioxide
PM2.5= particulate matter less than 2.5 microns

As discussed under Alternative 2A/d, there would be short-term generation of criteria pollutants concentrations, including diesel exhaust emissions, from the use of off-road construction equipment required for site preparation and other activities, and on-road haul and dump trucks used for hauling materials. Mobile equipment could operate within 100 feet to residents adjacent to the study area near Los Coches Street and Lakewood Drive. The duration of mobilized equipment used near sensitive receptors located near the study area would be approximately a few weeks during the two season construction period. Because sensitive receptors would not be exposed to substantial pollutants and emissions are below BAAQMD thresholds, this impact would be less than significant.

The proposed project is a short-term construction project. Operation and maintenance of proposed project would be similar to current maintenance practices. As a result, there would be no additional long-term increase in regional emissions of criteria pollutants associated with maintenance activities and vehicle trips. The proposed project would conform to applicable Federal and State standards, and local thresholds on a long term basis, therefore, this impact would be less than significant.

The proposed project would not produce emissions that are greater than the GCR *de minimus* values for criteria pollutants. Therefore, the proposed project falls into conformity with the EPA-approved State Implementation Plan and a written Conformity Determination is not required.

5.2.3.4 Alternative 4/d (Walled Trapezoidal Channel)

Alternative 4/d would have similar effects as described in Alternative 2B/d. Annual emissions were calculated based on assumptions on the type of construction equipment required. Modeling was based on Alternative 2B/d (Table 5-1) since impacts would be greater than Alternative 4/d.

Alternative 4/d requires less excavation of material than Alternative 2B/d and the same number of bridge and culvert replacements but slightly higher floodwalls. Emissions from Alternative 2B/d would be greater than those resulting from Alternative 4/d due to an increase in volume of earth-moving activities thus requiring a longer duration and an increase in material required (i.e., increase in haul truck trips) for proposed activities. Therefore, the types of effects and significance for Alternative 4/d would not be greater than Alternative 2B/d. Actual emissions (tons per construction period) for Alternative 4/d would be approximately 1 percent less than the modeled emissions for Alternative 2B/d. Emissions would not exceed Federal or BAAQMD thresholds; therefore, this impact would be less than significant.

As discussed under Alternative 2B/d, mobile equipment could operate within 100 feet to residents adjacent to the study area near Los Coches Street and Lakewood Drive. The duration of mobilized equipment used near sensitive receptors located near the study area would be approximately a few weeks during the two season construction period. Because sensitive receptors would not be exposed to substantial pollutants and emissions are below BAAQMD thresholds, the impact would be less than significant.

Operation and maintenance of proposed project would be similar to current maintenance practices. As a result, there would be no additional long-term increase in regional emissions of criteria pollutants associated with maintenance activities and vehicle trips. The proposed project would conform to applicable Federal and State standards, and local thresholds on a long term basis. This impact would be less than significant.

The proposed project would not produce emissions that are greater than the GCR *de minimus* values for criteria pollutants. Therefore, the proposed project falls into conformity with the EPA-approved State Implementation Plan and a written Conformity Determination is not required.

5.2.3.5 Alternative 5 (Authorized Project)

As discussed in Chapter 3, Alternative 5 is the authorized plan and is evaluated for Corps planning purposes. Alternative 5 would be used by the Corps for comparative reasons but is not a candidate for selection.

(a) Upstream of I-680

Annual construction emissions occur in Alternative 5 would result primarily from equipment operation associated with the modifications of bridges, and culverts, and construction of concrete lined channel. Table 5-2 shows air emissions from construction activities based on results of the modeling. The modeling was based on a worst case scenario for the upstream portion of Alternative 5. The upstream portion would not produce emissions that are greater than GCR *de*

minimus values for criteria pollutants. Emissions from the up stream of I-680 activities would not exceed Federal or BAAQMD thresholds.

Table 5-2 Alternative 5 Air Emissions from Upstream Construction Activities

Construction Year	ROG (tons/year) (lbs/day)	CO (tons/year) (lbs/day)	NO_X (tons/year) (lbs/day)	PM_{10} (tons/year) (lbs/day)	$PM_{2.5}$ (tons/year) (lbs/day)	CO_2 (tons/year) (lbs/day)
Activity beginning 2017	< 1 lbs/day	1.6 lbs/day	3.6 lbs/day	10.4 lbs/day	32.1 lbs/day	1,043 lbs/day
	<1 ton/year	<1 ton/year	<1 ton/year	1.7 ton/year	<1 ton/year	147 ton/year

ROG = reactive organic gases NOx = nitrogen oxides
CO = carbon monoxide CO2= carbon dioxide
PM10 = particulate matter less than 10 microns PM2.5= particulate matter less than 2.5 microns

Construction activities would result in short-term generation of criteria pollutants concentrations, including diesel exhaust emissions, from the use of off-road construction equipment required for site preparation and other activities, and on-road haul and dump trucks used for hauling materials. Mobile equipment could operate within 100 feet to residents adjacent to the Berryessa Creek during the eighteen month construction period. Because sensitive receptors would not be exposed to substantial pollutants and emissions are below BAAQMD thresholds the impact would be less than significant. Operation and maintenance of proposed project would be similar to current maintenance practices. As a result, there would be no additional long-term increase in regional emissions of criteria pollutants associated with maintenance activities and vehicle trips.

(b) Downstream of I-680

Downstream activities under Alternative 5 involves the modification bridges and culverts rather than their replacement as proposed in Alternative 2B/d. Emissions from Alternative 2B/d would be greater than those resulting from downstream of I-680 activities under Alternative 5 due to an increase in volume of earth-moving activities thus requiring a longer duration and an increase in total fill material required (i.e., increase in haul truck trips) for proposed activities. Therefore, the types of effects and significance for the downstream of I-680 activities under Alternative 5 would not be greater than Alternative 2B/d.

Table 5-3 compares project emissions with Federal Conformity Rule standards and California significance standards. As presented in the table, estimated worst case scenario emissions would Alternative 2B/d, and Alternative 5 would not exceed the BAAQMD regional thresholds. This alternative would not violate air quality standards or conflict with BAAQMD air quality plan; therefore, this impact would be less than significant.

Table 5-3 Comparison of Project Air Emissions with Federal Conformity Rule and State Significance Thresholds						
	Criteria Pollutant Emissions					
	ROG	**CO**	**NO_X**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**
Downstream Activity	1 lbs/day <1 ton/year	4.8 lbs/day <1 ton/year	45.7 lbs/day 4.8 ton/year	11.0 lbs/day 2.3 ton/year	2.6 lbs/day <1 ton/year	10,290 lbs/day 1,100 ton/year
Upstream Activity	<1 lbs/day <1 ton/year	1.6 lbs/day <1 ton/year	3.6 lbs/day <1 ton/year	10.1 lbs/day 1.7 ton/year	2.1 lbs/day <1 ton/year	1,043 lbs/day 147 ton/year
Total	1.2 lbs/day <1 ton/year	6.4 lbs/day <1 ton/year	49.3 lbs/day 5.2 ton/year	21.1 lbs/day 4.0 ton/year	4.7 lbs/day <1 ton/year	11,333 lbs/day 1,247ton/year
2010 BAAQMD Project Construction Thresholds	54 lbs/day	N/A	54 lbs/day	82 lbs/day	54 lbs/day	N/A
Federal Conformity Rule Thresholds	50 ton/year	100 ton/year	50 ton/year	100 ton/year	N/A	N/A
Exceed Thresholds	**No**	**No**	**No**	**No**	**No**	**No**
ROG = reactive organic gases VOC = volatile organic compounds CO = carbon monoxide NOx = nitrogen oxides			PM2.5= particulate matter less than 2.5 microns CO2 = carbon dioxide PM10 = particulate matter less than 10 microns			

Downstream of I-680 activities for Alternative 5 would have similar effects to sensitive receptors as discussed under Alternative 2B/d. In addition, operation and maintenance effects would be the same as described under Alternative 2B/d.

5.2.3.6 Mitigation Measures

The contractor would be required to provide information on emission from construction equipment to BAAQMD and avoid the use of portable generators where power can be practically obtained from the local power grid. In accordance with BAAQMD guidelines, all proposed projects should implementation of the Basic Construction Mitigation Measures listed below whether or not construction-related emissions exceed applicable thresholds.

(a) Basic Construction Mitigation Measures Recommended for ALL Proposed Projects:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 mph.

- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.

- Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

(b) Construction Area Particulate Matter Mitigation Measures

If the project's construction contractor determines that the construction activities would actively disturb more than 15 acres per day, then the contractor would be required to conduct PM_{10} and $PM_{2.5}$ dust modeling. If that modeling shows violations of BAAQMD's PM_{10} substantial CAAQS significance thresholds of the $PM_{2.5}$ CAAQS thresholds, then the contractor would be required to implement sufficient mitigation to eliminate any significant PM_{10} or $PM_{2.5}$ impacts.

(c) Fugitive Dust Emission Mitigation Measures

Fugitive dust mitigation would require the use of adequate measures during each construction activity and would include frequent water applications or application of soil additives, control of vehicle access, and vehicle speed restrictions. The Corps would implement the dust mitigation measures listed below.

- Limit vehicle speeds on unpaved roads to 15 miles per hour, or

- Water at least every two hours of active construction activities or sufficiently often to keep the area adequately wetted.

- Remove any visible track-out from a paved public road at any location where vehicles exit the work site: this removal effort shall be accomplished using wet sweeping of a HEPA filter-equipped vacuum device daily.

- Install one or more of the following track-out prevention measures:

    - A gravel pad designed using good engineering practices to clean the tires of exiting vehicles.

    - A tire shaker

- A wheel wash system
- Pavement extending for not less than 50 feet from the intersection with the paved public road, or
- Any other measure(s) as effective as the measures listed above.

- Pre-wet the ground to the depth of anticipated cuts, and
- Suspend any excavation operations when wind speeds are high enough to result in dust emissions across the property line, despite the application of dust mitigation measures.
- To mitigate stockpile handling and stockpile wind erosion fugitive dust emissions, active storage pile would be kept adequately wetted using wet suppression controls.
- To mitigate fugitive dust emissions from storage piles that would remain inactive for more than seven days, the Corps would ensure implementation of one or more of the following measures:
  - Wet suppression controls
  - Establishment and maintenance of surface crusting sufficient to satisfy the surface crusting test identified in the Asbestos ATCM
  - Apply chemical dust suppressants or chemical stabilizers,
  - Cover with tarp(s) or vegetative cover, and/or
  - Install wind barriers across open areas.
  - Install wind barrier of 50 percent porosity around three sides of storage piles, and/or
  - Any other measure(s) as effective as the measures listed above.
- To mitigate fugitive dust emissions from in-dry blasting operations, water would be applied every 4 hours within 100 feet of the demolition area.
- To mitigate fugitive dust emissions from the rock crushing facility, wet suppression controls would be implemented.
- To mitigate fugitive dust emissions from the concrete batch plant operations, one or more of the following measures would be implemented:
  - Apply water sprays,
  - Set up enclosures, hoods, curtains, shrouds, movable and telescoping chutes, and/or
  - Install a central dust collection system.

- To mitigate staging area or haul road emissions, the Corps would upon completion of the project, accomplish post-construction stabilization of disturbed surfaces by using one or more of the following measures:

- Establishing a vegetative cover,

- Placing at least 12 inches of non-asbestos-containing material,

- Paving, and/or

- Implementing any other measure deemed sufficient to prevent wind speeds of 10 miles per hour or greater from causing visible dust emissions.

5.3 CLIMATE CHANGE

5.3.1 Methodology

Emissions of GHG generated from construction equipment and on-road mobile sources resulting from the proposed project have been evaluated for their potential to contribute to climate change. GHG emissions generate by the proposed alternatives' would predominantly be in the form of CO_2 resulting from combustion sources (i.e. off-road equipment) during construction. The methodology used to analyze the proposed project alternatives' contribution to global climate change includes a calculation of GHG emissions using SMAQMD RoadMod, Version 7.1.1.

SMAQMD's RoadMod includes emissions factors for both on-road and off-road vehicles (i.e. light to heavy duty gasoline powered vehicles) and off-road construction equipment. The haul truck distance was estimated based on the approximate distance travelled to the disposal site which was assumed to be 20 miles round-trip. The number of trips was estimated based on the total amount of materials (i.e. rip rap, cellular confinement), hauling capacity, and trip length. The factors used to calculate emissions from off-road equipment, including all on-site off-road construction equipment, are based on 2011 fleet mix averages, as provided by RoadMod. Model results are provided in Appendix A Part IV.

5.3.2 Basis of Significance

Amendments to the CEQA guidelines for GHG emission, which became effective March 18, 2010, added new components to the CEQA Environmental Checklist presented in Appendix G. However, specific thresholds of significant have not been established and are left to the discretion of the lead agency to determine based on project characteristics and existing guidance. The size, scope, and purpose of the proposed project alternatives dictate that the following significant criteria to determine whether:

- The relative amount of GHG emission over the life of the project is small in comparison to the amount of GHG emissions for major facilities that are required to report GHG emissions (25,000 metric tons of CO_2e/yr) under EPA Final Mandatory Reporting of Greenhouse Gases Rule;

- The proposed project has the potential to conflict with or is consistent with plans to reduce or mitigate GHG; or

- The proposed project has the potential to contribute to a lower carbon future (i.e. improved energy efficiency or long-term emission reduction through implementation of GHG best management practices.

5.3.3 Impact and Mitigation Measures

5.3.3.1 Alternative 1 (No Action)

Under the No Action Alternative, no construction activities would occur. As a result, there would be no additional generation of GHGs from the construction activities associated with the proposed project, including operation of motorized equipment and vehicles. Climate change would be influenced by emissions due to local and regional emissions from vehicles, and local commercial and industrial land uses.

Prior to implementing measures to reduce flood damage to Milpitas and San Jose area, however, the current level of risk for flooding would remain the same. In the event of a flood, GHG emissions would be associated with the use of equipment during flood fighting, cleanup operations, and worker commute trips and haul trucks traveling to and from the site with remedial materials. A precise determination of significance is not possible and cannot be made because the extent of magnitude of impact is widely variable.

5.3.3.2 Alternative 2A/d (Incised Trapezoidal Channel –Moderate Protection)

Project construction would result in a net increase of GHG emissions over a finite period, approximately two years (2017-2018). CO_2 is produced during the burning of fossil fuels and is the predominant GHG generated during this project. Because no major sources exist for the other GHGs during the construction process, the other GHGs are not considered to be significant and no quantitative emission calculations were made for them. Table 5-1 in Section 5.2 summarizes CO_2 emissions from activities undertaken during construction. Modeling was based on a worst case scenario for Alternative 2B/d. Actual CO_2 emissions (tons per construction period) for Alternative 2A/d would be approximately 5 percent less than modeled emissions for Alternative 2B/d due to a shorter construction period.

The CO_2 emissions occur during the burning of fossil fuels from construction equipment. The amount of CO_2 emissions is estimated to be 1,046 tons per the year. This amount of CO_2 emission would not violate the 25,000 metric tons per year reporting level for any year of construction. Therefore, the proposed action would generate a less than significant amount of GHG emissions and would not have a significant environmental impact related to climate change.

The project is primarily a construction project resulting in a short-term, temporary GHG emissions from combustion associated with on and off road equipment. GHG emissions from maintenance would be negligible and are assumed not to have a significant impact on the regional GHG inventories. In addition, the project would not conflict with any plan, policy, or

regulation of an agency adopted to reduce the emissions of GHGs, and the BMPs listed below would be implemented to contribute to a lower carbon footprint. As a result, any effects of Alternative 2A/d on climate change would be less than significant.

5.3.3.3 Alternative 2B/d (Incised Trapezoidal Channel- FEMA Certified Protection)

Table 5-1 in Section 5.2 summarizes CO_2 emissions from activities undertaken during construction. Modeling was based on a worst case scenario for Alternative 2B/d. The CO_2 emissions occur during the burning of fossil fuels from construction equipment. The amount of CO_2 emissions is estimated to be 1,046 tons per the year. This amount of CO_2 emission would not violate the 25,000 metric tons per year reporting level for any year of construction. Therefore, the proposed action would generate a less than significant amount of GHG emissions and would not have a significant environmental impact related to climate change.

The project is primarily a construction project resulting in a short-term, temporary GHG emissions from combustion associated with on and off road equipment. GHG emissions from maintenance would be negligible and are assumed not to have a significant impact on the regional GHG inventories. In addition, the project would not conflict with any plan, policy, or regulation of an agency adopted to reduce the emissions of GHGs, and the BMPs listed below would be implemented to contribute to a lower carbon footprint. As a result, any effects from Alternative 2B/d on climate change would be less than significant.

5.3.3.4 Alternative 4/d (Walled Trapezoidal Channel)

The types of effects and significance would be less than or equal to modeled emissions for Alternative 2B/d. Alternative 4/d requires less excavation of material and the same number of bridge and culvert replacements but slightly higher flood walls. Emissions from Alternative 2B/d would be greater than those resulting from Alternative 4/d due to an increase in volume of earth-moving activities thus requiring a longer duration and an increase in material required (i.e., increase in haul truck trips) for proposed activities. Actual emissions (tons per construction period) for Alternative 4/d would be approximately 5 percent less than the modeled emissions for Alternative 2B/d due to a shorter construction period. Therefore, the types of effects and significance for Alternative 4/d would not be greater than Alternative 2B/d.

The proposed project would not conflict with any plan, policy, or regulation of an agency adopted to reduce the emissions of GHGs, and the BMPs listed below would be implemented to contribute to a lower carbon footprint. As a result, any effects on climate change would be less than significant.

5.3.3.5 Alternative 5 (Authorized Project)

As discussed in Chapter 3, Alternative 5 is the authorized plan and is evaluated for Corps planning purposes. Alternative 5 would be used by the Corps for comparative reasons but is not a candidate for selection.

(a) Upstream of I-680

GHG emissions associated with Alternative 5 would be entirely associated with construction. Construction activities associated with removal of waterside vegetation would require construction activities including number of equipment, hours of operation, and total number of workers (worker trips), and would generate short-term GHG emissions. In addition to the construction vehicles, there would also be GHG emissions from the workforce vehicles. Workers would commute from their homes to the construction site and park in one of the staging areas.

Table 5-4 shows the results of the emissions modeling conducted based on the estimates for construction activities. The results of the modeling determined that Alternative 5 would not violate the 25,000 metric tons per year reporting level for any year of construction. Therefore, the proposed action would generate a less than significant amount of GHG emissions and would not have a significant environmental impact related to climate change.

Additionally, operational emissions associated with this alternative would be similar to current conditions. The proposed project would not conflict with any plan, policy, or regulation of an agency adopted to reduce the emissions of GHGs, and the BMPs listed below would be implemented to contribute to a lower carbon footprint. As a result, any effects on climate change would be less than significant.

Table 5-4 CO2 Emissions Impact Analysis

Total CO_2 Emission Rates	**Alternative 5**
For construction beginning 2017	11,333 lbs/day 1,247ton/year

(b) Downstream of I-680

As described under Alternative 2B/d, the project is primarily a construction project resulting in a short-term, temporary GHG emissions from combustion associated with mobile road equipment and concrete production. Impacts and effects for downstream of I-680 activities under Alternative 5 would be similar to Alternative 2B/d. GHG emissions from maintenance would be negligible and are assumed not to have a significant impact on the regional GHG inventories. In addition, the proposed project would not conflict with any plan, policy, or regulation of an agency adopted to reduce the emissions of GHGs, and the BMPs listed below would be implemented to contribute to a lower carbon footprint. As a result, any effects on climate change would be less than significant.

5.3.3.6 Mitigation Measures

Since there would be no significant effects on climate change, no mitigation would be required. However, the following measures could be implemented by the contractor to reduce GHG emissions from construction. These measures could be implemented to contribute a lower carbon footprint.

- Improve fuel efficiency from construction equipment by minimizing idling time either by shutting equipment off when not in use or reducing the time of idling to no more than three minutes (five minute limit is required by the state airborne toxics control measure [Title 13,

Section 2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the site.

- Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated.
- Use equipment with new technologies (repowered engines, electric drive trains).
- Perform on-site material hauling with trucks equipped with on-road engines (if determined to be less emissive than the off-road engines).
- Encourage and provide carpools, shuttle vans, transit passes and/or secure bicycle parking for construction worker commutes.
- Produce concrete on-site if determined to be less emissive than transporting ready mix.

With the implementation of these mitigation measures, the CO_2 emissions would be reduced. Based upon the temporary and intermittent nature of the emissions, it was determined that the effects on climate change would be less than significant.

5.4 WATER RESOURCES AND QUALITY

5.4.1 Methodology

This analysis of the hydrologic and water quality impacts of the proposed project focuses on the effects of the construction of each alternative. Short-term impacts on hydrology and water quality could occur from ground-disturbing activities and other construction-related activities, many of them near local drainages and waterways. The focus of the hydrology and water quality analysis for short-term effects is on those portions of each reach that would be subject to ground disturbance during construction.

Additionally, proposed project impacts are assessed in light of existing regulatory requirements that would serve to mitigate potential impacts. The effectiveness of existing regulations in mitigating potential impacts is often affected by discretionary requirements, site characteristics or project features not yet detailed, and design-level considerations. Since some discretion exists in how these regulations are applied, the regulations are presented as mitigation measures to outline the specific process by which the Project would comply with these regulations.

The Corps and SCVWD are currently coordinating with the San Francisco Bay RWQCB, CDFW, and the U.S. EPA, Region 9, regarding water quality, stream geomorphology, sediment production, and sediment transport in Berryessa Creek. Agency recommendations are being incorporated into the design of project features and management measures. A Clean Water Act Section 404(b) (1) analysis is included in Appendix A Part V, and the Least Environmentally Damaging Practicable Alternative has been identified as Alternative 2A/d.

5.4.2 Basis of Significance

Adverse effects on water resources or quality would be significant if an alternative plan would result in any of the following:

- Substantially alter the existing drainage pattern of the area, including through the alternation of the course of a stream, in a manner which would result in substantial erosion or sedimentation on- or offsite;
- Violate any water quality standards or waste discharge requirements, including Section 401 of the CWA; create or contribute runoff water that would provide substantial additional sources of pollution runoff; or otherwise substantially degrade water quality; or
- Substantially degrade surface water or groundwater quality such that it would violate criteria or objectives identified in the San Francisco Bay RWQCB Basin Plan or otherwise substantially degrade water quality to the detriment of beneficial uses.

5.4.3 Impacts and Mitigation Measures

5.4.3.1 Alternative 1 (No Action)

Under the No Action Alternative, no construction activities would occur; therefore, the project would not impact water resources and water quality. Existing sources of water pollution would be expected to remain the same. Erosion in the upper watershed would continue, with ongoing sediment deposition in the study area. Existing water temperatures in the creek would not be expected to change.

Prior to implementing measures to reduce flood damage along Berryessa Creek the current level of risk would remain. A large storm event could cause overbank flooding, which could result in damage to structures and other facilities and introduce large quantities of contaminants (i.e., oil, gasoline, agricultural pesticides, and other hazardous materials) into waters and subsequently into the Berryessa Creek, Coyote Creek, and groundwater. Depending on the location and magnitude of a flood event, adverse effects could be localized or more widespread. To address damages, cleanup- and repair-related construction activities would occur. The location and extent of cleanup and repairs needed could be minor to extensive depending on the location, severity, and the duration of flooding. Repair-related construction activities are assumed to involve repairing damaged homes, utility infrastructure, roads, and highways. Repair-related construction activities have the potential to temporarily impair receiving water quality through the introduction of contaminants from stormwater runoff and erosion.

5.4.3.2 Alternative 2A/d (Incised Trapezoidal Channel –Moderate Protection)

Implementation of Alternative 2A/d would include ground-disturbing activities during construction, many of them near local drainages and waterways that could become contaminated by soil or construction substances. These waterways include Berryessa Creek, Arroyo de Los Coches, and Piedmont Creek. Construction activities would occur primarily during the dry season from May to the end of October.

Earth-moving and grading activities would remove vegetation and expose soils during construction. Activities associated with construction may require woody vegetation to be removed. Erosion of exposed soils could temporarily increase sediment load to the creek via surface runoff and direct deposition to the channel. Erosion at construction sites could also increase concentrations of suspended solids and nutrients such as phosphorus and nitrogen compounds. These nutrients are often attached to suspended particulate matter and contribute to increased water turbidity. However, this soil disturbance from construction would be temporary. Implementation of best management practices including erosion control measures would avoid or minimize any adverse effects from soil erosion and surface water runoff. Soil erosion during possible storm events also has the potential to temporarily increase turbidity and sedimentation in Berryessa Creek, but these effects would not be significant.

Alternative 2A/d would result in an increase in sediment transport through the I-680 to Montague and Montague to Calaveras. The increased transport results in a decrease in deposition in the I-680 to Montague reach. Overall, the total amount of sediment deposited in study area under Alternatives 2A/d is nearly equal to that under without-project conditions.

Construction activities have the potential to temporarily impair water quality if disturbed and eroded soil, petroleum products, or construction-related wastes (e.g., cement and solvents) are discharged into receiving waters or onto the ground where they can be carried into receiving waters. Soil and associated contaminants that enter receiving waters through stormwater runoff and erosion can increase turbidity, stimulate algae growth, increase sedimentation of aquatic habitat, and introduce compounds that are toxic to aquatic organisms. Accidental spills of construction-related substances such as oils and fuels can contaminate both surface water and groundwater. However, accidental spills would be avoided or minimized through the implementation of a Spill Prevention and Response Plan.

Since the project would disturb more than one acre of land, the contractor would be required to obtain a NPDES permit from the Regional Water Quality Control Board (RWQCB), Central Valley Region. As part of the permit, the contractor would be required to prepare a Storm Water Pollution Prevention Plan (SWPPP), identifying best management practices to be used to avoid or minimize any adverse effects during construction to surface waters. By obtaining the NPDES permit and implementing BMPs, water quality standards or waste discharge requirements associated with earth moving activities would be met; therefore, impacts would be less than significant.

Groundwater depths within the study area could be relatively shallow (approximately 11 feet below ground surface). In order to provide for clear and safe work areas, groundwater dewatering may be necessary for construction activities that would involve excavation work during: widening of channel, constructing earthen levees; reconstructing bridges at Los Coches, and Calaveras Boulevard and/or constructing box culvert at Montague Expressway, and UPRR trestle bridge.

All dewatering activities would be temporary in nature, confined to a small area, and occur only during dry season months (mid-April to mid-October). Accumulated water would be diverted around the work areas. The creek flow would be temporarily diverted around the work area by using one of the following types of diversions: temporary durable plastic K-rail barrier system,

water-tight cofferdam, or inflatable bladder dam. These diversions would remain in place throughout the in-stream construction period. The locations and spacing of the diversions would be determined based on the type and length of construction activity. BMPs would be implemented to reduce impacts on groundwater supplies and discharge. The implementation of the BMPs ensures that dewatering impacts on groundwater supplies and recharge would be less than significant.

Discharge (i.e., through dewatering) or displacement of contaminated water or soil as a result of excavation could potentially impact the beneficial uses of surface water or groundwater identified by the San Francisco Bay RWQCB. Implementation of BMPs would minimize the potential for water quality impacts or water quality standards violations associated with construction dewatering. Therefore, dewatering impacts on groundwater quality would be less than significant.

Construction of Alternative 2A/d would likely disturb or eliminate 0.79 acres of wetlands vegetation dominated by cattails, a wetland obligate plant species. However, since stream hydrology would not be permanently affected, it is assumed the cattails would reestablish naturally within one to three years after construction, and the wetlands would reemerge in the channel. In addition, the Corps would replant wetland vegetation upon completion of the project, therefore, this impact would be less than significant.

5.4.3.3 Alternative 2B/d (Incised Trapezoidal Channel– FEMA Certified Protection)

The types of effects and significance for Alternative 2B/d would be similar to Alternative 2A/d. Alternative 2B/d would include constructing higher floodwalls, replacement of bridges and culverts and a larger volume of material removed from the channel than proposed in Alternative 2A/d. Alternative 2B/d would not substantially alter the existing drainage pattern of the area. As described in Alternative 2A/d, the total amount of sediment deposited in study area under Alternatives 2B/d is nearly equal to that under without-project conditions. Obtaining an NPDES permit and implementation of BMPs would reduce effects on water quality to less than significant levels. Accidental spills would be avoided or minimized through the implementation of a Spill Prevention and Response Plan.

As described in Alternative 2A/d, the implementation of Alternative 2B/d could disturb or eliminate 0.79 acres of wetland vegetation. However, since stream hydrology would not be permanently affected, and it is assumed the cattails would reestablish naturally within one to three years after construction, and the wetlands would reemerge in the channel. In addition, the Corps would replant wetland vegetation upon completion of the project, therefore would be less than significant.

5.4.3.4 Alternative 4/d (Walled Trapezoidal Channel)

The types of effects, mitigation, and significance of Alternative 4 would be similar to Alternative 2B/d. Alternative 4/d includes the option of planting channel terraces with moderate density riparian vegetation consisting of trees and shrubs. Growth of a mature canopy would result in shading of the creek. The planted terraces could trap sediment during high-water events and

reduce the sediment load in the creek. The establishment of a riparian tree canopy could improve water quality by reducing sediment load during high flow events. Although beneficial, these effects are not expected to be significant.

5.4.3.5 Alternative 5 (Authorized Project)

As discussed in Chapter 3, Alternative 5 is the authorized plan and is evaluated for Corps planning purposes. Alternative 5 would be used by the Corps for comparative reasons but is not a candidate for selection.

(a) Upstream of I-680

Construction in the greenbelt area has the potential to reduce the amount of riparian canopy shading the creek. With increased sunlight on the creek channel, an increase in water temperature could occur during construction and for an indefinite period of time after construction. Lost riparian vegetation would be compensated to an amount according to consultation with the USFWS under the Fish and Wildlife Coordination Act. This vegetation would provide shade within five years of construction, and reach maturity and maximum shade density after year 40. Over time as plantings of trees and shrubs mature, the amount of riparian habitat shading the creek would equal or exceed preconstruction conditions. In the long term, water temperatures would not increase and may slightly decrease. The potential short-term increase in water temperature or the potential long-term decrease in water temperature would be less than significant.

(b) Downstream of I-680

The types of effects and significance for Alternative 5 downstream of I-680 would be similar to Alternative 2A/d. Alternative 5 downstream of I-680 would include constructing concrete-lined channel. Alternative 5 downstream of I-680 would not substantially alter the existing drainage pattern of the area. Obtaining an NPDES permit and implementation of BMPs would reduce effects on water quality to less than significant levels. Accidental spills would be avoided or minimized through the implementation of a Spill Prevention and Response Plan.

As described in Alternative 2A/d, the implementation of Alternative 5 downstream of I-680 would eliminate 0.79 acres of wetland vegetation. Wetland vegetation and native trees would be compensated to an amount according to consultation with the U.S. Fish and Wildlife Service under the Fish and Wildlife Coordination Act.

5.4.3.6 Mitigation Measures

Implementation of the below mitigation measures by the contractor would reduce the significant impacts on water quality, and jurisdictional waters to a less-than-significant level. Compliance and evaluation as a part of the provisions stated for the various permits discussed below would serve to minimize and mitigate potential hydrologic impacts due to construction activities.

- The project would comply with State-adopted, USEPA-approved water quality standards as contained in the Basin Plan. Clean Water Act Section 401 water quality certification and a NPDES General Permit for Discharges of Storm Water Associated with Construction

Activity would be obtained from the San Francisco Bay RWQCB. A SWPPP would be developed in accordance with the guidelines of the General Permit. The SWPPP would contain a visual monitoring program, a chemical monitoring program for non-visible pollutants if there is a failure of the best management practices, and a sediment monitoring plan. The SWPPP would list all best management practices to be implemented during construction activities for the control of erosion, siltation, and any other pollutants that could potentially enter stormwater or surface water of Berryessa Creek.

Best management practices would include, but not be limited to, the following:

- Install silt fences along Berryessa Creek to prevent silt and sediment from entering the creek channel.
- Stabilize and reseed with native grasses all soils and exposed areas disturbed by construction.
- Obtain dewatering permit from RWQCB and implement applicable water quality monitoring during dewatering activities.
- Prepare and implement an Erosion and Sediment Control Plan consistent with RWQCB policy and guidelines.

During project construction, erosion of bare soils would be managed by an Erosion and Sediment Control Plan. This plan would avoid and minimize the discharge of sediment to Berryessa Creek. The Erosion and Sediment Control Plan would require contractors to:

- Conduct all construction work in accordance with site-specific construction plans that minimize the potential for sediment to enter the stream
- Identify, with construction fencing, all areas that require clearing, grading, revegetation, or recontouring, and minimize the extent of areas to be cleared, graded, or recontoured
- Grade spoil sites to minimize surface erosion and apply erosion control measures, as appropriate, to prevent sediment form entering water courses or the stream channel to the maximum extent feasible
- Apply mulch to disturbed areas, as appropriate, and plant with appropriate plant species as soon as practical after disturbance
- Design and implement a dewatering plan to avoid operating equipment in flowing water by using temporary cofferdams or some other suitable diversion to divert channel flow around the channel and bank construction area
- Limit in-channel construction to the low-flow period between April 15 and October 31 to minimize soil erosion

Contractors would be required to implement a Spill Prevention and Response Plan. This plan would define requirements for storage, handling, and containment of hazardous materials. Key

components of the plan stipulate that hazardous materials would be properly stored and construction equipment would be serviced and maintained outside of the creek channel.

Recommendations for mitigation from disturbance or loss of wetlands are contained in the USFWS Coordination Act Report. Native trees that could not be avoided would be compensated to an amount according to consultation with the USFWS under the Fish and Wildlife Coordination Act. To mitigate for the 0.39 acres of seasonal wetlands, wetland vegetation would be re planted onsite upon completion on the project.

5.5 BIOLOGICAL RESOURCES

5.5.1 Methodology

This section evaluates the temporary and permanent effects of the alternatives on vegetation and wildlife resources in the study area. Evaluation of the vegetation and water resources is based on information provided by technical maps, and reports. Impacts on biological resources downstream of I-680 resulting from implementation of the proposed project were analyzed based on biological field surveys, coordination with USFWS staff, and review of existing documentation that addresses biological resources on or near the study area. Impacts on biological resources upstream of I-680 resulting from implementation of the proposed project were analyzed based on biological surveys for a Habitat Evaluation Procedure (HEP) analysis.

5.5.2 Basis of Significance

The alternatives under consideration were determined to result in a significant impact related to biological resources if they would:

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS;
- Have a substantial adverse effect, either directly or through habitat modification, on any species identified as endangered, threatened, candidate, rare, or of special concern in local or regional plans, policies, regulations, or on lists compiled by the CDFW or USFWS;
- Have a substantial adverse effect on Federally and State protected wetlands as defined by Section 404 of the CWA and as protected under the Porter-Cologne Water Quality Control Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means; or
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native fish or wildlife migratory or dispersal corridors, or impede the use of native wildlife or fish nursery sites.

5.5.3 Impacts and Mitigation

5.5.3.1 Alternative 1 (No Action)

Under the No Action Alternative, vegetation removal would not occur beyond current maintenance practices. Furthermore, no construction activities would occur from the proposed project. Under these conditions, the vegetation in the study area is expected to remain the same and wildlife resources in the future are not expected to change.

Prior to implementing measures to reduce flood damage the current level of risk would remain the same. The number of species and life stages of fish and wildlife species that could be affected under this scenario would vary significantly depending on the time of year when a flood event occurred and the intensity of the flood event. Flooding could introduce sediments and contaminants into waterways potentially degrading aquatic habitats. Flooding could also result in the drowning of terrestrial species and degrade terrestrial habitat.

5.5.3.2 Alternative 2A/d (Incised Trapezoidal Channel –Moderate Protection)

Figure 5-1 through Figure 5-4 show aerial photographs of the study area downstream of I-680, starting at I-680 and progressing downstream to Calaveras Boulevard. The photographs primarily depict grassland along the channel corridor. The blue shading on the north or east side of the creek channel indicates the potential maximum width of the project right-of-way.

The existing habitat consists of a sparse cover of herbaceous vegetation and nonnative grasses. Herbaceous vegetation would be removed during construction; however, the project reaches would be re-vegetation by hydroseeding after construction. The riparian habitat within the study area is less than one acre and considered low-quality. The bank lacks any trees or shrubs, and does not provide cover or wildlife movement opportunities. The ability of the landside vegetation to function as wildlife movement corridors is limited because of residential and industrial development. The proposed project would have a less than significant impact on riparian habitat.

Figure 5-1 Berryessa Creek Habitat – Downstream of I-680 to Montague Expressway

Figure 5-2 Berryessa Creek Habitat – Downstream of Montague Expressway

Figure 5-3 Berryessa Creek Habitat – Ames Avenue to Yosemite Avenue

Figure 5-4 Berryessa Creek Habitat – Los Coches to Downstream of Calaveras Boulevard

Herbacious vegetation along the channel would be removed prior to construction. Approximately 15 trees, located between East Calaveras Blvd and Los Coches Street, could be removed for construction access. A map of the potential trees to be removed is located in Appendix A. These trees are located only on the landside of the floodwall. Landside trees include occasional small patches of non-native and/or invasive trees including Eucalyptus, Black Acacia, Mexican palm, Australian willows, fruit trees, and ornamental trees. The removal of landside vegetation woody vegetation in the study area would not substantially interfere with the movement of resident or migratory birds. SRA habitat would not be affected under Alternative 2A/d because no waterside woody vegetation would be removed. Alternative 2A/d would not substantially modify the existing habitat or adversely affect Federal and State listed species, therefore, would have a less than significant effect.

Approximately 0.79 acre of wetland vegetation was present within the study area and is confined to the low-flow channel and is dominated by cattails. Construction activities would temporarily disturb or eliminate the vegetation. It is assumed the cattails would reestablish naturally within one to three years after construction, and the wetlands would reemerge in the channel. In addition, the Corps would replant cattails and/or other wetland vegetation upon completion of the project. Therefore, the effects on wetlands vegetation would be less than significant.

Excavation work in the stream channel below Los Coches Creek has the potential to temporarily disturb aquatic habitat for the western pond turtle, a State-listed species of special concern, if present during construction. To ensure that there would be no effect, preconstruction surveys would be conducted prior to any work scheduled. If turtles are present near construction areas along the creek, they are anticipated to move away from areas of disturbance and CDFW would be consulted for further action prior to construction. Therefore, the effects on the western pond turtle would be less than significant.

5.5.3.3 Alternative 2B/d (Incised Trapezoidal Channel– FEMA Certified Protection)

The types of effects and significance of Alternative 2B/d would be the same as Alternative 2A/d. Alternative 2B/d has an increase in disturbance due to an increase in excavation and a larger number of bridge and culvert replacements.

As described in Alternative 2A/d, the existing habitat consists of sparse cover of herbaceous vegetations and non-native grasses. Vegetation would be removed during construction; however, the project reaches would be re-vegetation by hydroseeding after construction. The short-term effects of project construction would be temporary, and long-term effects would be less than significant.

Approximately 15 trees, located on the landside of the floodwall between East Calaveras Blvd and Los Coches Street, may need to be removed for construction access. The removal of landside vegetation woody vegetation in the study area would not substantially interfere with the movement of resident or migratory birds. Alternative 2B/d would not substantially modify the existing habitat or adversely affect Federal and State listed species, therefore, would have a less than significant effect.

As described in Alternative 2A/d, approximately 0.79 acre of wetland vegetation was present within the study area. Construction activities would likely temporarily disturb or eliminate the vegetation. However, it is assumed the cattails would reestablish naturally within one to three years after construction, and the wetlands would reemerge in the channel. The Corps would also replant wetland vegetation upon completion of the project. Therefore, effects on wetlands vegetation would be less than significant.

Replacement of the bridges could disturb *Myotis* or western big-eared bats if these species are using the bridges for roosting. To ensure that there would be no effect, preconstruction surveys would be conducted prior to any work scheduled. If bats are present CDFW would be consulted for further action prior to construction.

5.5.3.4 Alternative 4/d (Walled Trapezoidal Channel)

The types of effects and significance would be the same as Alternative 2B/d except that trees or shrubs would be planted on the terraces could have a beneficial effect on vegetation and wildlife.

5.5.3.5 Alternative 5 (Authorized Project)

As discussed in Chapter 3, Alternative 5 is the authorized plan and is evaluated for Corps planning purposes. Alternative 5 would be used by the Corps for comparative reasons but is not a candidate for selection.

(a) Upstream of I-680

Figure 5-5 through Figure 5-8 show aerial photographs of the study area upstream of I-680, starting upstream of Old Piedmont Road and progressing downstream to I-680. From above Old Piedmont Road downstream through the greenbelt area to Morrill Avenue, the photographs depict grassland and riparian vegetation along the channel corridor. Levee footprints are shown above Old Piedmont Road and in the greenbelt area.

Construction of the levees in the greenbelt area and long-term maintenance with grass cover would lead to the permanent loss of a relatively small amount of riparian forest, a total of approximately 0.62 acres. This number includes the area affected by the construction of two very small levees immediately above the Old Piedmont Road Bridge. Construction in the reach between Old Piedmont Road and the Piedmont/Cropley culvert and the placement of concrete matting on the channel sideslopes would also permanently remove some riparian trees and brush. The placement of grade structures and small quantities of buried riprap at approximately 500-foot intervals in the greenbelt area would disturb or remove small areas of riparian vegetation. Careful placement of the grade structures to avoid removing existing large trees could minimize disturbance. The loss of vegetation habitat would be potentially significant, however, with the implementation of mitigation, this would be considered less-than-significant. Reestablishment of 2.63 acres of riparian habitat in the greenbelt area would fully replace the habitat lost.

Replacement of the Old Piedmont Road Bridge and construction of grade control structures would temporarily disturb a relatively small amount of aquatic and riparian habitat in and adjacent to the creek channel. There have been no documented occurrences of federally and

state-listed species in the study area. Berryessa Creek does not have suitable habitat to support special status species. Field surveys were completed for California red-legged frog (CRLF). No suitable habitat for the CRLF was found nor was any CRLF found to inhabit the Berryessa Creek study area. There would be no effect on listed species.

Construction activities and the removal of trees and shrubs in the greenbelt area have the potential to temporarily disturb raptors and other species of concern if the species are foraging or nesting during construction. Replacement work on the bridges and culverts would disturb *Myotis* or western big-eared bats if these species use the bridges and culverts for roosting. These construction activities have the potential to have temporary, significant adverse effect on species of concern. To ensure that there would be no effect, preconstruction surveys would be conducted prior to any work scheduled. If bats are present CDFW would be consulted for further action prior to construction.

(b) Downstream of I-680

Short term effect of Alternative 5 downstream of I-680 would be similar to Alternative 2b/d. Herbaceous vegetation would be removed during construction; however, the project reaches would be re-vegetation by hydroseeding after construction. The riparian habitat within the downstream of I-680 is less than one acre and considered low-quality. The bank lacks any trees or shrubs, and does not provide cover or wildlife movement opportunities. The ability of the landside vegetation to function as wildlife movement corridors is limited because of residential and industrial development.

As described in Alternative 2A/d, the implementation of Alternative 5 downstream of I-680 would eliminate 0.79 acres of wetland vegetation. Wetland vegetation and native trees would be compensated to an amount according to consultation with the U.S. Fish and Wildlife Service under the Fish and Wildlife Coordination Act.

Figure 5-5 Berryessa Creek Habitat – Upstream of Old Piedmont Road to Greenbelt Reach

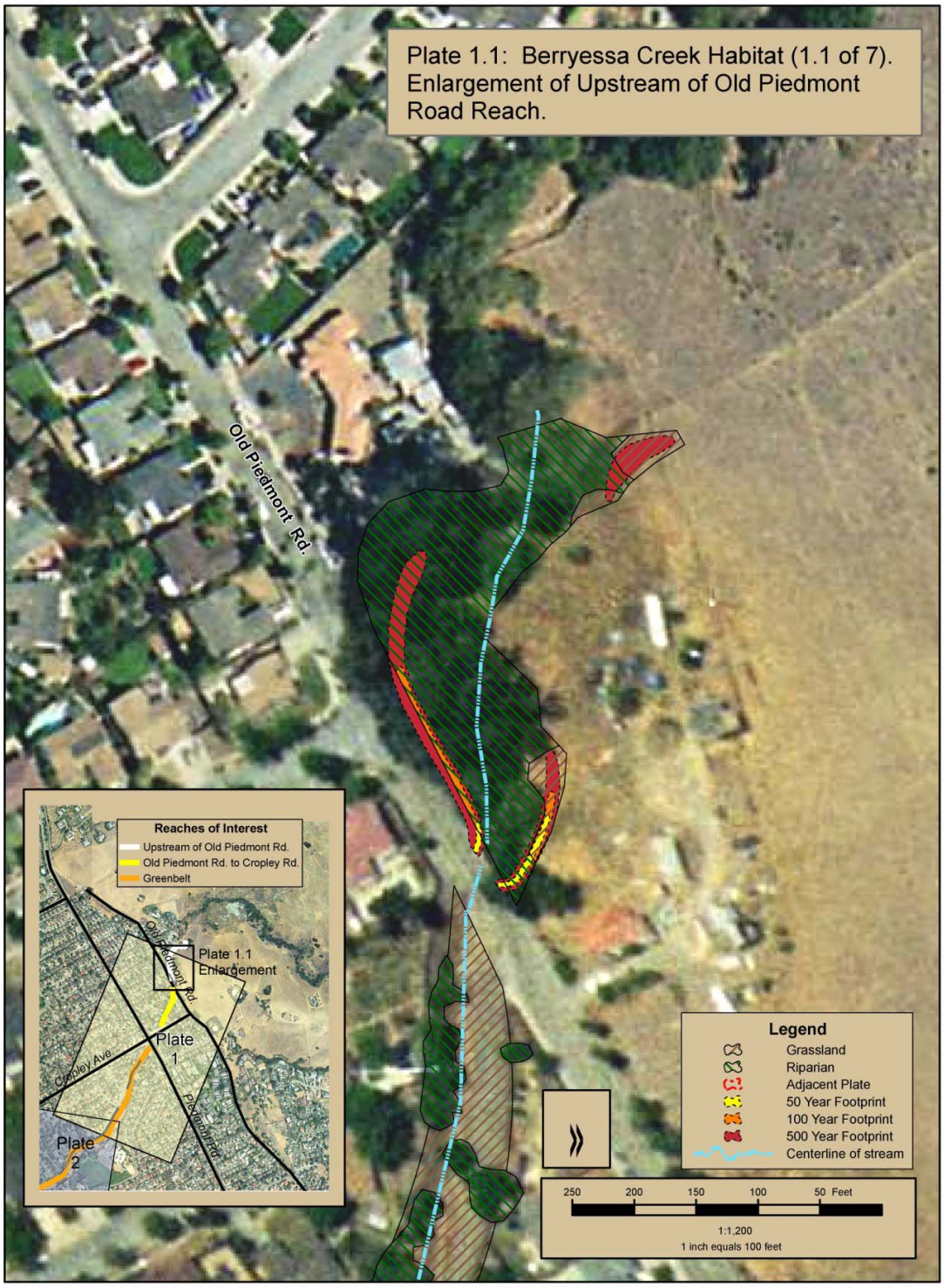


Figure 5-6 Berryessa Creek Habitat – Enlargement of Upstream of Old Piedmont Road Reach

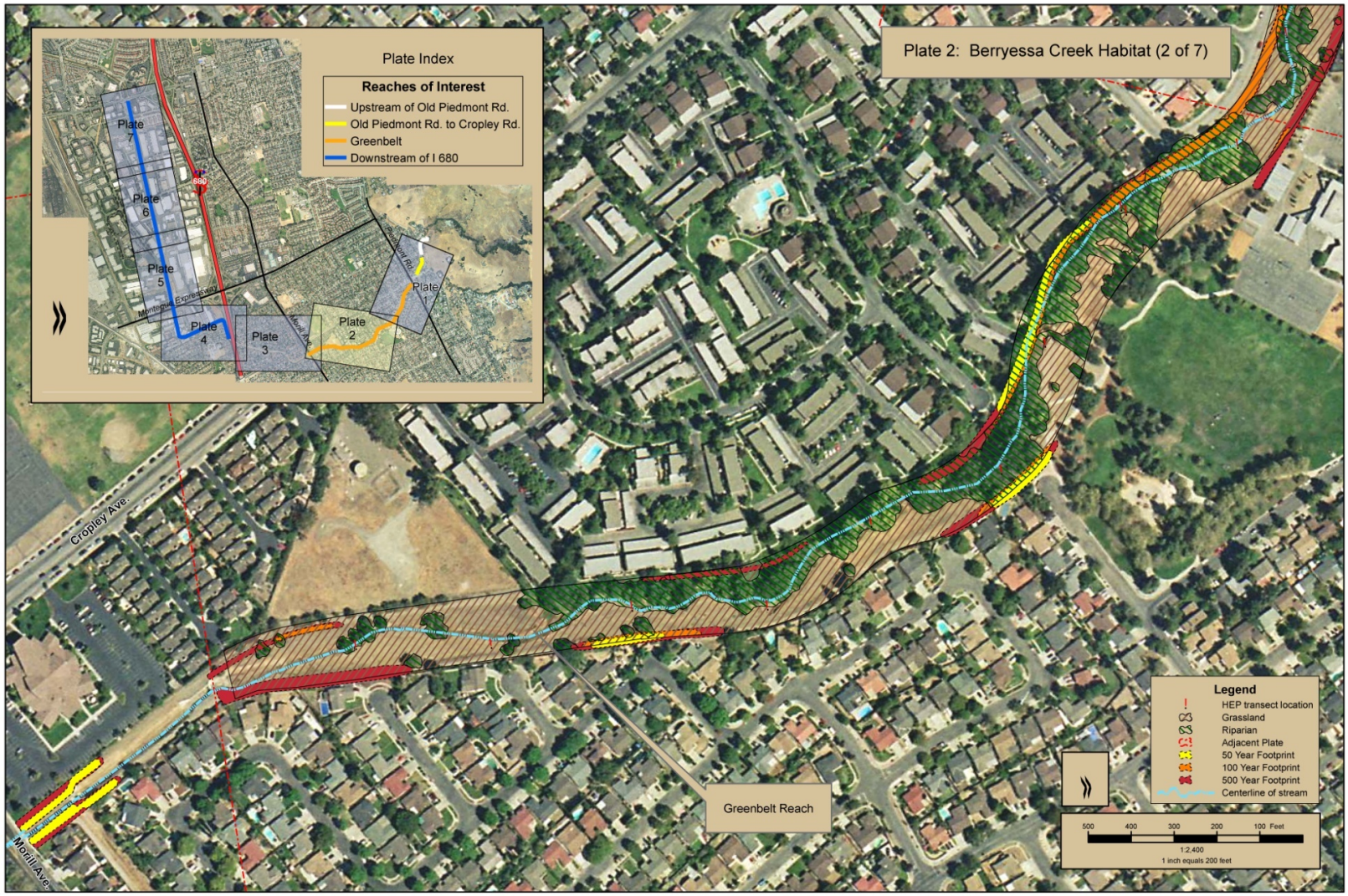


Figure 5-7 Berryessa Creek Habitat – Greenbelt Reach

Figure 5-8 Berryessa Creek Habitat – Morrill Avenue to Upstream of I-680

5.5.3.6 Mitigation Measures

(a) Downstream of I-680

Mitigation has been coordinated with the USFWS as required by the Fish and Wildlife Coordination Act. All annual grassland areas disturbed during construction would be re-seeded with native annual grasses. Corps guidance would require removing woody vegetation on the levee prism and within 15 feet of the toe of the levee. Native trees, shrubs, and aquatic vegetation within and adjacent to the site would be avoided to the extent possible. All required tree removal activities will be performed by or under the direct supervision of a certified arborist.

Native trees that cannot be avoided would be compensated to an amount according to consultation with the USFWS under the Fish and Wildlife Coordination Act. To mitigate for the 0.39 acres of seasonal wetlands, wetland vegetation would be re planted onsite upon completion on the project.

In addition, the contractor would be required to implement the following measures:

- Prior to ground-disturbing activities, a qualified biologist would instruct all project personnel in worker awareness training, including recognition of listed species.
- Survey protocols appropriate to raptors and listed birds would be followed. Surveys could be conducted prior to nesting, during nesting, or 30 days prior to construction, depending upon the specific protocol for that species.
- A qualified biologist would conduct pre-construction surveys for the western pond turtle within 24 hours prior to ground disturbance.
- Preconstruction surveys shall be conducted prior to ground-disturbing activities to determine if bat roosting sites are present.
- To the maximum extent practical, nesting sites would be avoided during construction.
- Trees suitable for nesting shall be removed between September 1 and February 15, when any nests would be unoccupied.
- If a listed species is encountered during excavations or any project activities, activities would cease until the species is removed and relocated by a USFWS-approved biologist. Any incidental take would be reported to the USFWS immediately by telephone.

(b) Upstream of I-680

Table 5-5 shows the amount of riparian habitat lost by construction and maintenance of earthen levees in the greenbelt area for Alternative 5 (100-year event project footprint). The mitigation acreage is a product of the HEP analysis conducted by USFWS and the Corps.

Table 5-5 Loss of Existing Riparian Habitat in the Greenbelt		
Alternative	**Area of Riparian Habitat Loss (acres)**	**Mitigation Area (acres)**
Alternative 5 (100-year event)	2.42	2.63

Under Alternative 5, there would be a loss of about 2.42 acres of riparian habitat in the upstream study area. Reestablishment of 2.63 acres of riparian habitat in the greenbelt area would fully replace the habitat value lost. The most promising site for mitigation tree planting would be the southern (downstream) end of the greenbelt area. The planting of native riparian tree species in open areas adjacent to Berryessa Creek could extend the linear distance of riparian tree canopy by about 700 feet.

5.6 CULTURAL RESOURCES

5.6.1 Methodology

Evaluation on cultural resources is based on information provided by literature review, records search, historic map research, field surveys, and consultation with Native American tribes and the State Historic Preservation Office.

There are two principal methods of locating cultural resources. Before a project is started, a records and literature search is conducted at any number of repositories of archeological site records. The search may show that an archeological or historical survey had been conducted and some cultural resources were identified. That information may be enough to proceed with the significance evaluation stage of the project. If a conclusion was reached that (1) no previous survey had been done or (2) a previous survey was either out of date or inadequate, the project cultural resources expert, either a historian or archeologist, carries out a survey to determine if any cultural resources are within the proposed study area boundaries.

After a cultural resource(s) has been identified during a survey, or record and literature search, the Federal agency overseeing the undertaking embarks on a process to determine whether the cultural resource is eligible for listing in the National Register of Historic Places (National Register). Section 106 of the National Historic Preservation Act mandates this process. The Federal regulation that guides the Section 106 process is 36 CFR 800. The criteria for evaluating resources for their National Register eligibility are defined under 36 CFR 60.4.

After a cultural resource has been determined eligible for listing in the National Register, it is accorded the same level of protection as any other property that is listed and becomes formally known as a "historic property," regardless of age. The term historic property refers exclusively to National Register eligible or listed properties.

5.6.2 Cultural Resources Survey Results

The area of potential effects (APE) was surveyed for cultural resources in its entirety in January 2009 (Basin Research Associates, Inc. 2010 (BRA)). The survey relocated one archeological site,

CA-SCL-593, but failed to relocate prehistoric archeological site, CA-SCL-156. CA-SCL-593 was the location of a human burial that eroded out of the creek bank in 1987. The presence of prehistoric human remains invariably makes a site eligible for listing in the National Register. The bridges in the APE were recommended as being ineligible for listing in the National Register. They either did not have state bridge numbers, or in the case of the Old Piedmont Road Bridge, the numbers were inaccurate. In all cases, they were not included in the Caltrans statewide Bridge Inventory.

5.6.3 Basis of Significance

Effects are considered to be adverse if they alter, directly or indirectly, any of the characteristics of a historic property that qualify that property for the National Register so that the integrity of the resource's location, design, setting, materials, workmanship, feeling, or association is diminished.

For the purposes of this analysis, an impact on cultural resources would be considered significant and would require mitigation if it would result in any of the following: (1) impacts to the integrity of the visual and physical setting of historic properties; (2) impacts to the structural integrity of historic buildings and structures from demolition; (3) impacts from earth moving activities; and (4) impacts from clearing, grubbing, and follow-on planting.

5.6.3.1 §60.4 Criteria for Evaluation

The criteria applied to evaluate properties for the National Register of Historic Places (NRHP) are listed below. These criteria are worded in a manner to provide for a wide diversity of resources. The following criteria shall be used in evaluating properties for nomination to the National Register, by NPS in reviewing nominations, and for evaluating National Register eligibility of properties.

Any adverse effect on cultural resources that are listed on, or are eligible for listing on the NRHP are considered to be significant. The criteria for the NRHP (36 CFR 60.4) are listed below:

5.6.3.2 NRHP Criteria for Evaluation

The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and:

a) that are associated with events that have made a significant contribution to the broad patterns of our history; or

b) that are associated with the lives of persons significant in our past; or

c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

d) that have yielded, or may be likely to yield, information important in prehistory or history.

5.6.4 Impact and Mitigation

5.6.4.1 Alternative 1 (No Action)

Archeological site CA-SCL-593 is on the creek bank and would suffer additional erosion from high velocity water flows. During the winter of 2009 channel erosion exposed additional human remains. Unrecorded archeological site C-167 is very close to CA-SCL-593 and may be part of the site. It may be impacted by continuing erosion as well.

5.6.4.2 Alternative 2A/d (Incised Trapezoidal Channel –Moderate Protection)

Two archaeological sites would be adversely affected by this alternative: CA-SCL-593 and C-167. Site CA-SCL-593 was determined eligible for the NRHP in 1994; C-167 has not yet been formally evaluated for NRHP eligibility. In order to evaluate C-167, test excavations should be undertaken to determine the nature and extent of the site, whether it is associated with CA-SCL-593, and what research potential exists. The Union Pacific Railroad bridge and culvert would be affected by construction. The Corps has determined that neither site is eligible for listing on the NRHP, the SHPO concurred with this finding in a letter dated January 25, 2012.

5.6.4.3 Alternative 2B/d (Incised Trapezoidal Channel– FEMA Certified Protection)

The effects and evaluations for listing would be the same as Alternative 2A/d.

5.6.4.4 Alternative 4/d (Walled Trapezoidal Channel)

The effects and evaluations for listing would be the same as Alternative 2A/d.

5.6.4.5 Alternative 5 (Authorized Project)

As discussed in Chapter 3, Alternative 5 is the authorized plan and is evaluated for Corps planning purposes. Alternative 5 would be used by the Corps for comparative reasons but is not a candidate for selection.

(a) Upstream of I-680

Two cultural sites are located in or near the creek upstream of I-680. Site CA-SCL-156 is not eligible for listing in the National Register. The other site is P-43-001136; a Native American burial was located at this site and subsequently reburied there. This site is located outside of the construction footprint and would not be affected by the alternative. A cultural resources monitor would be required to ensure that the location is avoided during construction.

One roadway bridge, three roadway culverts, and one pedestrian bridge are located upstream of I-60 and have been recommended as being ineligible for the National Register (Basin Research Associates, Inc. 2010). However, if a bridge or culvert is determined to eligible for the National

Register, Historic American Engineering Recordation (HAER) may be required for mitigation of adverse effects.

(b) Downstream of I-680

The effects and evaluations for listing would be the same as Alternative 2A/d.

5.6.4.6 Mitigation Measures

The mitigation would be the same for all alternatives. Additional subsurface excavation would be required on CA-SCL-593 to determine if the integrity of the site is intact or if it an isolated burial site. If it is a site, and has integrity, then a Historic Property Treatment Plan would be developed in consultation with the State Historic Preservation officer and interested local Native Americans to guide data recovery efforts.

The Union Pacific Railroad Trestle and associated culvert are located in the construction reach and will be required to be evaluated for their potential for listing in the NRHP. However, Basin Research Associates, Inc., 2010 recommended all bridges as being ineligible for the NRHP. In this scenario, no mitigation is required. If either is determined to eligible for the NRHP during consultation with SHPO, HAER recordation may be required that would fully mitigate adverse effects.

5.7 TRAFFIC AND CIRCULATION

5.7.1 Methodology

This analysis considers the range of foreseeable traffic conditions on roadways in relevant portions of the study area and identifies the primary ways that construction of the project could affect existing traffic conditions. This analysis focuses on construction-related traffic effects and effects of implementing the action alternatives on existing roadways. Therefore, any incremental transportation impacts associated with the project are limited to the proposed construction years. The project is expected to be under construction beginning 2017.

Available literature, including documents published by Federal, State, county, and city agencies that document traffic conditions, were reviewed for this analysis. The information obtained from these sources was reviewed and summarized to establish existing conditions and to identify potential environmental effects based on the significance criteria presented below.

Two components of traffic growth are typically considered when evaluating future year conditions. First, an annual background growth rate is determined based on historical data. Second, any increase in traffic volumes expected from approved development projects are added into the network.

To develop an existing scenario, current traffic counts, timings, and geometry data were obtained from various sources, including the VTA Traffix databases, tube counts conducted in 2008, and through correspondence with City of Milpitas, Caltrans, and City of San Jose officials. Starting from counts conducted in 2008 and 2010, an annual growth rate of 1 percent (not compounded) was applied and approved project trips from residential developments near the future Milpitas

BART station were added. On average, traffic volumes in 2017 were about 12 percent higher. Only one planned improvement is expected to be in place by 2017: an extension of Milpitas Boulevard that would connect Montague Expressway to Capitol Ave, providing access to the BART station.

5.7.2 Basis of Significance

Project alternatives under consideration would result in a significant impact related to transportation and circulation if they would:

- Substantially disrupt the flow and/or travel time of traffic.
- Substantially increase traffic in relation to existing traffic load and capacity of the roadway system.
- Increase delays on transit routes requiring reallocation of transit vehicles.
- Expose people to significant public safety hazards resulting from construction activities on or near the public road system.

5.7.3 Impacts and Mitigation Measures

5.7.3.1 Alternative 1 (No Action)

Under the No Action Alternative, no construction activities would occur; therefore, the project would not create addition traffic around the study area. The existing roadway network, types of traffic, and circulation patterns would be expected to increase traffic by 1 percent each year. This traffic growth is based on historical trends and a qualitative assessment of the Milpitas economic situation. In addition to this linear, area-wide growth, adjustments were made to account for several planned developments on Montague Expressway, near the future site of the Milpitas BART station.

Table 5-6 compares existing traffic to the projected 2017 traffic increases based on normal growth due to other unrelated development projects, general population job and household growth in the area at the study intersections. Table 4-16 presented in Section 4.7 identified only one intersection was below the LOS standard of E: Montague Expressway and Trade Zone Boulevard. Under the 2017 base conditions, this intersection is expected to operate at LOS F during the AM and PM peak hours.

Table 5-6 2017 Base Turning Movements at Study Intersections

(Delay in sec/veh)	Existing				2017 Base			
	AM Peak		PM Peak		AM Peak		PM Peak	
Intersection	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
1. Jacklin Road & I-680 Northbound Ramps	N/A		B	16.2	N/A		B	16.3
2. Jacklin Road & I-680 Southbound Ramps	N/A		B+	11.5	N/A		B+	11.8
3. Calaveras Boulevard/ I-880 NB Ramps	B	12.6	B	16.8	B	13.3	B-	18.1
4. Calaveras Boulevard/ Abel Street	D+	38.1	D	44.1	D	40.0	D	46.5
5. Calaveras Boulevard & Milpitas Boulevard	D	40.2	D	44.1	D	42.5	D	48.8
6. Great Mall Parkway & I-880 NB Ramps	C	27.1	C+	20.3	C	29.9	C+	21.5
7. Great Mall Parkway & Abel Street	D	40.7	D+	36.7	D	40.7	D+	35.9
8. Montague Expressway & Capitol Avenue	D	49.7	E+	56.6	E+	57.6	E	61.0
9. Montague Expressway & Milpitas Boulevard	D	39.6	D+	35.1	D	50.7	D	43.2
10. Montague Expressway & I-680 Northbound Ramps	D	40.5	D	46.2	D	44.7	D-	51.1
11. Montague Expressway & Main Street/Old Oakland	E	68.1	D-	54.8	E-	75.7	E	64.8
12. Montague Expressway & Trade Zone Boulevard	F	94.8	F	81.4	F	96.3	F	91.9

5.7.3.2 Alternative 2A/d (Incised Trapezoidal Channel –Moderate Protection)

Alternative 2A/d would modify the Calaveras Boulevard Bridge, Los Coches Street Bridge, and the Montague Expressway Bridge. Under Alternative 2A/d, there would be partial closure of lanes on Montague Expressway, and Calaveras Boulevard. Closures would not be concurrent to reduce traffic congestion. Since these roads are major arterial routes, lane closures would be expected to cause diversions to alternate routes. The potential impacts of the partial closures were evaluated by estimating traffic diversions during the temporary closures and analyzing traffic operations with the diverted traffic.

(a) Traffic Volumes

Engineering judgment was used to determine the number of vehicles that would seek alternate routes given the partial closures at Calaveras Boulevard and Montague Expressway. It was assumed that 50 percent of the traffic in each direction at the closure locations would divert. The

alternate routes for the Calaveras Boulevard closure were Great Mall Parkway and Montague Expressway. For the Montague Expressway closure, the alternate routes were assumed to be Great Mall Pkwy, Calaveras Boulevard, and Capitol Avenue. The diverted traffic was split evenly between northerly and southerly destinations (i.e., half were assumed to go north and half were assumed to go south).

(b) Calaveras Boulevard Diversion

Calaveras Boulevard Bridge construction would occur at the Berryessa Creek crossing east of North Hillview Drive. Alternatives 2A would modify the structure at Calaveras Boulevard, requiring closure of one of the six lanes for a period of 30 days. Partial traffic flow would be maintained at all times by restriping the open portion of the roadway to two lanes in each direction.

It is assumed that with partial closure of Calaveras Boulevard, 50 percent of the traffic in each direction would choose to divert from Calaveras Boulevard to alternative routes. Existing traffic counts at each intersection on Calaveras Boulevard were used to estimate the origins and destinations of traffic through the affected area. Based on proportions of turn movements, it was estimated that approximately 50 percent of the traffic in each direction is destined towards the north and 50 percent towards the south. Although several alternative routes would be available, as a conservative analysis all diverted traffic was assumed to use Great Mall Parkway and Montague Expressway to cross between I-880 and I-680 in each direction. Table 5-7 summarizes the level of service at the study intersections during a partial closure.

During the AM peak hour, the Montague/Capitol Avenue intersection would change from LOS of E to a LOS of F. During the AM and PM peak hour, Montague/Main Street/Old Oakland intersection LOS would change from an LOS of E to an LOS of F. During the AM and PM peak hour, the LOS at the Montague/Trade Zone intersection would be LOS F. The Calaveras closure would add more than 4 seconds of delay to the critical movements during the AM and PM peak.

(c) Montague Expressway Diversion

Alternatives 2A would modify the structure at Montague Expressway, requiring a partial closure for a period of 100 days. Partial traffic flow would be maintained at all times.

It is assumed that due to partial closure of Montague Expressway, 50 percent of the traffic in each direction would divert away from Montague Expressway onto parallel roadways like Calaveras Boulevard and Great Mall Parkway. Table 5-8 summarize the level of service at the study intersections during a partial closure. During the AM and PM peak hour, the LOS at the Montague/Trade Zone intersection would be LOS F.

Table 5-7 Year 2017 LOS with a Partial Closure of Calaveras Boulevard

(Delay in sec/veh)	2017 Base				2017 Calaveras Partial Closure			
	AM Peak		PM Peak		AM Peak		PM Peak	
Intersection	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
1. Jacklin Road & I-680 Northbound Ramps	N/A		B	16.3	N/A		B	16.3
2. Jacklin Road & I-680 Southbound Ramps	N/A		B+	11.8	N/A		B+	11.8
3. Calaveras Boulevard/ I-880 NB Ramps	B	13.3	B-	18.1	B	12.5	B	13.9
4. Calaveras Boulevard/ Abel Street	D	40.0	D	46.5	D	39.2	D	44.8
5. Calaveras Boulevard & Milpitas Boulevard	D	42.5	D	48.8	D	40.0	D	43.0
6. Great Mall Parkway & I-880 NB Ramps	C	29.9	C+	21.5	C-	32.8	C-	34.2
7. Great Mall Parkway & Abel Street	D	40.7	D+	35.9	D	40.1	D+	35.8
8. Montague Expressway & Capitol Avenue	E+	57.6	E	61.0	F	83.8	E	63.0
9. Montague Expressway & Milpitas Boulevard	D	50.7	D	43.2	D-	54.6	D	50.6
10. Montague Expressway & I-680 Northbound Ramps	D	44.7	D-	51.1	D	44.7	D-	51.1
11. Montague Expressway & Main Street/Old Oakland	E-	75.7	E	64.8	F	97.3	F	98.7
12. Montague Expressway & Trade Zone Boulevard	F	96.3	F	91.9	F*	124.5	F*	114.8

Table 5-8 Year 2017 LOS with a Partial Closure of Montague Expressway

(Delay in sec/veh)	2017 Base				2017 Montague Partial Closure			
	AM Peak		PM Peak		AM Peak		PM Peak	
Intersection	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
1. Jacklin Road & I-680 Northbound Ramps	N/A		B	16.3	N/A		B	16.3
2. Jacklin Road & I-680 Southbound Ramps	N/A		B+	11.8	N/A		B+	11.8
3. Calaveras Boulevard/ I-880 NB Ramps	B	13.3	B-	18.1	B-	19.9	D+	37.0
4. Calaveras Boulevard/ Abel Street	D	40.0	D	46.5	D	42.0	D	49.7
5. Calaveras Boulevard & Milpitas Boulevard	D	42.5	D	48.8	D	48.0	E	59.7
6. Great Mall Parkway & I-880 NB Ramps	C	29.9	C+	21.5	C	31.4	C-	32.5
7. Great Mall Parkway & Abel Street	D	40.7	D+	35.9	D	39.9	D+	35.7
8. Montague Expressway & Capitol Avenue	E+	57.6	E	61.0	E-	79.5	E	63.3
9. Montague Expressway & Milpitas Boulevard	D	50.7	D	43.2	E+	57.7	D-	53.9
10. Montague Expressway & I-680 Northbound Ramps	D	44.7	D-	51.1	C-	33.8	D	47.3
11. Montague Expressway & Main Street/Old Oakland	E-	75.7	E	64.8	E-	78.3	E+	60.0
12. Montague Expressway & Trade Zone Boulevard	F	96.3	F	91.9	F*	146.7	F*	154.3

Construction has the potential to disrupt the flow and travel time at three locations, at the intersections of Montague Expressway with Capitol Avenue, Montague Expressway with Main Street and Montague Expressway with Trade Zone Boulevard. The contractor would coordinate with Santa Clara County to monitor traffic operations at the intersection of Montague and Capitol, and if necessary, revise signal timings and/or implement manual traffic control during peak periods at the intersection during the period of partial closure of Calaveras Boulevard. A traffic operations analysis using Traffix software indicated that optimizing the cycle length would bring the LOS from F to an acceptable LOS E. Implementation of this mitigation measure would reduce the temporary impact to a less than significant level.

Construction would cause temporary significant impacts at the intersection of Montague and Trade Zone Boulevard. The contractor would coordinate with Santa Clara County to monitor traffic operations. The impact at this location would be a temporary significant and unavoidable impact.

Partial closure of Los Coches Street would require diversion to alternative routes such as Yosemite Drive. The temporary diversion would last up to 30 days. The diverted vehicles would be within the capacity of the alternative routes. This impact would be less than significant.

Partial closure of Yosemite Drive would involve the closure of one traffic lane. Traffic would continue to use two lanes in one direction but only one lane in the other direction. This would add delays to traffic on Yosemite Drive but would not require diversion to alternative routes. This impact would be less than significant.

Partial closure of Ames Avenue would involve the closure of one traffic lane for a duration of up to 10 days. The traffic flow on Ames Avenue could be maintained on the single available lane using construction flagging during the period of lane closure. The use of construction flagging would add delay to the traffic on Ames Avenue as only one direction of traffic could be served at a time. A portion of this traffic may divert to alternate routes like Sinclair Frontage Road and Yosemite Avenue. This impact would be less than significant.

Partial closures of streets would temporarily increase delays for transit vehicles during the construction period. VTA transit bus routes that use streets and bus stops in the study area would be impacted due to partial lane closures. Routes 46, 70, 71, 104 and 180 would experience additional delays due to the partial closure of Montague Expressway. Route 47 would experience additional delays due to the partial closures of both Calaveras Boulevard and Montague Expressway. The contractor would coordinate with Santa Clara VTA to identify the schedule of lane closures and, if necessary, provide for temporary manual traffic control to give priority for transit vehicles through congested corridors during the construction period. Implementation of this mitigation measure would reduce this temporary impact to a less than significant.

Full closures of streets would temporarily require bicycles and pedestrians to use alternative routes during the construction period**.** Pedestrians would need to use alternate routes during these closure periods. The contractor would prepare a traffic management plans which include advance notice of street closures so that bicyclists who typically use the creek crossings can

identify alternative routes. Implementation of this mitigation measure would reduce the temporary impact to a less than significant.

During the partial lane closures, it would be necessary to close the sidewalk on one side of the street at each location for safety reasons. Pedestrians would need to detour to the sidewalk on the other side of the street. This closure could cause some inconvenience at these locations but would not cause significant increases in delay for pedestrian movements.

5.7.3.3 Alternative 2B/d (Incised Trapezoidal Channel– FEMA Certified Protection)

Under Alternative 2B/d Calaveras Boulevard Bridge, Los Coches Street Bridge, and the Montague Expressway Bridge would be replaced. Partial road closures on Calaveras Boulevard, and the Montague Expressway would last up to 120 days. Los Coches Street would be closed for 60 days and partially closed for an additional 30 days.

Calaveras Boulevard bridge construction would occur at the Berryessa Creek crossing east of North Hillview Drive. Alternatives 2B would replace the structure at Calaveras Boulevard, requiring closure of three of the six lanes for a period of 120 days. Partial traffic flow would be maintained at all times by restriping the open portion of the roadway to two lanes in each direction.

Table 5-7 summarizes the level of service at the study intersections during a partial closure. During the AM peak hour, the Montague/Capitol Avenue intersection would change from LOS of E to a LOS of F. During the AM and PM peak hour, Montague/Main Street/ Old Oakland intersection LOS would change from an LOS of E to an LOS of F. During the AM and PM peak hour, the LOS at the Montague/Trade Zone intersection would be LOS F. The Calaveras closure would add more than 4 seconds of delay to the critical movements during the AM and PM peak.

The bridge on Montague Expressway would be replaced and involve partial road closure on Montague Expressway for a period of 120 days. Partial traffic flow would be maintained at all times by restriping the roadway to two lanes in each direction. It is assumed that due to partial closure of Montague Expressway, 50 percent of the traffic in each direction would divert away from Montague Expressway onto parallel roadways like Calaveras Boulevard and Great Mall Parkway. Table 5-8 summarizes the level of service at the study intersections during a partial closure. During the AM and PM peak hour, the LOS at the Montague/Trade Zone intersection would be LOS F.

Complete closure of Los Coches Street east of Piedmont Road would require traffic to divert to alternative routes. Closure of Los Coches Street would require diversion to alternative routes such as Yosemite Drive. The temporary diversion would last up to 60 days with the B alternatives. The number of vehicles impacted would be up to 550 during peak hours. The diverted vehicles would be within the capacity of the alternative routes. The out-of-direction travel would be up to 1.5 miles. This would be a less than significant impact.

Partial closure of Yosemite Drive would involve the closure of one traffic lane. Traffic would continue to use two lanes in one direction but only one lane in the other direction. This would add delays to traffic on Yosemite Drive but would not require diversion to alternative routes.

Partial closure of Ames Avenue would involve the closure of one traffic lane for a duration of up to 10 days. The traffic flow on Ames Avenue could be maintained on the single available lane using construction flagging during the period of lane closure. A portion of this traffic may divert to alternate routes like Sinclair Frontage Road and Yosemite Avenue (if the partial closure on Yosemite Avenue is not concurrent with Ames Avenue). This impact would be less than significant and no mitigation required.

Los Coches Street would be closed for 60 days. Full closures of streets would temporarily require bicycles and pedestrians to use alternative routes during the construction period**.** Pedestrians would need to use alternate routes during these closure periods. The contractor would prepare a traffic management plans which include advance notice of street closures so that bicyclists who typically use the creek crossings can identify alternative routes. Implementation of this mitigation measure would reduce the temporary impact to a less than significant.

During the partial lane closures, it would be necessary to close the sidewalk on one side of the street at each location for safety reasons. Pedestrians would need to detour to the sidewalk on the other side of the street. This closure could cause some inconvenience at these locations but would not cause significant increases in delay for pedestrian movements.

5.7.3.4 Alternative 4/d (Walled Trapezoidal Channel)

Under Alternative 4/d Calaveras Boulevard Bridge, Los Coches Street Bridge, and the Montague Expressway Bridge would be replaced. Partial road closures on Calaveras Boulevard, and the Montague Expressway would last up to 120 days. Los Coches Street would be closed for 60 days and partially closed for an additional 30 days. The types of effects and significance would be the same as Alternative 2B/d.

5.7.3.5 Alternative 5 (Authorized Project)

As discussed in Chapter 3, Alternative 5 is the authorized plan and is evaluated for Corps planning purposes. Alternative 5 would be used by the Corps for comparative reasons but is not a candidate for selection.

(a) *Upstream of I-680*

Alternative 5 would require the complete closure of Old Piedmont Road. The closure of Old Piedmont Road would require diversion to alternative routes such as Piedmont Road, Bloomsbury Way and Tunis Road. The temporary diversion would last up to 30 days. The number of vehicles impacted would be less than 40 during peak hours. The diverted vehicles would be well within the capacity of the alternative routes. The out-of-direction travel would typically be less than one-half mile. Therefore, this impact would be a less than significant impact.

Full closures of streets would temporarily require bicycles to use alternative routes during the construction period. Alternative 5 includes full closure of Old Piedmont Road for 30 days. The contractor would prepare a traffic management plans which include advance notice of street

closures so that bicyclists who typically use the creek crossings can identify alternative routes. Implementation of this mitigation measure would reduce the temporary impact to a less than significant.

(b) Downstream of I-680

The types of effects and significance would be the same as Alternative 2A/d.

5.7.3.6 Mitigation Measures

Mitigation measures would be incorporated into the construction plans in order to reduce effects to traffic. The contractor would be required to develop a Traffic Control Plan prior to construction, and coordinate all use of public roads with the City of Milpitas, or other responsible agencies. This plan would include the following measures:

- Construction vehicles would not be permitted to block any roadways or driveways.
- Access will be provided for emergency vehicles at all times.
- Signs and flagmen would be used, as needed, to alert motorists, bicyclists, and pedestrians to the presence of haul trucks and construction vehicles at all access points.
- Vehicles would be required to obey all speed limits, traffic laws, and transportation regulations during construction. Vehicles would not exceed 15 miles per hour on unpaved roads.
- Construction workers would be encouraged to carpool and park in designated staging areas.
- Closure of roads, staging areas, and construction sites would be clearly fenced and delineated with appropriate closure signage.
- The contractor would be required to repair any roads damaged by construction.

With the implementation of the above mitigation measures, all effects to traffic in the study area would be less-than-significant.

5.8 NOISE

5.8.1 Methodology

Construction of the proposed project would require the use of heavy equipment that would temporarily increase noise and ground vibration levels at properties near the work area. After the proposed project is constructed, project maintenance would likely require periodic use of smaller equipment to clean detention sites, channels, and culverts; however, the work would be much less extensive and would take place over a much shorter period (several hours or days) than project construction. Therefore, the analysis of noise impacts focused primarily on noise generation during construction of each project element.

5.8.2 Basis of Significance

Adverse effects on noise were considered significant if an alternative would result in any of the following:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Substantial temporary or permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or
- Substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

5.8.3 Impacts and Mitigation Measures

5.8.3.1 Alternative 1 (No Action)

Under the No Action Alternative, no construction activities would occur; therefore, no potential exists for the project to generate temporary and short-term construction noise. The types and levels of noise and vibration would continue to be influenced by roadway traffic, human activities, and other sources such as wind. Noise-sensitive receptors would be expected to be the same as under existing conditions.

Prior to implementing measures to reduce flood damage, the current level of risk would remain for flooding of areas within Milpitas and San Jose. In the event of a flood, flood fighting and repair-related construction activities would occur. The location and extent of repair related activities could be minor to extensive depending on the location, severity, and duration of flooding. Repair-related construction activities would likely involve repairing damaged homes, utility infrastructure, roads, and highways. Noise-sensitive land uses (i.e., residential uses) are scattered throughout the area in which repair-related construction could be needed.

5.8.3.2 Alternative 2A/d (Incised Trapezoidal Channel –Moderate Protection)

Noise impacts would be limited to the construction phase of the project. Construction activity noise levels at and near the study areas would fluctuate depending on the particular type, number, and duration of uses of various pieces of construction equipment and would result in short-term increases in ambient. Construction related material haul trips would raise ambient noise levels along haul routes, depending on the number of haul trips made and types of vehicles used. Noise related to operational and maintenance would be similar to current maintenance activities.

There are few noise-sensitive receptors since the majority of the study area is in commercial/industrial area. Sensitive receptors that could be affected by this increase include residents along Los Coches and Lakewood Drive, and wildlife. Based on their distance from the project site, residents and other sensitive receptors in the study area are anticipated to experience noise levels between 80 and 90 dBA, similar to those described in Table 5-9. Construction

equipment that would be used for the proposed project includes: excavators, water trucks, haul trucks, and maintenance trucks. Construction activities associated with the proposed project would be temporary in nature and related noise impacts would be short-term.

Table 5-9 Construction Equipment Noise Emission Levels[1]

Equipment Type	Typical Noise Level (dB) at 50 Feet	Equipment Type	Typical Noise Level (dB) at 50 Feet
Air compressor	78	Generator	81
Asphalt paver	77	Grader	85
Backhoe	78	Hoe ram extension	90
Compactor	83	Jack hammer	89
Concrete breaker	82	Pneumatic tools	85
Concrete pump	81	Rock drill	81
Concrete saw	90	Scraper	84
Crane, mobile	81	Trucks	74–81
Dozer	82	Water pump	81
Front-end loader	79		

Notes: dB = A-weighted decibels
1 All equipment fitted with properly maintained and operational noise control device, per manufacturer specifications. Noise levels listed are
the actual measured noise levels for each piece of heavy construction equipment.
Sources: Bolt, Beranek, and Newman 1981:8-5; FTA 2006:12-6 to 12-7

Construction of the proposed project would occur between the hours of 7 a.m. and 7 p.m. Monday thru Saturday. The noise associated with the construction activities would fall within the city of Milpitas's construction exemption for noise. Construction activities could increase ambient noise at nearby sensitive receptors, but would be reduced to less than significant with the incorporation of mitigation measures. Long-term effects would be limited to occasional noise generated during visits by maintenance vehicles, which would not be considered significant.

5.8.3.3 Alternative 2B/d (Incised Trapezoidal Channel– FEMA Certified Protection)

The types of effects and significance for Alternative 2B/d would be the same as Alternative 2A/d. Alternative 2A/d would have an increase in truck trips due to more excavation work and bridge and culvert replacements. Construction would occur between the hours of 7 a.m. and 7 p.m. Monday thru Saturday which would fall within the city of Milpitas's construction exemption for noise. Construction activities could increase ambient noise at nearby sensitive receptors, but would be reduced to less than significant with the incorporation of mitigation measures. Long-term effects would be limited to occasional noise generated during visits by maintenance vehicles, which would not be considered significant.

5.8.3.4 Alternative 4/d (Walled Trapezoidal Channel)

The types of effects and significance for Alternative 4/d would be the same as Alternative 2B/d except with possibly a slight increase in truck trips from the construction of the vegetated terraces. Construction would occur between the hours of 7 a.m. and 7 p.m. Monday thru

Saturday which would fall within the city of Milpitas's construction exemption for noise. Construction activities could increase ambient noise at nearby sensitive receptors, but would be reduced to less than significant with the incorporation of mitigation. Long-term effects would be limited to occasional noise generated during visits by maintenance vehicles, which would not be considered significant.

5.8.3.5 Alternative 5 (Authorized Project)

As discussed in Chapter 3, Alternative 5 is the authorized plan and is evaluated for Corps planning purposes. Alternative 5 would be used by the Corps for comparative reasons but is not a candidate for selection.

(a) Upstream of I-680

Alternative 5 would cause noise disturbance to residents since this part of the study area has several noise-sensitive land uses and nearby noise-sensitive receptors. Mitigation measures would be implemented to reduce adverse effects. Long-term effects would be limited to occasional noise generated during visits by maintenance vehicles, which would not be considered significant.

(b) Downstream of I-680

The types of effects and significance would be the same as Alternative 2B/d.

5.8.3.6 Mitigation Measures

Implementation of the following measures would reduce noise-related impacts to less than significant:

- In accordance with the City Noise Ordinance exemptions for construction (City of Milpitas Municipal Code Section V-213-3) the construction activities shall be limited to between 7:00 a.m. and 7:00 p.m. daily except holidays.
- Construction equipment noise shall be minimized during project construction by muffling and shielding intakes and exhaust on construction equipment (per the manufacturer's specifications) and by shrouding or shielding impact tools.
- Turn off all equipment, haul trucks, and worker vehicles when not in use for more than 30 minutes.
- Notify residences about the type and schedule of construction.

Compliance with the local noise ordinance would minimize the exposure of residents to excessive noise. Therefore, the impact after mitigation is less than significant.

5.9 RECREATION AND PUBLIC ACCESS

5.9.1 Methodology

Recreational opportunities are limited to the upstream portion of the study area. Impacts on recreation are evaluated based on temporary and permanent changes to those resources that would occur with implementation of the proposed project.

5.9.2 Basis of Significance

The proposed project alternatives under consideration would result in a significant impact related to recreation if they would:

- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated;
- Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment;
- Substantially restrict or reduce the availability or quality of existing recreational opportunities in the project vicinity; or
- Implement operational or construction-related activities related to the placement of project facilities that would cause a substantial long-term disruption of any institutionally recognized recreational activities.

5.9.3 Impacts and Mitigation Measures

5.9.3.1 Alternative 1 (No Action)

The No Action Alternative would have no effect on recreation and public access in the study area. Existing nearby recreational facilities, opportunities, and use would be expected to remain the same. In addition, the public would continue to have informal access to those areas without fencing.

5.9.3.2 Alternative 2A/d (Incised Trapezoidal Channel –Moderate Protection)

Construction and maintenance of this alternative would have no effects on recreation downstream of I-680. This area has no recreational facilities and little opportunity or use by residents or employees. A trail could be designed and constructed along this section of the creek as part of the project. Such a trail would provide additional opportunities for bicycling, walking, and jogging. In addition, the trail could connect to existing trails, thus providing access to other areas in the region. The City of Milpitas has expressed interest in extending its bike trail system in this area.

5.9.3.3 Alternative 2B/d (Incised Trapezoidal Channel– FEMA Certified Protection)

The effect and significance would be the same as Alternative 2A/d.

5.9.3.4 Alternative 4/d (Walled Trapezoidal Channel)

The effect and significance would be the same as Alternative 2A/d.

5.9.3.5 Alternative 5 (Authorized Project)

As discussed in Chapter 3, Alternative 5 is the Authorized Plan and is evaluated for Corps planning purposes. Alternative 5 would be used by the Corps for comparative reasons but is not a candidate for selection.

(a) Upstream of I-680

Construction and maintenance of this alternative would have no effect on recreational facilities or access to those facilities upstream of I-680. No work would be conducted in Berryessa Creek Park, and construction-related vehicles would not affect public access to the park. During construction, informal access to and use of the creek, especially by children and teenagers, would be disrupted since the work areas would be fenced to ensure public safety. Thus, there would be less opportunity for walking and bicycling along the creek. In addition, the quality of the recreational experience of any nearby recreationists could be diminished by construction activity and noise.

However, these adverse effects would only be short-term during construction, and access to the creek would return to pre-project conditions once the project is completed. Construction would be conducted only on weekdays so recreationists in the park would not be disturbed on the weekends. As a result, these adverse effects would be considered less than significant. Long-term effects would be limited to occasional noise generated during visits by maintenance vehicles, which would not be considered significant.

A trail could be designed and constructed along this section of the creek as part of the project. Such a trail would provide additional opportunities for bicycling, walking, and jogging. To date, however, the City of San Jose does not anticipate additional recreational development in the areas adjacent to Berryessa Creek.

(b) Downstream of I-680

The types of effects and significance would be the same as Alternative 2A/d.

5.9.3.6 Mitigation Measures

Since there would be no significant adverse effects on recreation, no mitigation would be required.

5.10 AESTHETICS AND VISUAL RESOURCES

5.10.1 Methodology

Analysis of the proposed project effects were based on evaluation of the changes to the existing visual resources that would result from implementation of the proposed project. In making a determination of the extent and implications of the visual changes, consideration was given to:

- Specific changes in the visual composition, character, and valued qualities of the affected environment;
- The visual context of the affected environment;
- The extent to which the affected environment contained places or features that have been designated in plans and policies for protection or special consideration; and
- The numbers of viewers, their activities, and the extent to which these activities are related to the aesthetic qualities affected by the project-related changes.

It should be noted that an assessment of visual quality is a subjective matter, and reasonable people can disagree as to whether alteration in the visual character of the proposed project would be adverse or beneficial.

5.10.2 Basis of Significance

The proposed project alternatives under consideration would result in a significant impact related to visual resources if they would:

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- Substantially degrade the existing visual character or quality of the site and its surroundings; or
- Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

5.10.3 Impacts and Mitigation Measures

5.10.3.1 Alternative 1 (No Action)

Under the No Action Alternative, there would be no potential for the project to degrade the existing visual character or quality of the site and its surroundings. The No Action alternative would have no effect on aesthetics or visual resources in the study area. The basic components, character, and quality of the regional and local viewsheds would be expected to remain the same.

Prior to implementing measures to reduce flood damage the current level of risk would remain for flooding of areas within Milpitas and San Jose. In the event of a flood, flood fighting and repair-related construction activities would occur. Damage to visual resources would depend on the extent and duration of a flood event and subsequent repair. Flooding could cause damage to structures, vegetation, and woodlands.

5.10.3.2 Alternative 2A/d (Incised Trapezoidal Channel–Moderate Protection))

There would be no indirect effects associated with construction of Alternative 2A/d. Direct effects from construction of Alternative 2A/d would have temporary and permanent effects on the aesthetics. During construction, the presence of construction equipment, workers, and activities would temporarily obscure the viewshed and change the visual character of the area. After construction is complete, the equipment and workers would leave the area, and scenic views would be unobstructed to the viewers in the area.

The visual character of the creek in most areas would change permanently. The shape of the channel would change to a trapezoidal configuration with floodwalls in some sections. However, this change would not degrade the visual character because the channel would continue to be earthen. Grasses and other vegetation would be removed to construct the trapezoidal channel and floodwalls. The side channels would be planted with a seed mix to control erosion and appear as annual grassland habitat. All modification and replacement of bridges and culverts would be consistent with existing bridge designs in the area so there would be no change in the visual character of the modified or new structures. Since there would be no substantial effects on scenic views or the visual character of the area, this alternative would have no significant adverse effects.

5.10.3.3 Alternative 2B/d (Incised Trapezoidal Channel– FEMA Certified Protection)

Under Alternative 2B/d temporary effects on the aesthetics would be the same as in Alternative 2A/d. However, under Alternative 2B/d the permanent visual quality of the site would be altered. The creek channel would be widened varying from 2 – 38 feet in width. Vertical concrete floodwalls with a maximum height of 4 feet would be installed, except from the reach from Yosemite Drive to Los Coches Street. At this location, the maximum height of the floodwall would be 5 feet. Although concrete would contrast with the earthen channel, the walls would be consistent with other concrete structures in the viewing area.

Grasses and other vegetation would be removed prior to construction. Upon completion of construction the site would be reseeded with native grasses to restore site conditions and help minimize erosion.

All existing culverts would be replaced, as well as, the UPRR Trestle Bridge, Los Coches Street Bridge, Calaveras Boulevard Bridge. The new structures would be consistent with existing bridge designs so there would be no change in the visual character. Sediment accumulated at the I-680 bridge, Ames Avenue bridge, and Yosemite bridge would be removed and abutment protect would be added.

5.10.3.4 Alternative 4/d (Walled Trapezoidal Channel)

The types of effects and significance for Alternative 4/d would be the same as Alternative 2B/d except the channel would be a 10 foot width, earthen low-flow channel. The location the concrete floodwalls would be the same as in Alternative 2B/d. Alternative 4/d would have floodplain benches (10ft and 32ft) bounded by 3 – 6 foot vertical floodwalls. The bridge and culvert modifications for Alternative 4/d would be the same as in Alternative 2B/d.

5.10.3.5 Alternative 5 (Authorized Project)

As discussed in Chapter 3, Alternative 5 is the Authorized Plan and is evaluated for Corps planning purposes. Alternative 5 would be used by the Corps for comparative reasons but is not a candidate for selection.

(a) Upstream of I-680

Construction of Alternative 5 would have temporary and permanent effects on the aesthetics upstream of I-680.

Construction would require the installation of sediment basin, low flow pipes, and a concrete lined channel. Small levees, with a maximum height of 3 feet, would be constructed along the creek. Some large trees, bushes, and other vegetation would be removed to construct the new levees in the greenbelt area. To mitigate for this effect, suitable species of trees would be planted onsite; it is assumed in areas currently without trees. In addition, the project site would be reseeded to replace grasses and help minimize erosion. Over time, the grasses and new trees would grow and mature, improving the visual character of the greenbelt. All modification and replacement of bridges and culverts would be consistent with existing bridge designs in the area so there would be no change in the visual character of the modified or new structures.

(b) Downstream of I-680

Alternative 5 would construct trapezoidal concrete channel with a varying bottom width. Construction would require the removal and/or relocation of several features within the proposed project footprint, including utilities, vegetation, and timber trestles. The bridge and culvert modifications for Alternative 5 would be similar to Alternative 2B/d. Although this alternative would replace the earthen channel with concrete, there would not be a significant change in the viewing area since the study area is in an industrial area and would be consistent with the other concrete structures.

5.10.3.6 Mitigation Measures

(a) Downstream of I-680

There would be no significant long-term effects on aesthetics or visual resources in the study area, therefore, no mitigation would be required. All areas impacted by the project would be revegetated and restored to remain consistent with preconstruction conditions.

(b) Upstream of I-680

Under Alternative 5, there would be a loss of 2.42 acres of riparian habitat. Once construction is completed, all disturbed areas would be restored. Disturbed areas would be reseeded with native grasses and forbs to promote revegetation. Trees and woody vegetation would be replanted in accordance to USFWS CAR. The grasses, as well as annuals and some small shrubs, would be expected to grow relatively quickly and improve that aspect of the viewshed within a year or two. As a result, the project would not be considered a significant effect on the visual character of the area.

5.11 HAZARDOUS, TOXIC, AND RADIOLOGICAL WASTE

5.11.1 Methodology

This section addresses potential sources of hazards and risks associated with hazardous materials that may be associated with implementation of the project. This analysis is based on the Phase 1 environmental site assessment (ESA) report.

5.11.2 Basis of Significance

The proposed project alternatives under consideration would result in a significant impact related to hazards and hazardous materials if they would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment; or
- Locate the project on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and as a result, would create a significant hazard to the public or the environment.

5.11.3 Impact and Mitigation Measures

5.11.3.1 Alternative 1 (No Action)

Under the No Action Alternative, no construction activities would occur; therefore, no accidental spills of hazardous materials related to this project would occur. Existing sources of HTRW would be expected to remain the same. Downstream of I-680 are three sites of concern near the study area: Jones Chemical Company, Great Western Chemical Company, and a Shell gas station (Figure 2 of the HTRW Appendix). These sites contain plumes of contaminated groundwater. If the ongoing remediation efforts do not successfully contain or treat the groundwater plumes, then groundwater contamination could migrate into the study area in the future.

Prior to implementing measures to reduce flood damage, the current level of risk would remain for flooding of areas within Milpitas and San Jose. In the event of a flood, flood fighting and repair-related construction activities would occur. A flood event could result in flooding that

could upset stored hazardous materials and spread agricultural pesticides, oil, gasoline, and other hazardous materials in flood waters, creating somewhat localized or widespread hazardous conditions for the public and the environment.

5.11.3.2 Alternative 2A/d (Incised Trapezoidal Channel –Moderate Protection)

There are three HTRW sites of concern near the study area: Jones Chemical Company, Great Western Chemical Company, and a Shell gas station. These sites contain plumes of contaminated groundwater. Depending on the site, the plumes contain either MTBE, VOC or PAH. The ongoing remediation efforts may not successfully contain or treat the groundwater plumes; consequently, groundwater contamination potentially could migrate into the study area underneath Berryessa Creek. If contaminated groundwater intersects Berryessa Creek and further spreads contamination to subsurface soils or surface water, then excavation of the channel could potentially expose contaminated soils and create a hazard to construction workers, the public, or the environment. These effects could potentially be significant.

Project-related construction and maintenance activities would involve the use of potentially hazardous materials, such as fuels (gasoline and diesel), oils and lubricants, and cleaners (e.g., solvents, corrosives, soaps, detergents), which are commonly used in construction projects. During construction, accidental spills could occur, although minor spills are not likely to have significant effects. Accidental spills would be avoided or minimized through the implementation of a Spill Prevention and Response Plan.

Compliance with the applicable regulations would reduce the potential for accidental release of hazardous materials during their transport and during project construction activities. Consequently, the risk of significant hazards associated with the transport, use, and disposal of these materials is low.

5.11.3.3 Alternative 2B/d (Incised Trapezoidal Channel– FEMA Certified Protection)

The types of effects and significance for Alternative 2A/d would be the same as Alternative 2A/d.

5.11.3.4 Alternative 4/d (Walled Trapezoidal Channel)

The types of effects and significance for Alternative 2B/d would be the same as Alternative 2A/d.

5.11.3.5 Alternative 5 (Authorized Project)

As discussed in Chapter 3, Alternative 5 is the Authorized Plan and is evaluated for Corps planning purposes. Alternative 5 would be used by the Corps for comparative reasons but is not a candidate for selection.

(a) Upstream of I-680

Based on numerous assessments and extensive water and soil analysis within the study area, there are no substances in the water column, sediments, or embankment soils in sufficient concentrations to be classified as hazardous. Upstream of I-680, there are no HTRW sites of concern.

During construction, accidental spills of hazardous materials (diesel fuel, gasoline, oil, grease, hydraulic fluid, engine coolant, and concrete) could occur, although minor spills are not likely to have significant effects. Accidental spills would be avoided or minimized through the implementation of a Spill Prevention and Response Plan.

Project activities upstream of I-680 are not likely to create any significant HTRW hazards to the public or the environment.

(b) Downstream of I-680

The types of effects and significance for Alternative 5 downstream of I-680 would be the same as Alternative 2A/d.

5.11.3.6 Mitigation Measures

Soil characterization would occur during the Preconstruction Engineering and Design (PED) phase to verify the absence of contamination. In the event that constituents of concern have migrated into the project site in regulated concentrations, a remediation plan would be developed during PED and implemented by the sponsor prior to construction in the contaminated area.

To reduce health hazards associated with potential exposure to hazardous substances the following measures before initiating ground-disturbing activities:

- Prepare a plan that identifies any necessary remediation activities including excavation and removal of on-site contaminated soils and redistribution of clean fill material within the project site, if necessary. The plan shall include measures that ensure the safe transport, use, and disposal of contaminated soil and building debris removed from the site. In the event that contaminated groundwater is encountered during site excavation activities, the contractor shall report the contamination to the appropriate regulatory agencies, dewater the excavated area, and treat the contaminated groundwater to remove contaminants before discharge into the sanitary sewer system. The contractors shall be required to comply with the plan and applicable Federal, State, and local laws. The plan shall outline measures for specific handling and reporting procedures for hazardous materials and disposal of hazardous materials removed from the site at an appropriate off-site disposal facility.

- Notify the appropriate Federal, State, and local agencies if evidence of previously undiscovered soil or groundwater contamination (e.g., stained soil, odorous groundwater) is encountered during construction activities. Any contaminated areas shall be remediated in accordance with recommendations made by the San Francisco Bay Regional Water Quality Control Board, and/or other appropriate Federal, State, or local regulatory agencies.

5.12 GROWTH-INDUCING EFFECTS

The areas of San Jose and Milpitas adjacent to Berryessa Creek downstream of Old Piedmont Road are almost completely developed, and there is little remaining vacant land. Any future growth and development would be in accordance with City and County General Plans, and future growth in the area is not currently restricted by the potential for flooding from Berryessa Creek. As a result, none of the alternatives would remove any significant restrain to growth. Therefore, the alternatives would not induce growth in or near the study area.

5.13 CUMULATIVE EFFECTS

NEPA regulations require that an EIS discuss project effects that, when combined with the effects of other projects, result in significant cumulative effects. This section first identifies other existing, ongoing, or planned projects in or near the Berryessa Creek study area and then discusses any effects of the project that could result in significant cumulative effects with these other projects.

5.13.1 Existing, Ongoing, or Planned Projects

5.13.1.1 Santa Clara Valley Transportation Authority (VTA)

(a) Highway 237/I-880 Interchange Reconstruction Project

This transportation project includes two elements: (1) Carpool connectors from southbound I-880 to westbound Route 237 and from eastbound Route 237 to northbound I-880, and (2) a southbound "braided" exit ramp from I-880 to Tasman Drive. The project was completed during spring 2005.

(b) Bay Area Rapid Transit (BART) Extension Project

This project proposes a BART extension to Milpitas, San Jose and Santa Clara. The proposal includes a 16.3 mile extension along a railroad right-of-way through Milpitas to San Jose. Along the alignment, stations are proposed at the following seven locations: Montague/Capitol, Berryessa, Alum Rock, Market Street, Diridon/Arena, and Santa Clara. On April 16, 2010, the Final Environmental Impact Report was published for a two- station, 10 mile extension of BART. Construction began in 2012 and is ongoing.

(c) I-880 Widening from North First Street to Montague Expressway

This highway project widens I-880 between U.S. 101/North First Street and Montague Expressway from a four to a six-lane freeway. The project was completed in January 2004.

(d) Tasman East Light Rail Project

This project consists of a 4.9 mile light rail extension in two segments, the first from Baypointe Parkway to Alder Drive, and the second from Alder Drive to just south of Hostetter Road. Seven new light rail stations would be added. Segment one was completed in 1999; and segment two was completed in 2004.

(e) Capitol Light Rail Project

This project consists of a 3.3 mile light rail extension of the Tasman Light Rail Line. The project travels along Capitol Avenue from just south of Hostetter Road to Wilbur Avenue, north of Capitol Expressway. The Capitol Light Rail adds four new stations.

5.13.1.2 Santa Clara Valley Water District (SCVWD)

(a) Lower Berryessa Creek Flood Protection Project

The SCVWD proposes to construct a project that will provide protection from the 100-year flood event long Berryessa Creek between Lower Penitencia Creek confluence and Calaveras Boulevard. Included in this project are improvements to Calera Creek and Tularcitos Creek, both tributaries to Berryessa Creek. The total length of the project, including the tributaries, is approximately 4.1 miles. The project was initiated because the creek's channel capacity downstream of Calaveras Boulevard is not sufficient to convey the design flows from the upstream project without inducing flooding or violating FEMA freeboard requirements for levees. The lower portions of Calera and Tularcitos Creeks were added because project improvements would create a backwater effect that could induce flooding. The SCVWD is currently cooperating with the VTA (the local transportation agency) to construct the first phase of the work to begin in 2013 and be completed in two to four years.

(b) Coyote and Berryessa Creeks Flood Protection Project

The SCVWD has completed the first element of this project by constructing flood damage reduction features on lower Coyote Creek from Montague Expressway downstream to the San Francisco Bay. The second element is the proposed (Upper) Berryessa Creek Element described in this document.

(c) Coyote Creek Flood Protection Project (formerly Mid-Coyote Flood Protection)

The SCVWD proposes to improve Coyote Creek from Montague Expressway upstream to Interstate 280, a length of approximately 6.1 miles, to ensure flood protection from a 100-year event.

(d) Upper Penitencia Creek Flood Protection Project

The SCVWD is partnering with the U.S. Army Corps of Engineers, San Francisco District, to complete a feasibility study which will identify a plan to improve Upper Penitencia Creek from the confluence with Coyote Creek upstream to Dorel Drive, a length of approximately 4.1 miles, to ensure flood protection from a 100-year event. Construction of this project is currently scheduled to occur in 2012.

5.13.1.3 City of Milpitas

The Santa Clara County Valley Transportation Plan (VTP) 2040 is the countywide plan for transportation funding and service decisions for Santa Clara County through the year 2020. The plan includes a prioritized list of transportation projects, as well as long-range strategic recommendations for land use and transportation policies. The City of Milpitas is considering the following projects to be included in VTP 2040.

(a) Calaveras Boulevard Widening

The existing two bridges between Milpitas Boulevard and Abel Street would be replaced with a six-lane bridge complete with 10-foot sidewalks and 6-foot bike lanes.

(b) Montague Expressway and Great Mall Parkway Interchange Improvements

The intersection between Montague Expressway and Great Mall Parkway/Capitol Avenue has been operating at congested levels of service "F" since 1991. A grade separation of the Great Mall Parkway/Capitol Avenue through lanes over Montague Expressway would greatly enhance capacity and maintain compatibility with the existing elevated light rail structure and future BART. The resulting at-grade signalized intersection on Montague Expressway would accommodate a partial frontage road and left turn lanes.

(c) Montague Expressway BART Pedestrian Overcrossing

The project would span Montague Expressway from the future Milpitas BART Station parking structure to a planned development site east of Piper Drive as highlighted in the City of Milpitas Transit Area Specific Plan.

(d) Berryessa Creek Trail- Hillview Drive to City Limits

The project would continue the Berryessa Creek Trail from Hillview Drive south to the City Limits near Montague Expressway. The path is 1.86 miles long and would connect to the future Milpitas BART station area.

5.13.2 Cumulative Impact Analysis

5.13.2.1 Air Quality

Construction of the proposed project is not expected to have any long-term effects on air quality since the operational activities (including inspection and maintenance) are expected to be similar to existing conditions. However, construction would result in direct, short-term effects on air quality mainly related to combustion emissions and dust emissions. Implementation of mitigation measures during construction would reduce emissions to the extent possible. Since the project would not require a change in the existing land use designation, long-term projected emissions of criteria pollutants would be the same with or without the project. In addition, the project individually would not result in a significant effect on air quality.

However, construction of the Lower Berryessa Creek Flood Protection Project Phase 2, and the Upper Penitencia Creek Flood Protection Project has the potential to overlap with construction of the Project. These concurrent construction activities could have a significant cumulative effect on air quality. It is expected that effects from these projects would be similar to the current project in that effects would be primarily due to construction activities. Therefore, construction of these projects would increase emissions of criteria pollutants, including ROG, NO_X, CO, and PM emissions.

Individually these projects would mitigate emissions below significance threshold levels. If these construction projects are implemented concurrently, the combined cumulative effects could be above CEQA thresholds for air quality emissions and *de minimus* thresholds. To address these potential cumulative effects, the Corps would coordinate the scheduling and sequence of construction activities with the cities of Milpitas and San Jose and BAAQMD. For example, should activities such as excavation occur simultaneously for multiple projects in the area, the agencies would stagger the work in order to comply with the thresholds, reducing the potential for adverse cumulative effects. Coordination on this level would reduce any potential cumulative air quality effects to less than significant.

5.13.2.2 Climate Change

It is unlikely that a single project would have a significant effect on the environment with respect to GHGs. However, the cumulative effect of human activities has been clearly linked to quantifiable changes in the composition of the atmosphere, which, in turn, have been shown to be the main cause of global climate change (IPCC 2007). While the emissions of one single project would not cause global climate change, GHG emissions from multiple projects throughout the world could result in a cumulative effect with respect to global climate change.

With respect to global warming, CO_2 is tracked as a contributor to GHG emissions. GHG emissions generated by the proposed project would predominantly be in the form of CO_2. CO_2 emissions would be generated from combustion sources including operation of construction vehicles, mobile vehicles, and haul trucks. Construction emissions of CO_2 would be temporary and short-term and would have a less-than-significant impact.

During construction, best management practices required by the BAAQMD for all projects in the Berryessa and Coyote Creek watershed would reduce emissions of dust and equipment exhaust. The implementation of best management practices would reduce the potentially significant, cumulative effects of vehicle and construction equipment exhaust emissions the effects on air quality to less than significant, and the project is not expected to contribute significantly to cumulative climate change.

5.13.2.3 Water Resources and Quality

During construction, the incremental contributions of suspended solids, sediment loads, and nutrients would have less than significant effects because ground-disturbing activities would be conducted in compliance with approved Storm Water Pollution Prevention Plans, erosion and sediment control plans, and mitigation and monitoring plans. The implementation of best

management practices would reduce the potentially significant, cumulative effects of soil erosion to a level that is less than significant.

Any temporary impairment of water quality resulting from spills of construction materials or equipment fluids would be avoided or minimized through the use of best management practices. Potential cumulative effects would be less than significant because toxic materials control and spill response plans would be implemented for major construction projects in the watershed.

Any adverse effects on wetlands effects caused by the Berryessa Creek Element or other projects in the watershed would be fully mitigated. Wetland loss would be mitigated by the creation of additional wetlands, and disturbed wetlands in the Berryessa Creek channel is assumed to reestablish naturally. With the implementation of wetland mitigation and replacement, the cumulative effects upon wetlands would be less than significant.

5.13.2.4 Biological Resources

Construction activities would cause a temporary loss of grasses in the Berryessa Creek watershed. This temporary loss of grasses would be mitigated by reseeding of grass. Cumulative effects upon vegetation in the Berryessa Creek watershed would be less than significant.

There would be a temporary disturbance of wildlife during project construction. The disturbance would be temporary and less than significant because wildlife would tend to reenter and/or repopulate the study area once construction is completed. Cumulative effects upon wildlife in the Berryessa Creek watershed would be less than significant.

The Berryessa Creek Element and other projects in the Berryessa and Coyote Creek watershed have the potential to temporarily disturb or harm special status animal species during project construction. Some habitat loss or disturbance could result from construction activities. Surveys would be conducted during spring and summer or prior to construction to determine species presence and location of nesting sites. To lessen potential adverse effects, mitigation plans would be developed in consultation with the USFWS and the CDFW. Cumulative effects on special status species would be reduced to a less than significant level through the implementation of mitigation plans and avoidance and minimization measures.

5.13.2.5 Cultural Resources

During construction, there is the potential for the Berryessa Creek Element and other projects to uncover previously unknown archeological sites. If these sites contain burial artifacts or human remains, there is the potential for significant, adverse effects upon cultural resources. The use of construction monitors, and implementation of inadvertent discovery procedures, including the notification of the SHPO and other authorities, would reduce any potential, cumulative effects to a level that is less than significant.

Implementation of the Section 106 of the NHPA process, including testing and evaluation of known archeological sites and evaluation for listing of bridges, culverts, and railroad trestles, would reduce any potential, cumulative effects on cultural resources to a level that is less than significant.

5.13.2.6 Traffic and Circulation

Construction of the Berryessa Creek Element would cause temporary significant impacts at three locations: at the intersections of Montague Expressway with Capitol Avenue, Montague Expressway with Main Street, and Montague Expressway with Trade Zone Boulevard.

The proposed construction activities would have short-term effects on traffic levels on local and regional roadways, which would temporarily decrease their LOS. While construction of the projects would temporarily increase traffic counts on roadways within the vicinity of the project, the volume of trucks associated with these projects would not be of sufficient magnitude to affect the LOS on these roadways. Through the implementation of best management practices and traffic control plans, the cumulative effects on traffic and circulation would be reduced to a level that is less than significant.

Following construction, the proposed project would not contribute to cumulative regional traffic and transportation impacts associated with other projects in the region. Minimization practices at all sites and the relative distances between multiple projects would reduce cumulative effects on local traffic and circulation to less than significant. The operation of the Berryessa Creek Element would have no cumulative effects on traffic.

5.13.2.7 Noise

The temporary effects of noise during the construction of flood control or transportation projects could be significant. However, operation of the Berryessa Creek Element would have no long-term, cumulative effects upon ambient noise levels in the Milpitas and San Jose urban areas. Construction involved with both the proposed project and the projects listed above are short-term and, therefore, there will be no long-term cumulative noise effects other than increases in noise levels during simultaneous construction activities.

5.13.2.8 Recreation and Public Access

Except for the greenbelt area, Berryessa Creek has relatively little, existing recreational use. During construction of the proposed project, public access would be temporarily limited, but access would be restored upon completion of construction. Future construction of a bicycle trail downstream of I-680 by the City of Milpitas has the potential to have a significant, positive effect upon recreation and public access. The proposed bicycle trail could create cumulative, recreational benefits in the Milpitas urban area.

5.13.2.9 Aesthetics and Visual Resources

Upon completion of the Berryessa Creek Element, the visual character of the creek would change to include small levees or floodwalls, but the project would have no significant, cumulative effects upon aesthetics or visual resources in the Milpitas and San Jose urban areas.

5.13.2.10 Hazardous, Toxic and Radiological Waste

During construction of the Berryessa Creek Element and other projects in the Milpitas and San Jose area, best management practices would be implemented to avoid and minimize the

possibility of accidental spills of hazardous materials. Through the implementation of these best management practices, the cumulative effects would be less than significant.

Downstream of I-680, the Berryessa Creek Element could receive groundwater contamination from nearby groundwater plumes. The potential adverse effects would be avoided through ongoing monitoring and the implementation of a Hazardous and Toxic Materials Contingency Plan. Through the implementation of these best management practices, any potential, cumulative effects would be less than significant.

5.14 RELATIONSHIP OF SHORT-TERM USES AND LONG TERM PRODUCTIVITY

NEPA requires that an EIS consider the relationship between short-term uses of the environment and the impacts that such uses may have on the maintenance and enhancement of long-term productivity of the affected environment. This section compares the short- and long-term environmental effects of the proposed project.

Short-term uses of the environment resulting from construction of Alternatives 2A/d, 2B/d, 4/d, and 5 would narrow the range of beneficial uses of the environment and lead to some adverse effects on existing riparian vegetation. In the long term, planting to restore this habitat type would offset the loss of riparian vegetation and enhance the long-term productivity of Berryessa Creek. Other short-term environmental effects associated with construction activities, such as reduced air quality and increased noise and traffic, would occur only during the construction phase of the alternative and would not adversely affect the long-term productivity of the environment.

5.15 IRREVERSIBLE AND IRRETRIEVABLE ENVIRONMENTAL COMMITMENT OF RESOURCES

Alternatives 2A/d, 2B/d, 4/d, and 5 would result in the irretrievable commitment of land, construction materials, fossil fuels, and other energy resources needed to construct the channel modifications and bridges. The land needed to widen the channel and construct the levees and maintenance road would experience an irreversible change in land use. Modification and replacement of the bridges would also result in the irretrievable commitment of construction materials and fossil fuels during construction. Maintenance of the channel modifications and bridges is not expected to increase the use of construction materials or fossil fuels since maintenance activities are currently ongoing.

Onsite mitigation would require the irretrievable commitment of materials and fossil fuels to prepare the soils and install the plantings. Maintenance of the mitigation would also result in a small increase in use of materials and fossil fuels. All mitigation would contribute to the environmental sustainability of the creek corridor and be consistent with urban uses of the surrounding area.

5.16 COMPARISON OF ALTERNATIVES

Table 5-10 summarizes the environmental effects, levels of significance, and mitigation of Alternatives 2A/d, 2B/d, 4/d, and 5.

5.17 IDENTIFICATION OF THE ENVIRONMENTALLY PREFERRED AND ENVIRONMENTALLY SUPERIOR ALTERNATIVE

NEPA requires environmentally preferable alternative be identified in the alternatives which were considered. Environmentally preferred is defined as the alternative that will promote the national environmental policy as expressed in Section 101 of the National Policy Act, meaning the alternative that causes the least damage to the biological and physical environment. In addition, it means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources.

CEQA Guidelines (Section 15126.6(e)(2)) require that an environmentally superior alternative be identified among the alternatives considered. The environmentally superior alternative is generally defined as the alternative which would result in the least adverse environmental impacts to the project site and surrounding area. If the No Action Alternative is found to be the environmentally superior alternative, then the document must also identify an environmentally superior alternative among the other alternatives.

The No Action Alternative would not result in any physical impacts to the environment; however, the No Action Alternative, it would fail to meet the purpose and need of the project. The No Action Alternative would fail to provide the long-term flood reduction benefits associated with the construction of flood walls and would therefore not be considered an environmentally superior alternative.

Each design alternative meets the purpose of the project and the overall impacts associated with each alternative are similar with the exception of Alternative 5, which is not being carried forward. The main differences in impacts between Alternative 2A/d, Alternative 2B/d and Alternative 4 can be found in the areas of air quality, wetlands and water quality, and road closures.

Alternative 2A/d would have a shorter construction period resulting from replacing only the UPRR Trestle Bridge where as Alternative 2B/d and Alternative 4 require the replacement of the Montague Expressway culvert, the Los Coches Street Bridge, the Calaveras Boulevard Bridge, and the UPRR Trestle Bridge and culvert. The shorter construction period would result in fewer emissions and less impact on air quality. Alternative 2B/d would have increase emissions since the alternative requires more earth moving activities and import of materials as compared to Alternative 2A/d and Alternative 4.

Alternative 2A/d, Alternative 2B/d and Alternative 4 will result in impacts to 0.39 acres of jurisdictional wetlands. Alternative 2A/d and Alternative 2B/d would have approximately the same channel bottom width. Alternative 4 would have a narrow channel bottom with setback flood walls. All three alternatives would have side slopes with cellular bank protect and buried riprap to reduce erosion and improve water quality. Alternative 4 would have vegetative floodplain terraces which could benefit water quality.

Alternative 2A/d, Alternative 2B/d and Alternative 4 have a low potential to affect the western pond turtle and cause a temporary disturbance to wildlife habitat. Alternative 2B/d and Alternative 4 have the potential to disturb *Myotis* bats during bridge replacements.

Alternative 2A/d would result in the shortest duration of road closes and the least impact to traffic. Alternative 2A/d would modify the Calaveras Boulevard Bridge, Los Coches Street Bridge, and the Montague Expressway Bridge whereas; Alternative 2B/d and Alternative 4 require the replacement of these bridges. Alternative 2A/d would require the partial closure of Calaveras Boulevard for up to 30 days and Montague Expressway for up to 10 days. Los Coches Street could be partially close for up to 30 days. Alternative 2B/d and Alternative 4 would require the partial road closure of Calaveras Boulevard and Montague Expressway which could last up to 120 days. Los Coches Street could be fully close for up to 60 days and partially closed for an additional 30 days.

Based on a quantitative analysis of impacts presented in this document it can be determined the Alternative 2A/d would have the fewest environmental impacts and would therefore be considered the environmentally superior alternative.

Determination of the environmentally superior alternative does not preclude other alternatives from being selected. The lead agency may adopt a statement of overriding considerations which expresses the agency's views on the merits of approving a project despite its significant adverse environmental impacts. The statement of overriding considerations provides the justification for proceeding with a project despite its environmental impacts. The statement reflects the balancing of competing public objectives including factors such as environmental concerns, legal issues, technical, social, and economic factors. Since the Corps has selected the environmentally superior option, a statement of overriding considerations does not need to be provided.

Table 5-10 Summary of Environmental Effects, Levels of Significance, and Mitigation for Alternatives					
Environmental Resource	**Alternative 1 (No Action)**	**Alternative 2A/d**	**Alternative 2B/d**	**Alternative 4/d**	**Alternative 5 (Authorized Plan)**
Geology, and Seismicity					
Effects	Climatic, geologic, and seismic conditions expected to remain the same	**No effect.**	**No effect.**	**No effect.**	**No effect.**
Significance	Not applicable.	Not applicable.	Not applicable.	Not applicable.	Not applicable.
Mitigation	Not applicable.	Not applicable.	Not applicable.	Not applicable.	Not applicable.
Topography and Soils					
Effects	Topography and soil types expected to remain the same	Temporary soils disturbance during construction.	Temporary soils disturbance during construction.	Same as Alternative 2B/d.	Same as Alternative 2B/d.
Significance	Not applicable.	**Less-than-significant with mitigation**	**Less-than-significant with mitigation**	**Less-than-significant with mitigation**	**Less-than-significant with mitigation**
Mitigation	Not applicable.	Use of best management practices to minimize loss of soil.	Use of best management practices to minimize loss of soil.	Same as Alternative 2B/d.	Same as Alternative 2B/d.
Land Use, Socioeconomics, and Environmental Justice					
Effects	Land use expected to be consistent with City General Plans. Socioeconomics and ethnic diversity would change per social/economic trends.	**No effect.**	**No effect.**	**No effect.**	**No effect.**
Significance	Not applicable.	Not applicable.	Not applicable.	Not applicable.	Not applicable.
Mitigation	Not applicable.	Not applicable.	Not applicable.	Not applicable.	Not applicable.
Air Quality					
Effects	Air quality conditions expected to remain the same or deteriorate with continuing development.	Temporary increase in ROG, NOx, CO, PM_{10} and $PM_{2.5}$ emissions due to operation of construction equipment and vehicles.	Temporary increase in ROG, NOx, CO, PM_{10} and $PM_{2.5}$ emissions due to operation of construction equipment and vehicles.	Same as Alternative 2B/d.	ROG, NOx, CO, and PM emissions would temporarily increase due to operation of construction equipment and vehicles. Project exceeds BAAQMD air quality NOx thresholds.
Significance	Not applicable.	**Less-than-significant with mitigation.**	**Less-than-significant with mitigation.**	**Less-than-significant with mitigation**	**Less-than-significant with mitigation.**
Mitigation	Not applicable.	Compliance with BAAQMD mitigation.	Compliance with BAAQMD mitigation.	Same as Alternative 2B/d.	Compliance with BAAQMD mitigation. State mitigation fee payments for excess NOx emissions.
Climate Change					
Effects	No effect.	CO_2e emissions would occur during project construction.	CO_2e emissions would occur during project construction.	Same as Alternative 2B/d.	CO_2e emissions would occur during project construction.
Significance	Not applicable.	**Less-than-significant with mitigation.**	**Less-than-significant with mitigation.**	**Less-than-significant with mitigation**	**Less-than-significant with mitigation.**
Mitigation	Not applicable.	Compliance with BAAQMD mitigations.	Compliance with BAAQMD mitigations.	Same as Alternative 2B/d.	Compliance with BAAQMD mitigations.
Water Resources and Quality					
Effects	Water resources and water quality conditions expected to remain the same.	Potential increase in sediment load, suspended solids, and nutrients due to soil erosion. Possible accidental spills or leaks from equipment or vehicles. Possible slight temporary increase in water temperature.	Potential increase in sediment load, suspended solids, and nutrients due to soil erosion. Possible accidental spills or leaks from equipment or vehicles. Possible slight temporary increase in water temperature.	Same as Alternative 2B/d except possible minimal benefits on water temperature and sediment load from plantings on terraces.	Potential increase in sediment load, suspended solids, and nutrients due to soil erosion. Possible accidental spills or leaks from equipment or vehicles. Possible slight temporary increase in water temperature. Germinate effects to 2.42 acres of riparian habitat.

Table 5-10 Summary of Environmental Effects, Levels of Significance, and Mitigation for Alternatives					
Environmental Resource	**Alternative 1 (No Action)**	**Alternative 2A/d**	**Alternative 2B/d**	**Alternative 4/d**	**Alternative 5 (Authorized Plan)**
Significance	Not applicable.	**Less-than-significant with mitigation.**	**Less-than-significant with mitigation.**	**Less-than-significant with mitigation.**	**Less-than-significant with mitigation.**
Mitigation	Not applicable.	Use of best management practices to minimize soil erosion and accidental spills/leaks. Implementation of all requirements of regulatory agreements, permits, and plans.	Use of best management practices to minimize soil erosion and accidental spills/leaks. Implementation of all requirements of regulatory agreements, permits, and plans.	Same as Alternative 2B/d.	Use of best management practices to minimize soil erosion and accidental spills/leaks. Implementation of all requirements of regulatory agreements, permits, and plans.
Biological Resources					
Effects	Vegetation and wildlife expected to remain the same.	Temporary loss of grassland. Wildlife disturbed and displaced during construction. Potential temporary disturbance of western pond turtle, Cooper's hawk, white-tailed kite, western big-eared bat, and Myotis bats.	Temporary loss of grassland. Wildlife disturbed and displaced during construction. Potential temporary disturbance of western pond turtle, Cooper's hawk, and white-tailed kite.	Same as Alternative 2B/d except potential benefit of 4.66 AAHU if plant terraces downstream of I-680.	Temporary loss of grassland and loss of 2.42 acres of riparian habitat. Displaced wildlife during construction. Potential temporary disturbance of western pond turtle, Cooper's hawk, white-tailed kite, western big-eared bat, and Myotis bats
Significance	Not applicable.	**Less-than-significant with mitigation.**	**Less-than-significant with mitigation.**	**Less-than-significant with mitigation.**	**Less-than-significant with mitigation.**
Mitigation	Not applicable.	Implementation of recommendation proposed by USFWS. Site restoration; reseed grasses, planting of wetland vegetation. Surveys conducted prior to construction to determine presence of species of concern. Specific avoidance measures implemented, if needed.	Implementation of recommendation proposed by USFWS. Site restoration; reseed grasses, planting of wetland vegetation. Surveys conducted prior to construction to determine presence of species of concern. Specific avoidance measures implemented, if needed.	Same as Alternative 2B/d.	Implementation of recommendation proposed by USFWS. Site restoration; reseed grasses, planting of wetland vegetation. Reestablishment of 2.63 acres of riparian habitat in the greenbelt area Surveys conducted prior to construction to determine presence of species of concern. Specific avoidance measures implemented, if needed.
Cultural Resources					
Effects	Sites CA-SCL-156 and P-43-001136 remain the same. Archeology sites CA-SCL-593 and C-167 continue to be at risk from erosion.	Disturbance of sites CA-SCL-593 and C-167. Changes to bridges, culverts, and trestle.	Disturbance of sites CA-SCL-593 and C-167. Changes to bridges, culverts, and trestle.	Same as Alternative 2B/d.	Disturbance of sites CA-SCL-593 and C-167. Changes to bridges, culverts, and trestle.
Significance	Not applicable.	**Significant if determined eligible for listing in National Register.**	**Significant if determined eligible for listing in National Register.**	**Significant if determined eligible for listing in National Register.**	**Significant if determined eligible for listing in National Register.**
Mitigation	Not applicable.	Cultural resources monitor onsite near CA-SCL-156 and P-43001136. Mitigation program for eligible sites. Possible Historic American Engineering Recordation for eligible bridges, culverts, or trestle.	Cultural resources monitor onsite near CA-SCL-156 and P-43001136. Mitigation program for eligible sites. Possible Historic American Engineering Recordation for eligible bridges, culverts, or trestle.	Same as Alternative 2B/d.	Cultural resources monitor onsite near CA-SCL-156 and P-43001136. Mitigation program for eligible sites. Possible Historic American Engineering Recordation for eligible bridges, culverts, or trestle.
Traffic and Circulation					
Effects	Traffic expected to remain the same or increase with continuing development.	Contribute to an overall increase in traffic volumes on the roadway network on a localized and temporary basis.	Construction activities would contribute to an overall increase in traffic volumes on the roadway network on a localized and temporary basis.	Same as Alternative 2B/d.	Contribute to an overall increase in traffic volumes on the roadway network on a localized and temporary basis.
Significance	Not applicable.	**Less-than-significant with mitigation.**	**Less-than-significant with mitigation.**	**Less-than-significant with mitigation.**	**Less-than-significant with mitigation.**
Mitigation	Not applicable.	Develop a Traffic Control Plan prior to construction and coordinate all use of public roads with the City of Milpitas and City of San Jose, or other responsible agencies.	Develop a Traffic Control Plan prior to construction and coordinate all use of public roads with the City of Milpitas, or other responsible agencies.	Same as Alternative 2B/d.	Develop a Traffic Control Plan prior to construction and coordinate all use of public roads with the City of Milpitas and City of San Jose, or other responsible agencies.

Table 5-10 Summary of Environmental Effects, Levels of Significance, and Mitigation for Alternatives

Environmental Resource	Alternative 1 (No Action)	Alternative 2A/d	Alternative 2B/d	Alternative 4/d	Alternative 5 (Authorized Plan)
Noise					
Effects	Noise sources and sensitive receptors expected to remain the same. Noise levels could increase due to increases in traffic volumes.	Construction activities would occur during exempt hours. Increased noise levels generated by construction equipment, haul trucks, and worker vehicles.	Construction activities would occur during exempt hours. Increased noise levels generated by construction equipment, haul trucks, and worker vehicles.	Same as Alternative 2B/d.	Construction activities would occur during exempt hours. Increased noise levels generated by construction equipment, haul trucks, and worker vehicles.
Significance	Not applicable.	**Less-than-significant with mitigation.**	**Less-than-significant with mitigation.**	**Less-than-significant with mitigation.**	**Less-than-significant with mitigation.**
Mitigation	Not applicable.	Implement measures to reduce short term effect on noise.	Implement measures to reduce adverse effect on sensitive receptors.	Same as Alternative 2B/d.	Implement measures to reduce adverse effect on sensitive receptors**.**
Recreation and Public Access					
Effects	Recreational facilities and access expected to remain the same.	Informal public access to the creek disrupted during construction.	Informal public access to the creek disrupted during construction.	Same as Alternative 2B/d.	Informal public access to the creek disrupted during construction. Quality of recreational experience in Berryessa Creek Park diminished during construction.
Significance	Not applicable.	**Less-than-significant effect.**	**Less-than-significant effect.**	**Less-than-significant effect.**	**Less-than-significant effect.**
Mitigation	Not applicable.	Not applicable.	Not applicable.	Not applicable.	Not applicable.
Aesthetics and Visual Resources					
Effects	Aesthetics and visual resources expected to remain the same.	Viewshed obscured during construction. Visual character of creek would change to include small floodwalls and earthen trapezoidal channel downstream of I-680	Temporary visual effect of construction equipment. Permanent change to visual character of the creek.	Same as Alternative 2B/d except earthen low-flow channel with flood plain benches bounded by vertical concrete floodwalls downstream of I-680	Permanent change to visual character of the creek to include a concrete lined channel. Temporary visual effect of construction equipment.
Significance	Not applicable.	**Less-than-significant effect.**	**Less-than-significant effect.**	**Less-than-significant effect.**	**Less-than-significant with mitigation.**
Mitigation	Not applicable.	Disturbed areas would be reseeded with native grasses.	Disturbed areas would be reseeded with native grasses.	Same as Alternative 2B/d.	Trees would be replanted on site. Disturbed areas would be reseeded with native grasses.
Hazardous, Toxic, and Radiological Waste					
Effects	Remediation of three existing HTRW sites downstream of I-680. HTRW sites outside study area expected to remain the same or undergo remediation.	Potential groundwater contamination from three HTRW sites downstream of I-680. Possible accidental spills or leaks from equipment or vehicles	Potential groundwater contamination from three HTRW sites downstream of I-680. Possible accidental spills or leaks from equipment or vehicles.	Same as Alternative 2B/d.	Potential groundwater contamination from three HTRW sites downstream of I-680. Possible accidental spills or leaks from equipment or vehicles.
Significance	Not applicable.	**Less-than-significant with mitigation.**	**Less-than-significant with mitigation.**	**Less-than-significant with mitigation.**	**Less-than-significant with mitigation.**
Mitigation	Not applicable.	Ongoing monitoring for groundwater contaminants. Implement Hazardous and Toxic Materials Contingency Plan, if needed. Use of best management practices to minimize soil erosion and accidental spills/leaks.	Ongoing monitoring for groundwater contaminants. Implement Hazardous and Toxic Materials Contingency Plan, if needed. Use of best management practices to minimize soil erosion and accidental spills/leaks.	Same as Alternative 2B/d.	Ongoing monitoring for groundwater contaminants. Implement Hazardous and Toxic Materials Contingency Plan, if needed. Use of best management practices to minimize soil erosion and accidental spills/leaks.

5.18 U.S. FISH AND WILDLIFE SERVICE RECOMMENDATIONS

USFWS submitted a draft CAR for the Berryessa Creek Flood Control Project April 2012. The recommendations from that CAR are presented below and the Corps responses follow each recommendation. The preliminary draft CAR is included in Appendix A, Part VI. The USFWS recommends that the Corps:

- Avoid impacts to any native trees, shrubs, and aquatic vegetation within and adjacent to the site to the extent possible.

  Corps response: Native trees, shrubs, and aquatic vegetation will be avoided to the greatest extent possible.

- Avoid future impacts at the site by ensuring any fill material used for construction is free of contaminants.

  Corps response: The Corps would comply with CVRWQCB requirements in a 401 water quality certification for the project which would ensure contaminants are not added by fill material placement. No contaminants were identified in the HTRW assessment.

- Avoid impacts to migratory birds nesting in trees along the access routes and adjacent to the proposed sites by conducting preconstruction surveys for active nests along proposed haul roads, staging areas, and construction sites. This would be especially important if construction begins in the spring. Work activity around active nests should be avoided until young have fledged.

  Corps response: The Corps would avoid adverse effects to nesting migratory birds, by complying with the Migratory Bird Act and conduct surveys for all migratory bird nests within the study area prior to construction.

- Minimize impacts by reseeding all disturbed areas at the completion of construction with native forbs and grasses.

  Corps response: All disturbed areas that would be seeded with native grasses.

- Minimize the impact of removal and/or trimming of any trees and shrubs by having these activities supervised and/or completed by a certified arborist.

  Corps response: If tree removal and/or trimming activities are necessary, they would be performed by or under the direct supervision of a certified arborist.

- Work with the Service and other resource agencies to quantify project affects and determine mitigation needs for the selected project alternative.

  Corps response: The Corps will continue to coordinate with the Service and appropriate agencies throughout the project.

- Contact NOAA Fisheries for possible effects of the project on federally listed species under their jurisdiction.

  Corps response: The Corps has contacted NOAA Fisheries.

- Contact the California Department of Fish and Game regarding possible effects of the project on State listed species.

  Corps response: The Corps has contacted California Department of Fish and Game.

CHAPTER 6 – COMPARISON OF ALTERNATIVE PLANS

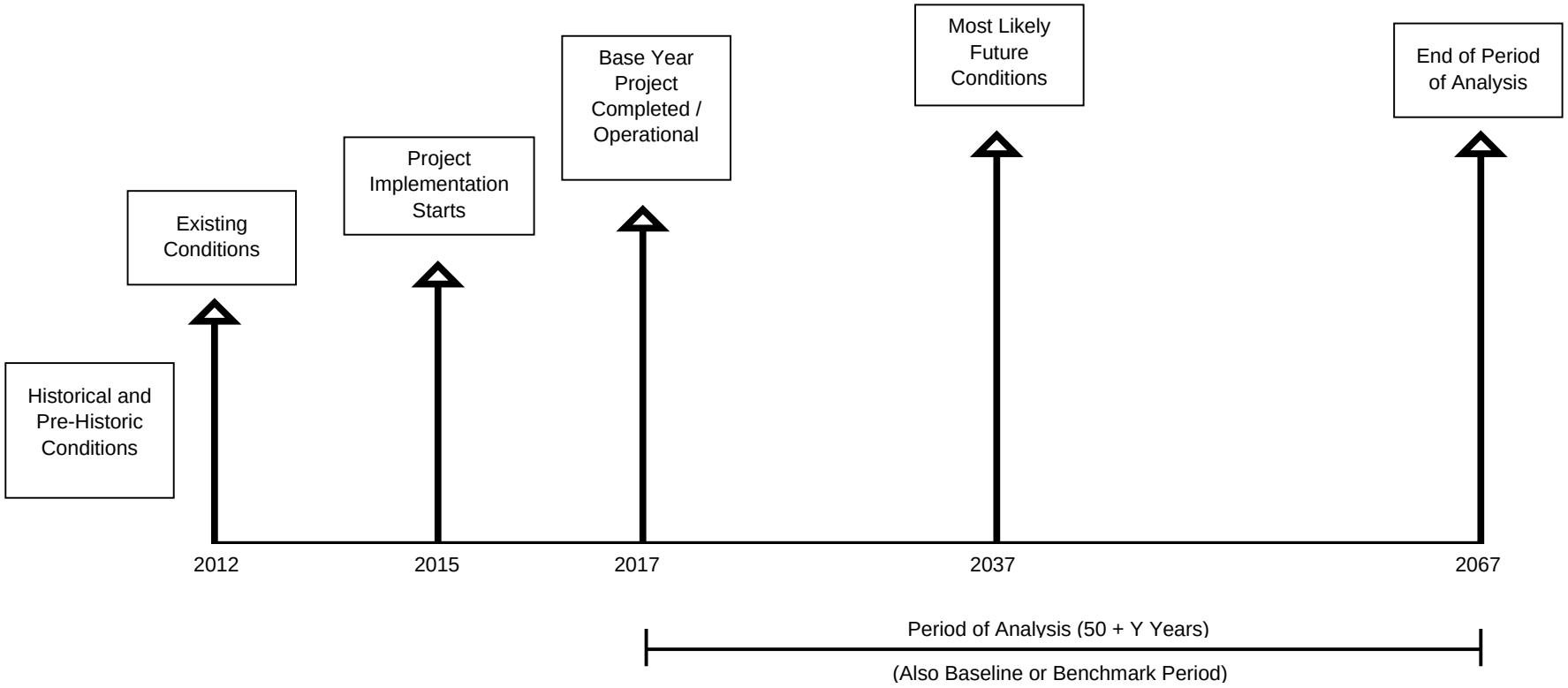
6.1 FINAL REEVALUATION PROCESS AND CRITERIA

The process for evaluation of alternatives to the authorized project was conducted in accordance with standard Federal procedures for planning water resources projects, regulations, and laws, and the requirements of NEPA. A selected set of alternative project modifications—at first preliminary alternatives followed by the final array of alternatives—were considered to better meet the authorized project's objectives for flood control and environmental compliance while avoiding and mitigating adverse effects to the maximum extent practicable. These alternatives were developed and evaluated specifically to meet the objectives described in Section 3.2 and in consideration of the concerns of the resource agencies and other interested persons raised during the public scoping process. The results presented show that there are alternatives to the authorized project that are most likely feasible and implementable and thus warrant more detailed evaluation.

6.1.1 Base Year and Economic Period of Analysis

Base year conditions are defined as those conditions which are expected to exist within the study area in the earliest year that a project could begin to produce benefits. For the Berryessa Creek Element, base year conditions begin immediately after construction, when operation begins. This period was chosen to coincide with the completion of the downstream Lower Berryessa Project (downstream of Calaveras) expected to be completed by the SCVWD in 2012.

A thorough assessment and evaluation was conducted for existing conditions in the study area, and this was brought forward in time based on expected future change in the study area and its resources over a fifty-year period of analysis. A base year of 2017 was chosen on the assumption that study completion, slated for 2013, would be funded for the plans and specifications phase of construction soon thereafter, and that the design would be completed approximately two years later. This construction would begin in 2015 and be completed in 2017. The period of analysis would end in 2067, as shown in Figure 6-1. These periods provide the basis for comparison and evaluation of alternatives. For the purposes of this analysis, a common base year was assumed for all plans to allow for an accurate comparison of costs and potential impacts.



WHERE:

Existing Conditions – year of inventory of what is presently there (2012)
Project Implementation Starts – assumed year when construction begins (2015)
Base Year – first year project is fully operational (2017)
Most Likely Future Conditions Year – specific future year targeted for analysis (typically 20 – 30 years from base year)
End of Period of Analysis Year – last year project assumed functional

Figure 6-1 Period of Analysis

6.2 COMPARISON OF ALTERNATIVE PLANS

The purpose of this step is to compare the results from the evaluations completed, for the purpose of developing a recommended plan that addresses the flooding problems in Berryessa Creek. A more detailed project footprint, including temporary construction easements, staging areas, and access routes, is presented in the overview exhibits at the end of Chapter 6.

6.2.1 Hydraulic Design

6.2.1.1 Hydrologic Effects

With-project discharges are actually higher within the creek than the without-project discharges. This is typical of flood risk management projects that maintain flow within the channel that otherwise would overflow onto the floodplain in the without-project condition. The discharges for the without- and with-project conditions upstream of I-680 remain the same in Alternatives 2A/d and 4. On the other hand, the difference between without- and with-project discharges upstream of I-680 is less pronounced in Alternative 5.

6.2.1.2 Water Surface Profiles

The with-project water surface elevations resulting from the additional discharge in Alternatives 2B/d, 4/d, and 5 are generally higher than in Alternative 2A/d, but the amount of increase is highly variable. These results are for fully contained flows. Comparison to existing conditions is therefore hypothetical only; the computed without-project (Alternative 1) water surface elevation at any point assumes full containment at each upstream section, and flows are restricted to the extent of each cross section in the event of breakout.

Among different alternatives, the different channel configurations downstream of I-680 affect water surfaces that vary by reach. The vegetated terraces in Alternative 4/d tend to reduce the available conveyance in the channel in comparison to Alternatives 2A/d and 2B/d.

6.2.2 Sediment Transport

The quantitative sediment analysis was conducted for the without-project, Alternatives 2A/d, 2B/d, and 4/d using hydraulic models developed for previous phases of this study for existing conditions between Old Piedmont Road and I-680. In addition, analyses were conducted for Alternatives 2B/d and 4/d assuming the proposed SCVWD bypass alternative was in place between Old Piedmont Road and I-680.

The analysis indicated an increase in sediment transport through the I-680 to Montague Expressway and Montague to Calaveras Boulevard for Alternatives 2A/d and 2B/d. The increased transport results in a decrease in deposition in the I-680 to Montague reach for the alternatives. With a larger amount of sediment being transported through the upstream reach, there is an increase in the amount of deposition in the Montague to Calaveras Boulevard reach for all alternatives over the without-project alternative. Overall, the total amount of sediment deposited in the study area for Alternatives 2A/d and 2B/d is nearly equal to that under the

without-project conditions. In contrast, the analysis showed a marked increase in deposition in for Alternative 4/d.

The analysis also showed a significant reduction in the deposition in the sediment basin below the Piedmont-Cropley culvert over existing conditions. This is due to a majority of flood flows being transported through the proposed SCVWD bypass culvert. The reduction in the flood flows to the Greenbelt reach results in a significant reduction in the sediment supply to the downstream reach. The sediment supply conveyed through the bypass culvert adds to the supply to the downstream reach, but accounts for only a small portion of the reduced Greenbelt sediment supply. The sediment transport rate for the Morrill to I-680 reach is greater than the combined sediment supply for the Greenbelt and bypass culvert. Since the sediment transport capacity through the reach is greater than the incoming supply, no deposition is seen in the reach. For Alternatives 2B/d and 4/d, there is an increase in sediment transport through the I-680 to Montague and Montague to Calaveras reaches over the without-project alternative. The increased transport results in no deposition in the I-680 to Montague reach. Normally, a larger amount of sediment being transported through the upstream reach would result in an increase in the amount of deposition in the Montague to Calaveras Boulevard reach. But since the supply from the Greenbelt reach is limited, the transport capacity of Alternative 2B/d can transport the entire supply to the downstream reach with no deposition and Alternative 4/d showing a small amount of deposition.

Throughout the study area, there are large variations in velocities and shear stresses that can cause localized sedimentation and scour problems. During the design phase, the project design needs to be further refined to reduce the level of these changes. Additionally, the measures used to provide passage of the design event through bridges should be reviewed. There may be the creation of significant backwater conditions in cases in which walls were extended above the bridge deck to contain flows. The reduced velocity and shear stress may cause an additional potential for additional, localized deposition in an area that in some cases already experiences deposition.

Currently, the study area is a deposition zone, and a reduction in velocity will further increase deposition and the need for maintenance. Constructed features should facilitate removal of deposited sediments.

6.2.3 Floodplains

The final array of alternative plans was analyzed using the Lower Berryessa Creek FLO-2D model. Of the four project alternatives, only Alternatives 2A/d and 5 have breakouts from the Berryessa Creek channel for the modeled events. Alternatives 2B/d and 4/d were developed to meet FEMA certification requirements using risk-based principles assuming SCVWD's bypass structure upstream of I-680 is implemented. The bypass design resulted in higher flow rates at I-680 resulting in Alternatives 2B/d and 4/d to have a larger conveyance capacity allowing both alternatives to convey up to the 0.002 exceedance probability event. Thus, no residual floodplains were mapped for these alternatives.

6.2.3.1 Alternative 1 (No Action)

The floodplains developed for the No Action Alternative used the Lower FLO-2D model and the updated Upper FLO-2D model. The Upper FLO-2D model was extended to the south to include the area up to the Penitencia Creek watershed boundary. The Upper model also included a channel segment representing the Sierra Creek channel, which extended from the confluence with Berryessa Creek to the Sierra Creek culvert outlet. HEC-RAS models for the Berryessa and Sierra Creeks were used to calibrate the Upper model to ensure that the FLO-2D channel system was accurately simulating the in-channel flows as well as the three bridges (i.e., Old Piedmont Road, Piedmont Cropley culvert, and Morrill Avenue culvert) that are sources of breakout flows.

The FLO-2D models were run for the 0.20, 0.10, 0.04, 0.02, 0.01, 0.005, and 0.002 exceedance probability events. The resulting floodplains show flooding downstream of Piedmont Creek when the 0.20 and 0.10 exceedance probability events were routed. Breakouts from various locations upstream and downstream of I-680 occur when the 0.04 exceedance probability event was routed. The floodplains became larger as higher exceedance probability events were routed. The with-project conditions floodplain for the 0.002 exceedance probability event are shown in Figure 6-2. The maps for the other events may be found in Part II, Floodplain Development of Appendix B.

6.2.3.2 Alternative 2A/d (Incised Trapezoidal Channel –Moderate Protection)

Alternative 2A/d consists of a 0.01 exceedance probability event level of protection downstream of the I-680 culvert. The 0.005 and 0.002 exceedance probability floodplains were developed for Alternative 2A/d. For both events, the residual with-project conditions floodplains show residual flooding downstream of I-680. Breakouts occur from various locations upstream of I-680. The with-project conditions floodplain for the 0.002 exceedance probability event is shown in Figure 6-3.

6.2.3.3 Alternative 2B/d (Incised Trapezoidal Channel –FEMA Certified Protection)

As previously mentioned, the channel for Alternative 2B/d contains flows of up to 0.002 exceedance probability event; therefore, no residual floodplain occurs downstream of I-680. Upstream of I-680, breakouts occur at various locations.

6.2.3.4 Alternative 4/d(Walled Trapezoidal Channel)

Similar to Alternative 2B/d, the channel for Alternative 4/d contains flows of up to 0.002 exceedance probability event; therefore, no residual floodplain occurs downstream of I-680. Upstream of I-680, breakouts occur at various locations.

6.2.3.5 Alternative 5 (Authorized Plan)

Alternative 5 is the only plan in the final array of alternatives with project features upstream of I-680. The Upper FLO-2D model was modified to include the proposed channel improvements. The modified Upper model was used to develop the floodplain upstream of I-680. The breakout

flows developed from the HEC-RAS model was routed through the Lower FLO-2D model to develop the floodplain downstream of I-680.

The 0.01, 0.005, and 0.002 exceedance probability floodplains were developed for Alternative 5. Breakouts occur at Calaveras Boulevard and Los Coches Avenue when the 0.01 exceedance probability event was routed. The floodplains increase as the remaining exceedance probability events were routed. The with-project conditions floodplain for the 0.002 exceedance probability event are shown on Figure 6-4. The maps for the other events may be found in Part II, Floodplain Development, of Appendix B.

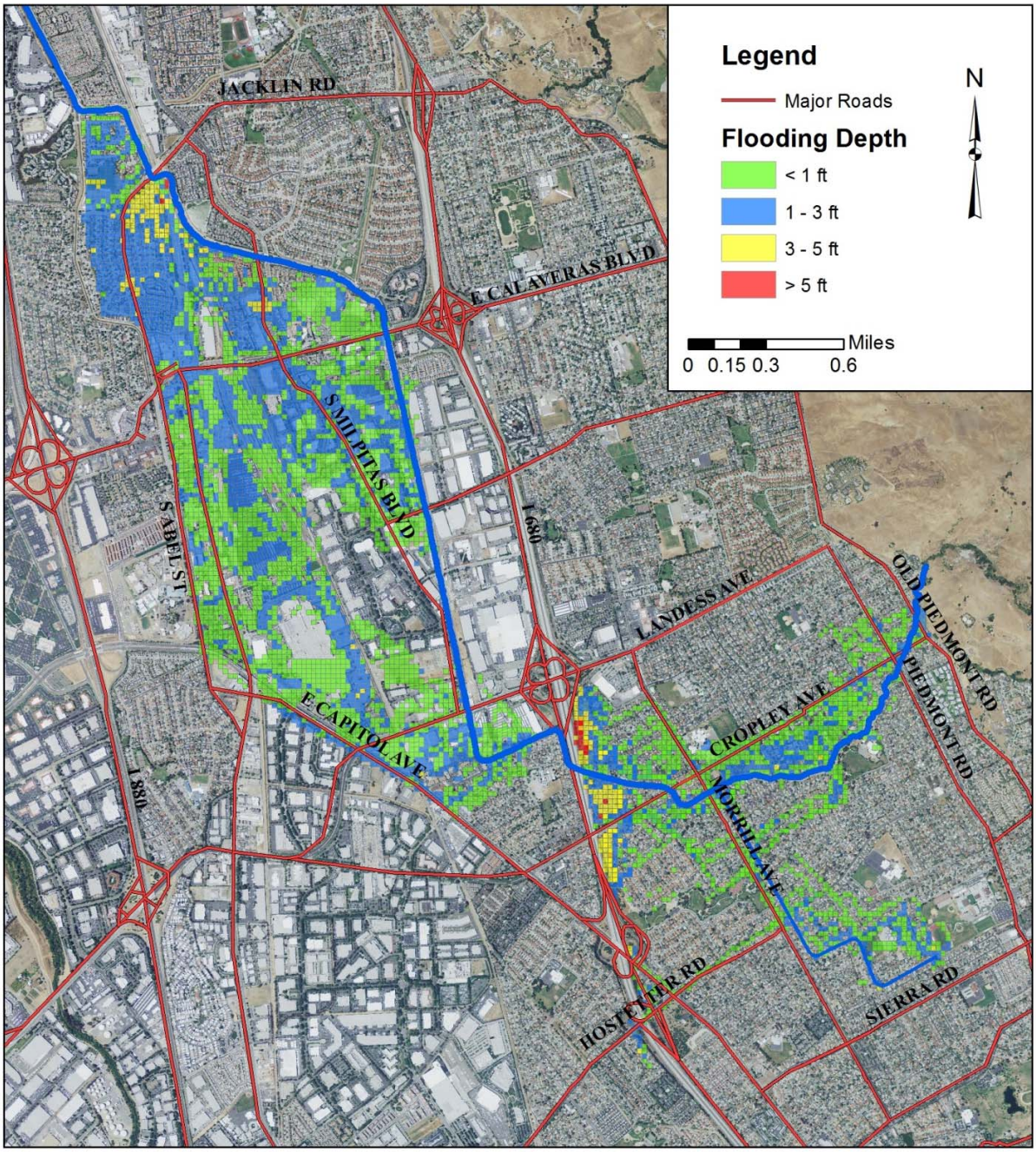


Figure 6-2 0.002 Exceedance Probability Event Floodplain – No Action Alternative

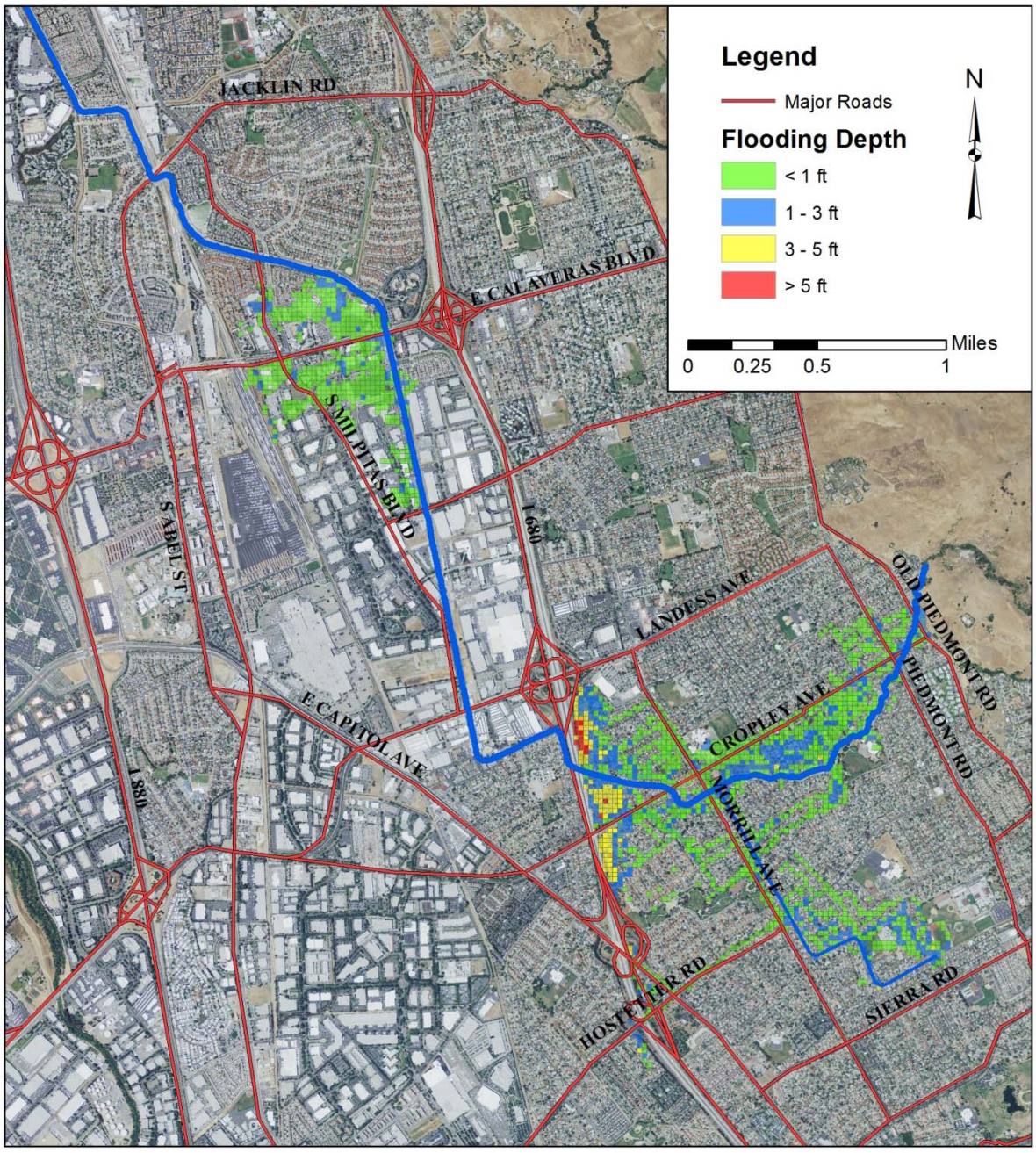


Figure 6-3 0.002 Exceedance Probability Event Floodplain – Alternative 2A/d

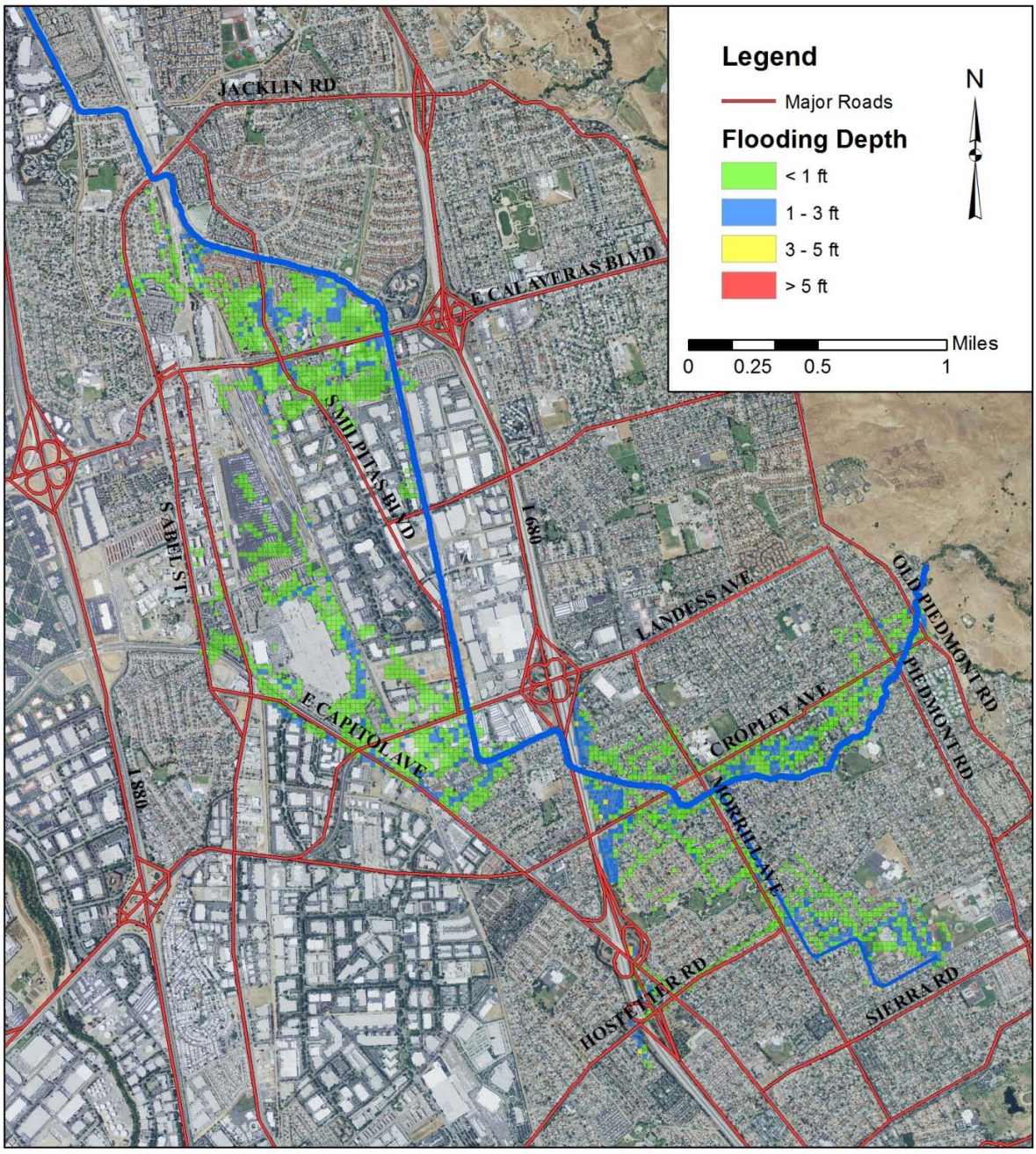


Figure 6-4 0.002 Exceedance Probability Event Floodplain – Authorized Project

6.2.4 Incidental Recreation Features

While the Berryessa Creek Element is a single-purpose flood risk management project, the constructed features may also provide some opportunity to achieve incidental recreational benefits. A 15-foot wide obstruction-free zone provides access for maintenance, inspection, and flood-fighting purposes along both sides of the channel throughout the entire reach downstream of I-680. Per Corps requirements for levees and floodwalls, the obstruction-free zone must be kept free of vegetation and any other obstructions; however, some recreational use may be accommodated within the obstruction-free zone without hindering the primary purposes.

The quantities and cost estimates developed assume the roadway in the obstruction-free zone is surfaced with compacted backfill, in-situ material, or coarse aggregate. A review of the City of Milpitas' Master Trail Plan (Sokale/Landry Collaborative 1997) was conducted to determine the feasibility of locating a multi-use recreation trail within the obstruction-free zone. The City of Milpitas was consulted in comparing the project features in the current design with the Master Plan criteria, and it was determined that additional paving would be required to allow the obstruction-free zone to serve as a recreational trail and meet the requirements of the American Disability Act (ADA) and City of Milpitas design criteria.

While the Master Plan generally recommends that a trail easement should include a 25-foot buffer between the trail and adjoining parcels, the 15-foot-wide obstruction-free zone in the current design is bounded intermittently along the project reach by buildings, roadways, and other infrastructure that would preclude the presence of a buffer zone. While not optimal, a City of Milpitas representative has stated that the current design widths will be adequate to meet the minimum standards of a recreation trail.

Only the routes on the upper channel banks are being considered for the multi-use recreational trail; the in-channel maintenance roads will not be utilized as the ramps would not necessarily provide ADA compliance; as such, undercrossings and stream access points are not being considered as incidental recreational features. It is anticipated that pedestrians users of the recreational trails would utilize existing at-grade street crossings; due to the proximity of the project alignment to the Milpitas Boulevard intersections, the installation of an additional pedestrian or bicycle crossing with signaling, striping, and other requirements, is not considered feasible, particularly for the high traffic-volume routes such at Montague Expressway and Calaveras Boulevard. Because there is currently no undercrossing at the I-680 Bridge, the proposed recreational trail extends only between Calaveras Boulevard and the Montague Expressway. Future improvements by others may connect the obstruction-free zones to the existing pedestrian bridge at I-680, allowing this reach to include a recreational trail; however, these features are considered beyond the scope of the current project.

The Master Plan cites that identity signs, use signs, safety signs, private property signs, interpretive and protective signs, and regional signs should be used to mark trails; however, the 15-foot obstruction-free zone must be free of any structures, which includes signage that might encroach on the available width. While some safety signage may be required by the project regardless of recreational use (near floodwalls, bridge crossings, or hydraulic structures, for example), any additional signage would need to be implemented by the non-Federal agency and would need to be placed in locations outside of the obstruction free-zone. The current cost

estimate for recreational features assumes signage is located at each access point where the trail meets one of the roadway crossings. Benches are also included at the access points and would likewise need to be located outside of the primary access route. Safety fencing is included in the project costs where vertical concrete walls are present; however, these costs are not considered part of the recreational features as they would be required with or without a multi-use trail. It is assumed that access along Berryessa Creek would remain open as at present; supplemental safety fencing is not provided along the top of the sloping earthen channel banks as part of the project or recreational features.

Due to the limitations of the study area's obstruction-free zone for providing permanent facilities to trail users, existing regional staging areas (e.g., parks and public recreation facilities) should be utilized to provide potable and non-potable water and sanitary facilities. The 2-mile project reach allows these facilities to be located beyond the extents of the project while still meeting the Master Plan requirement of a 5-mile maximum spacing.

Several features that are typically recommended in conjunction with recreational trails in the Master Plan are not considered incidental recreational benefits. These non-incidental features are outside of the authorized project purpose. Adding this purpose to the authorized project would require additional authority from Congress, which would require a potentially lengthy process. However, these features could be added to the project as non-Federally funded betterments without additional Congressional authority.

The plan view in Figure 6-5 depicts the location of proposed incidental recreational features relative to the study area.

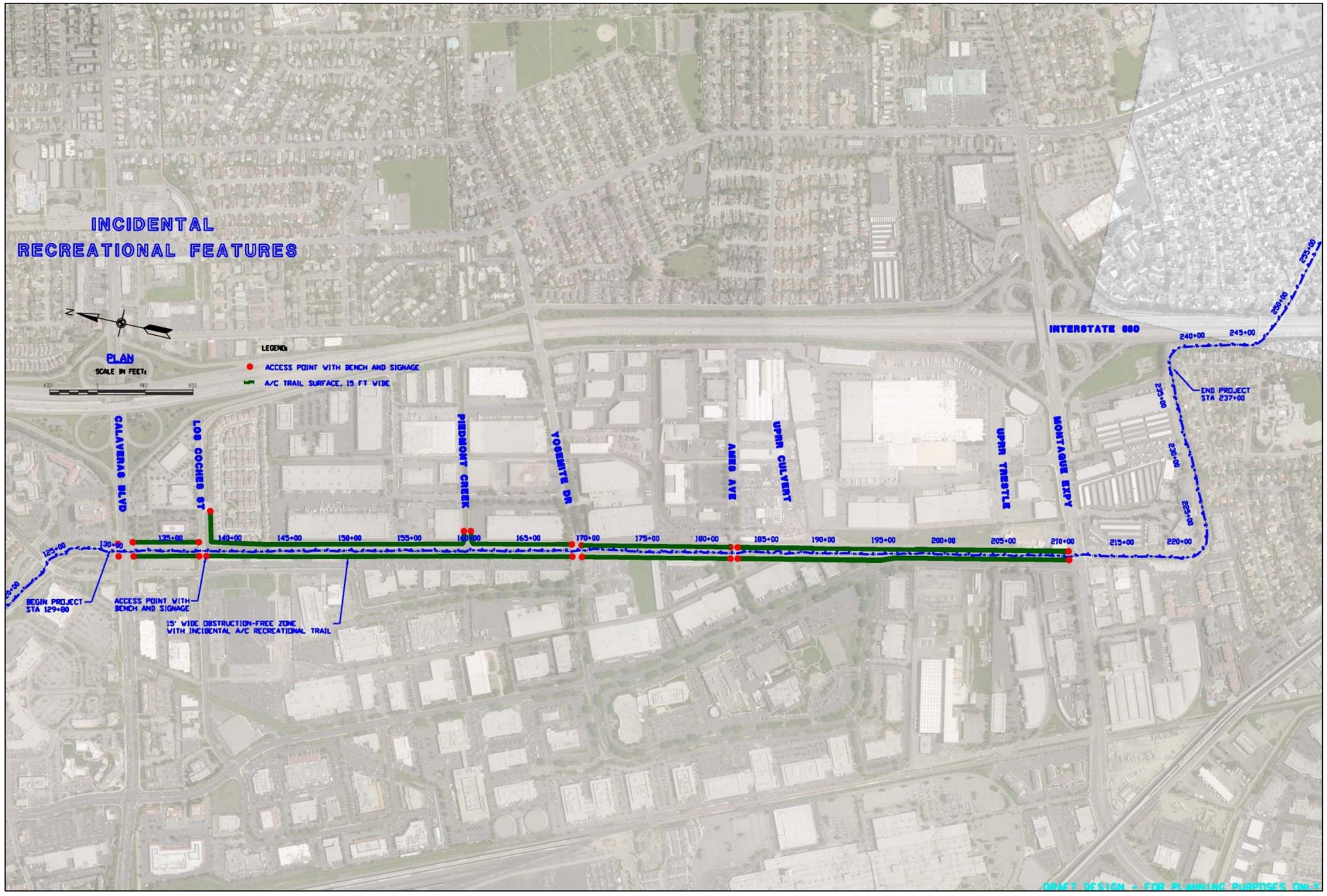


Figure 6-5 Incidental Recreational Features

6.2.5 Real Estate Costs

The general real estate requirements for the Project are the acquisition of channel improvement easements (CIE), flood protection levee easements (FPLE), and temporary work area easements (TWAE) and use of existing rights-of-way (ROW) owned and/or controlled by the SCVWD.. The preliminary alternative-comparison estimates for severance damages and contingencies (excluding utilities/facilities and administrative costs) are shown in Table 6-1.

Table 6-1 Real Estate Costs
November 2012 Prices[1]

	2A/d	2B/d	4/d	5
Preliminary Estimates	$9,828,000	$10,800,000	$14,965,000	$46,190,000[2]

[1] Source: 2012 Real Estate Plan
[2] Total estimated cost for the entire reach of Berryessa Creek upstream and downstream of I-680, as authorized. Costs for the downstream reach are estimated at $38,500,000.

The alternatives would also require relocations of publicly- and privately-owned utilities. The cost associated with alterations and relocations of bridges for non-navigation projects (other than railroad bridges) and utilities (e.g., municipal water and sanitary sewer lines, telephone lines, storm drains) determined by the Federal government to be necessary for construction of a project is considered LERRDs and included as part of the non-Federal sponsor contributions. The estimated relocation costs (including contingencies) are presented in Table 6-2. Additional information on the affected bridges and utilities for each alternative is presented in Appendix B, Design and Cost of Alternatives.

Table 6-2 Relocation Costs
October 2012 Prices[1]

	2A/d	2B/d	4/d	5
Utility/Facility Relocation Costs	$1,710,000[3]	$17,283,000	$17,283,000	$5,111,000[2]

[1] Source: Utilities-facilities survey developed October 2012.
[2] Total estimated cost for the entire reach of Berryessa Creek upstream and downstream of I-680, as authorized. Costs for the downstream reach are estimated at $2,398,000.
[3]Source: 2013 Real Estate Plan

6.2.6 Benefits

HEC-FDA was run simulating with-project conditions. Residual with-project damages were subtracted from the without-project damages to determine the flood risk management benefits. Table 6-3 presents the total annual benefits (from flood risk management) for the alternatives. Annual benefits represent the difference between the without- and with-project equivalent annual damage.

Table 6-3 Annual Benefits – Final Array of Alternative Plans Values in $1,000's, October 2012 Prices 3.75% Interest Rate, 50-Year Period of Analysis			
Alternative	**Equivalent Annual Damages**		**Annual Benefits[1]**
	Without Project	**With Project**	
Upstream of I-680 - Damage Areas A, B, C, & D			
Without	2,537	2,537	0
1) Alt. 5	2,537	454	2,083
2) Alt. 2A	2,537	2,537	0
3) Alt. 2B	2,537	2,537	0
4) Alt. 4	2,537	2,537	0
Downstream of I-680 - Damage Areas E & F			
Without	11,824	11,824	0
1) Alt. 5	11,824	319	11,505
2) Alt. 2A	11,824	887	10,937
3) Alt. 2B	11,824	0	11,824
4) Alt. 4	11,824	0	11,824
[1] Benefit values shown include average annual equivalent damages rather than expected annual damages.			

Any alternative that requires major reconstruction or replacement of any bridge crossing and extends the useful life of that bridge, advanced bridge replacement can be claimed (Table 6-4). In general, all of the bridges were constructed in the early 1970s, and replacement will extend their lives beyond the study's period of analysis. The life extension within the period of analysis is estimated at 24 years. Benefits from an operational and maintenance change are not expected to occur with bridge replacements.

Table 6-4 Advance Bridge Replacement Benefits October 2012 Prices 3.75% Interest Rate, 50-Year Period of Analysis						
Bridges	**2A/d**		**2B/d and 4/d**		**5**	
	Costs	**Benefits**	**Costs**	**Benefits**	**Costs**	**Benefits**
Old Piedmont Bridge	-	-	-	-	$708,589	$8,500
Montague Expressway	-	-	$3,041,550	$36,300	$1,040,751	$12,100
UPRR Trestle	$1,052,200	$12,600	$1,052,200	$12,600	$1,190,522	$14,200
Los Coches Street	-	-	$2,147,625	$25,600	-	-
Calaveras Road	-	-	$4,674,750	$55,800	-	-
TOTALS	**$1,052,200**	**$12,600**	**$10,916,125**	**$130,300**	**$2,939,862**	**$34,800**

Improvements for flood risk management may provide the opportunity for increased recreation uses in the study area. Improvements to the levees would allow for completion of locally proposed recreational trails. At this time, no recreation benefits have been computed as the recreation components have not yet been selected, and recreation has not been identified as a

Federal project purpose for the Berryessa Creek Element. Based on preliminary investigations, recreation measures could be added as a local project improvement to any of the alternatives without altering the formulation for flood risk management.

6.2.7 Costs

Project costs were developed for Alternatives 2A/d, 2B/d, and 4/d. Project costs for Alternative 5 (authorized project) have been updated to the 2012 price levels. For the purposes of comparing costs to benefits, the costs have been amortized over the projected 50-year period of analysis using the current Federal discount rate of 3.5 percent to yield an annual cost. Interest during construction was based on a two-year construction schedule assuming uniform expenditures over the period. Annual cost estimates are shown in Table 6-5.

Table 6-5 Total Project Cost Summary
October 2012 Prices
3.75% Interest Rate, 50-Year Period of Analysis

Item	2A/d	2B/d	4/d	5
Relocations	1,391,000	10,786,000	10,786,000	3,407,000
Channels and Canals	8,728,000	15,261,000	34.947,000	22,483,000
Total Construction Cost	10,228,000	26,047,000	45,733,000	25,890,000
Contingencies	2,558,000	10,178,000	17,638,000	8,991,000
Planning, Engineering, and Design	1,670,000	4,773,000	8,381,000	4,745,000
Construction Management	1,092,000	3,046,000	5,348,000	3,027,000
Lands and Damages (LERRD)	9,828,000	15,137,000	14,965,000	46,190,000
LERRD Administrative Costs	1,250,000	1,250,000	1,220,000	2,080,000
Total First Cost	**26,626,000**	**60,430,000**	**93,285,000**	**90,923,000**
Interest During Construction (IDC)	998,000	2,327,000	3,559,000	3,410,000
Total Project Economic Cost	27,624,000	62,757,000	96,844,000	94,333,000
Annualized Project Economic Cost	1,231,000	2,797,000	4,317,000	4,205,000
Annual OMRR&R	63,000	79,000	89,000	128,000
Total Annual Economic Cost	***1,294,000***	***2,876,000***	***4,406,000***	***4,333,000***

[1] IDC is based on a 2-year midlife full expenditure approach.

6.2.8 Net Benefits

Economic efficiency is based on the alternative with the greatest return on investment, as measured by annual net benefits. Annual net benefits are determined as the difference between the annual benefits and the annual costs of an alternative. The alternative that offers the greatest net benefits is known as the National Economic Development (NED) Plan. Table 6-6 shows equivalent damage reduction. Table 6-7 shows net benefits and the benefit-to-cost ratio for each alternative.

Table 6-6 Equivalent Annual Damage Reduced Values in $1000's, October 2012 Prices 3.75% Interest Rate, 50-Year Period of Analysis						
Alternatives	**Equivalent Annual Damage**			**Probability Damage Reduced Exceeds Indicated Values**		
	Without Project	**With Project**	**Damage Reduced**	**75%**	**50%**	**25%**
1	14,360	14,360	0	-	-	-
2A/d	11,824	887	10,937	2,731	3,337	8,068
2B/d	11,824	0	11,824	n/a	n/a	n/a
4/d	11,824	0	11,824	n/a	n/a	n/a
5	14,360	773	13,587	3,351	4,100	10,915

As shown in Table 6-7, the alternative that maximizes net annual benefits is Alternative 2A/d, and as such is the NED Plan.

Table 6-7 Annual Benefits and Costs Values in $1,000's, October 2012 Prices 3.75% Interest Rate, 50-Year Period of Analysis				
Item	**2A/d**	**2B/d**	**4/d**	**5/d**
Total Cost	26,626	64,383	98,470	94,333
Annual Benefits Flood Risk Reduction[1]	10,937	11,824	11,824	13,587
Advanced Bridge Replacement	13	130	130	35
Total Annual Benefits	10,950	11,954	11,954	13,622
Annual Costs	1,294	2,876	4,406	4,333
Net Benefits	**9,656**	**9,078**	**7,548**	**9,289**
B/C Ratio	*8.5*	*4.2*	*2.7*	*3.1*
[1] Including future development flood risk management benefits				

6.2.9 Verification of NED Plan

To confirm Alternative 2A/d's selection, an additional analysis on optimization was conducted to ensure increasing net benefits by analyzing a smaller alternative. This alternative, referred to as Alternative 2AA/d, was developed to pass the 0.02 exceedance probability event downstream of I-680, with a minimum of 50 percent CNP. The primary features of Alternative 2AA/d are similar to those of Alternative 2A/d. The analysis of Alternative 2AA/d followed the same procedures as with the other alternatives analyzed during this study. Engineering runs of hydrology and hydraulics were computed and were compiled with the economic data within HEC-FDA. The results of the HEC-FDA model are shown in Table 6-8. A preliminary construction cost estimate was prepared for Alternative 2AA/d and is displayed in Table 6-9. (It should be noted that the optimization was completed in an earlier draft of this GRR, and the outcome of the analysis (as presented in the following tables) will be unaffected with an update to 2012 price levels.)

Table 6-8 Equivalent Annual Damages – Alternatives 2A/d and 2AA/d Values in $1,000's, October 2011 Prices 4% Interest Rate, 50-Year Period of Analysis			
Alternative	**Equivalent Annual Damages**		**Annual Benefits**
	Without Project	**With Project**	
Upstream of I-680 - Damage Areas A, B, C, & D			
Without	2,537	2,537	0
Alt. 2A	2,537	2,537	0
Alt. 2Aa	2,537	2,537	0
Downstream of I-680 - Damage Areas E & F			
Without	11,823	11,823	0
Alt. 2A	11,823	887	10,936.
Alt. 2Aa	11,823	2,082	9,741

Table 6-9 Construction Costs – Alternatives 2A/d and 2AA/d October 2011 Prices 4% Interest Rate, 50-Year Period of Analysis		
Item	**Alt 2A/d**	**Alt 2AA/d**
Total Construction Cost	$9,215,695	$7,576,284
Contingency	$2,764,708	$2,272,885
Design Phase/PED	$1,382,354	$1,136,443
Construction Mgt-Inspection & Admin/SI/SA	$737,256	$606,103
LERRD Acquisition Costs	$9,825,000	$8,351,250
LERRD Investigations cost	$200,000	$200,000
Total First Cost	**$24,125,013**	**$20,142,964**
Interest During Construction	$984,301	$821,833
Total Project Economic Cost	$25,109,313	$20,964,797
Annualized Project Economic Cost	$1,168,844	$975,916
Annual OMRR&R	$63,071	$53,610
Total Annual Economic Cost	$1,231,914	$1,029,526

As shown in Table 6-10, the results of the above costs and benefits indicate that Alternative 2A/d produces greater net benefits than Alternatives 2AA/d.

Table 6-10 Annual Benefits and Costs – Alternatives 2A/d and 2AA/d Values in $1,000's, October 2011 Prices 4% Interest Rate, 50-Year Period of Analysis		
Item	**Alt 2A/d**	**Alt 2AA/d**
Total Cost	$25,109	$20,965
Annual Benefits Flood Damage Reduction	$10,937	$9,741
Savings in NFIP Administration Costs	$0	$0
Advanced Bridge Replacement	$13	$0
Total Annual Benefits	$10,950	$9,741
Annual Costs	$1,232	$1,030
Net Benefits	**$9,718**	**$8,711**
B/C Ratio	8.89	9.46

6.2.10 System of Accounts

The Principles and Guidelines specify that the alternative plan that reasonably maximizes net economic benefits consistent with protecting the Nation's environment will be selected. The Assistant Secretary of the Army for Civil Works (ASA(CW)) may grant an exception when there are overriding reasons for selecting another plan based on other Federal, State, local, and international concerns. Because the purpose of this study is to reduce flood damages, the plan formulation and selection process for this reevaluation study is primarily driven by NED Plan selection criteria. Comparison of the alternative plans is summarized in Table 6-11.

Another means of evaluating the alternatives to assist in making a plan recommendation is to identify the non-monetary effects the alternative plans may have on significant environmental resources. This is included in the table under the Environmental Quality (EQ) account. A summary of environmental effects, levels of significance, and mitigation is also shown in Table 5-10. Also presented in the following table are the possible effects that the proposed plans may have on regional economic activity, specifically income and regional employment (illustrated under the Regional Economic Development [RED] account). Lastly, a comparison of the effects the proposed alternatives may have in the areas of public facilities and services, recreational opportunities, transportation and traffic and man-made and natural resources (included under the Other Social Effects [OSE] account) are also presented.

Recent Corps guidance on collaborative planning (EC 1105-2-409, dated 31 May 2005) provides that any alternative plan may be selected and recommended for implementation if it has, on balance, net beneficial effects after considering all plan effects, beneficial and adverse, in the four Principles and Guidelines evaluation accounts described above. Current policies on cost-sharing would apply, so that the Federal cost-share would be based on the NED Plan, or another plan approved by the ASA(CW).

Table 6-11 System of Accounts					
Criteria	**No Action Plan**	**Alternative 2A/d**	**Alternative 2B/d**	**Alternative 4/d**	**Alternative 5**
National Economic Development Account (without Recreation)					
Annual NED Benefits ($1,000s)	-	$10,950	$11,954	$11,954	$13,622
Annual Costs ($1,000s)	-	$1,266	$2,949	$4,478	$4,333
B/C Ratio		*8.6*	*4.1*	*2.7*	*3.1*
Net Benefits ($1,000s)	-	**$9,684**	**$9,005**	**$7,476**	**$9,289**
Environmental Quality Account					
Air Quality	Air quality conditions expected to remain the same or deteriorate with continuing development.	Temporary increase in ROG, NOx, CO, and PM emissions due to operation of construction equipment and vehicles.	Temporary increase in ROG, NOx, CO, and PM emissions due to operation of construction equipment and vehicles.	Same as Alternative 2B/d.	For both upstream and downstream reaches, ROG, NOx, CO, and PM emissions would temporarily increase due to operation of construction equipment and vehicles.
Water Resources and Quality	Water resources and water quality conditions expected to remain the same.	Potential increase in sediment load, suspended solids, and nutrients due to soil erosion. Possible accidental spills or leaks from equipment or vehicles. Slight temporary increase in water temperature.	Potential increase in sediment load, suspended solids, and nutrients due to soil erosion. Possible accidental spills or leaks from equipment or vehicles. Slight temporary increase in water temperature.	Same as Alternative 2B/d.	Same as Alternative 2B/d except loss of additional 2.42 acres of riparian habitat in the upstream study area (greenbelt reach upstream of I-680).
Biological Resources	Vegetation and wildlife expected to remain the same.	Temporary loss of grassland. Wildlife disturbed and displaced during construction, but return once construction completed.	Temporary loss of grassland. Wildlife disturbed and displaced during construction, but return once construction completed.	Same as Alternative 2B/d.	Temporary loss of grasslands and the loss of 2.42 acres of riparian habitat. Displaced wildlife during construction.
Special Status Species	Special status species expected to remain the same.	Potential temporary disturbance of western pond turtle, California yellow warbler, Cooper's hawk, loggerhead shrike, western burrowing owl, and white-tailed kite.	Potential temporary disturbance of western pond turtle, California yellow warbler, Cooper's hawk, loggerhead shrike, western burrowing owl, and white-tailed kite.	Same as Alternative 2B/d.	Same as Alternative 2B/d.
Cultural Resources	Sites CA-SCL-156 and P-43-001136 remain the same. Archeology sites CA-SCL-593 and C-167 continue to be at risk from erosion.	Disturbance of sites CA-SCL-593 and C-167. Changes to bridges, culverts, and trestle.	Disturbance of sites CA-SCL-593 and C-167. Changes to bridges, culverts, and trestle.	Same as Alternative 2B/d.	Same as Alternative 2B/d.
Noise	Noise sources and sensitive receptors expected to remain the same. Noise levels could increase due to increases in traffic volumes.	Increased noise levels during construction. Noise generated by construction equipment, haul trucks, and worker vehicles. Noise levels exceed local objectives.	Increased noise levels during construction. Noise generated by construction equipment, haul trucks, and worker vehicles. Noise levels exceed local objectives.	Same as Alternative 2B/d.	Same as Alternative 2B/d.
Aesthetics	Aesthetics and visual resources expected to remain the same.	Visual character of creek would change to include small floodwalls and earthen trapezoidal channel downstream of I-680.	Visual character of creek would change to include small floodwalls and earthen trapezoidal channel downstream of I-680.	Same as Alternative 2B/d except earthen low-flow channel with floodplain benches bounded by vertical concrete floodwalls downstream of I-680.	Visual character of the creek would change to include concrete-lined channel.
Regional Economic Development Account					
Employment	No impacts on employment.	Temporary increase in construction-related employment. The increased construction-related employment would have a corresponding short-term beneficial effect on the local economy. Increase would tend to be focused in lower specialization sector.	Temporary increase in construction-related employment. The increased construction-related employment would have a corresponding short-term beneficial effect on the local economy. Increase would tend to be focused in lower specialization sector.	Same as Alternative 2B/d.	Same as Alternative 2B/d.
Housing Supply and Business	No effect on housing supply or businesses.	Implementation of Alternative 2A/d would not require removal of residences or displacement of businesses.	Same as Alternative 2A/d	Same as Alternative 2A/d	Same as Alternative 2A/d
Local Government Finance	No direct impacts on local government	Non-Federal sponsor's initial investment of	Non-Federal sponsor's initial investment	Non-Federal sponsor's initial investment	Non-Federal sponsor's initial investment of

Table 6-11 System of Accounts					
Criteria	**No Action Plan**	**Alternative 2A/d**	**Alternative 2B/d**	**Alternative 4/d**	**Alternative 5**
	finance.	$13.4 for construction and $63,000 for maintenance annually.	of $31M for construction and $79,000for maintenance annually.	of $47.5M for construction and $89,000 for maintenance annually.	$45.5M for construction and $128,000 maintenance annually.
Growth Inducing Impacts	Growth within the study area will not be "induced" by a lack of project implementation.	Any potential growth in this area would be limited by market factors that are unrelated to elements of the proposed action.	Same as Alternative 2A/d	Same as Alternative 2A/d	Same as Alternative 2A/d
Other Social Effects Account					
Public Health and Safety	Safety threats associated with flood hazards would continue to exist for properties within the floodplain.	Reduced flood losses for existing properties within the floodplain.	Alternative has been designed to a FEMA certifiable level of protection.	Same as Alternative 2B/d.	Reduced flood losses for existing properties within the floodplain.
Recreation	Recreational facilities and access expected to remain the same.	Informal public access to the creek disrupted during construction; proposed maintenance roads would facilitate local plans for trails.	Same as Alternative 2A/d	Same as Alternative 2A/d	Informal public access to the creek disrupted during construction; proposed levees and maintenance roads would facilitate local plans for trails.
Transportation	Traffic is expected to remain the same or increase with continuing development.	Construction activities would contribute to an overall increase in traffic volumes on the roadway network on a localized and temporary basis.	Same as Alternative 2A/d.	Same as Alternative 2A/d.	Contribute to an overall increase in traffic volumes on the roadway network on a localized and temporary basis.

6.2.11 Risk-Based Analysis

Risk-based analysis is an approach to evaluation and decision making that explicitly and analytically incorporates considerations of risk and uncertainty in water resource planning. Values such as discharges, flood damages, and the parameters that determine these values are not known with absolute certainty. These parameters are better described by a probability distribution to account for the range of possible values. In the Berryessa Creek study, uncertainties in hydrology, hydraulics, and economics were all incorporated in determining both the probability and magnitude of the flood risk. Parameters that determine probable discharges, stages and damages for varying flood events were given probability distributions and standard errors to describe uncertainty in each value. Details of the uncertainties used in each relationship can be found in Appendix C, Economics.

Risk-based analysis provides results in terms of uncertainty and probability distribution. The computer model used for this analysis was the HEC-FDA program which uses Monte Carlo simulation to integrate the uncertainties in hydrology, hydraulics, and economics to determine expected annual damages and project performance. Detailed description can be found in Appendix C, Economics, with a graphical representation found in Figure 2 of the appendix.

Table 6-12 describes the risk-based results in terms of project performance, residual risk, and project accomplishment in terms of reduction in risk.

In addition to the monetary losses, flooding from Berryessa Creek could have other damage impacts and place many public services at risk, and if reduced would provide additional non-monetary benefit. Emergency costs (about 1 percent of total damages) evaluated in this study were limited to evacuation, relocation, and temporary assistance based on examples of similar flood risks found on other flood risk management studies in northern California. Administrative costs and increased public services such as police and fire were not included in these emergency cost estimates primarily due to lack of available data regarding any comparable historical flooding within the Bay Area. Nationwide, where depth of flooding and duration of event were much greater, some studies have estimated total emergency costs (including temporary relocation, evacuation, public administration, additional emergency healthcare, and increased labor) as high as 15 percent of the total without-project damages. While the emergency costs listed for Berryessa do not capture the total potential loss, these non-quantified losses are an incrementally-small portion of the overall losses and would not change the feasibility or formulation of any of the alternatives.

Potential traffic delays and temporary interruption in public services were also not quantified. Interstate 680 runs through the study area but would not be closed from flooding along Berryessa Creek. Minor roads within the floodplain may be closed for short durations due to flooding, but alternate routes would not add significant time loss or additional resource consumption to the NED account and would not change the feasibility or formulation of any of the alternatives.

Table 6-12 Project Accomplishments and Residual Flood Risk					
	No Action	**2A/d**	**2B/d**	**4/d**	**5**
Equivalent Annual Damages (in $1,000s, October 2011 Prices)					
Without-Project Damages	14,360	11,824	11,824	11,824	14,360
With-Project Residual Damage	14,360	887	0	0	773
Percent Reduction in Damage	0%	92%	100%	100%	95%%
Annual Exceedance Probability					
Without-Project	0.2461	.0696	.0696	.0696	.0696
With-Project Residual Risk	0.2461	.0089	.0000	.0000	.0062
Percent Reduction Flood Risk	0%	87%	100%	100%	91%
1 in X Chance of Flooding in any Year					
Without-Project	4	14	14	14	14
With-Project Residual Risk	4	112	NC	NC	161
Long-Term Risk – Chance of 1 or More Floods over 30 Years					
Without-Project	100%	84%	84%	84%	84%
With-Project Residual Risk	100%	20%	0%	0%	14%
Percent Reduction Flood Risk	0%	76%	100%	100%	83%
Conditional Non-Exceedance – Chance of No Damage from the 1 Percent Event					
Without Project	0%	22%	22%	22%	22%
With Project Residual Risk	0%	73%	100%	100%	70%
Statistics represent area of greatest risk. Other damage areas may have slightly different statistics. (See Appendix C for breakdown by damage area.)					

The area could suffer from significant business losses that could be included as RED damages in the analysis. However, most of these income losses could not be included in the NED analysis and therefore would not change the determination of the NED Plan, RED benefits were not explicitly quantified for this document.

Other non-monetary risks could also occur from a flood event but are not included in the NED evaluation. General reductions in risks to health, safety, and public welfare are typically associated with flood conditions and are further reasons why flood risk management serves the Federal interest and the public good. Within the Berryessa Creek floodplain, there are several elementary schools, two fire stations, a hospital, several medical clinics, police station, and Milpitas City Hall that could lose vital public services due to flooding of at least 1 foot above the first floor.

6.2.12 Fulfillment of Objectives

Early in the planning stages, objectives were identified to monitor the development of various social and environmental elements of alternatives. Implementation of the Recommended Plan is expected to achieve the following benefits, which are consistent with the study objectives. Table 6-13, at the end of this section, presents a comparison of the likely future attainment of project objectives among the alternatives considered in detail.

6.2.12.1 Flood Risk Management

Currently, Berryessa Creek poses the threat of causing millions of dollars in flood damage to thousands of homes and businesses within the cities of San Jose and Milpitas. Flooding within the watershed and vicinity has occurred often during the past decades. The primary objectives of the alternative plans are to control periodic flooding, preferably provide protection from the 0.01 exceedance probability flood event, and to avoid and/or minimize associated negative impacts and costs.

FEMA Certification

The guidance discussed in Section 3.2.3 under "Planning Criteria and Objectives" requires that the Berryessa Creek Element be formulated, selected, and constructed with a conveyance capacity corresponding to a 95-percent confidence level in order to qualify for levee certification under the NFIP program. This is based on (1) project outputs being determined with a risk-based analysis per current Corps of Engineers guidelines for economic analysis, and (2) the 95-percent confidence level (risk-based) for protection from the 0.01 exceedance probability flood event being less than the FEMA levee criteria (freeboard requirement of 3 feet). The alternatives in the current analysis generally follow typical project performance categories: for example, the 2 percent (previously called the 50-year event), 1 percent (100-year event), and 0.2 percent (500-year event) frequency levels. The discharges corresponding to these frequencies in the Corps' risk-based analysis are associated with a 50-percent (median) level of confidence. However, the guidance for FEMA levee certification requires a 95-percent level of confidence, as mentioned above. Only Alternatives 2B/d and 4/d have been designed to be NFIP-certifiable.

(Additionally, design and construction of the levee system leading to NFIP certification requires that a geotechnical and structural evaluation take place to determine if the levee meets Corps design, construction, operation, and maintenance standards. Data including the original design, surveys of levee top profile, levee cross-sections, embankment stability, underseepage, through seepage, and erosion protection is examined to determine "the water elevation at which the levee is not likely to fail.")

6.2.12.2 Fish and Wildlife Habitat

The alternative plans were formulated to avoid and minimize adverse effects to riparian and aquatic habitat. Where justified and feasible, the alternative plans were formulated to provide a more environmentally-sustainable channel design than currently exists. Under Alternative 5, the existing moderate quality habitat above Old Piedmont Road and in the greenbelt area would be protected to the maximum extent practicable. Any adverse effects would be mitigated by revegetation in the floodplain and riparian zone of the greenbelt.

6.2.12.3 Local Planning Criteria

- Flood Protection

As previously discussed, the primary objectives of the alternative plans are to control periodic flooding, to provide protection from the 0.01 exceedance probability flood event, and to avoid and/or minimize associated negative impacts and costs.

- Ecology

Alternative plans were designed to be environmentally-sustainable and to take advantage of opportunities for incidental restoration. This objective is mostly satisfied by Alternative 4/d that include terraces within the channel downstream of I-680 upon which vegetative plantings may take place, dependent on the further selection of vegetation for the benches and the upper bank. All alternatives, however, would have ecological improvements in this downstream area due to increased grassy vegetation cover on the banks of the channel.

- Geomorphology/Stable Channel

All alternative plans were formulated to provide stable bed and banks to reduce erosion and deposition. All of the alternatives consist of engineered slopes that include slope and toe protection. This would help limit future erosion and the associated sediment load.

- Maintenance

All alternatives seek to minimize the long-term obligation of operation and maintenance costs by protecting the channel banks from erosion, protecting the channel bed from deposition, and reducing the amount of sediment inflow into the project reach.

- Watershed Context

The manner in which flood risk management is being achieved is appropriate to the watershed and location of potential opportunities for alternatives. The downstream limits of the project alternatives is just upstream of the proposed Lower Berryessa Creek Project, a project of SCVWD that is currently designed to provide protection from the 0.01 exceedance probability flood event. Alternative plans were formulated to achieve mutually beneficial goals of the proposed Lower Berryessa Creek Project.

- Water Quality and Quantity

The Corps and SCVWD have coordinated with the San Francisco Bay Regional Water Quality Control Board, California Department of Fish and Game, and the U.S. Environmental Protection Agency (Region 9), regarding water quality, stream morphology, sediment production, and sediment transport in Berryessa Creek. Agency recommendations have been incorporated into the design of project features.

As previously mentioned, all of the alternatives consist of engineered slopes that include slope and toe protection, which help limit future erosion and the associated sediment load; thus, improving water quality.

- Local Partner Agencies

Throughout the history of the authorized project, the Corps and SCVWD have coordinated planning activities with other Federal, State, and local regulatory and planning agencies. In the 1980s, coordination with these agencies led to development of the authorized project. This coordination would continue through the reevaluation phase, leading to the design and construction of the authorized project as modified per the general reevaluation phase. The Corps

and Water District plan to engage these agencies throughout the development and refinement of a range of alternatives for public consideration that would meet the objectives of the project.

- Community Benefits

All of the alternatives help meet this objective by improving the safety and health of citizens that would otherwise be subject to flooding and associated health risks. Alternatives also increase local community values to the extent that habitat remains or increases in vitality throughout the project reach. This would occur to a greater extent with Alternative 4/d, but is also true for Alternative 2B/d. Finally, community benefits are also increased by incorporation of community-based objectives and ideas.

- Life Cycle Costs

The alternatives satisfy this objective for viewing project costs over the long-term by considering both capital and operation/maintenance costs. The analysis of alternatives that is performed considers the net present value of first costs plus annual costs associated with the project to arrive at an annual cost that reflects the true life-cycle costs of the project. In addition, the alternatives include the opportunity for Federal cost-sharing to the project that helps reduce local funding investment requirements.

Table 6-13 Fulfillment of Objectives for Project Modification

Objective	No Action	Alt 2A	Alt 2B/d	Alt 4/d	Alt 5
Specific Planning Objectives					
Reduce flood damage from Berryessa Creek to upstream of Calaveras Boulevard	0	2	3	3	1
Provide protection from the 1% (0.01) flood event	0	2	3	3	1
Use environmentally sustainable design in addressing the flood damage reduction purpose	0	2	2	3	1
Other Planning Considerations					
Use the SCVWD's NFP objectives	0	1	3	3	1
Provide opportunities for local agency to incorporate recreational features	0	1	1	1	1
Reduce maintenance requirements	0	1	1	3	1
Improve water quality by reducing sedimentation within the creek	0	2	2	3	2
Cooperate with the mutually beneficial goals of related plans, projects, and agencies	0	3	3	3	1
Fully coordinate with other Federal, State, local agencies, and stakeholders	0	3	3	3	2
Legend: 3 = high; 2 = moderate; 1 = low; 0 = does not meet objective					

6.3 VALUE ENGINEERING

In April 2005, the Value Engineering Team (representatives from the Corps and SCVWD) performed a Value Engineering Study on the Berryessa Creek Element. The team executed the following:

- Identified, evaluated, and classified project features and functions
- Determined and evaluated values to each function
- Developed a FAST Diagram based on the classification and evaluation of each function
- Proposed remedial alternatives for each function
- Evaluated the plausibility of each proposal and selected the most viable proposals for submittal
- Provided documentation for alternatives on original design and VE proposals, costs comparison, savings, and justification for the selected proposal

The Value Engineering Team identified 15 proposals/alternatives. Of these, five were carried forward for further analysis and/or incorporation into the alternative plans. These proposals are listed below, followed by indented line items on how these proposals would be incorporated.

(1) Investigate sediment storage in the project and upstream of the project (C-03): This proposal recommends that after computing new channel capacities based on setbacks, laybacks, raised levees, and excavations, determine what increased sediment volumes or management strategies could be implemented in the project. Conservation easements upstream may allow the local sponsor to significantly reduce sediment coming into the project.

- Accurate modeling of sediment transport will require more detailed field data and design information than is currently available. Sediment transport modeling will therefore be conducted during pre-construction engineering and design along with other detailed project design. Based on the information currently available, the project alternatives include modifications to the existing sediment basin downstream from Piedmont Road.

- Inspection of the upland watershed and information contained in past studies indicate that the majority of coarse sediment is generated in the lower steep canyon reaches of Berryessa Creek as a result of mass wasting and erosion of the steep hillsides immediately adjacent to the creek. Because of the scale of these sources and the fact that they are a result of natural process and conditions, including the presence of active fault zones and unstable geologic formation, controlling the coarse sediment supply at its source is not practical. Also, a large sediment basin upstream of Old Piedmont Road, for example, that would efficiently trap a majority of course sediment would likely cause downstream degradation, and is not compatible with the alluvial bed through the greenbelt reach. The conclusion of the sediment studies to-date is that installation of a debris fence or other permeable structure just upstream of the Old Piedmont Road culvert

would help prevent major debris flows containing large boulders from clogging the culvert.

- Upstream conservation easements are addressed in Item (4), below.

(2) Floodwalls/levees (C-06): This proposal recommends substituting floodwalls for levees, particularly in the greenbelt reach where mitigation is required for loss of riparian habitat in the levee footprint.

- Replacing the right-bank levee in the greenbelt reach, primarily along the 1,500-foot reach adjacent to Parkhaven Drive, was considered following this value engineering comment. A rough cost estimate for the floodwall that could replace this levee resulted in an additional cost of approximately $250,000, and would save approximately 0.3 acres of levee footprint. More detailed information regarding the impacts and costs of a floodwall in lieu of a levee are currently being developed. The decision on whether to include a floodwall in the Recommended Plan will be based on weighing the added cost against the impacts avoided and the cost of mitigation saved, as well as the aesthetic effect of a concrete structure rather than the earthen levee currently designed.

(3) Water detention (C-08): This proposal recommends constructing a detention reservoir in the City of San Jose property next to the Elementary School adjacent to the Greenbelt reach of the project. This property is approximately 6 acres in size, and would be excavated and sloped to drain toward the creek. Floodflows would be diverted into the upstream end of the detention basin and stored temporarily, and then would be released through a gated culvert at the downstream end of the detention basin. Levees would be constructed along the perimeter of this property to the height of the adjacent channel levee. The City of San Jose could construct soccer fields or other recreational fields in the detention basin that did not obstruct flows.

- During the refinement of measures, as discussed above, detention basins were eliminated due to their inability to reduce peak flooding in available locations due to limited basin volume. There were originally three potential sites: the elementary school and two additional sites that were vacant at the time. The study team decided they did not want to pursue detention basins on any of these sites during plan formulation, partially because of alternate plans for the open parcels, and partially due to the volume required to achieve a reduction in peak flow. For example, because of the additional tributaries and other inflows joining Berryessa Creek further downstream, a basin at the elementary school site would need to be prohibitively large in order to reduce the discharges in the downstream reach. It would need to be at least 8 feet deep even with a minimum recommended sideslope of 10:1.

(4) Vegetate the watershed (C-24): This proposal recommends the planting of native plants within the project watershed. A conservation easement in the same area would preclude the loss of vegetation by limiting or restricting grazing.

- A conservation easement and revegetation program could be pursued within the watershed. It would have to be coordinated with appropriate agencies, landowners, and

the SCVWD. For the purposes of the GRR, a conservation easement will be recommended for implementation by watershed stakeholders, but not assumed to be part of the without- or with-project conditions. Relative impacts of limited or restricted upstream grazing, therefore, would not be assessed within the document.

(5) Eliminate bridges (C-26): This proposal recommends purchasing the existing UPRR bridges and UPRR spur right-of-way. These bridges would be removed and not replaced. The UPRR spur right-of-way would be used to increase the channel cross-section, or for recreational or restoration purposes.

- Coordination between the Valley Transportation Authority (VTA) and the SCVWD is taking place to identify the ability and desirability of purchasing the UPRR bridges and spur right-of-way. The SCVWD will continue coordination with the VTA, but the GRR will assume that the bridges will need to be replaced unless VTA determines that replacement of the bridges is not necessary.

6.4 IDENTIFICATION AND RATIONALE FOR SELECTION OF RECOMMENDED PLAN

As shown in Table 6-7 above, the analysis indicates that the NED Plan is Alternative 2A/d with annual net benefits of $9.68 million and a benefit-to-cost ratio of 8.6 to 1.

US Army Corps
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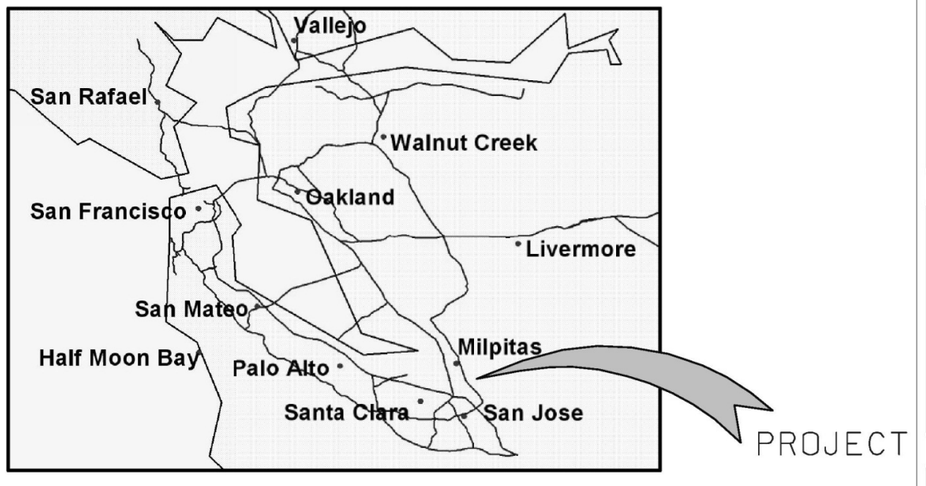
Sacramento District

BERRYESSA CREEK PROJECT
GENERAL REEVALUATION STUDY
ALTERNATIVES FORMULATION

SANTA CLARA COUNTY
CALIFORNIA

PLAN AND PROFILE VIEWS

FY_12



VICINITY MAP

DRAFT DESIGN – FOR PLANNING PURPOSES ONLY

US Army Corps of Engineers
Sacramento District

Date Approved | Description | Symbol

Date: JAN 17, 2012 | Rev. N/A
Designed by: PRELIMINARY | Design file no.: N/A
Drawn by: KP | Spec No.: N/A
Reviewed by: RW | Drawing Code: N/A
Submitted by: | File name: BER PP 2-2X
Date: | Plot date: DEC 22, 2011 | Plot scale: 350/100

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
IN PARTNERSHIP WITH:
SANTA CLARA VALLEY WATER DISTRICT

PREPARED BY:
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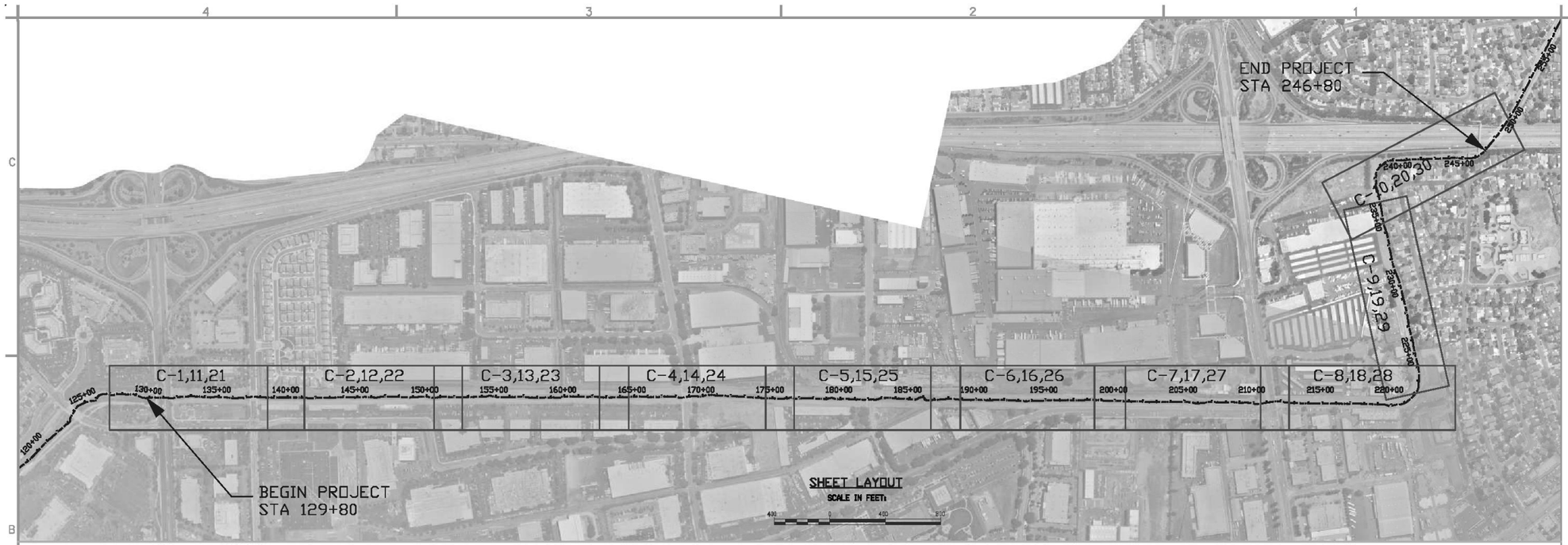
SANTA CLARA COUNTY CALIFORNIA
BERRYESSA CREEK PROJECT
GENERAL REEVALUATION STUDY
ALTERNATIVES FORMULATION
PROJECT ALTERNATIVES
PLAN AND PROFILE VIEW
TITLE SHEET

Sheet reference number:
G1
Sheet 1 of 35



ABBREVIATIONS

ACC	ACCORDING
APPROX	APPROXIMATE
BDY	BOUNDARY
BOB	BASIS OF BEARING
BM	BENCHMARK
CH	CHANNEL
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CY	CUBIC YARD
D/S	DOWNSTREAM
DIA	DIAMETER
EG	EXISTING GROUND
FG	FINISH GRADE
E	EAST, EASTING
EA	EACH
EL	ELEVATION
EXIST	EXISTING
FT	FOOT, FEET
IE	INVERT ELEVATION
INV	INVERT
LF	LINEAR FOOT
MAX	MAXIMUM
MIN	MINIMUM
N	NORTH, NORTHING
NAD	NORTH AMERICAN DATUM
N/A	NOT APPLICABLE
NGVD	NATIONAL GEODETIC VERTICAL DATUM
NTS	NOT TO SCALE
PCL	PRIMARY CONTROL LINE
PROP	PROPOSED
PT	POINT
RCP	REINFORCED CONCRETE PIPE
ROW	RIGHT OF WAY
S	SOUTH
SCVWD	SANTA CLARA VALLEY WATER DISTRICT
SHT	SHEET
SS	SIDE SLOPE
SF	SQUARE FEET
STA	STATION
TOB	TOP OF BANK
TOW	TOP OF WALL
TYP	TYPICAL
U/S	UPSTREAM
UPRR	UNION PACIFIC RAILROAD
USACE	UNITED STATES ARMY CORPS OF ENGINEERS
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL
W	WEST
WSEL	WATER SURFACE ELEVATION

SHEET INDEX

NOTES

1. ALL PROJECT FEATURES SHOWN ARE PRELIMINARY IN NATURE AND ARE TO BE USED FOR PLANNING PURPOSES ONLY.
2. CONTROL LINE FROM HEC-GEORAS STATIONING, USACE 2004.
3. 2' CONTOUR INTERVAL TOPOGRAPHY AND DIGITAL ORTHOPHOTO USACE 2002.
4. PARCEL DATA FROM SCVWD 2009 BOUNDARY SURVEY.
5. ALL MAPPING IS PROJECTED TO NAD 83 STATE PLACE CALIFORNIA ZONE 3. VERTICAL DATUM IS NAVD 88. UNITS ARE SURVEY FEET.
6. WATER SURFACE ELEVATIONS ARE SHOWN FOR BASED ON HEC-RAS MODELING BY TETRA TECH USING UNSTEADY FLOWS WITHOUT UPSTREAM PROJECT IMPROVEMENTS IN PLACE.
7. DESIGN WATER SURFACE ELEVATION PROFILE FOR ALTERNATIVE 2A/d IS THE 0.01 WSEL AT 50% CERTAINTY ASSUMING NO FUTURE UPSTREAM IMPROVEMENTS BY SCVWD.
8. UPPER DESIGN WATER SURFACE ELEVATION PROFILE FOR ALTERNATIVES 2B/d AND 4/d IS THE 0.01 WSEL AT 50% CERTAINTY ASSUMING FUTURE UPSTREA,M IMPROVEMENTS (SCVWD OBJECTIVE). DESIGN FLOODWALL HEIGHTS AND TOP OF BANK ELEVATIONS ARE BASED ON 95% CERTAINTY CRITERIA APPLIED TO THIS WSEL.
9. LOWER DESIGN WATER SURFACE ELEVATION PROFILE FOR ALTERNATIVES 2B/d AND 4/d IS THE 0.01 WSEL AT 50% CERTAINTY ASSUMING NO FUTURE UPSTREAM IMPROVEMENTS BY SCVWD.
10. CROSS SECTIONS ARE SHOWN LOOKING DOWNSTREAM AND ARE NOT TO SCALE.

LEGEND

EXISTING FEATURES (PLAN VIEW)
- 2' CONTOUR
- PARCEL LINE
- STRUCTURE
- WATER/SEWER/STORM UTILITY
- ELEC/TEL/CABLE UTILITY

PROPOSED FEATURES (PLAN VIEW)
- CONTROL LINE
- STRUCTURE
- TOP OF SLOPE
- TOE OF SLOPE
- LIMIT OF CONSTRUCTION
- TEMPORARY CONSTRUCTION EASEMENT
- TEMPORARY STAGING AREA

EXISTING FEATURES (PROFILE VIEW)
- TOP OF BANK
- THALWEG

PROPOSED FEATURES (PROFILE VIEW)
- TOP OF WALL/MAT
- WATER SURFACE ELEVATION
- VEGETATED BENCH
- THALWEG

DRAFT DESIGN – FOR PLANNING PURPOSES ONLY

US Army Corps of Engineers
Sacramento District

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
IN PARTNERSHIP WITH:
SANTA CLARA VALLEY WATER DISTRICT

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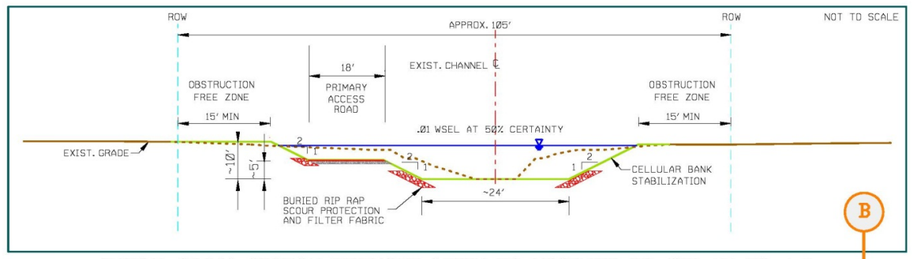
Chief, CIV ENGR BR SEC A

Date: JAN 17, 2012
Rev. N/A
Design file no: N/A
Drawing Code:
File name: BER PP C-XX
Plot date: DEC 22, 2011
Plot scale: 1:50/100

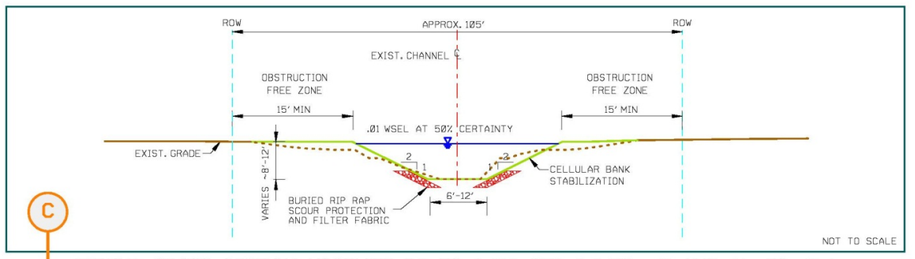
SANTA CLARA COUNTY CALIFORNIA
BERRYESSA CREEK PROJECT
GENERAL REEVALUATION STUDY
ALTERNATIVES FORMULATION

PROJECT ALTERNATIVES
PLAN AND PROFILE VIEW
INDEX, LEGEND, AND ABBREVIATIONS

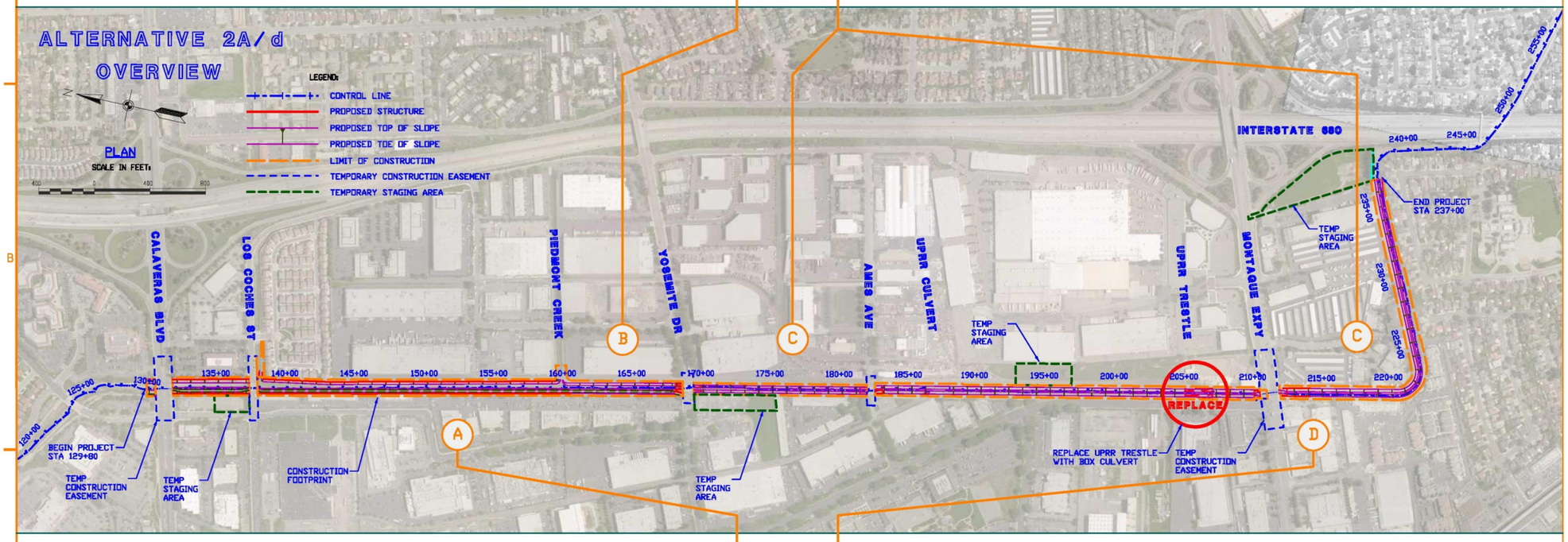
Sheet reference number: G2
Sheet 2 of 35

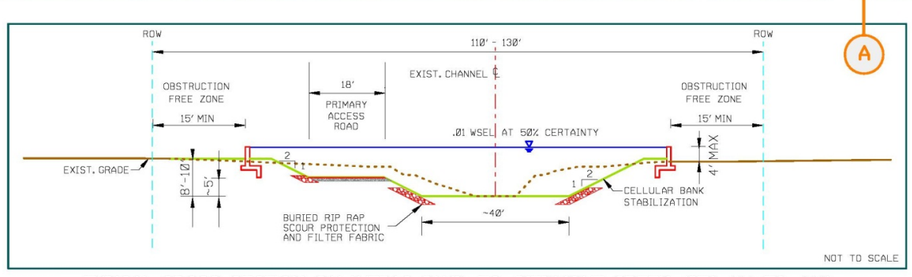


TYPICAL CROSS SECTION, PIEDMONT CREEK TO YOSEMITE DR (STA 160 TO 170)

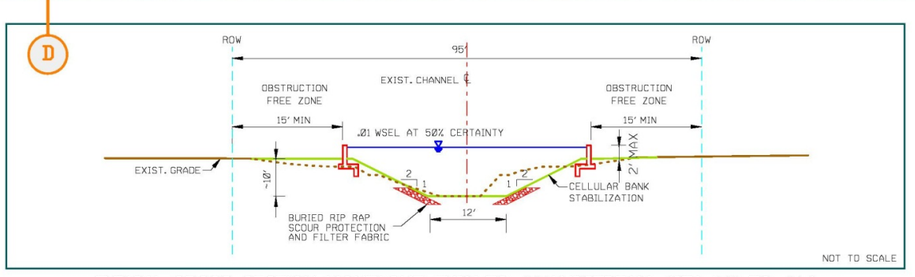


TYPICAL CROSS SECTION YOSEMITE DR TO I-680 (STA 170 TO 212 AND 214 TO 237)





TYPICAL CROSS SECTION, CALAVERAS BLVD TO PIEDMONT CREEK (STA 130 TO 160)



TYPICAL CROSS SECTION, MONTAGUE EXPY TO 200' UPSTREAM (STA 212 TO 214)

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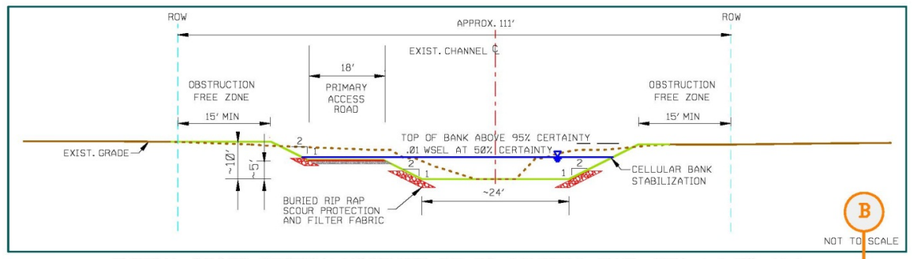
US Army Corps of Engineers
Sacramento District

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
IN PARTNERSHIP WITH
SANTA CLARA VLY WATER DISTRICT

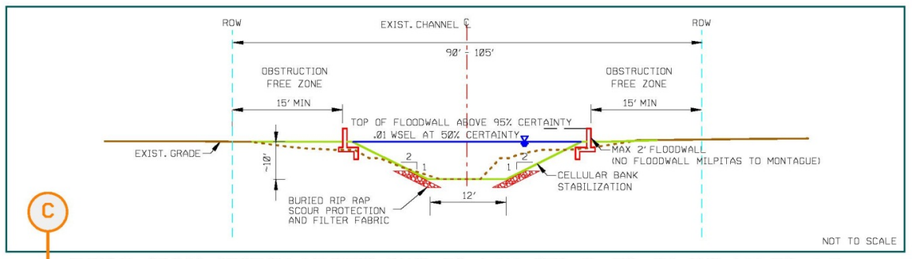
PREPARED BY:
TETRA TECH, INC.
17887 VON KARMAN AVE, STE 500
IRVINE, CA 92614

SANTA CLARA COUNTY CALIFORNIA
BERRYESSA CREEK PROJECT
GENERAL REEVALUATION STUDY
ALTERNATIVES FORMULATION
ALTERNATIVE 2A/d
OVERVIEW EXHIBIT

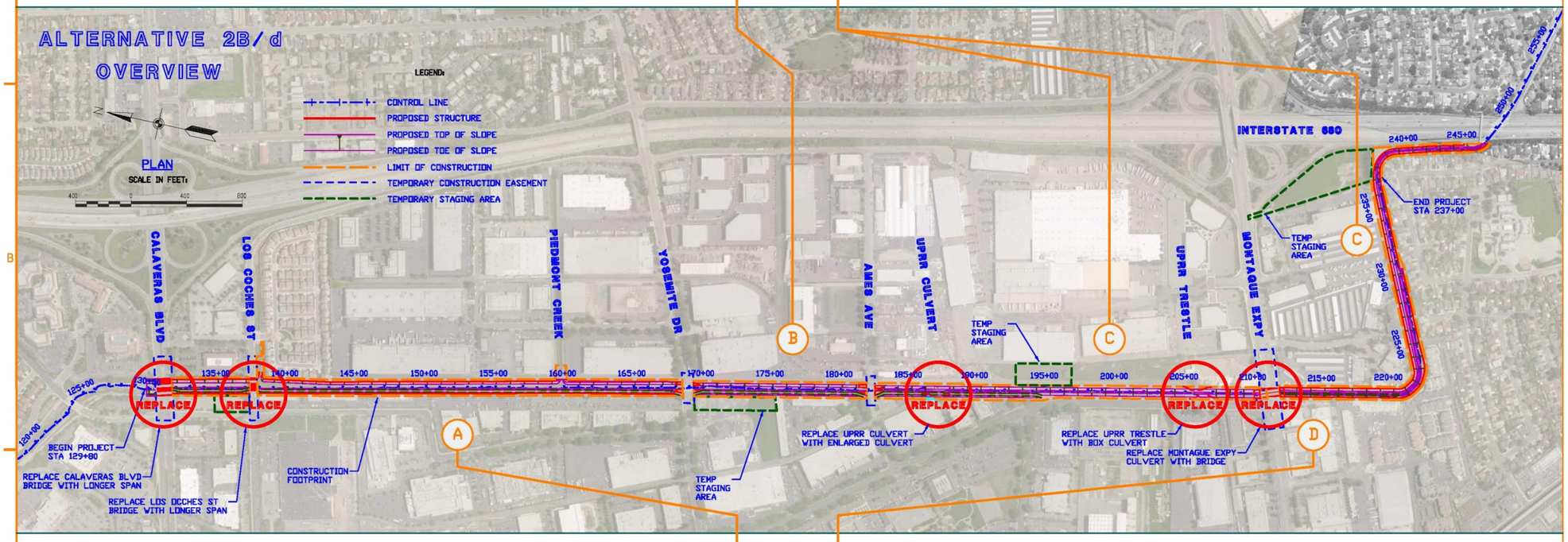
Sheet reference number:
G3
Sheet 3 of 35

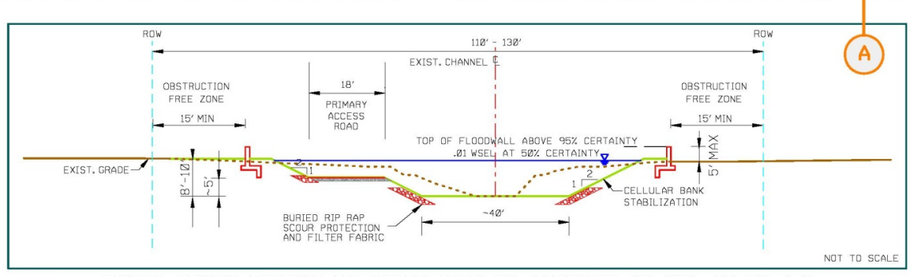


TYPICAL CROSS SECTION, YOSEMITE DR TO MILPITAS BLVD (STA 170 TO 195)



TYPICAL CROSS SECTION MILPITAS BLVD TO I-680 (STA 195 TO 212 AND 230 TO 248)





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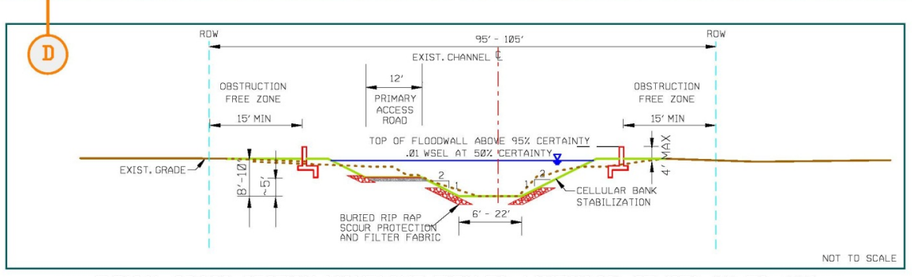

TYPICAL CROSS SECTION, MONTAGUE EXPY TO LAKEWOOD CT (STA 212 TO 230)

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Sacramento District

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TETRA TECH, INC.
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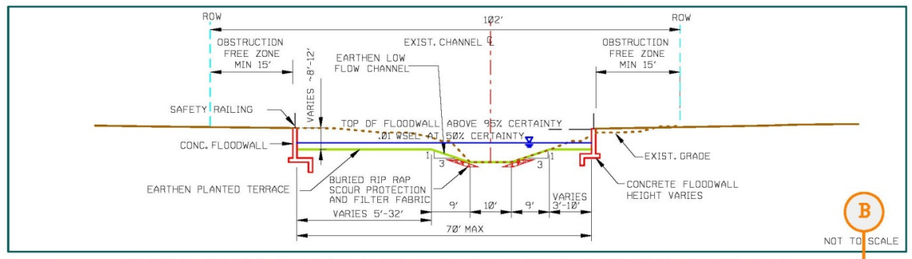
IRVINE, CA 92614

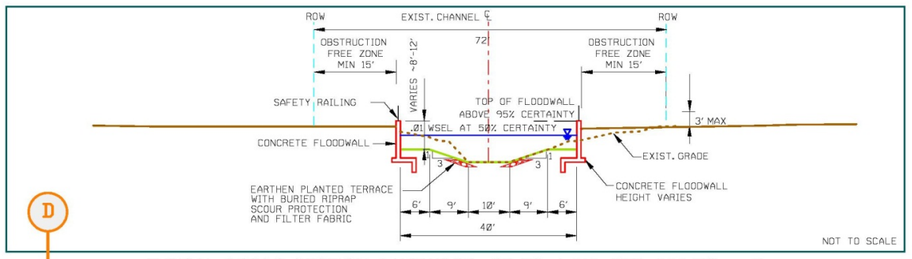
SANTA CLARA COUNTY CALIFORNIA
BERRYESSA CREEK PROJECT
GENERAL REEVALUATION STUDY
ALTERNATIVES FORMULATION

ALTERNATIVE 2B/d
OVERVIEW EXHIBIT

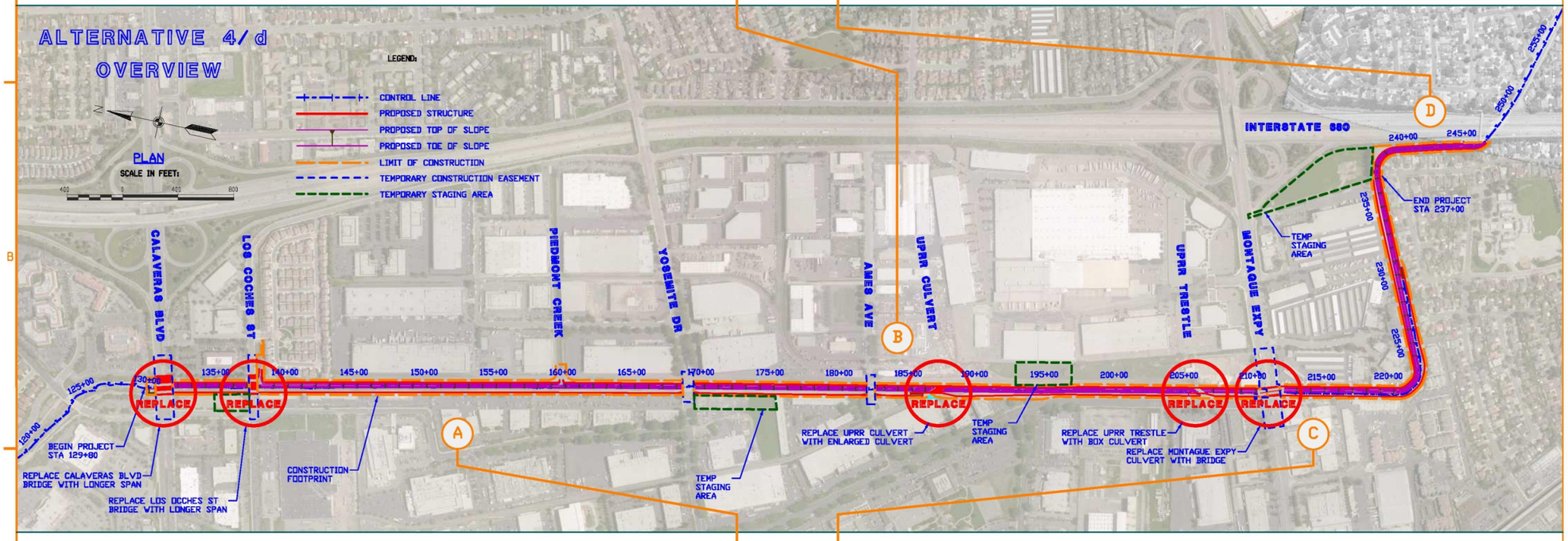
Sheet reference number:
G4
Sheet 4 of 35

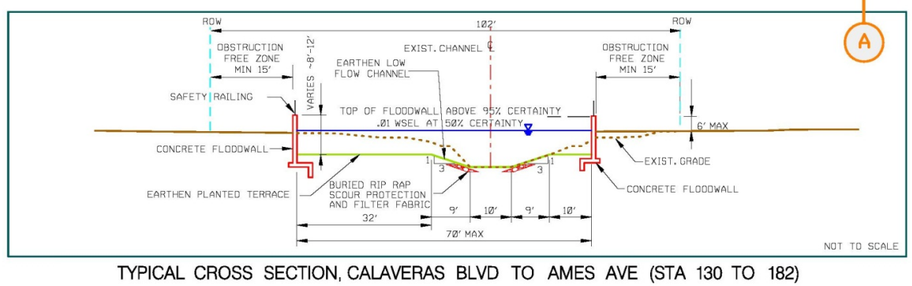


TYPICAL CROSS SECTION, AMES AVE TO MILPITAS BLVD (STA 182 TO 195)

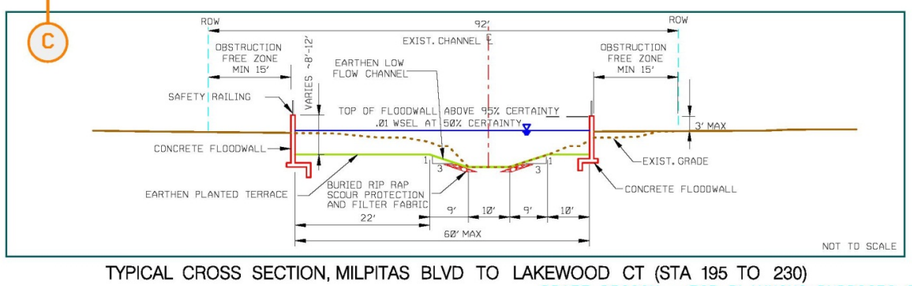


TYPICAL CROSS SECTION LAKEWOOD CT TO I-680 (STA 230 TO 248)





TYPICAL CROSS SECTION, CALAVERAS BLVD TO AMES AVE (STA 130 TO 182)



TYPICAL CROSS SECTION, MILPITAS BLVD TO LAKEWOOD CT (STA 195 TO 230)

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US Army Corps of Engineers
Sacramento District

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
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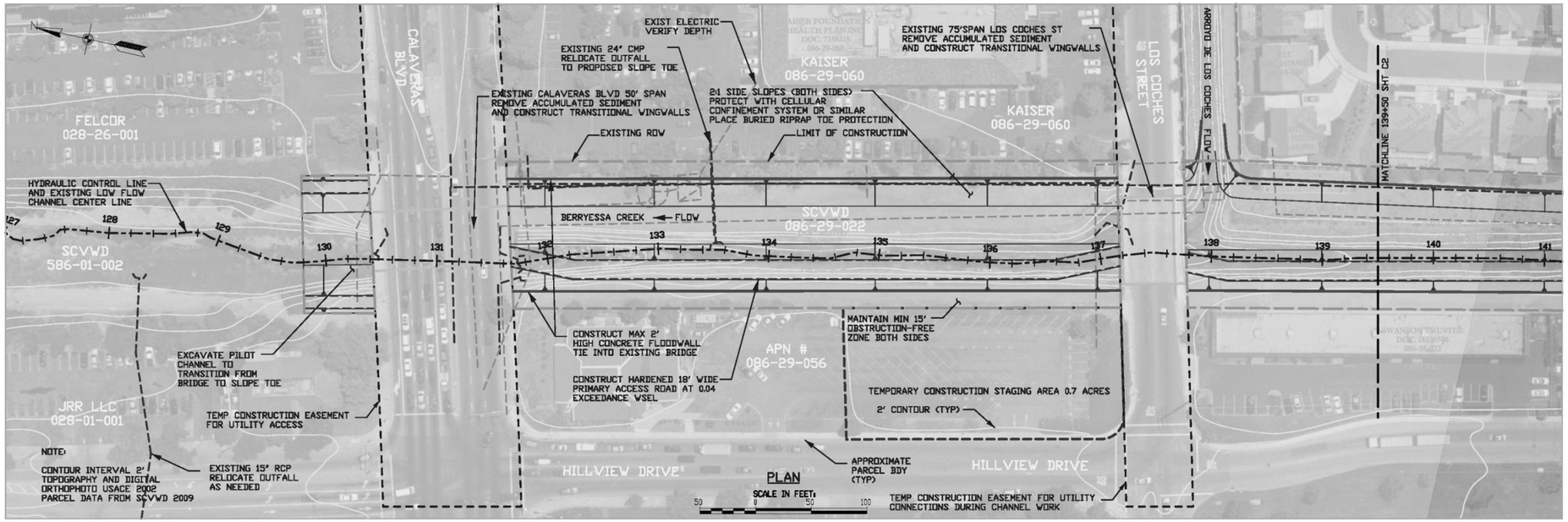
SANTA CLARA VLY WATER DISTRICT

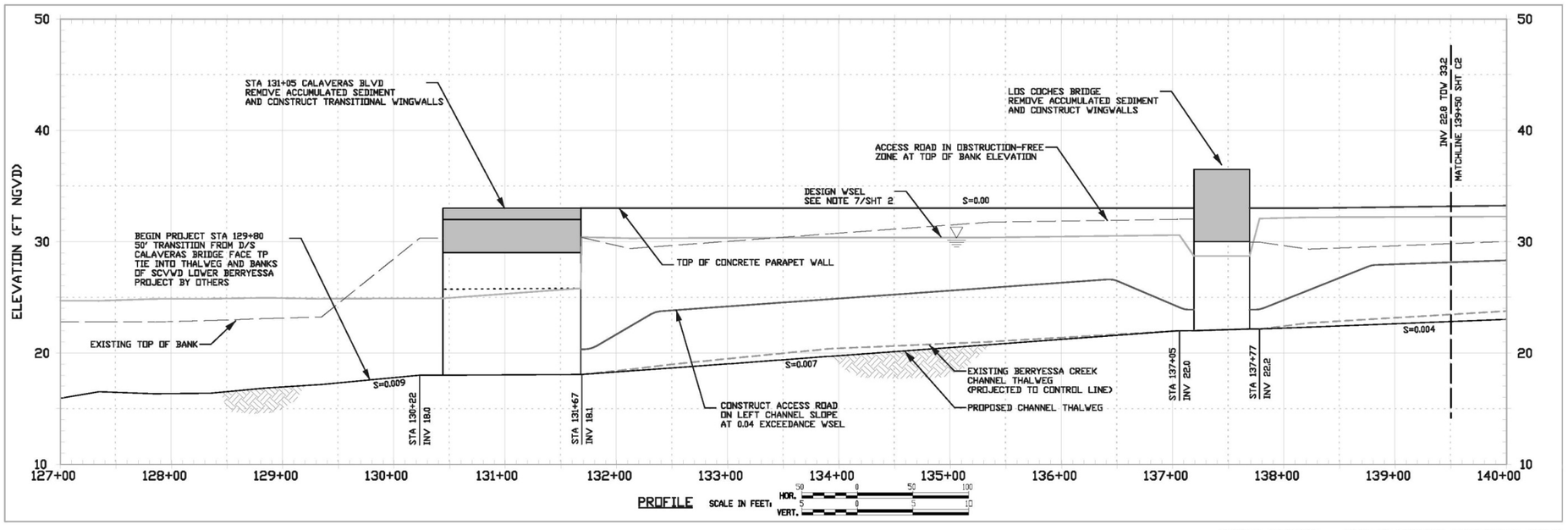
PREPARED BY:
TETRA TECH INC.
17887 VON KARMAN AVE, STE 500
IRVINE, CA 92614

SANTA CLARA COUNTY, CALIFORNIA
BERRYESSA CREEK PROJECT
GENERAL REEVALUATION STUDY
ALTERNATIVES FORMULATION
ALTERNATIVE 4/d
OVERVIEW EXHIBIT

Designed by: PRELIMINARY
Drawn by: KP
Reviewed by: RW
Submitted by:
Date: JAN 11, 2012
Design file not N/A
Span No.: N/A
Drawing Code: N/A
File name: BER PP C-XX
Plot date: DEC 22, 2011
Plot scale: 50'00 SIZE A

Sheet reference number: G5
Sheet 5 of 35





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US Army Corps of Engineers Sacramento District

Designed by: PRELIMINARY | Date: JAN 17, 2012 | Rev. N/A
Drawn by: KP | Spec No.: N/A
Reviewed by: RM | Design file no.: N/A
Submitted by: | Drawing Codes: N/A
CHIEF, CIV BOR RES & PLNG BR | File name: BER PP C-XX | Plot date: DEC 22, 2011 | Plot scale: 50/100

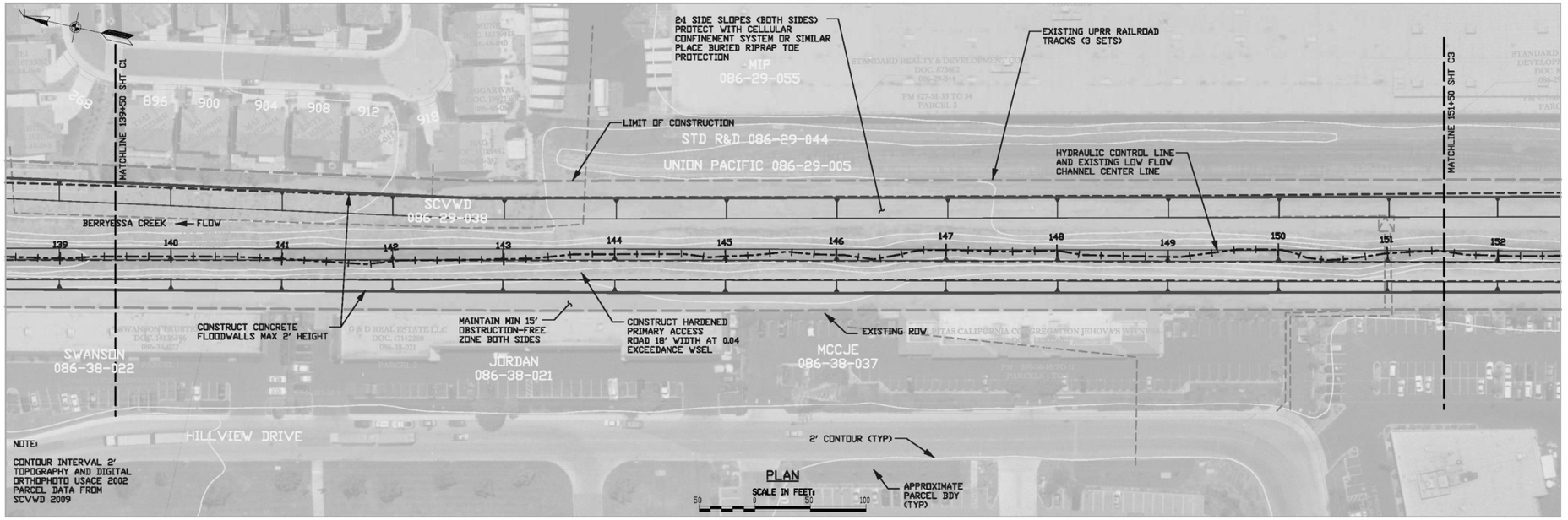
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
IN PARTNERSHIP WITH:
SANTA CLARA VLY WATER DISTRICT

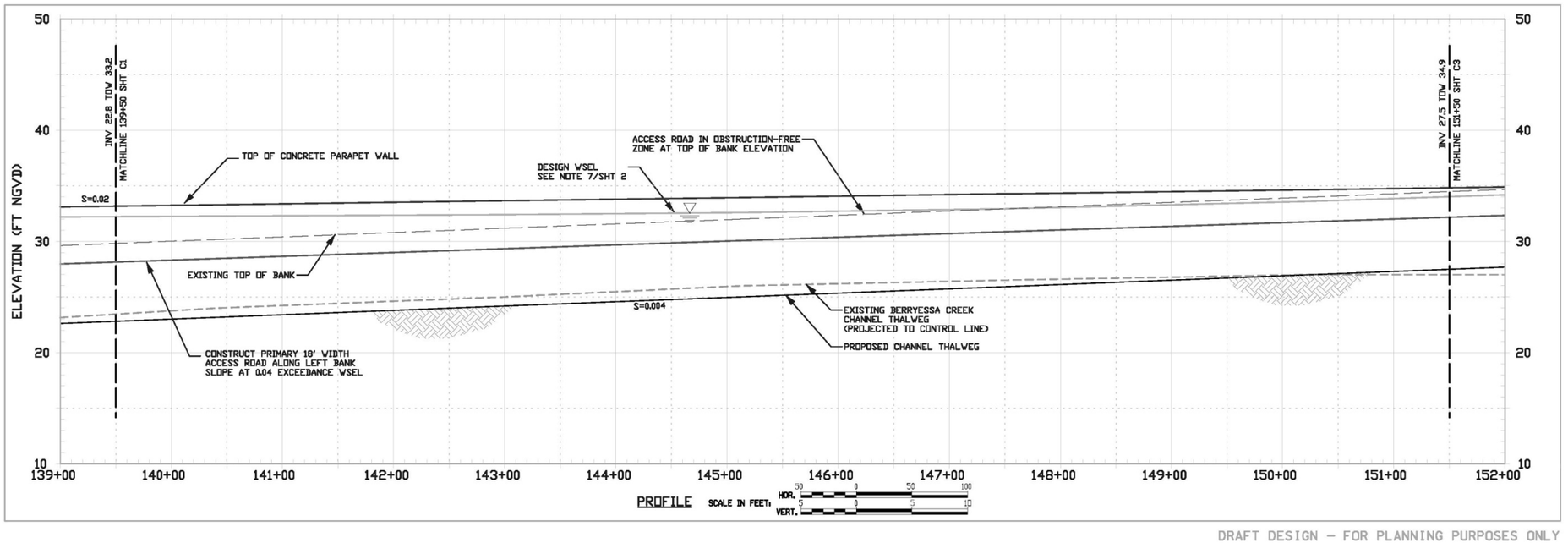
PREPARED BY:
TETRA TECH, INC.
17770 CARTWRIGHT, STE. 500
IRVINE, CA 92614

SANTA CLARA COUNTY CALIFORNIA
BERRYESSA CREEK PROJECT
GENERAL REEVALUATION STUDY
ALTERNATIVES FORMULATION

ALTERNATIVE 2A/d
PLAN AND PROFILE VIEW
STA. 127+00 TO 140+00

Sheet reference number: C1
Sheet 6 of 35





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US Army Corps of Engineers
Sacramento District

Symbol	Description	Date Approved

Designed by: PRELIMINARY
Drawn by: KP
Reviewed by: PM
Submitted by:
CHIEF, CIV BR RES SEC A

Date: JAN 17, 2012
Spec No.: N/A
Drawing Codes: N/A
Rev. N/A
Design file not:
File name: BER PP 2-2X
Plot date: DEC 22, 2011
Plot scale: 50/100

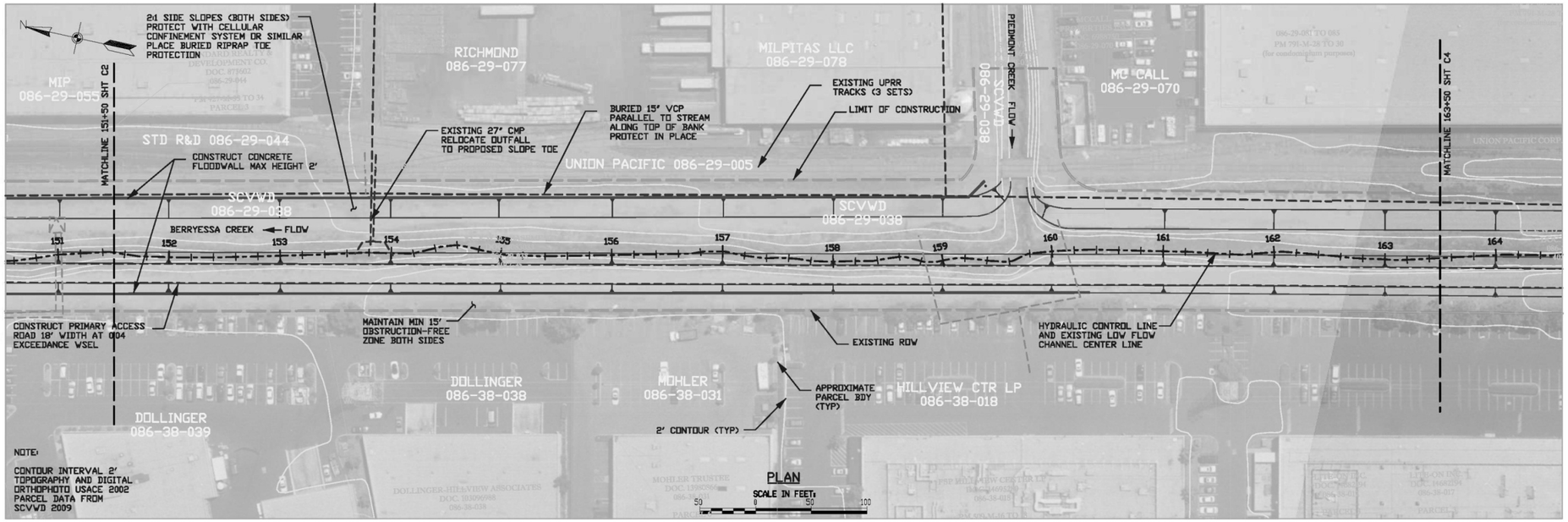
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
IN PARTNERSHIP WITH:
SANTA CLARA VLY WATER DISTRICT

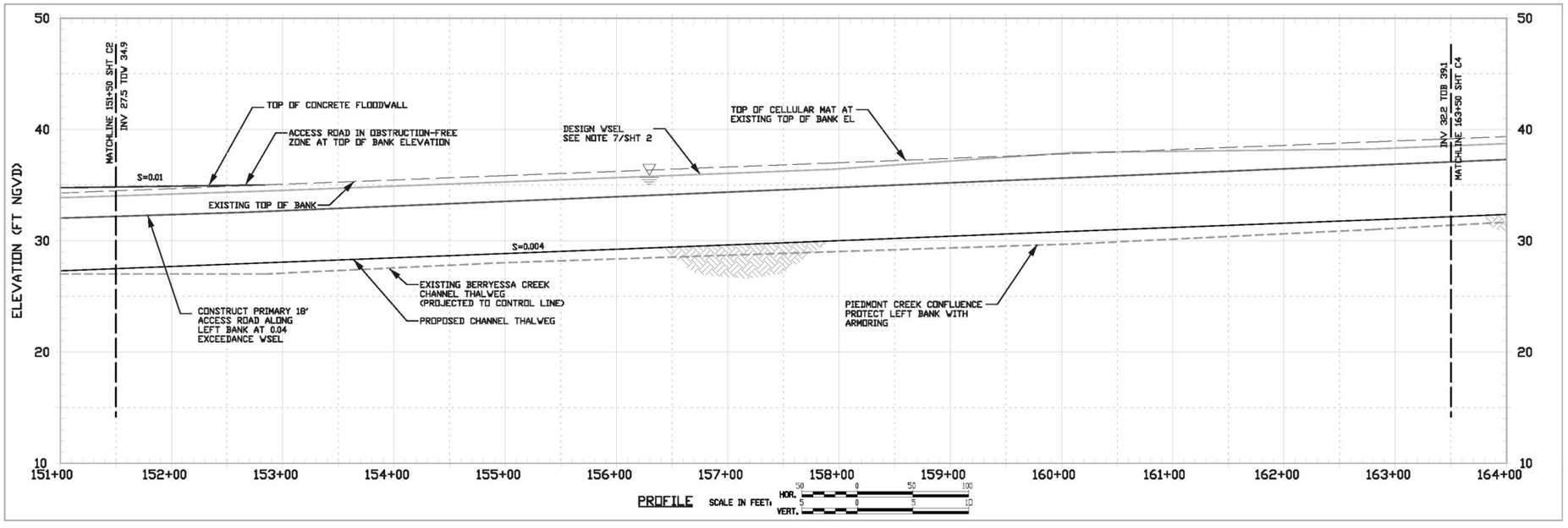
PREPARED BY:
TETRA TECH, INC.
17770 CARTWRIGHT, STE. 500
IRVINE, CA 92614

SANTA CLARA COUNTY CALIFORNIA
BERRYESSA CREEK PROJECT
GENERAL REEVALUATION STUDY
ALTERNATIVES FORMULATION

ALTERNATIVE 2A/d
PLAN AND PROFILE VIEW
STA. 139+00 TO 152+00

Sheet reference number:
C2
Sheet 7 of 35





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US Army Corps of Engineers
Sacramento District

Date Approved | Description | Symbol

Designed by: PRELIMINARY
Drawn by: KP
Reviewed by: RM
Submitted by:
Date: JAN 17, 2012 Rev. N/A
Design file not
Spec No.: N/A
Drawing Code:
File name: BER PP C-XX
Plot date: DEC 22, 2011
Plot scale: 50/100
Data: civil\ngs\sca

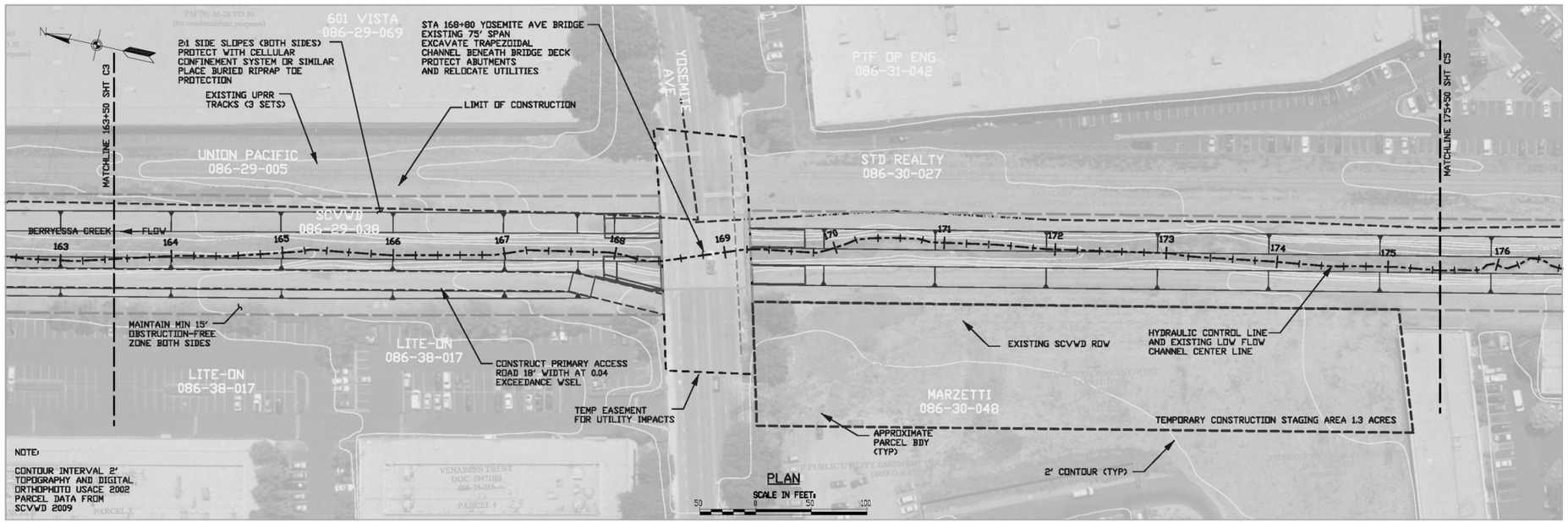
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
IN PARTNERSHIP WITH:
SANTA CLARA VALLEY WATER DISTRICT

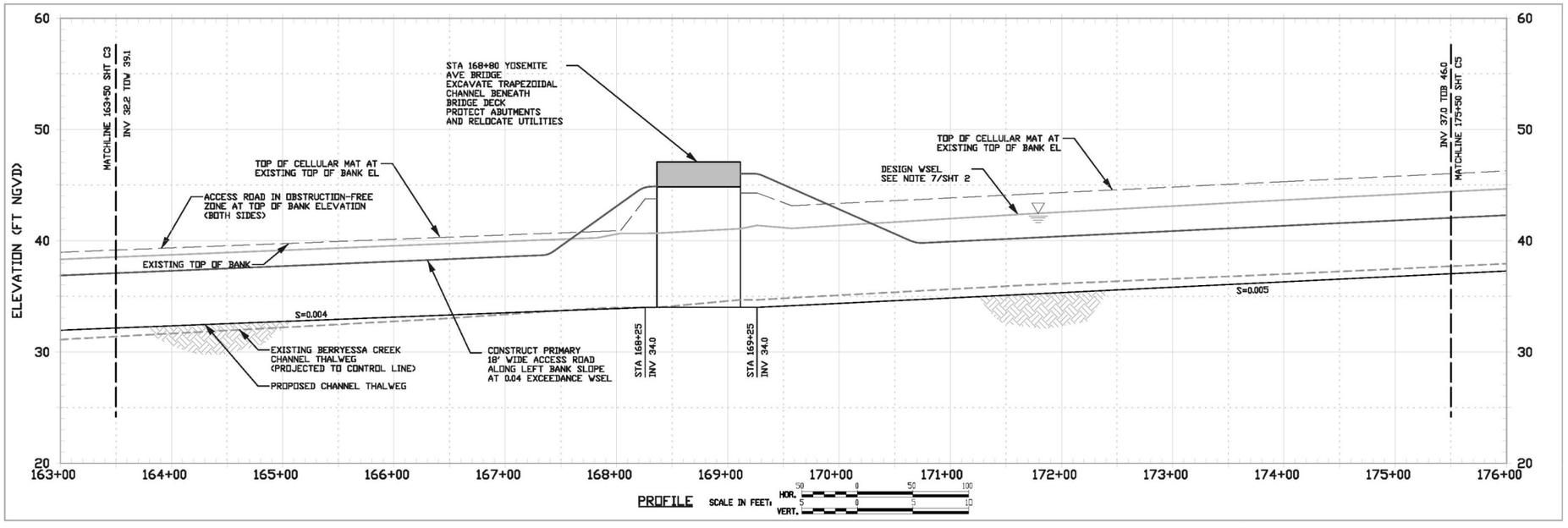
PREPARED BY:
TETRA TECH, INC.
17770 CAPISTRANO, 500
IRVINE, CA 92614

SANTA CLARA COUNTY
CALIFORNIA
BERRYESSA CREEK PROJECT
GENERAL REEVALUATION STUDY
ALTERNATIVES FORMULATION

ALTERNATIVE 2A/d
PLAN AND PROFILE VIEW
STA. 151+00 TO 164+00

Sheet reference number:
C3
Sheet 8 of 35





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US Army Corps of Engineers
Sacramento District

Rev.	Description	Date Approved

Date: JAN 17, 2012 N/A
Design file no.: N/A
Drawing Codes:
File name: BER PP C-XX
Plot date: DEC 22, 2011
Plot scale: 50/100

Designed by: PRELIMINARY
Drawn by: KP
Reviewed by: RW
Submitted by:

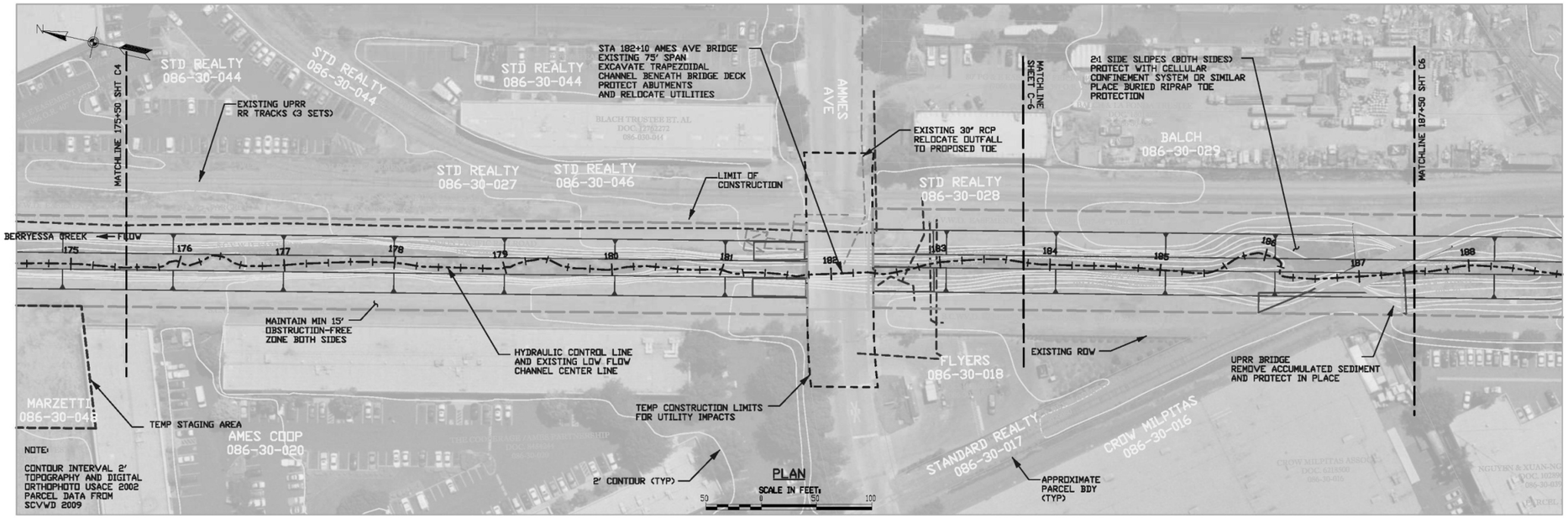
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
IN PARTNERSHIP WITH:
SANTA CLARA VALLEY WATER DISTRICT

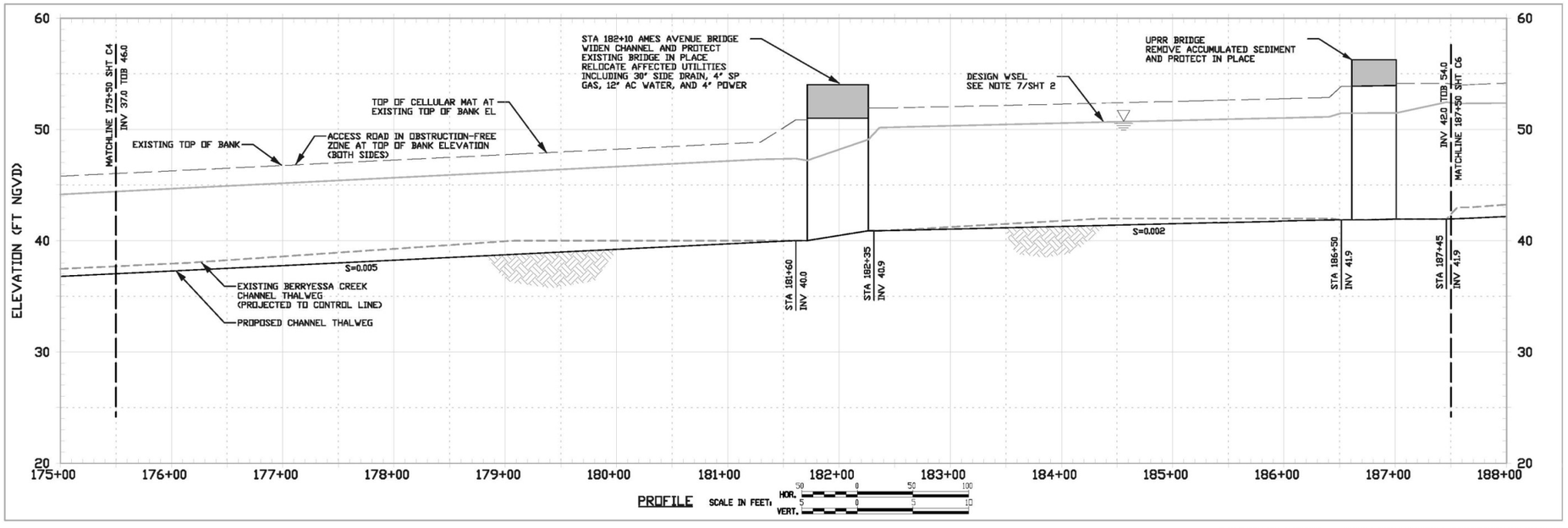
PREPARED BY:
TETRA TECH, INC.
17770 CARTWRIGHT, STE. 500
IRVINE, CA 92614

SANTA CLARA COUNTY CALIFORNIA
BERRYESSA CREEK PROJECT
GENERAL REEVALUATION STUDY
ALTERNATIVES FORMULATION

ALTERNATIVE 2A/d
PLAN AND PROFILE VIEW
STA. 163+00 TO 176+00

Sheet reference number:
C4
Sheet 9 of 35





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US Army Corps of Engineers
Sacramento District

Date Approved | Description | Symbol

Designed by: PRELIMINARY
Drawn by: KP
Reviewed by: RW
Submitted by:
Date: JAN 17, 2012 Rev.
Design file no: N/A
Spec No.: N/A
Drawing Codes:
File name: BER PP C-2X
Plot date: DEC 22, 2011
Plot scale: 50/100
Date: civil_engineering_sig_block

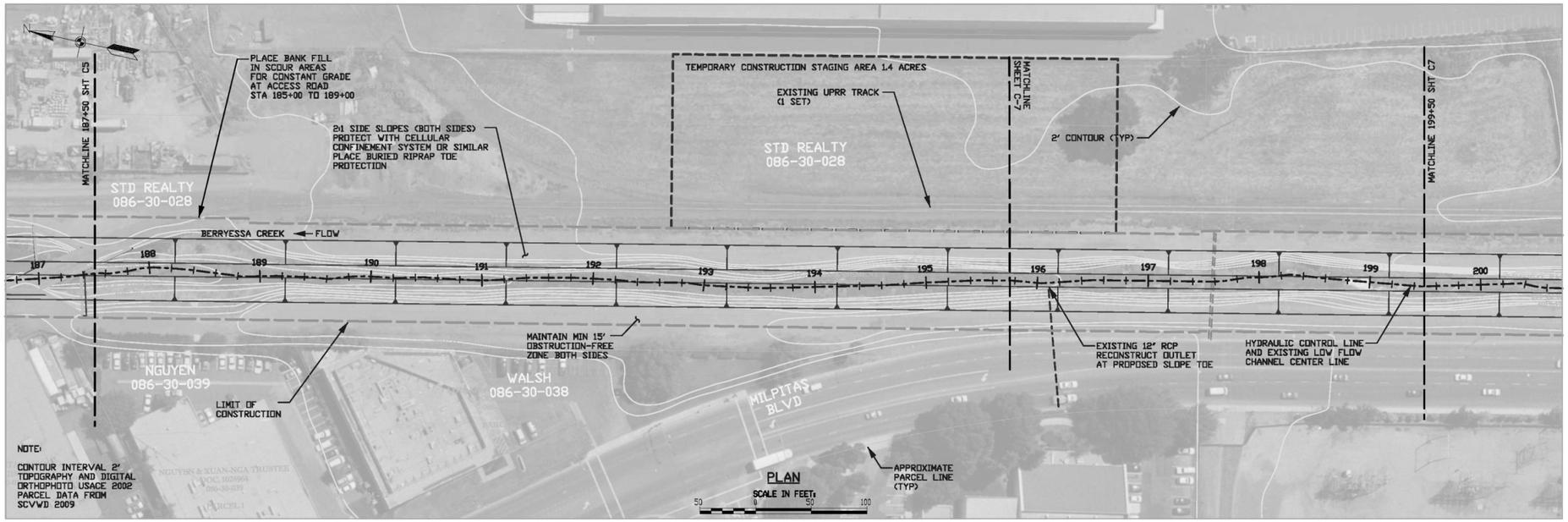
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
IN PARTNERSHIP WITH:
SANTA CLARA VALLEY WATER DISTRICT

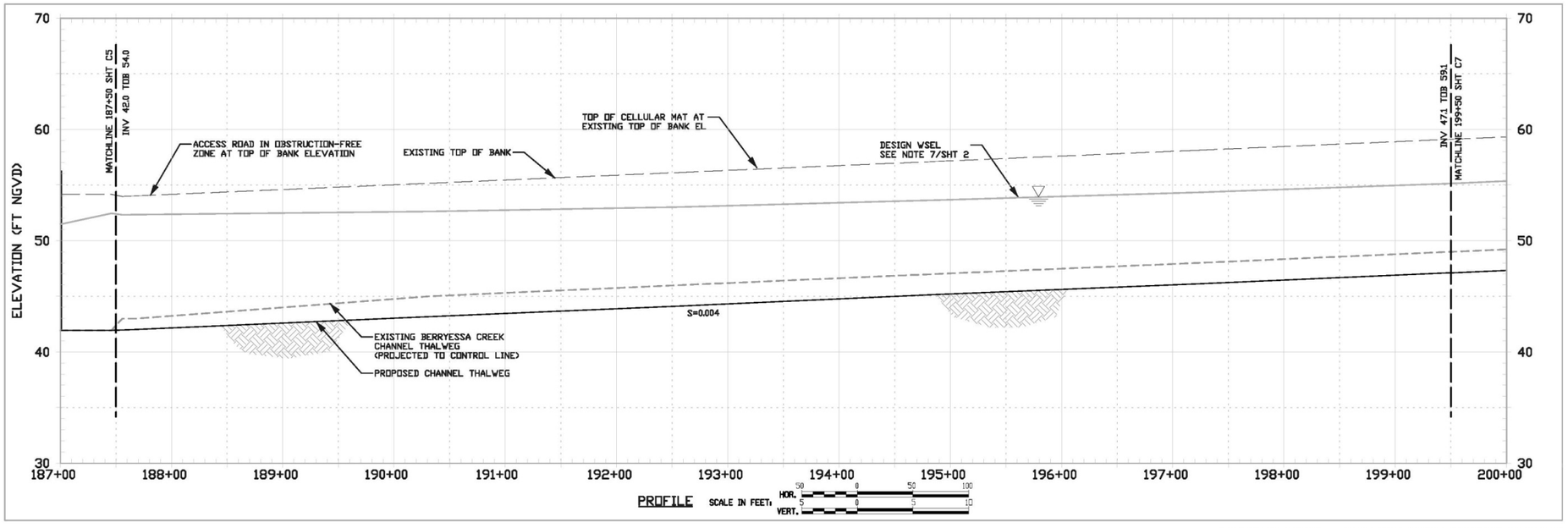
PREPARED BY:
TETRA TECH, INC.
17770 CARTWRIGHT, 500
IRVINE, CA 92614

SANTA CLARA COUNTY
CALIFORNIA
BERRYESSA CREEK PROJECT
GENERAL REEVALUATION STUDY
ALTERNATIVES FORMULATION

ALTERNATIVE 2A/d
PLAN AND PROFILE VIEW
STA. 175+00 TO 188+00

Sheet reference number:
C5
Sheet 10 of 35





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Sacramento District

Rev.	Description	Date Approved

Date: JAN 17, 2012 N/A
Spec No.: N/A
Design file no.: N/A
Drawing Codes: N/A
File name: BER PP C-XX
Plot date: DEC 22, 2011
Plot scale: 50/100

Designed by: PRELIMINARY
Drawn by: KP
Reviewed by: RM
Submitted by:

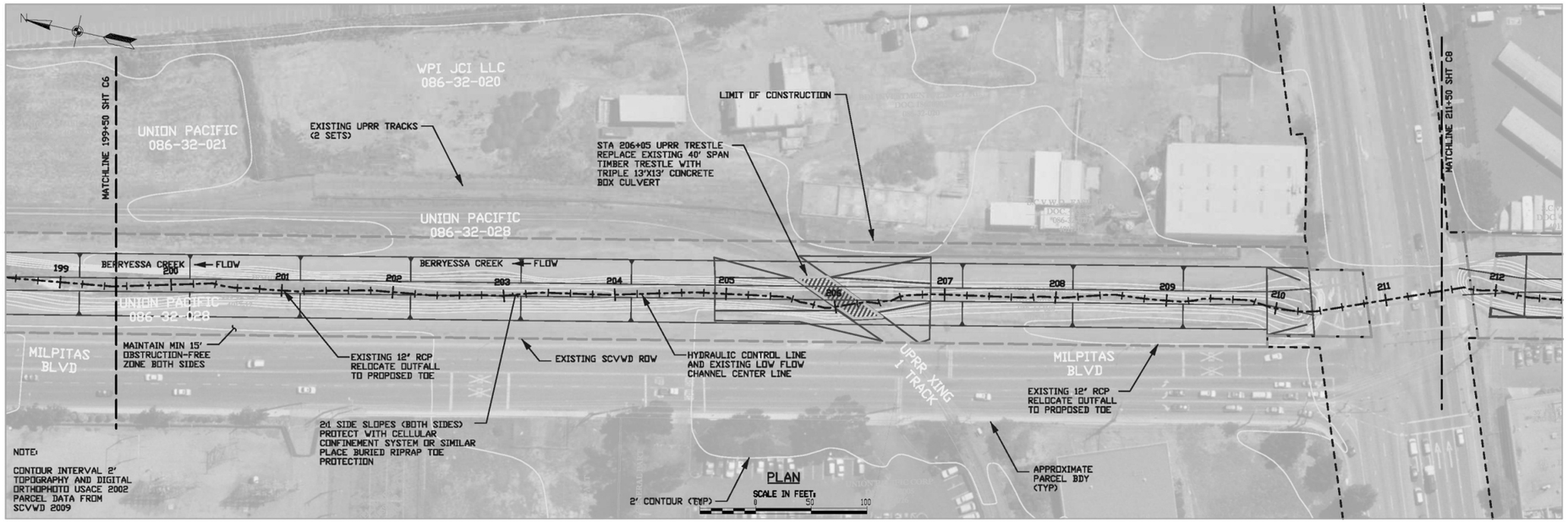
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
IN PARTNERSHIP WITH:
SANTA CLARA VALLEY WATER DISTRICT

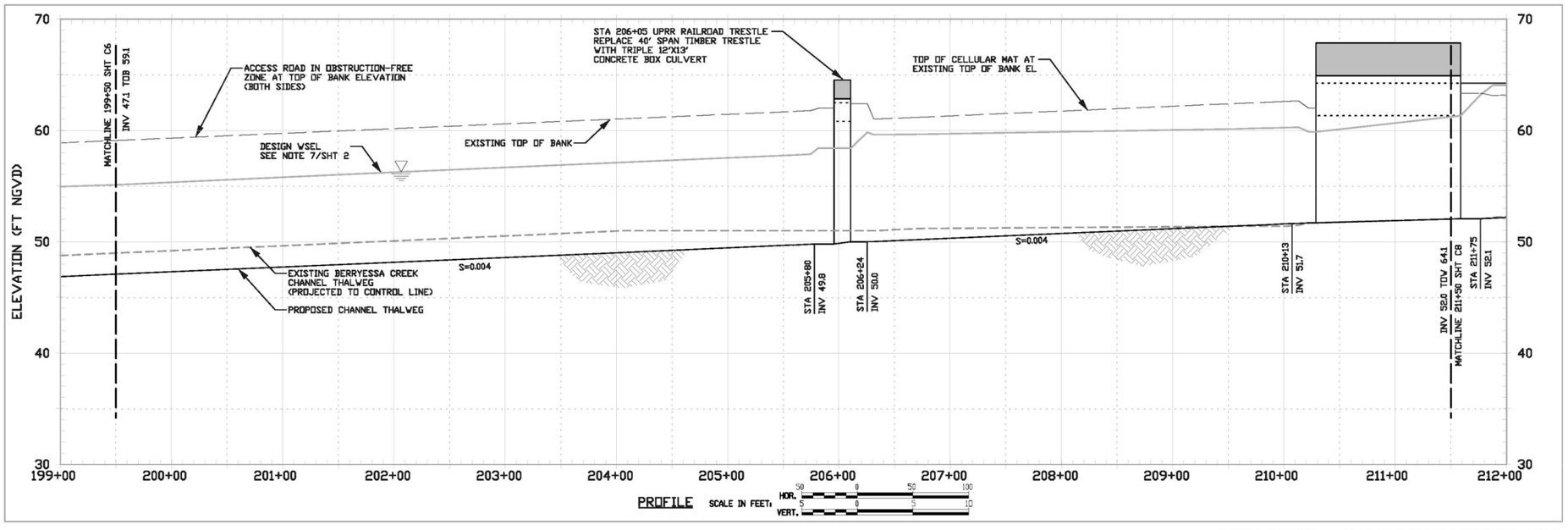
PREPARED BY:
TETRA TECH, INC.
17770 CARTWRIGHT, 500
IRVINE, CA 92614

SANTA CLARA COUNTY CALIFORNIA
BERRYESSA CREEK PROJECT
GENERAL REEVALUATION STUDY
ALTERNATIVES FORMULATION

ALTERNATIVE 2A/d
PLAN AND PROFILE VIEW
STA. 184+00 TO 197+00

Sheet reference number: C6
Sheet 11 of 35





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US Army Corps of Engineers
Sacramento District

No.	Description	Date Approved

Designed by: PRELIMINARY
Drawn by: KP
Reviewed by: RM
Submitted by:
CHIEF, CIV HDR BR SEC A

Date: JAN 17, 2012
Spec No.: N/A
Drawing Codes: N/A
File name: BER PP 2-X
Plot date: DEC 22, 2011
Plot scale: 50/100

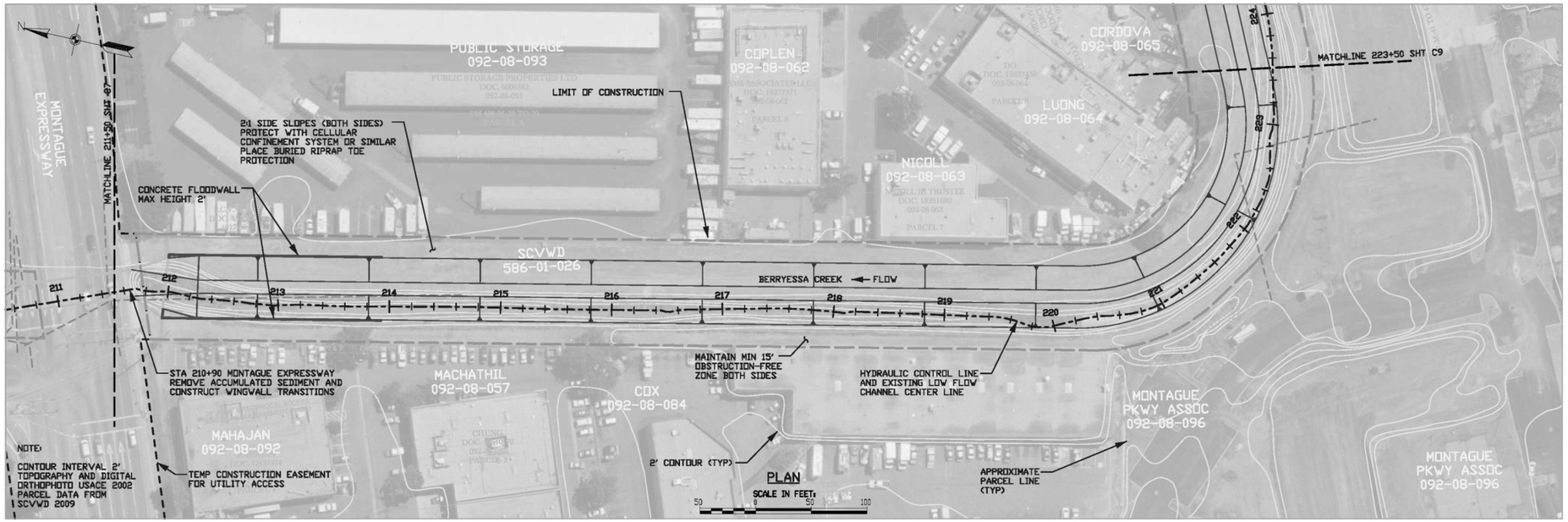
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
IN PARTNERSHIP WITH:
SANTA CLARA VALLEY WATER DISTRICT

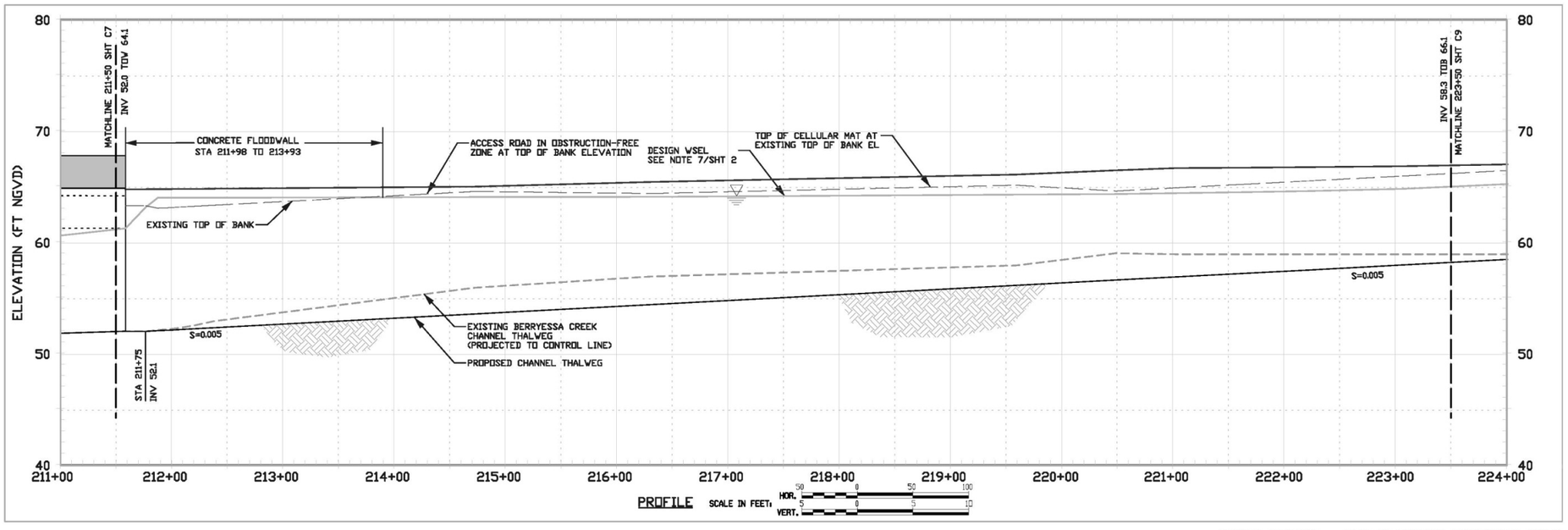
PREPARED BY:
TETRA TECH, INC.
17770 CARTWRIGHT, STE. 500
IRVINE, CA 92614

SANTA CLARA COUNTY CALIFORNIA
BERRYESSA CREEK PROJECT
GENERAL REEVALUATION STUDY
ALTERNATIVES FORMULATION

ALTERNATIVE 2A/d
PLAN AND PROFILE VIEW
STA. 199+00 TO 212+00

Sheet reference number:
C7
Sheet 12 of 35





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US Army Corps of Engineers
Sacramento District

Designed by: PRELIMINARY	Date: JAN 17, 2012	Rev. N/A
Dwn by: KP	Spec No.: N/A	Design file no: N/A
Reviewed by: RM	Drawing Codes: N/A	
Submitted by: CHIEF, CIV ENGR BR	File name: BER PP C-XX Plot date: DEC 22, 2011 Plot scale: 50/100	

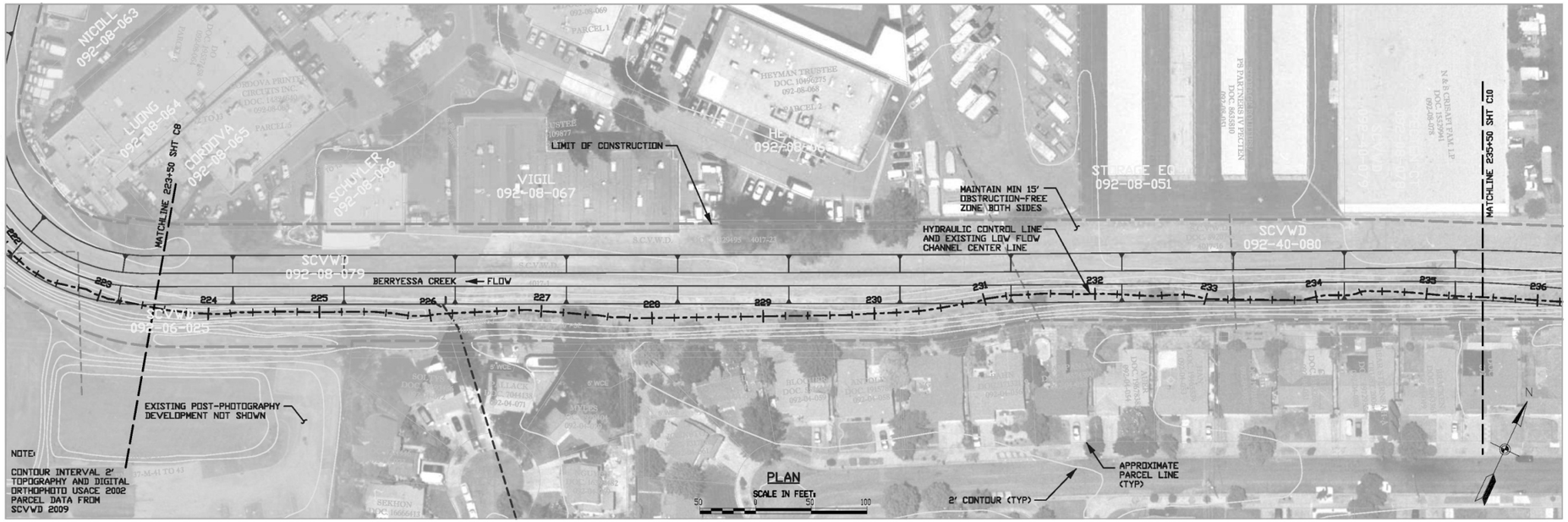
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
IN PARTNERSHIP WITH:
SANTA CLARA VLY WATER DISTRICT

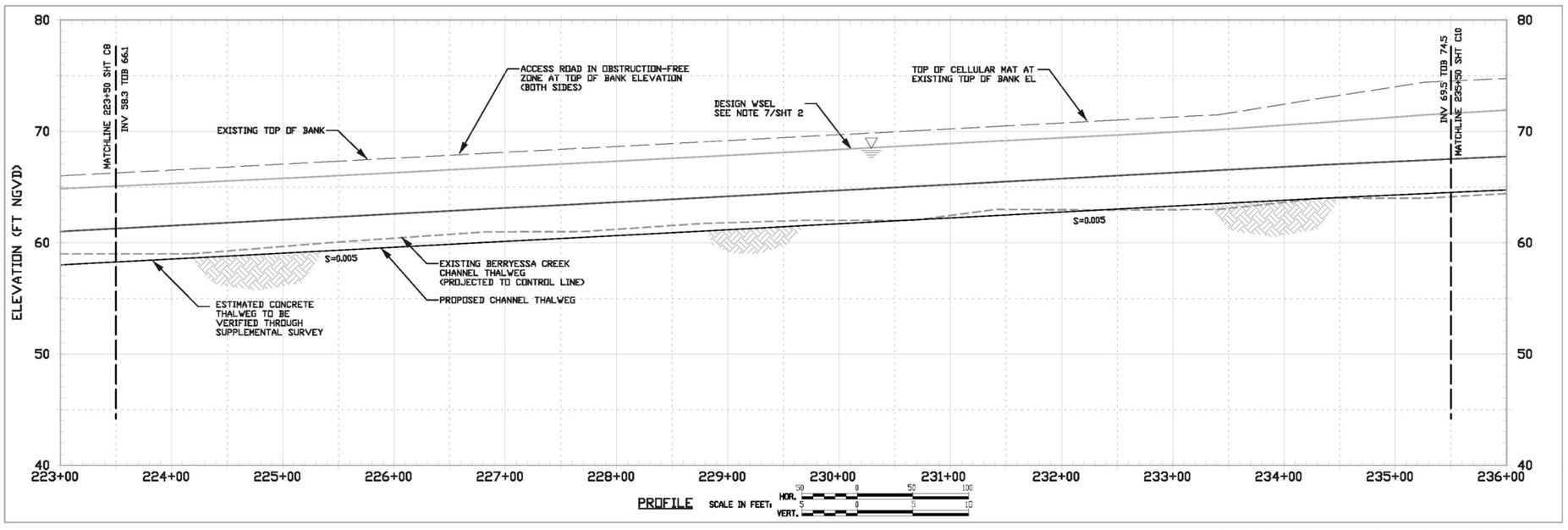
PREPARED BY:
TETRA TECH, INC.
17770 CARTWRIGHT, STE. 500
IRVINE, CA 92614

SANTA CLARA COUNTY CALIFORNIA
BERRYESSA CREEK PROJECT
GENERAL REEVALUATION STUDY
ALTERNATIVES FORMULATION

ALTERNATIVE 2A/d
PLAN AND PROFILE VIEW
STA. 211+00 TO 224+00

Sheet reference number:
C8
Sheet 13 of 35





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US Army Corps of Engineers
Sacramento District

No.	Description	Date Approved

Designed by: PRELIMINARY
Drawn by: KP
Reviewed by: RW
Submitted by:
Date: JAN 17, 2012 N/A
Design file no: N/A
Drawing Code:
File name: BER PP 2-XX
Plot date: DEC 22, 2011
Plot scale: 50/100

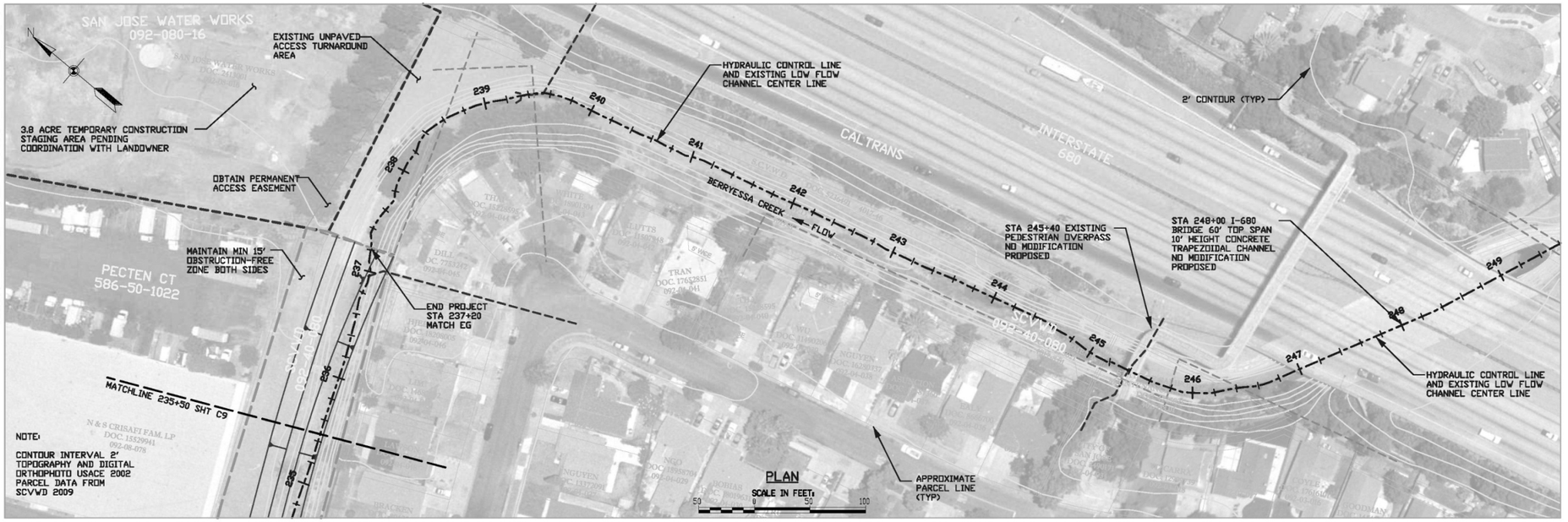
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
IN PARTNERSHIP WITH:
SANTA CLARA VALLEY WATER DISTRICT

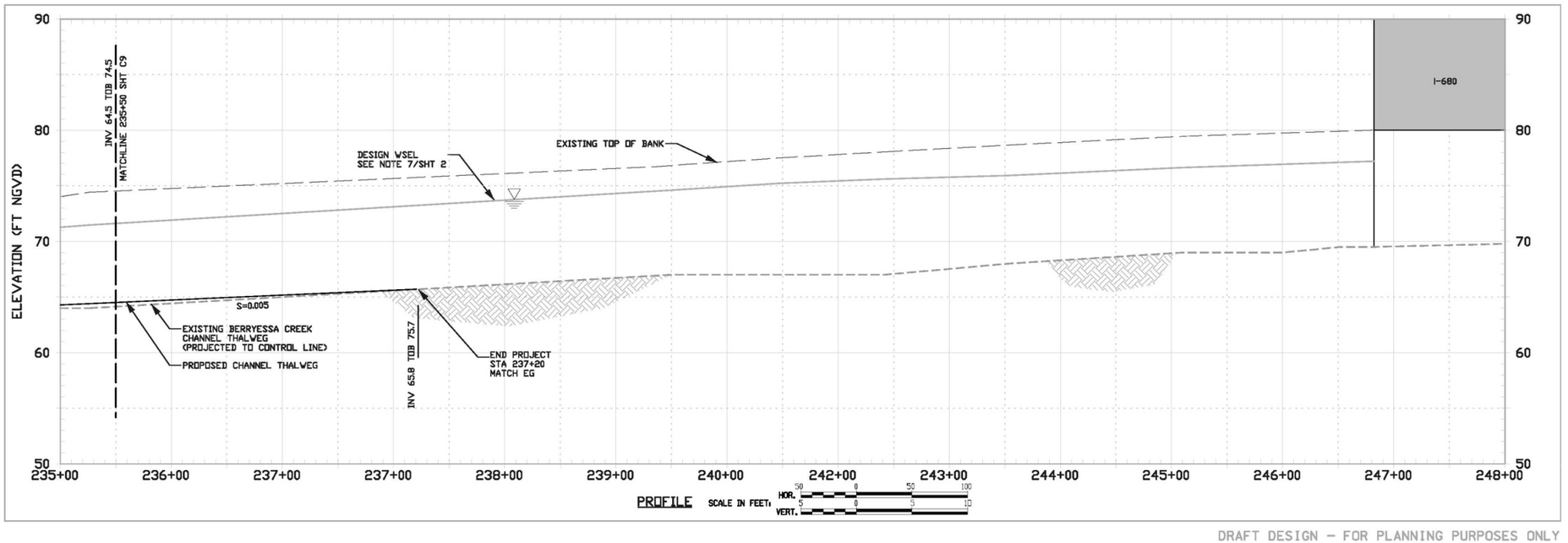
PREPARED BY:
TETRA TECH, INC.
17770 CARTWRIGHT, 500
IRVINE, CA 92614

SANTA CLARA COUNTY CALIFORNIA
BERRYESSA CREEK PROJECT
GENERAL REEVALUATION STUDY
ALTERNATIVES FORMULATION

ALTERNATIVE 2A/d
PLAN AND PROFILE VIEW
STA. 220+00 TO 233+00

Sheet reference number:
C9
Sheet 14 of 35





DRAFT DESIGN – FOR PLANNING PURPOSES ONLY

US Army Corps of Engineers
Sacramento District

Symbol	Description	Date Approved

Designed by: PRELIMINARY
Drawn by: KP
Reviewed by: PM
Submitted by: CHIEF, CIV BR RES SEC A
Date: JAN 17, 2012
Spec No.: N/A
Design file no: N/A
Drawing Codes: N/A
Rev. N/A
File name: BER PP 2-VX
Plot date: DEC 22, 2011
Plot scale: 50/100

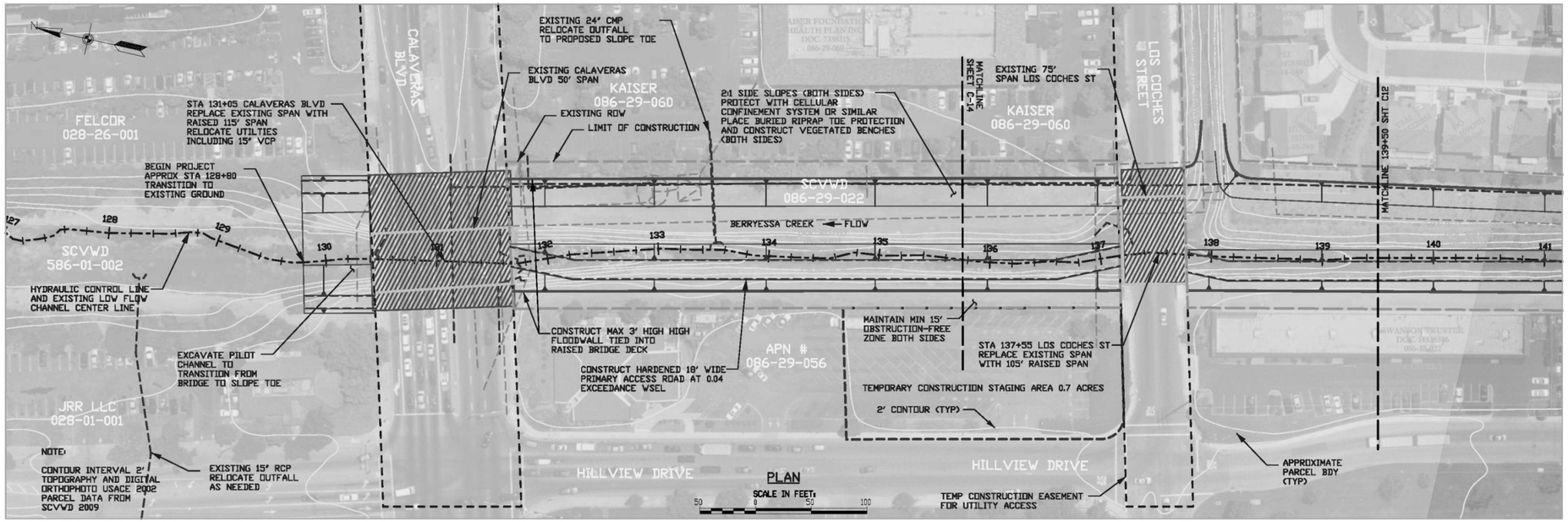
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
IN PARTNERSHIP WITH:
SANTA CLARA VALLEY WATER DISTRICT

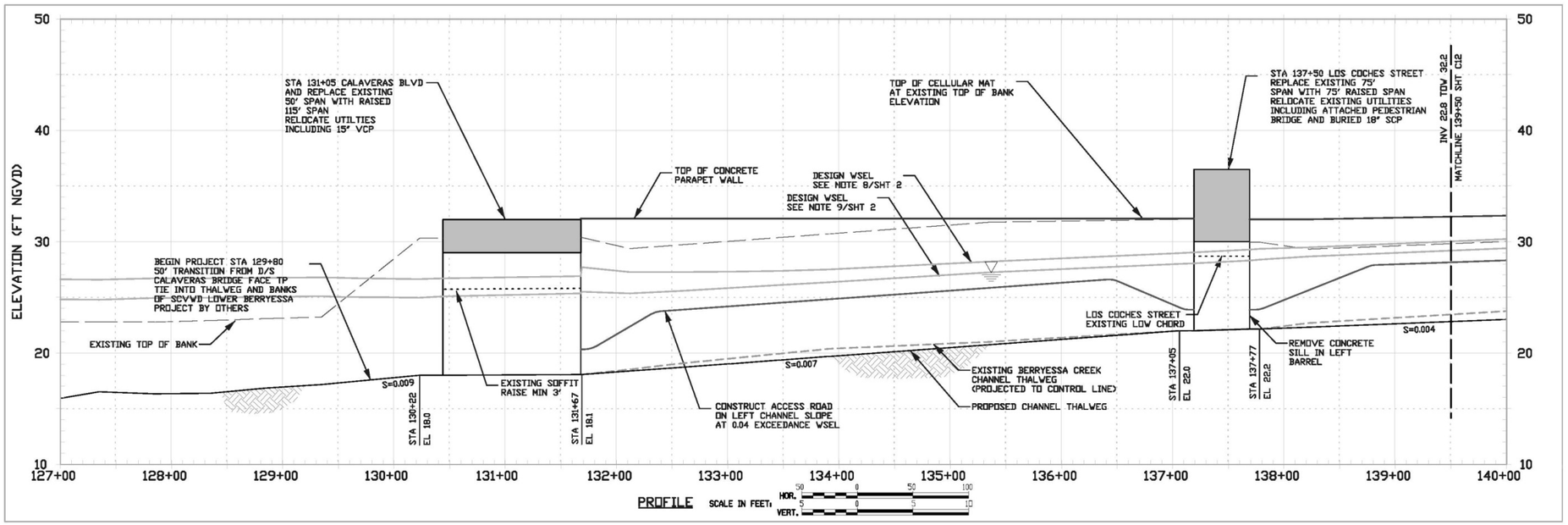
PREPARED BY:
TETRA TECH, INC.
17770 CARTWRIGHT, STE. 500
IRVINE, CA 92614

SANTA CLARA COUNTY CALIFORNIA
BERRYESSA CREEK PROJECT
GENERAL REEVALUATION STUDY
ALTERNATIVES FORMULATION

ALTERNATIVE 2A/d
PLAN AND PROFILE VIEW
STA. 235+00 TO 248+00

Sheet reference number:
C10
Sheet 15 of 35





DRAFT DESIGN – FOR PLANNING PURPOSES ONLY

US Army Corps of Engineers
Sacramento District

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
IN PARTNERSHIP WITH:
SANTA CLARA VALLEY WATER DISTRICT

PREPARED BY:
TETRA TECH, INC.
17770 CARTWRIGHT, STE. 500
IRVINE, CA 92614

Designed by: PRELIMINARY
Drawn by: KP
Reviewed by: RM
Submitted by:
Chief, civ tech sec

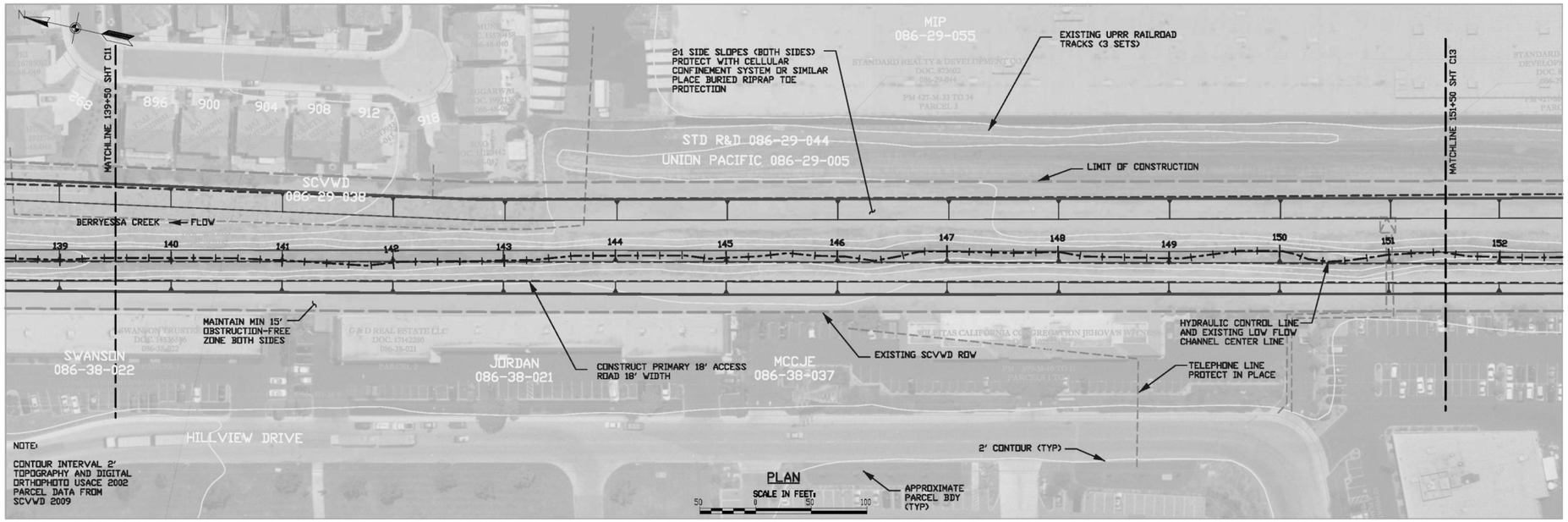
Date: JAN 17, 2012
Design file no: N/A
Spec No.: N/A
Drawing Codes:
File name: BER PP C-XX
Plot date: DEC 22, 2011
Plot scale: 50/100

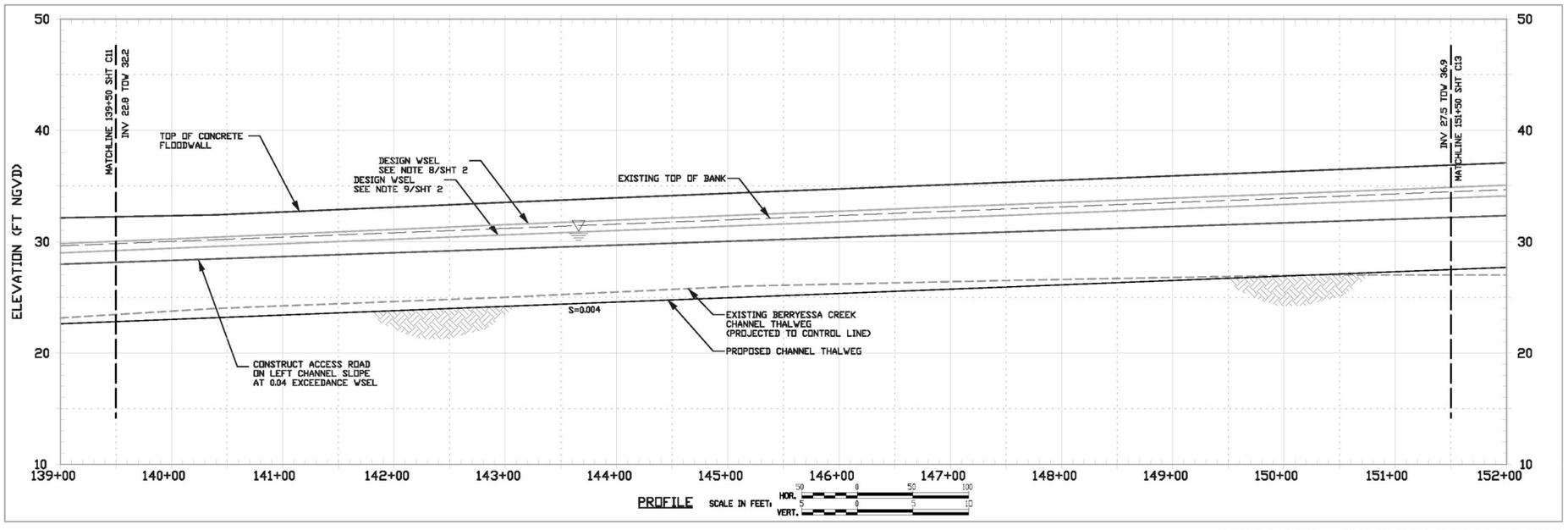
Rev. N/A
Description
Date Approved

SANTA CLARA COUNTY CALIFORNIA
BERRYESSA CREEK PROJECT
GENERAL REEVALUATION STUDY
ALTERNATIVES FORMULATION

ALTERNATIVE 2B/d
PLAN AND PROFILE VIEW
STA. 127+00 TO 140+00

Sheet reference number:
C11
Sheet 16 of 35





DRAFT DESIGN – FOR PLANNING PURPOSES ONLY

US Army Corps of Engineers
Sacramento District

Rev.	Description	Date Approved

Designed by: PRELIMINARY
Drawn by: KP
Reviewed by: PM
Submitted by:
Date: JAN 17, 2012
Spec No.: N/A
Drawing Codes: N/A
File name: BER PP 2-XX
Plot date: DEC 22, 2011
Plot scale: 50/100
CHIEF, CIV HOR BR SEC A

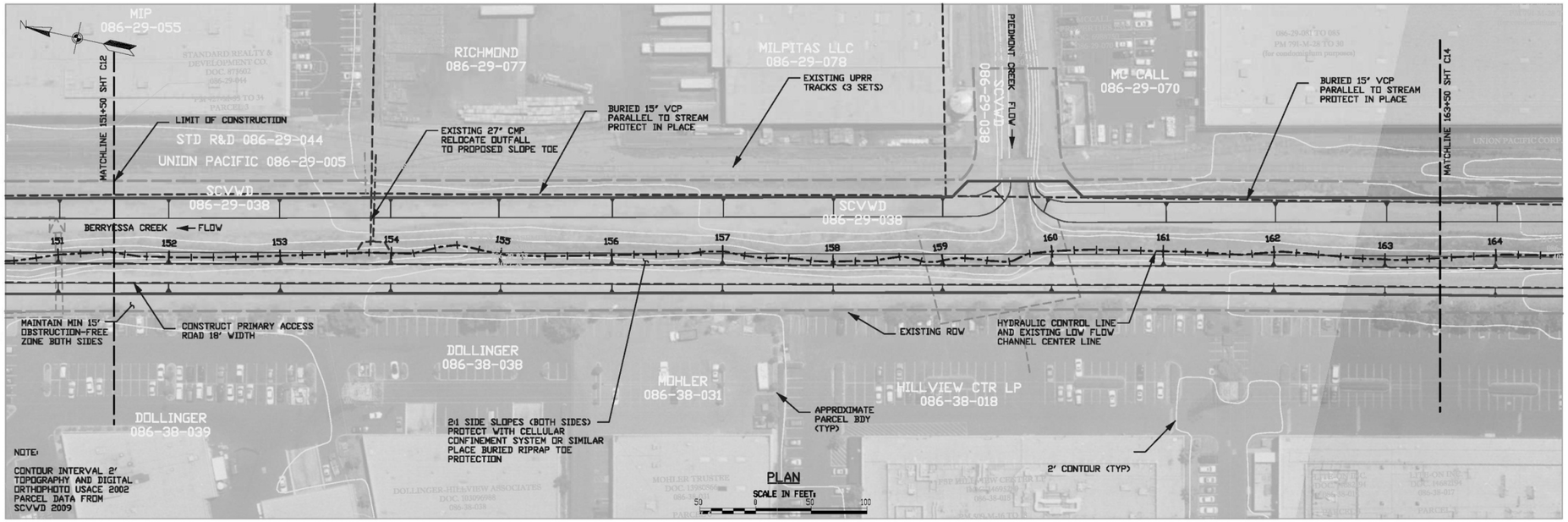
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
IN PARTNERSHIP WITH:
SANTA CLARA VALLEY WATER DISTRICT

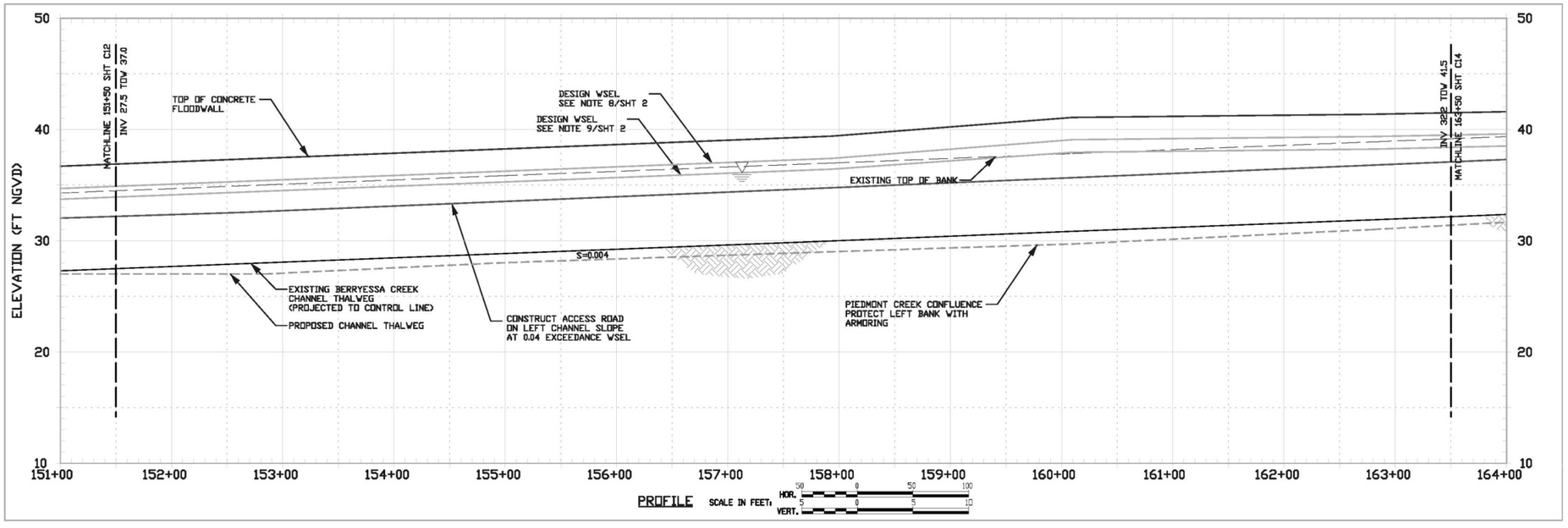
PREPARED BY:
TETRA TECH, INC.
17770 CARTWRIGHT, STE. 500
IRVINE, CA 92614

SANTA CLARA COUNTY CALIFORNIA
BERRYESSA CREEK PROJECT
GENERAL REEVALUATION STUDY
ALTERNATIVES FORMULATION

ALTERNATIVE 2B/d
PLAN AND PROFILE VIEW
STA. 139+00 TO 152+00

Sheet reference number:
C12
Sheet 17 of 35





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US Army Corps of Engineers
Sacramento District

Date Approved | Description | Symbol

Designed by: PRELIMINARY
Drawn by: KP
Reviewed by: RM
Submitted by:
Date: JAN 17, 2012
Design file no.: N/A
Spec No.: N/A
Drawing Codes:
File name: BER PP C-XX
Plot date: DEC 22, 2011
Plot scale: 50/100
Date: civ_ings_scs_a

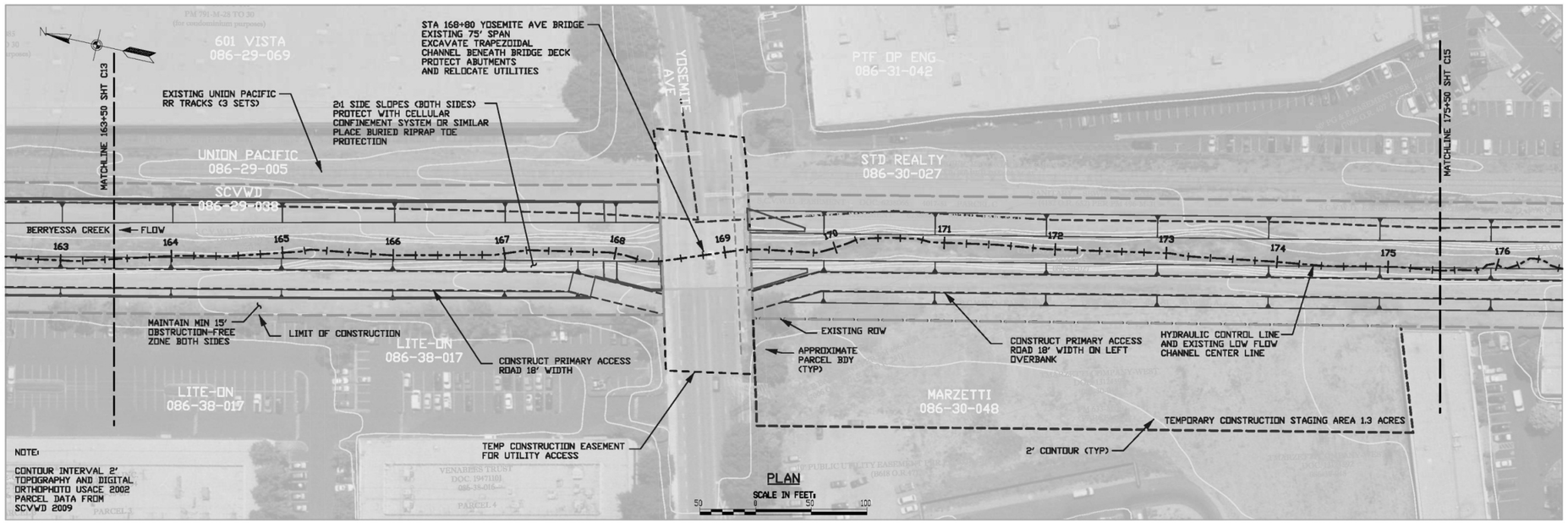
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
IN PARTNERSHIP WITH:
SANTA CLARA VALLEY WATER DISTRICT

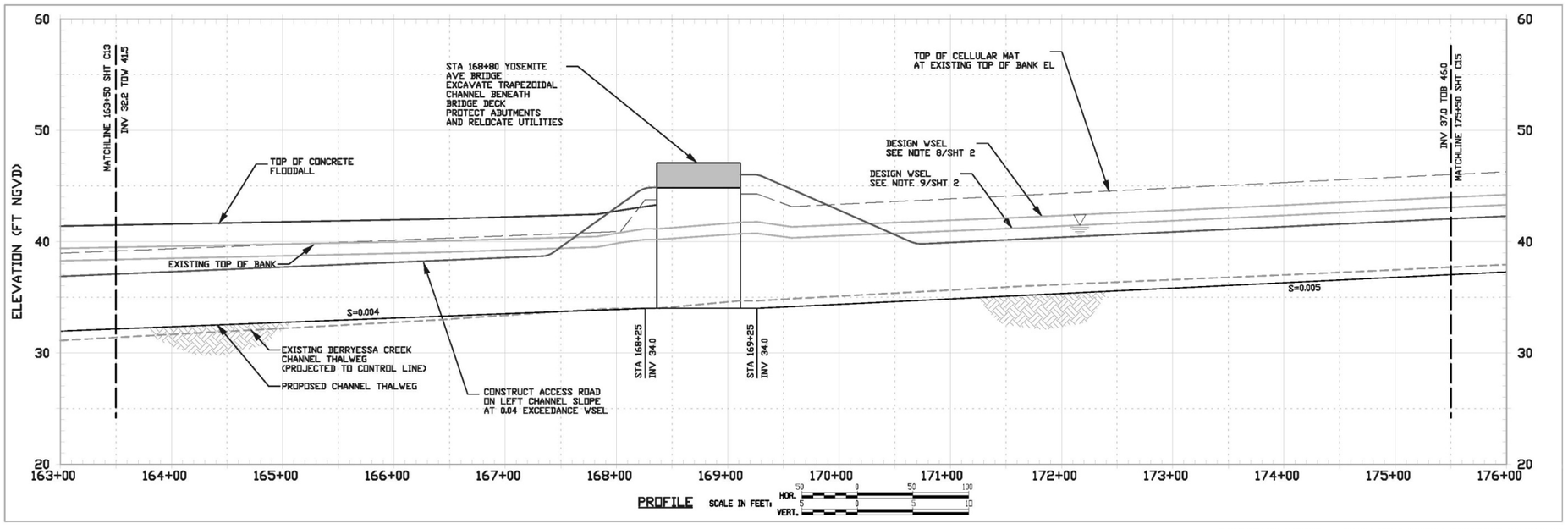
PREPARED BY:
TETRA TECH, INC.
1770 CAMINO TORT, 500
IRVINE, CA 92614

SANTA CLARA COUNTY
CALIFORNIA
BERRYESSA CREEK PROJECT
GENERAL REEVALUATION STUDY
ALTERNATIVES FORMULATION

ALTERNATIVE 2B/d
PLAN AND PROFILE VIEW
STA. 151+00 TO 164+00

Sheet reference number:
C13
Sheet 18 of 35





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US Army Corps of Engineers
Sacramento District

Designed by:	Date:	Rev.
PRELIMINARY	JAN 17, 2012	N/A
Dwn by:	Spec No.:	Design file no:
KP	N/A	N/A
Reviewed by:	Drawing Codes:	
RW		
Submitted by:	File name:	BER PP C-XX
	Plot date:	DEC 22, 2011
	Plot scale:	50/100

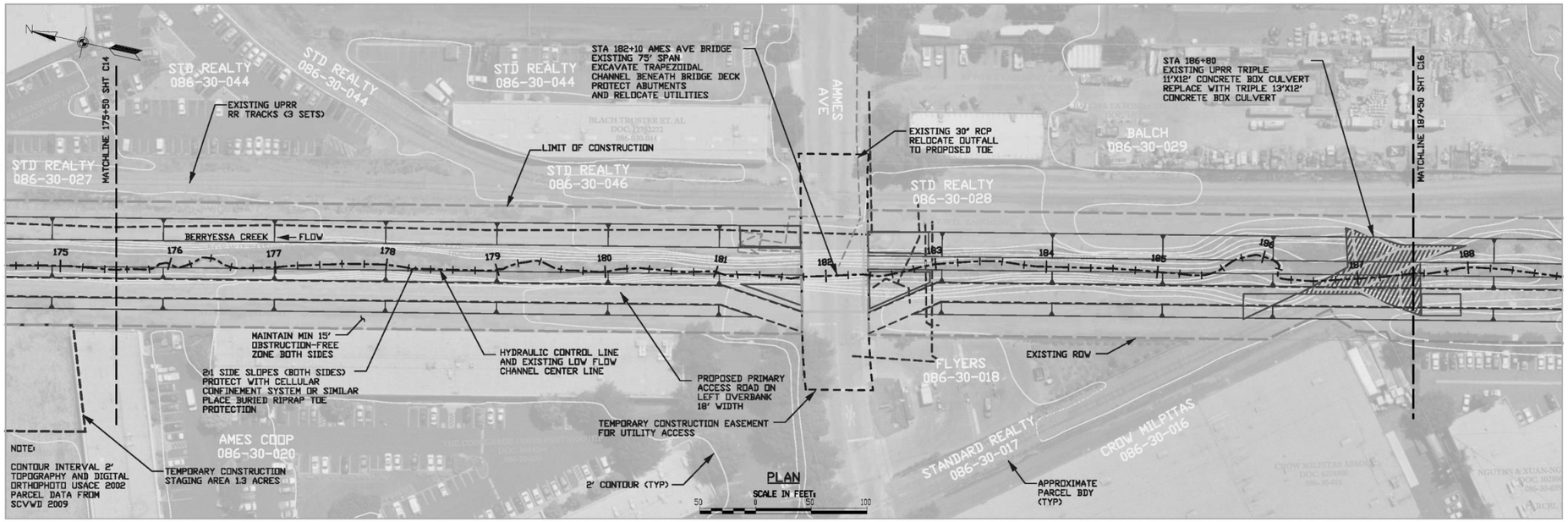
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
IN PARTNERSHIP WITH:
SANTA CLARA VALLEY WATER DISTRICT

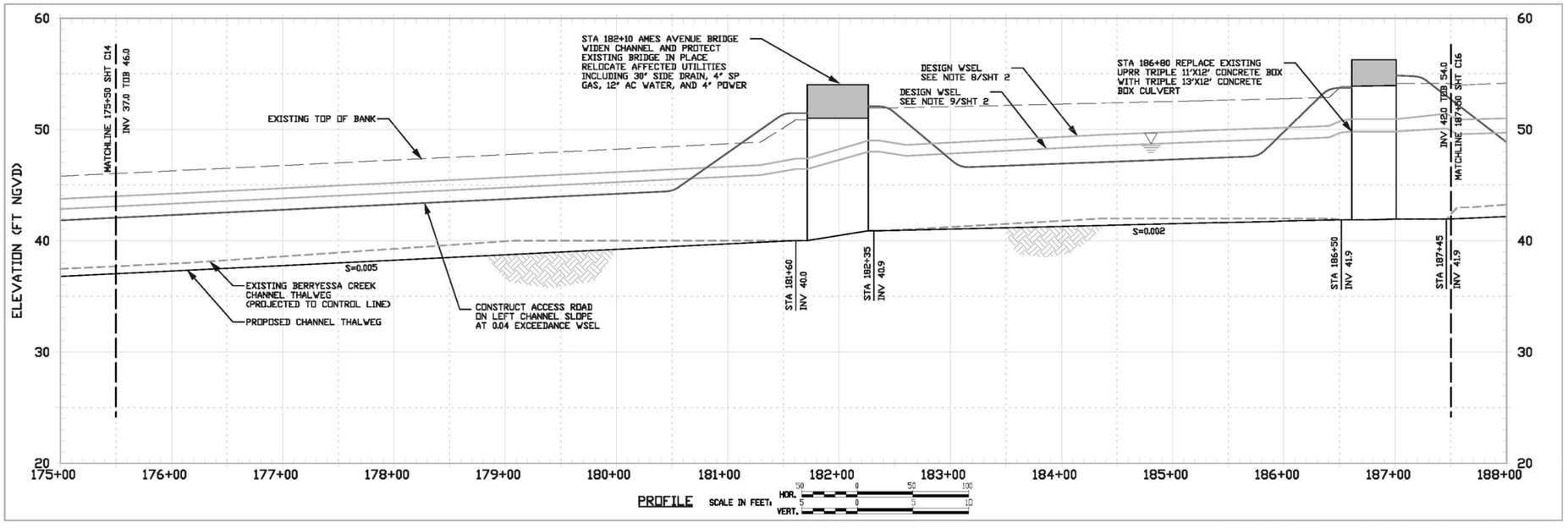
PREPARED BY:
TETRA TECH, INC.
17770 CARTWRIGHT, 500
IRVINE, CA 92614

SANTA CLARA COUNTY CALIFORNIA
BERRYESSA CREEK PROJECT
GENERAL REEVALUATION STUDY
ALTERNATIVES FORMULATION

ALTERNATIVE 2B/d
PLAN AND PROFILE VIEW
STA. 163+00 TO 176+00

Sheet reference number:
C14
Sheet 19 of 35





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US Army Corps of Engineers
Sacramento District

Designed by:	Date:	Rev.
PRELIMINARY	JAN 17, 2012	N/A
Drawn by:	Spec No.:	Design file no.:
KP	N/A	N/A
Reviewed by:	Drawing Codes:	
RW		
Submitted by:	File name:	BER PP C-XX
	Plot date:	DEC 22, 2011
Civil Engineering Section A	Plot scale:	30/100

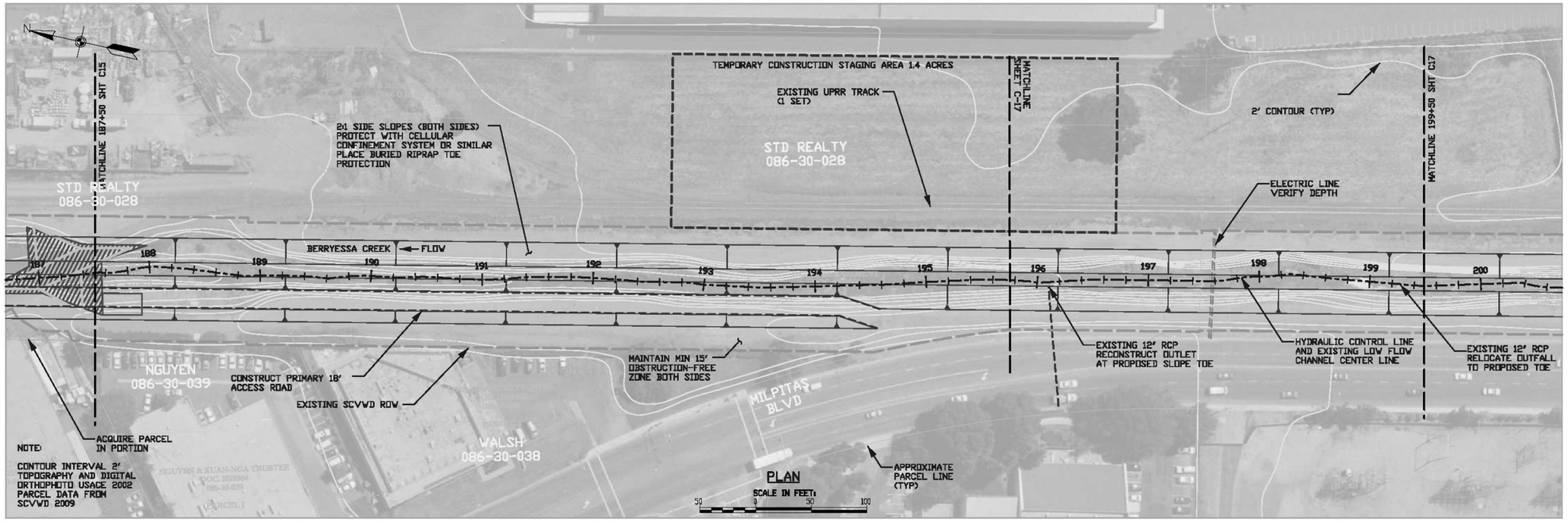
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
IN PARTNERSHIP WITH:
SANTA CLARA VALLEY WATER DISTRICT

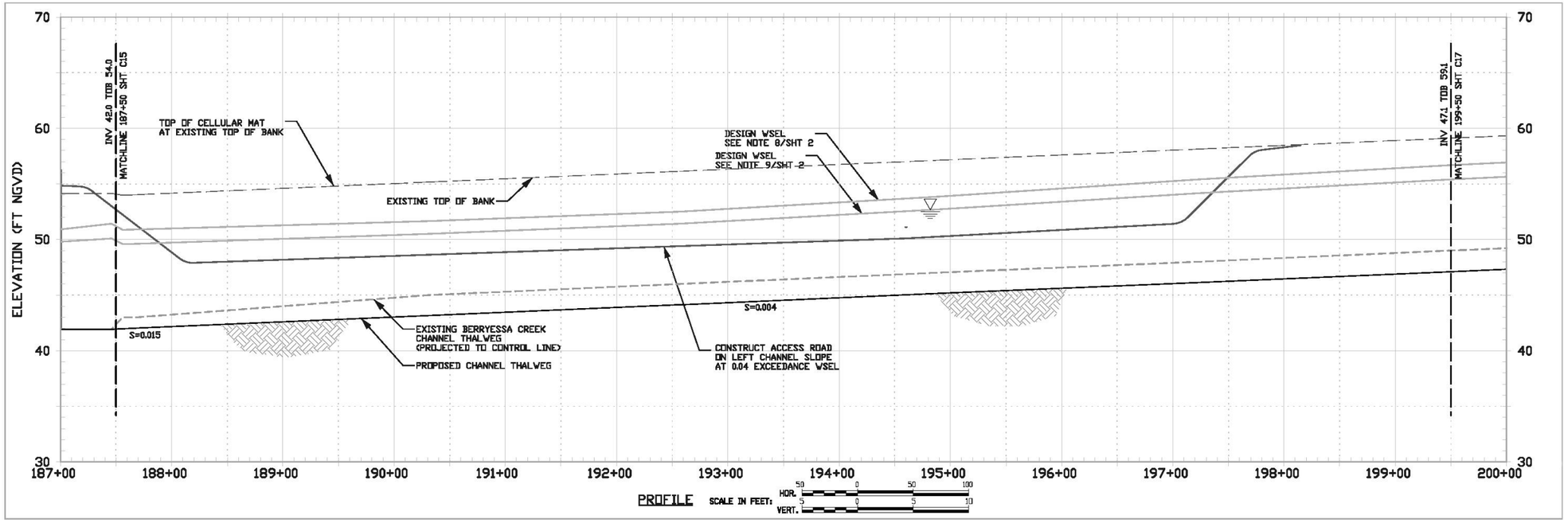
PREPARED BY:
TETRA TECH, INC.
17770 CAPISTRANO, STE. 500
IRVINE, CA 92614

SANTA CLARA COUNTY CALIFORNIA
BERRYESSA CREEK PROJECT
GENERAL REEVALUATION STUDY
ALTERNATIVES FORMULATION

ALTERNATIVE 2B/d
PLAN AND PROFILE VIEW
STA. 175+00 TO 188+00

Sheet reference number:
C15
Sheet 20 of 35





DRAFT DESIGN - FOR PLANNING PURPOSES ONLY

US Army Corps of Engineers
Sacramento District

Symbol	Description	Date Approved

Designed by: PRELIMINARY
Drawn by: KP
Reviewed by: RM
Submitted by:
Date: JAN 17, 2012
Spec No.: N/A
Drawing Code: N/A
Rev. N/A
File name: BER PP C-XX
Plot date: March 23, 2011
Plot time: 15:07:50
Chief, CIV CWO DES SEC A

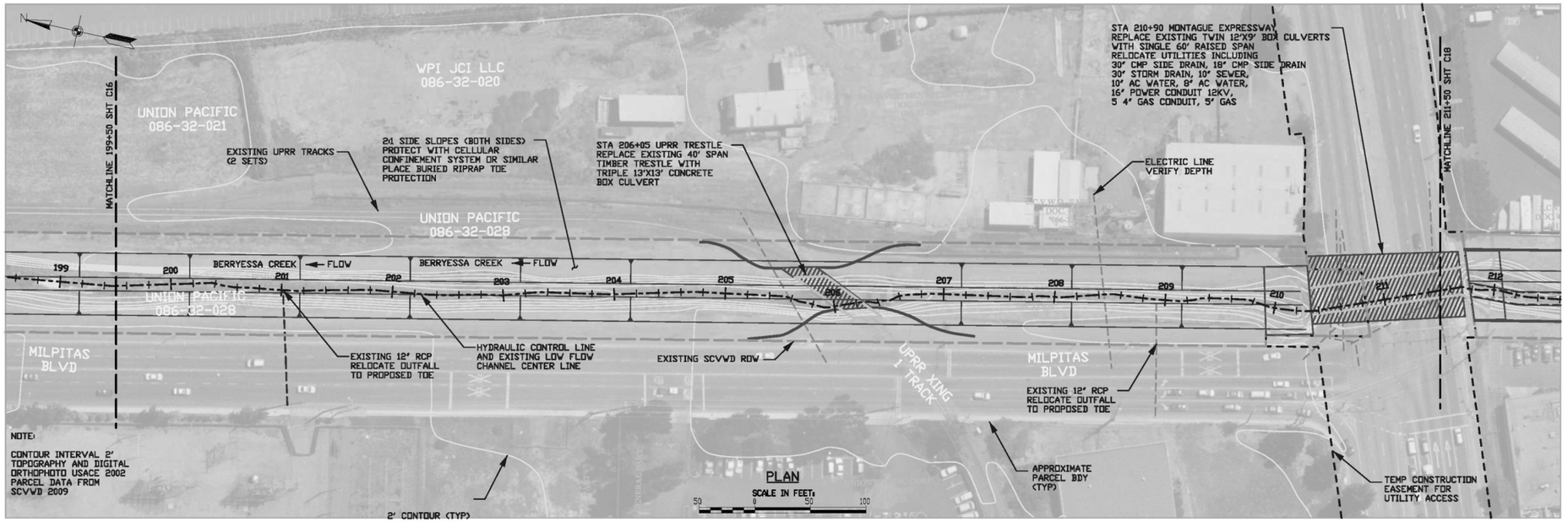
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
IN PARTNERSHIP WITH:
SANTA CLARA VLY WATER DISTRICT

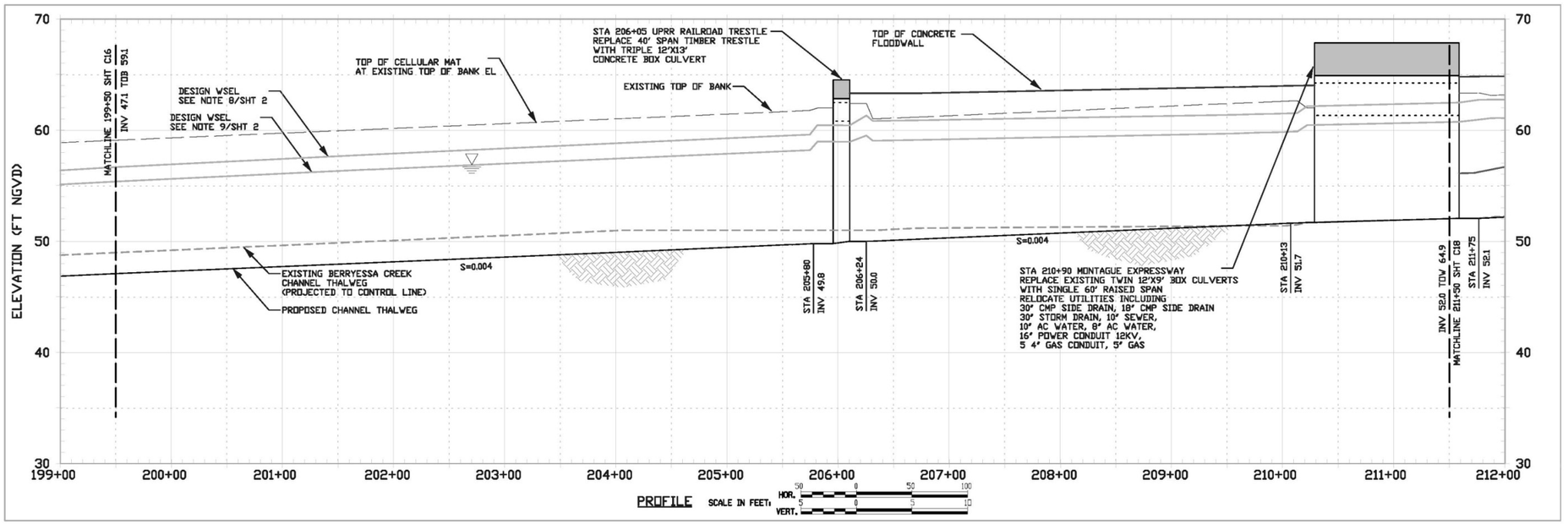
PREPARED BY:
TETRA TECH, INC.
17770 CARTWRIGHT, STE. 500
IRVINE, CA 92614

SANTA CLARA COUNTY CALIFORNIA
BERRYESSA CREEK PROJECT
GENERAL REEVALUATION STUDY
ALTERNATIVES FORMULATION

ALTERNATIVE 2B/d
PLAN AND PROFILE VIEW
STA. 187+00 TO 200+00

Sheet reference number:
C16
Sheet 21 of 35





DRAFT DESIGN – FOR PLANNING PURPOSES ONLY

US Army Corps of Engineers
Sacramento District

Designed by:	Date:	Rev.
PRELIMINARY	JAN 17, 2012	N/A
Drawn by:	Spec No.:	
KP	N/A	
Reviewed by:	Drawing Code:	
RM		
Submitted by:	File name:	BER PP C-XX
CHIEF, CIV ENGR BR	Plot date:	DEC 22, 2011
	Plot scale:	50/100

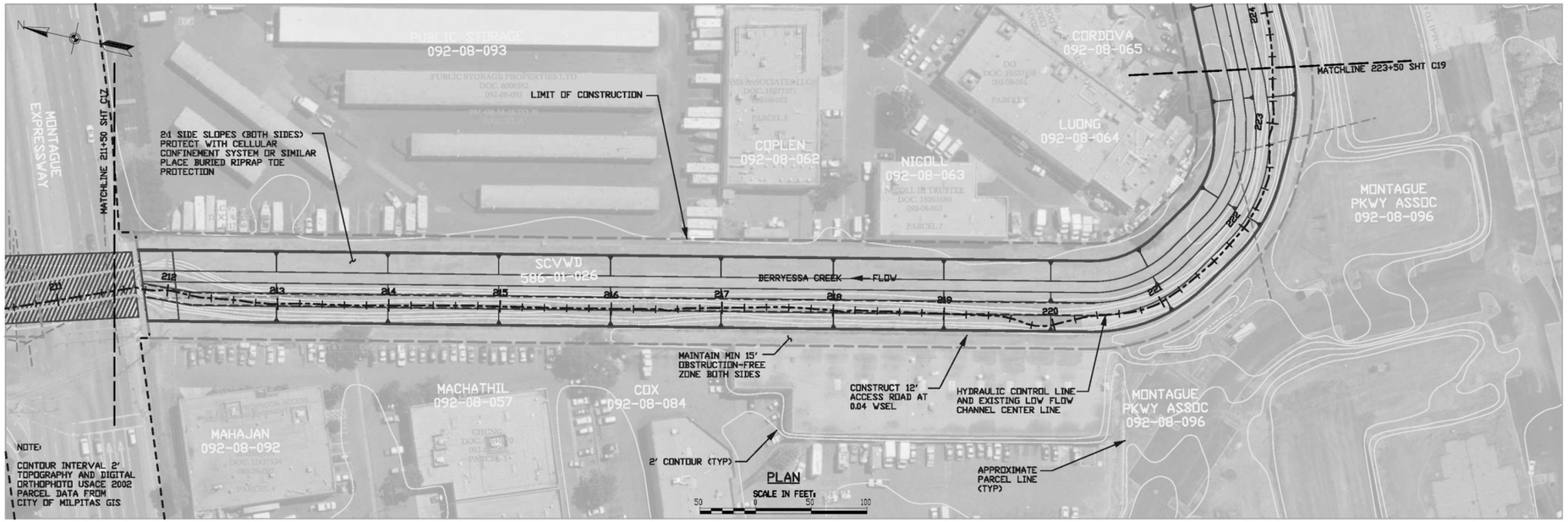
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
IN PARTNERSHIP WITH:
SANTA CLARA VALLEY WATER DISTRICT

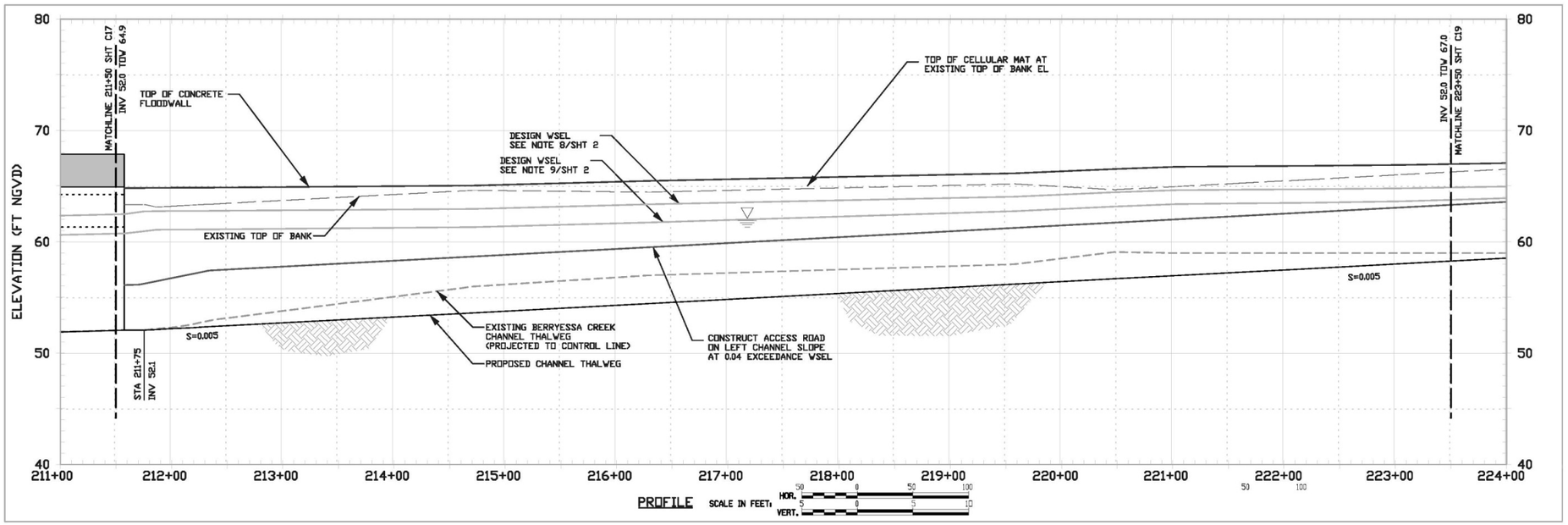
PREPARED BY:
TETRA TECH, INC.
17770 CARTWRIGHT, STE. 500
IRVINE, CA 92614

SANTA CLARA COUNTY CALIFORNIA
BERRYESSA CREEK PROJECT
GENERAL REEVALUATION STUDY
ALTERNATIVES FORMULATION

ALTERNATIVE 2B/d
PLAN AND PROFILE VIEW
STA. 199+00 TO 212+00

Sheet reference number:
C17
Sheet 22 of 35





DRAFT DESIGN – FOR PLANNING PURPOSES ONLY

US Army Corps of Engineers
Sacramento District

Rev.	Description	Date Approved

Designed by: PRELIMINARY
Drawn by: KP
Reviewed by: PM
Submitted by:
CHIEF, CIV HDR RES SEC A

Date: JAN 17, 2012 N/A
Spec No.: N/A
Drawing Codes:
File name: BER PP 2-XX
Plot date: DEC 22, 2011
Plot scale: 50/100

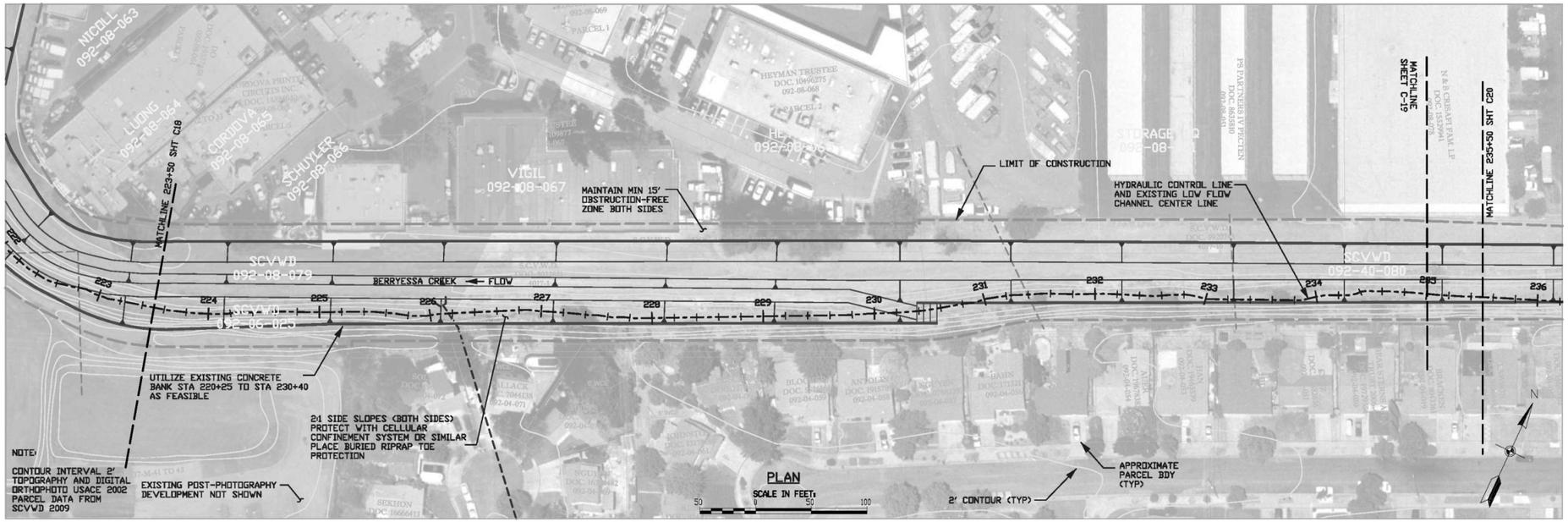
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
IN PARTNERSHIP WITH:
SANTA CLARA VALLEY WATER DISTRICT

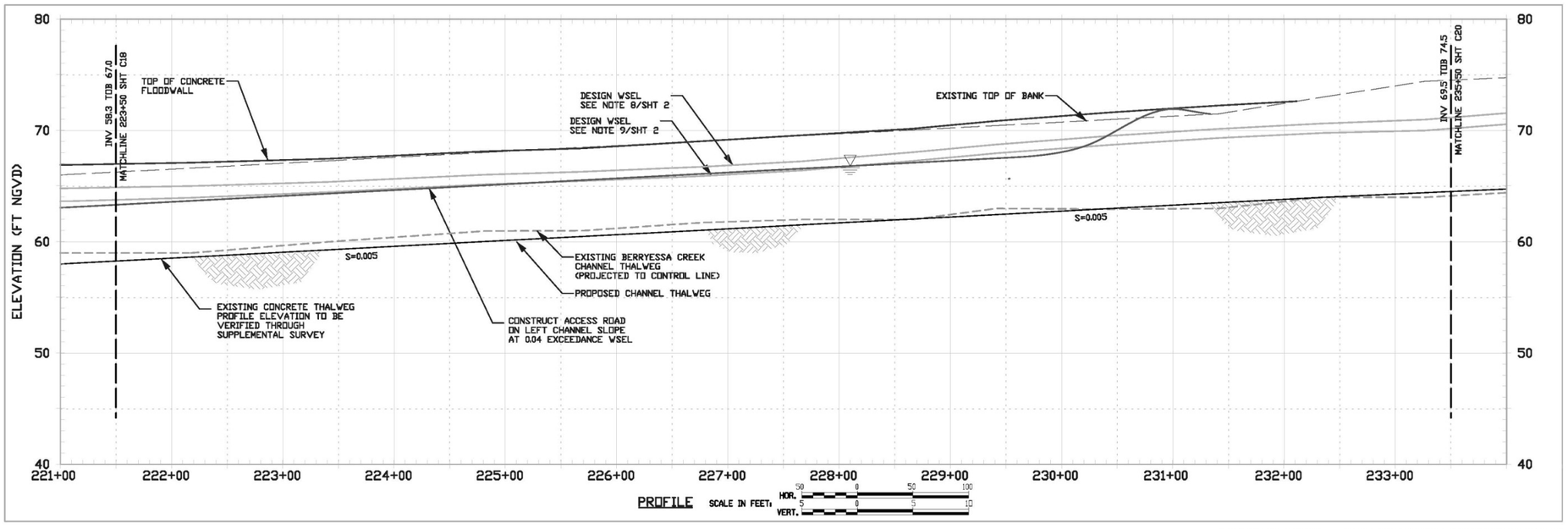
PREPARED BY:
TETRA TECH, INC.
17770 CARTWRIGHT, STE. 500
IRVINE, CA 92614

SANTA CLARA COUNTY CALIFORNIA
BERRYESSA CREEK PROJECT
GENERAL REEVALUATION STUDY
ALTERNATIVES FORMULATION

ALTERNATIVE 2B/d
PLAN AND PROFILE VIEW
STA. 211+00 TO 224+00

Sheet reference number:
C18
Sheet 23 of 35





DRAFT DESIGN – FOR PLANNING PURPOSES ONLY

US Army Corps of Engineers
Sacramento District

Rev.	Description	Date Approved

Designed by: PRELIMINARY
Drawn by: KP
Reviewed by: RM
Submitted by:
Date: JAN 17, 2012 N/A
Design file no: N/A
Drawing Codes:
File name: BER PP C-XX
Plot date: DEC 22, 2011
Plot scale: 50/100

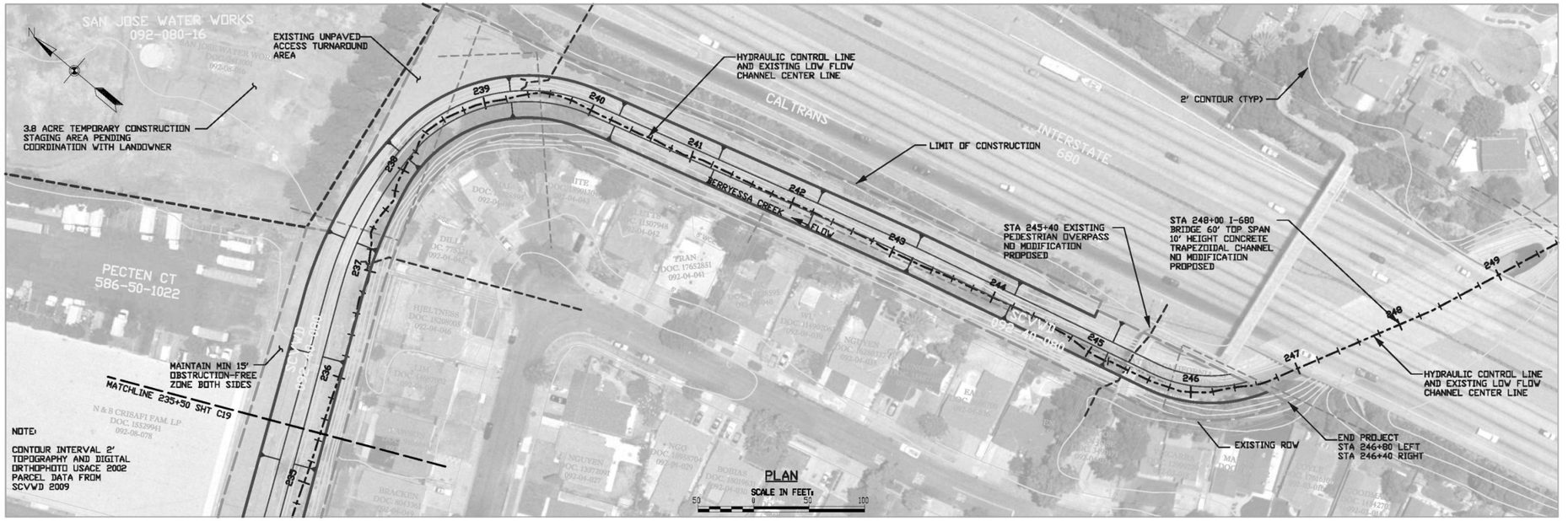
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
IN PARTNERSHIP WITH:
SANTA CLARA VALLEY WATER DISTRICT

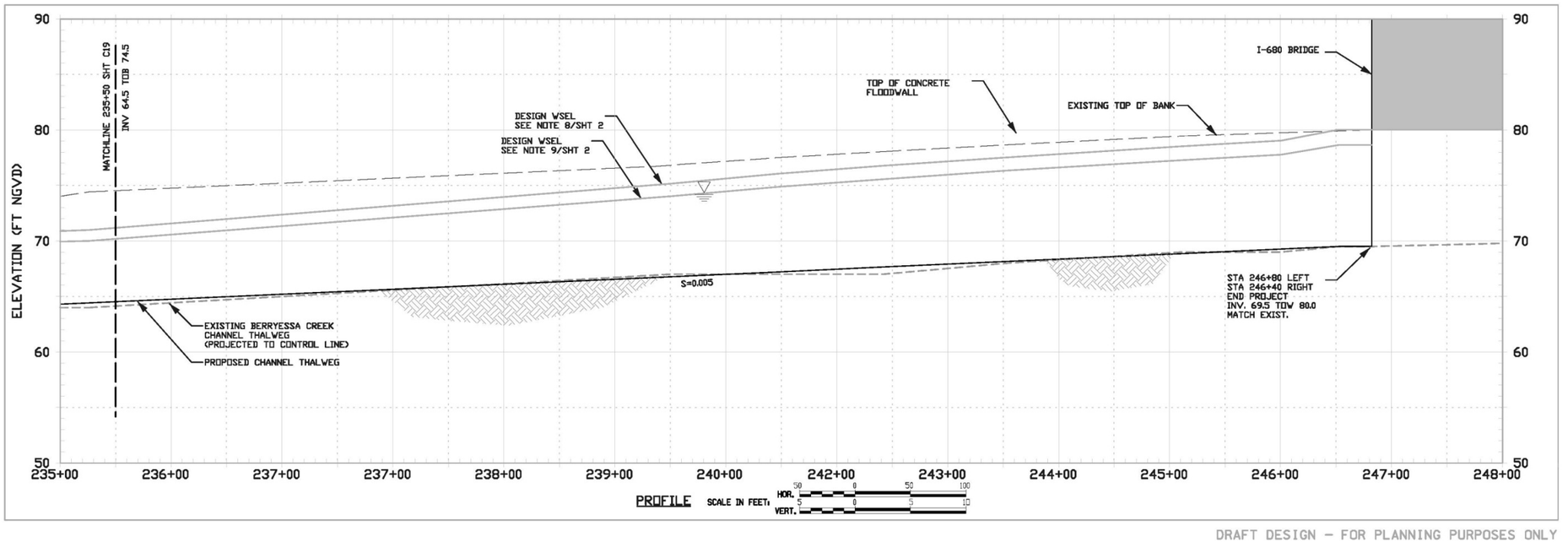
PREPARED BY:
TETRA TECH, INC.
17770 CAPISTRANO, STE. 500
IRVINE, CA 92614

SANTA CLARA COUNTY CALIFORNIA
BERRYESSA CREEK PROJECT
GENERAL REEVALUATION STUDY
ALTERNATIVES FORMULATION

ALTERNATIVE 2B/d
PLAN AND PROFILE VIEW
STA. 223+00 TO 236+00

Sheet reference number:
C19
Sheet 24 of 35





DRAFT DESIGN – FOR PLANNING PURPOSES ONLY

US Army Corps of Engineers
Sacramento District

Symbol	Description	Date Approved

Designed by: PRELIMINARY
Drawn by: KP
Reviewed by: PM
Submitted by:
CHIEF, CIV BR RES SEC A

Date: JAN 17, 2012
Spec No.: N/A
Design file no:
Drawing Codes:
File name: BER PP 2-XX
Plot date: DEC 22, 2011
Plot scale: 50/100

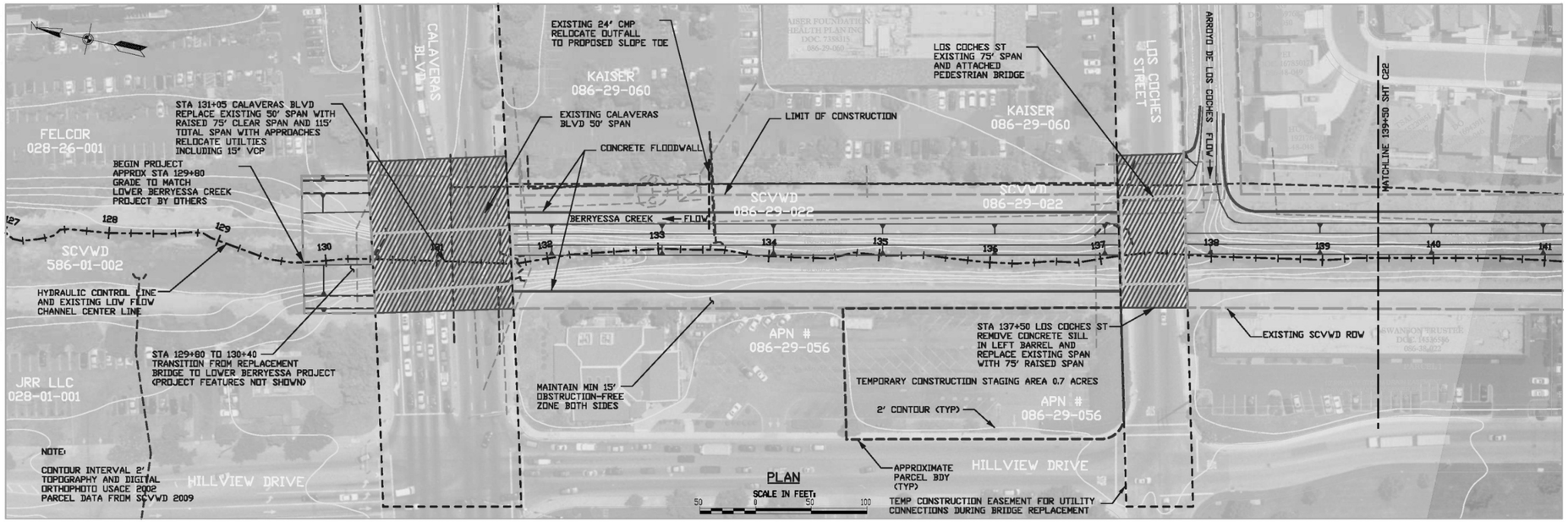
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
IN PARTNERSHIP WITH:
SANTA CLARA VALLEY WATER DISTRICT

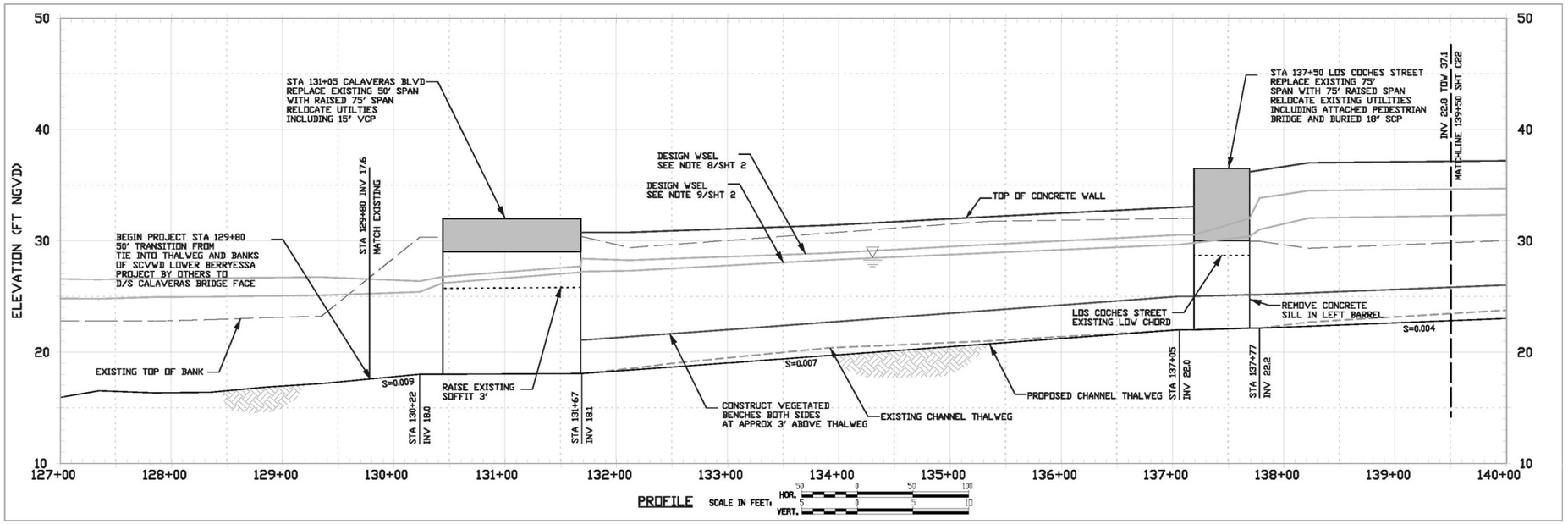
PREPARED BY:
TETRA TECH, INC.
17770 CARTWRIGHT, STE. 500
IRVINE, CA 92614

SANTA CLARA COUNTY CALIFORNIA
BERRYESSA CREEK PROJECT
GENERAL REEVALUATION STUDY
ALTERNATIVES FORMULATION

ALTERNATIVE 2B/d
PLAN AND PROFILE VIEW
STA. 232+00 TO 245+00

Sheet reference number:
C20
Sheet 25 of 35





DRAFT DESIGN – FOR PLANNING PURPOSES ONLY

US Army Corps of Engineers
Sacramento District

Rev.	Description	Date Approved

Designed by: PRELIMINARY
Drawn by: KP
Reviewed by: RM
Submitted by:
Chief, civ tech ops sec a

Date: JAN 17, 2012 N/A
Design file no:
Spec No.: N/A
Drawing Code:
File name: BER PP C-XX
Plot date: DEC 22, 2011
Plot scale: 50/100

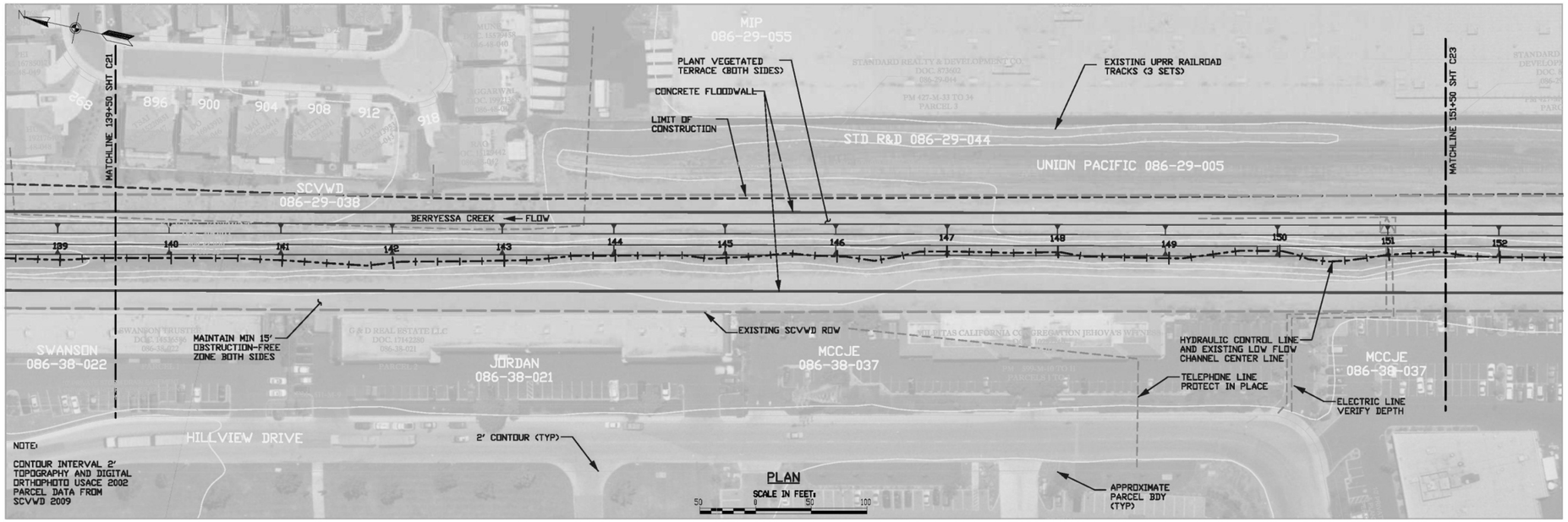
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
IN PARTNERSHIP WITH:
SANTA CLARA VALLEY WATER DISTRICT

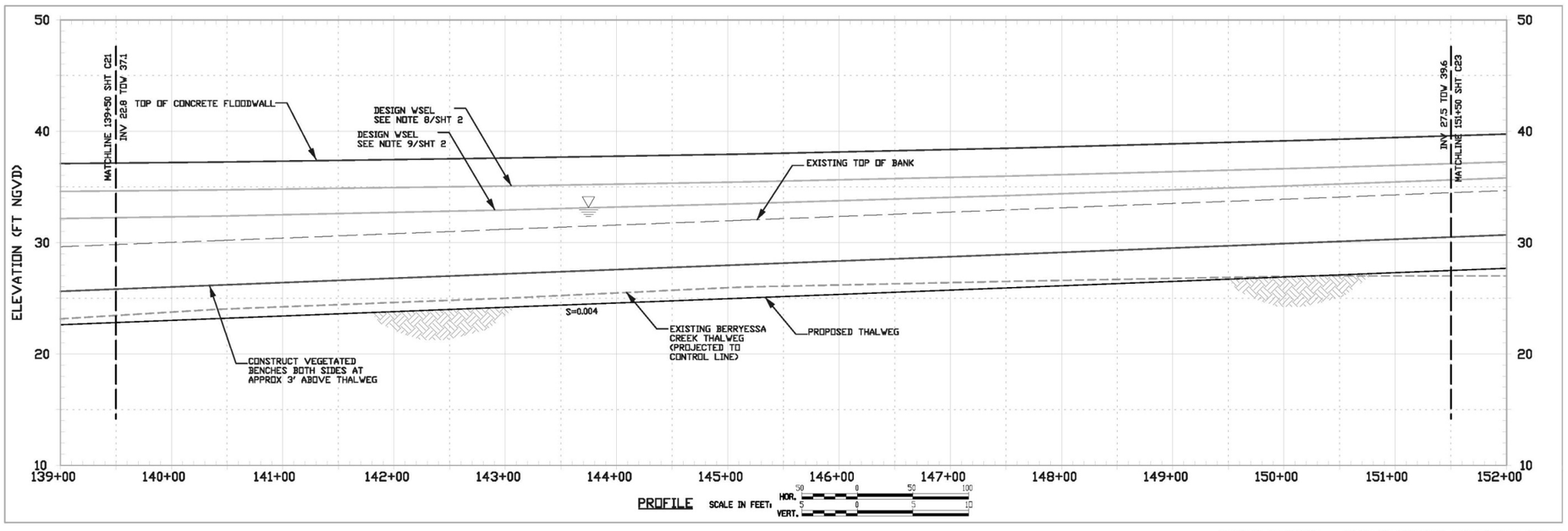
PREPARED BY:
TETRA TECH, INC.
17770 CARTWRIGHT, STE. 500
IRVINE, CA 92614

SANTA CLARA COUNTY CALIFORNIA
BERRYESSA CREEK PROJECT
GENERAL REEVALUATION STUDY
ALTERNATIVES FORMULATION

ALTERNATIVE 4B/d
PLAN AND PROFILE VIEW
STA. 127+00 TO 140+00

Sheet reference number:
C21
Sheet 26 of 35





DRAFT DESIGN – FOR PLANNING PURPOSES ONLY

US Army Corps of Engineers
Sacramento District

Designed by: PRELIMINARY	Date: JAN 17, 2012	Rev. N/A
Drawn by: KP	Spec No.: N/A	Design file no.:
Reviewed by: PM	Drawing Code:	
Submitted by:	File name:	BER PP C-XX
Chief, civ tech brs sec.	Plot date:	DEC 22, 2011
	Plot scale:	30/100

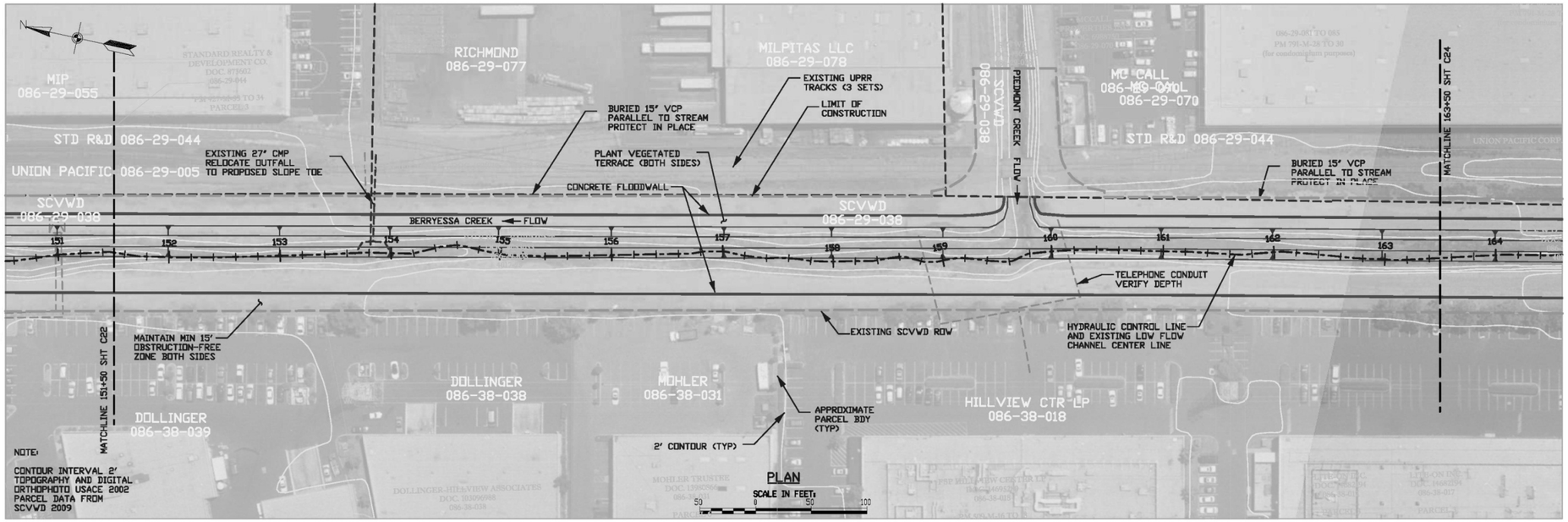
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
IN PARTNERSHIP WITH:
SANTA CLARA VLY WATER DISTRICT

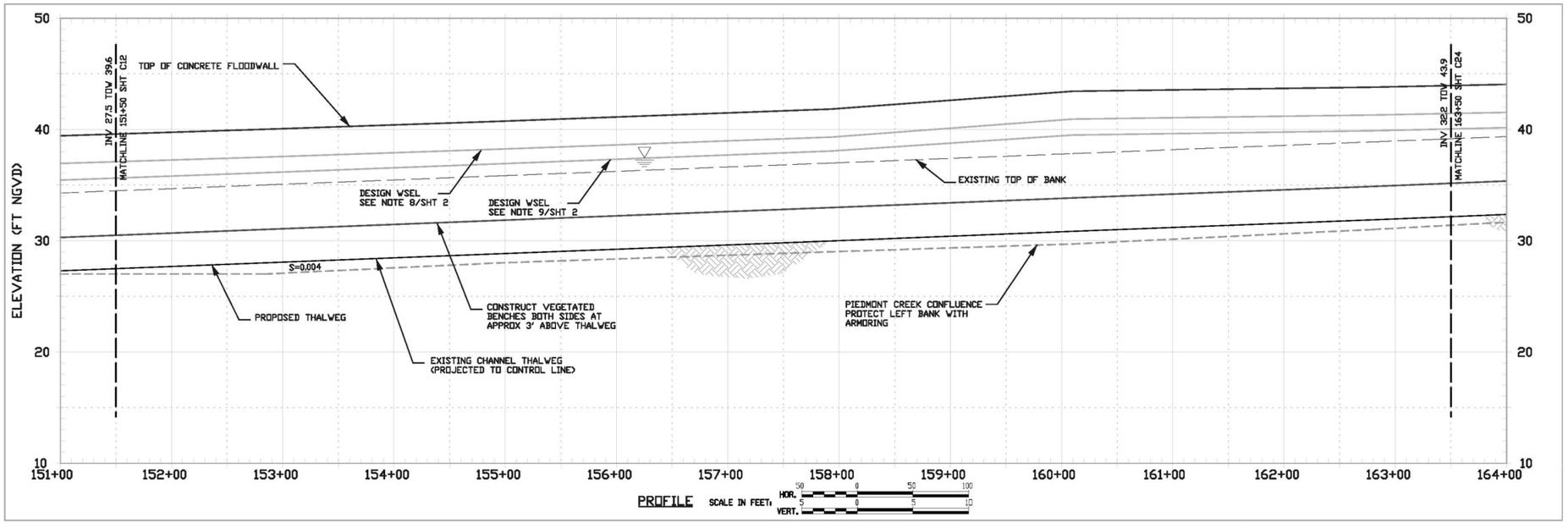
PREPARED BY:
TETRA TECH, INC.
17770 CARTWRIGHT, STE. 500
IRVINE, CA 92614

SANTA CLARA COUNTY CALIFORNIA
BERRYESSA CREEK PROJECT
GENERAL REEVALUATION STUDY
ALTERNATIVES FORMULATION

ALTERNATIVE 4B/d
PLAN AND PROFILE VIEW
STA. 139+00 TO 151+00

Sheet reference number:
C22
Sheet 27 of 35





DRAFT DESIGN – FOR PLANNING PURPOSES ONLY

US Army Corps of Engineers
Sacramento District

Date Approved | Description | Symbol

Designed by: PRELIMINARY
Drawn by: KP
Reviewed by: RW
Submitted by:
Date: JAN 17, 2012
Design file no: N/A
Drawing Codes: N/A
Rev. N/A
Spec No.: N/A
File name: BER PP C-XX
Plot date: DEC 22, 2011
Plot scale: 50/100
Units: civil engineering sheet

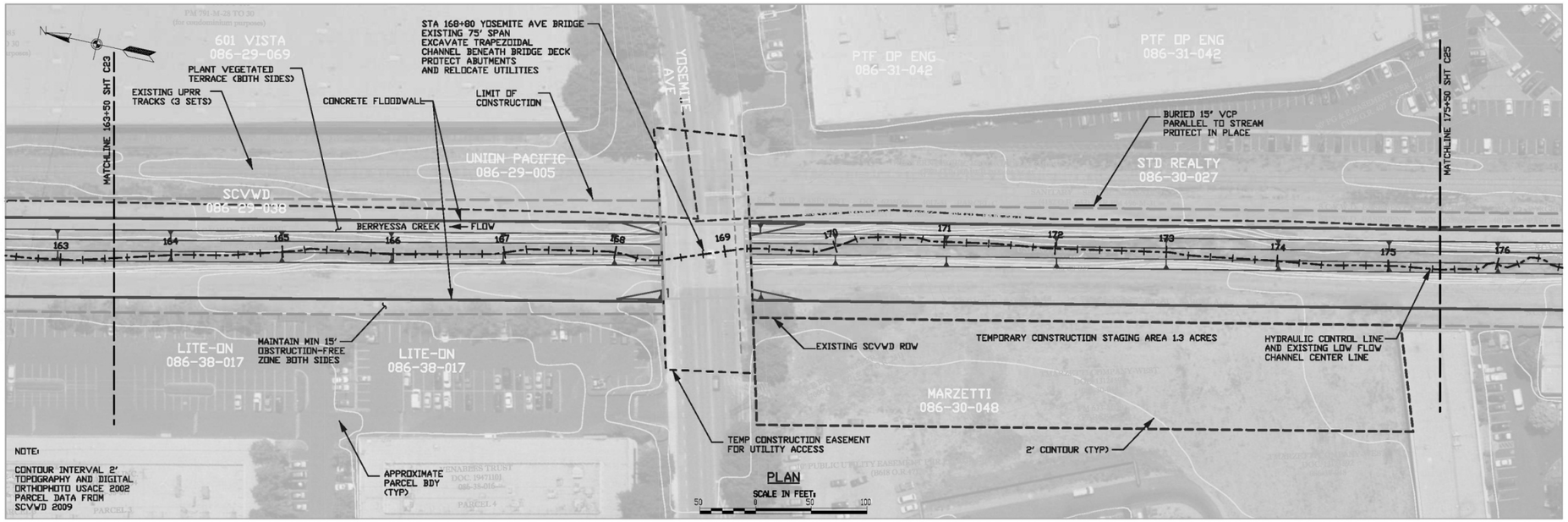
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
IN PARTNERSHIP WITH:
SANTA CLARA VALLEY WATER DISTRICT

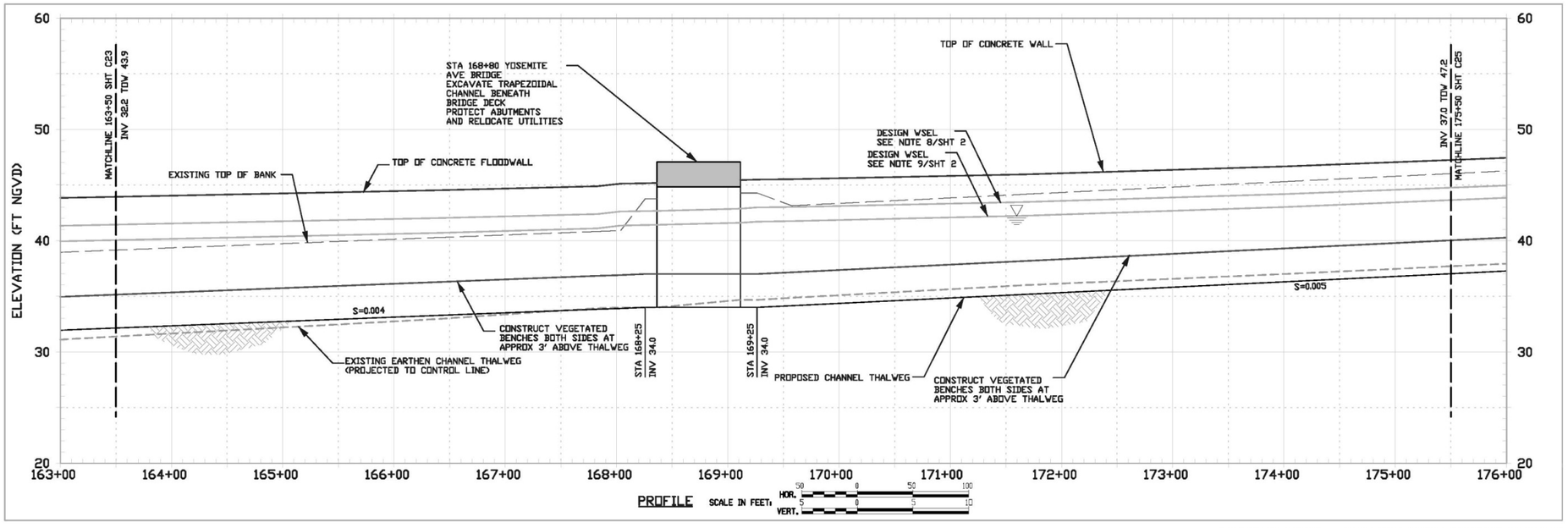
PREPARED BY:
TETRA TECH, INC.
17770 CAPISTRANO, 500
IRVINE, CA 92614

SANTA CLARA COUNTY CALIFORNIA
BERRYESSA CREEK PROJECT
GENERAL REEVALUATION STUDY
ALTERNATIVES FORMULATION

ALTERNATIVE 4B/d
PLAN AND PROFILE VIEW
STA. 151+00 TO 164+00

Sheet reference number:
C23
Sheet 28 of 35





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GENERAL REEVALUATION STUDY
ALTERNATIVES FORMULATION

ALTERNATIVE 4B/d
PLAN AND PROFILE VIEW
STA. 163+00 TO 176+00

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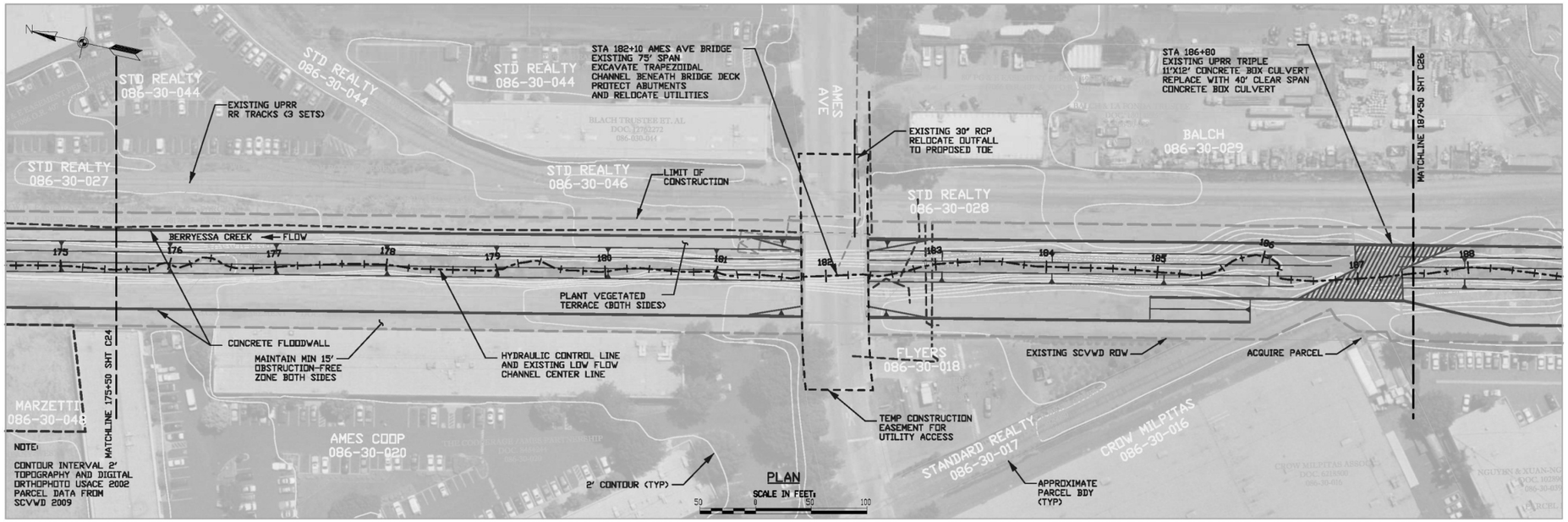

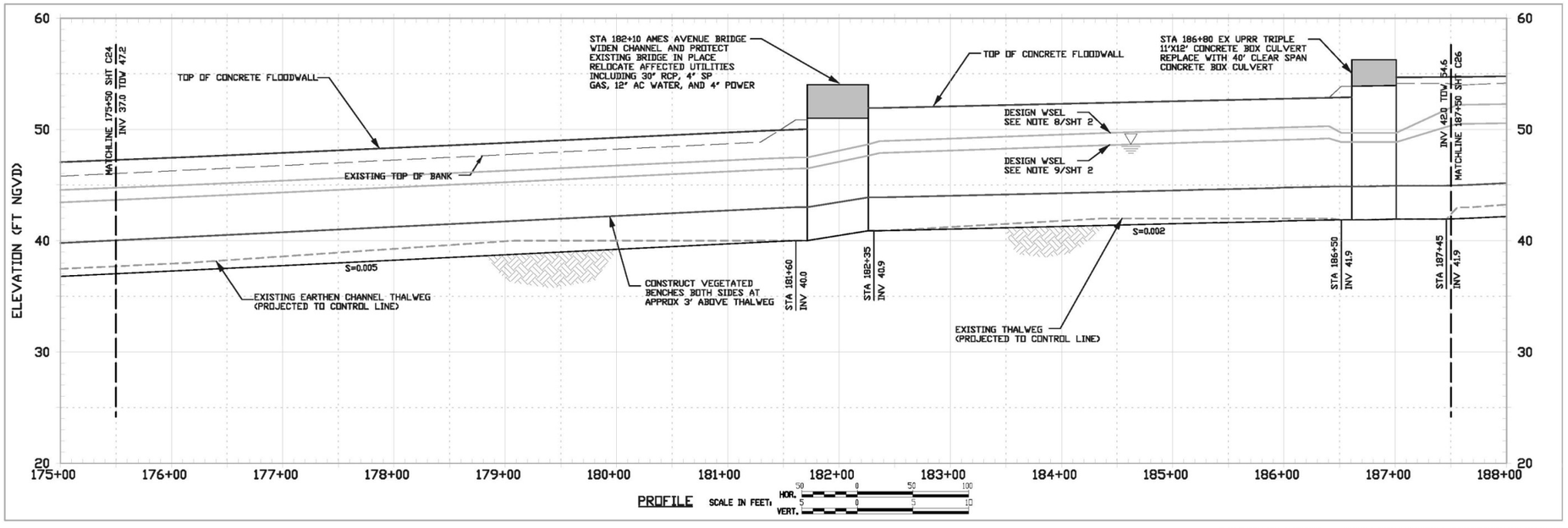

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ALTERNATIVE 2B/d
PLAN AND PROFILE VIEW
STA. 175+00 TO 188+00

Sheet reference number:
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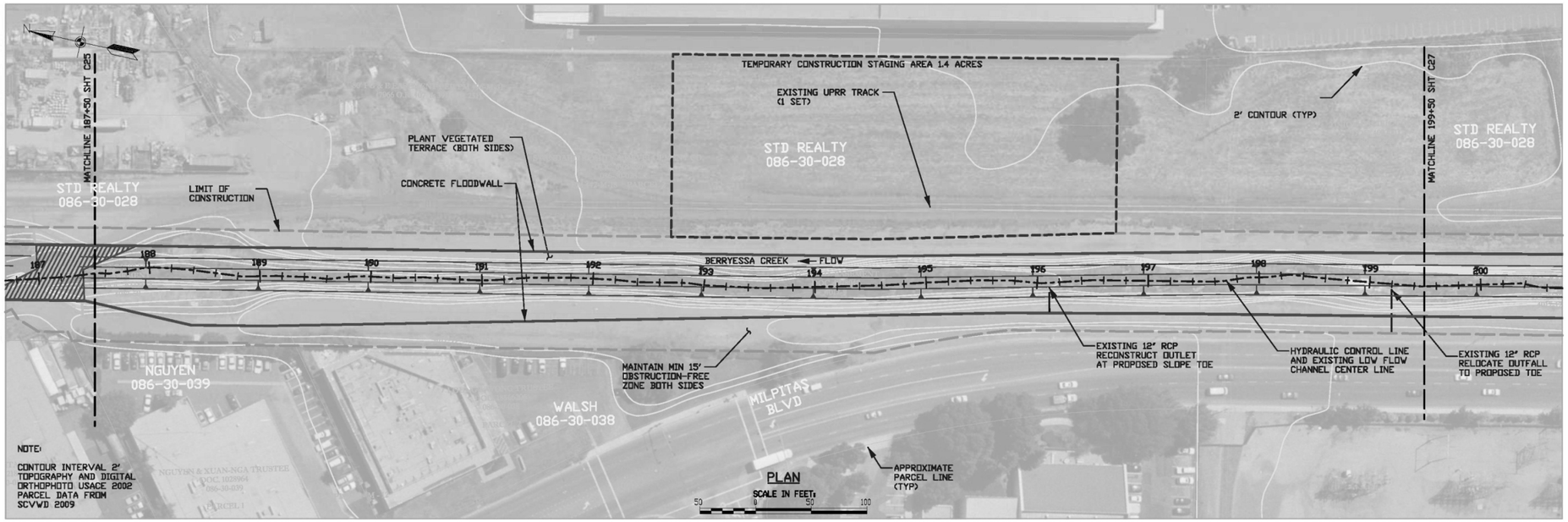

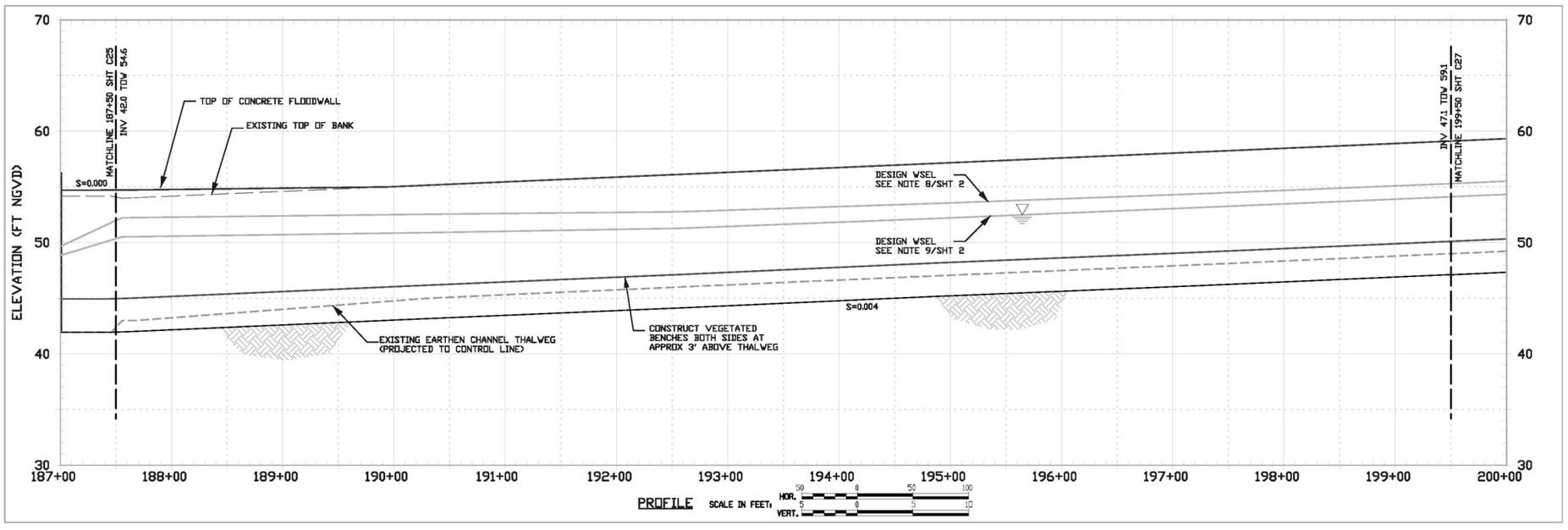

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ALTERNATIVES FORMULATION

ALTERNATIVE 4B/d
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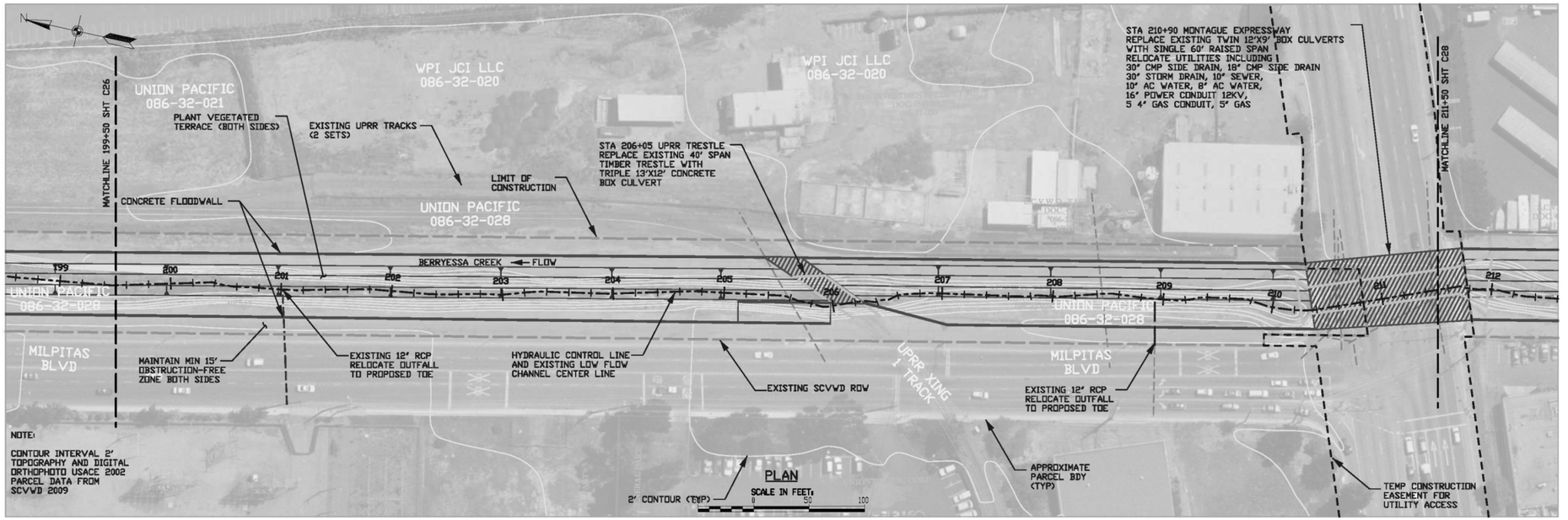

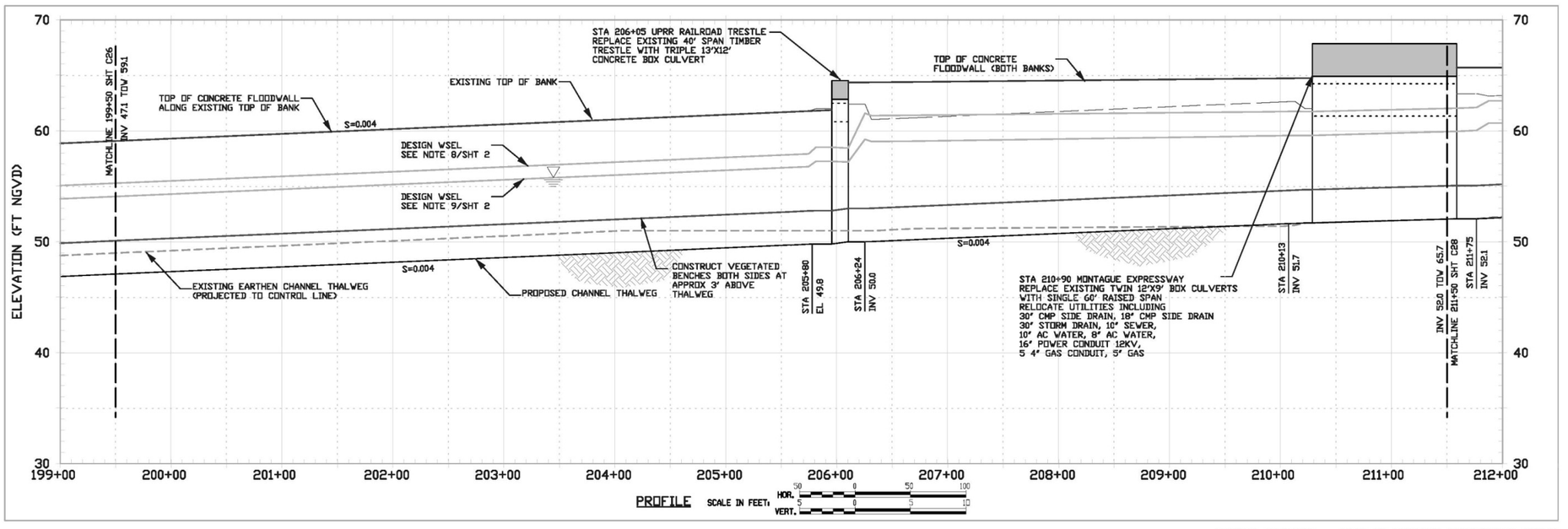

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ALTERNATIVES FORMULATION

ALTERNATIVE 4B/d
PLAN AND PROFILE VIEW
STA. 199+00 TO 212+00

Sheet reference number:
C27
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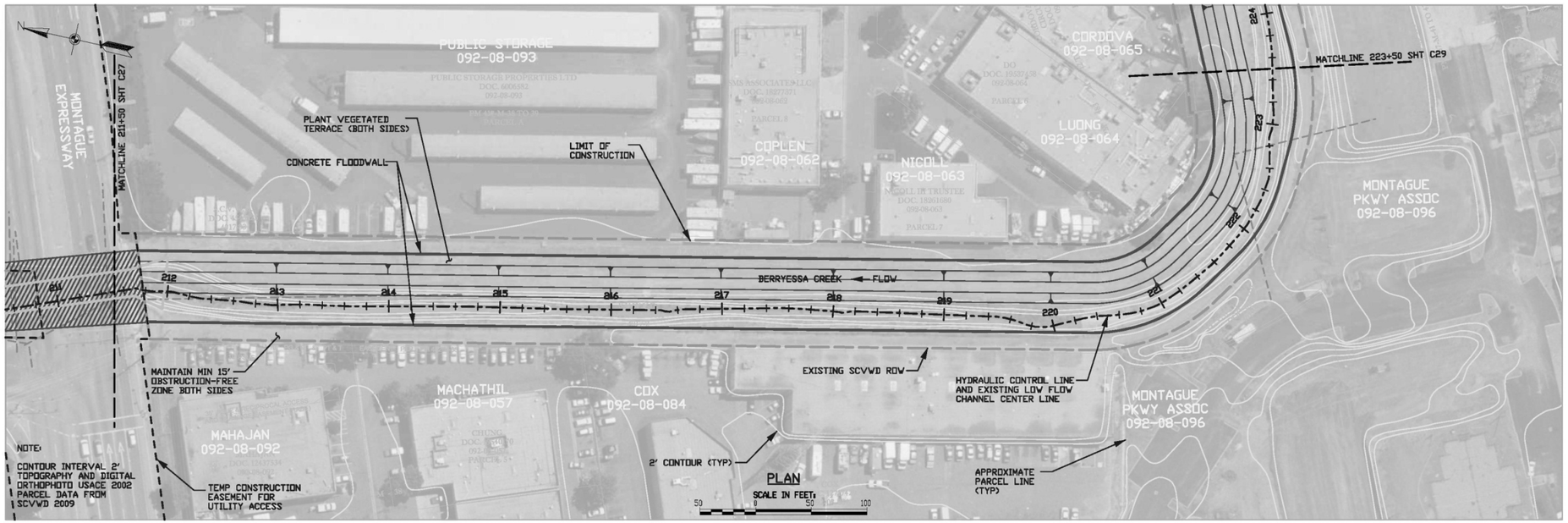

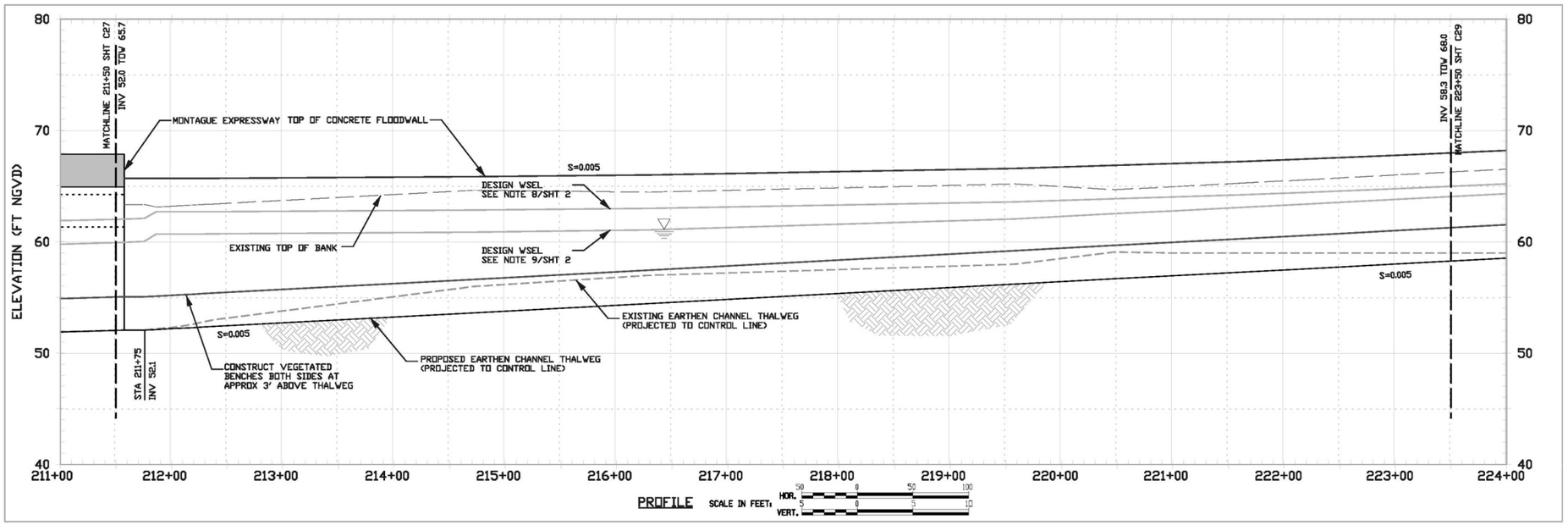

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PLAN AND PROFILE VIEW
STA. 211+00 TO 224+00

Sheet reference number:
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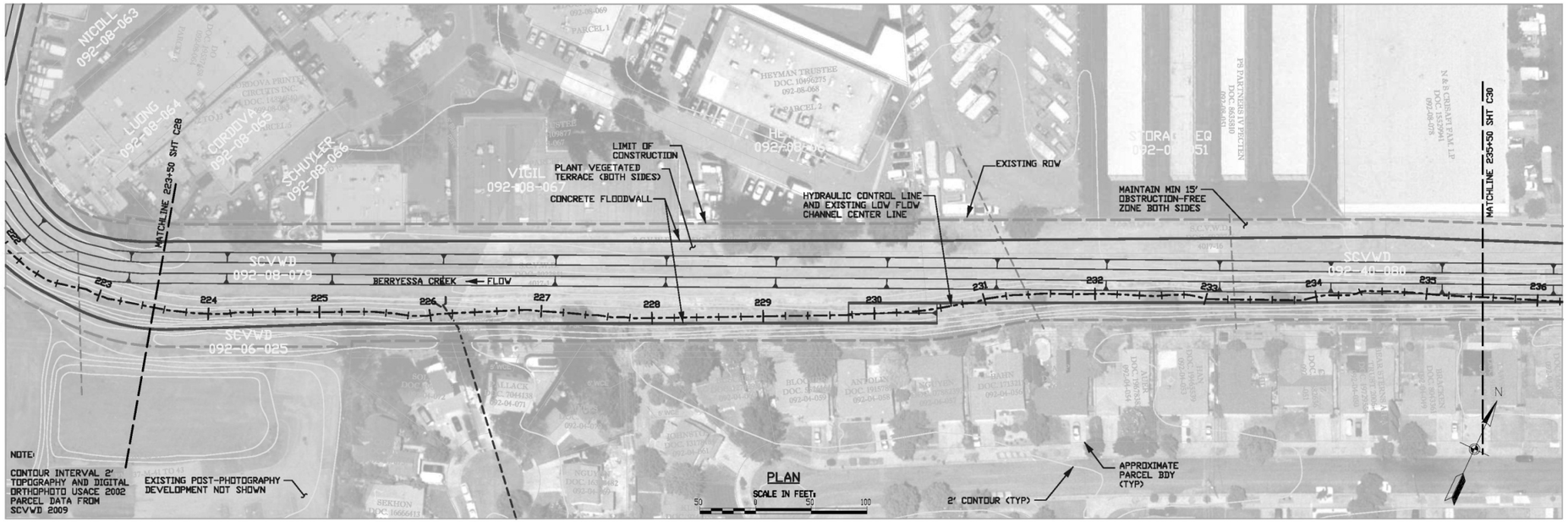

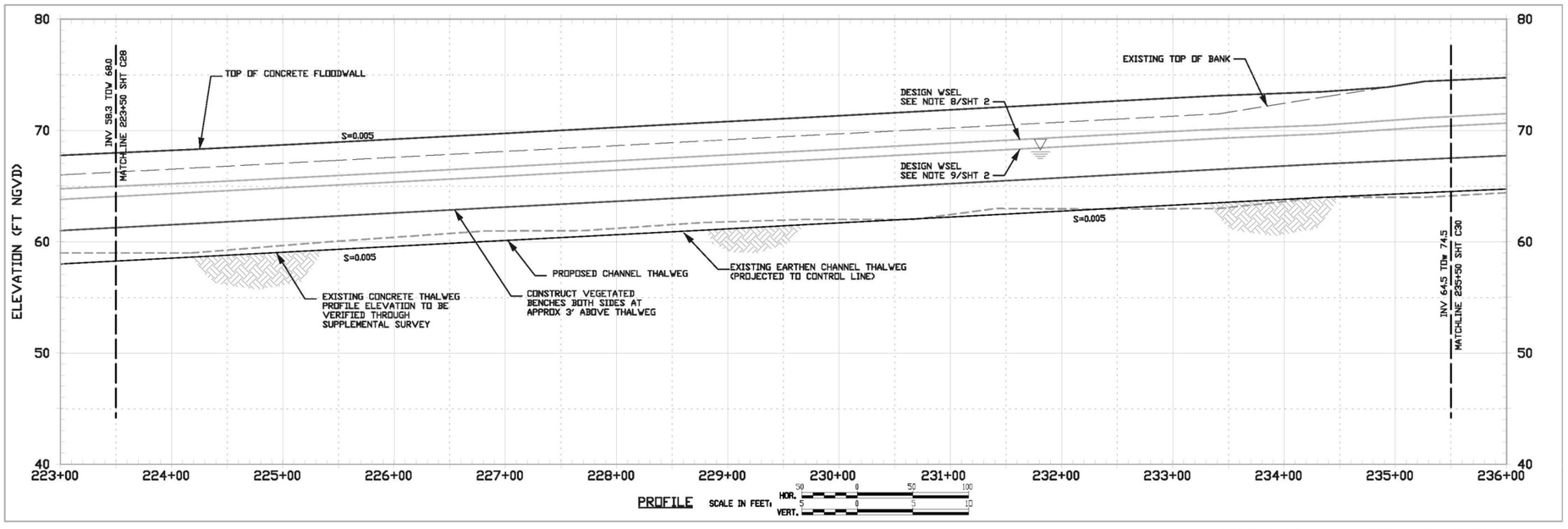

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ALTERNATIVES FORMULATION

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PLAN AND PROFILE VIEW
STA. 223+00 TO 236+00

Sheet reference number:
C29
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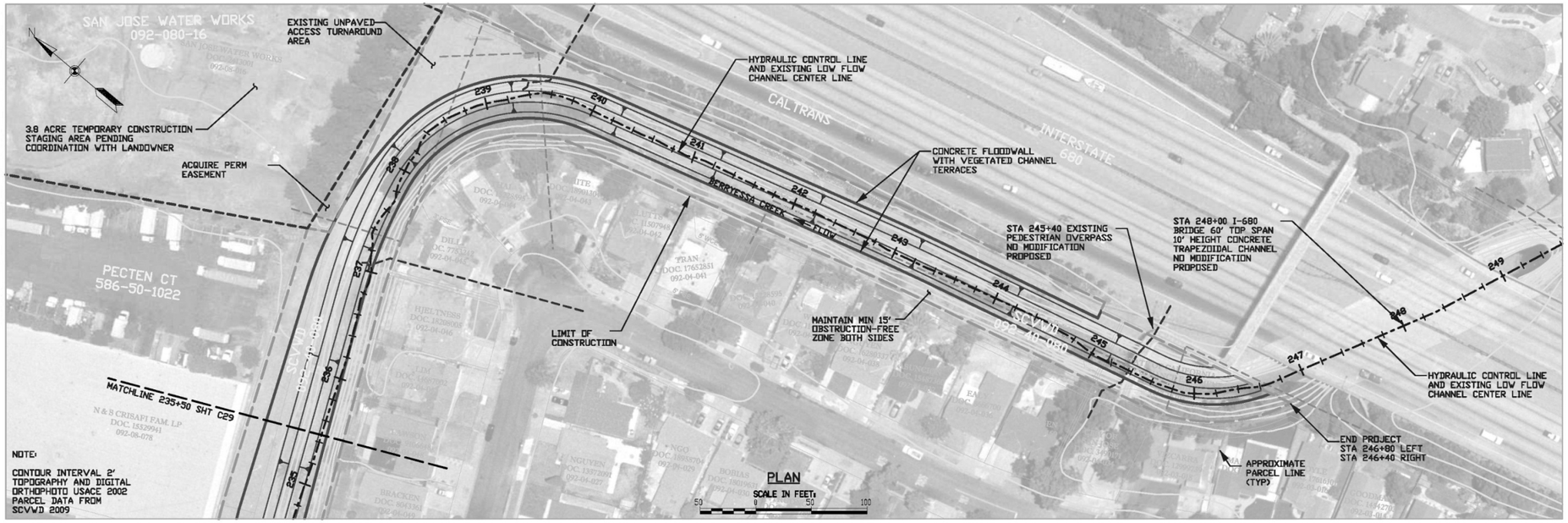

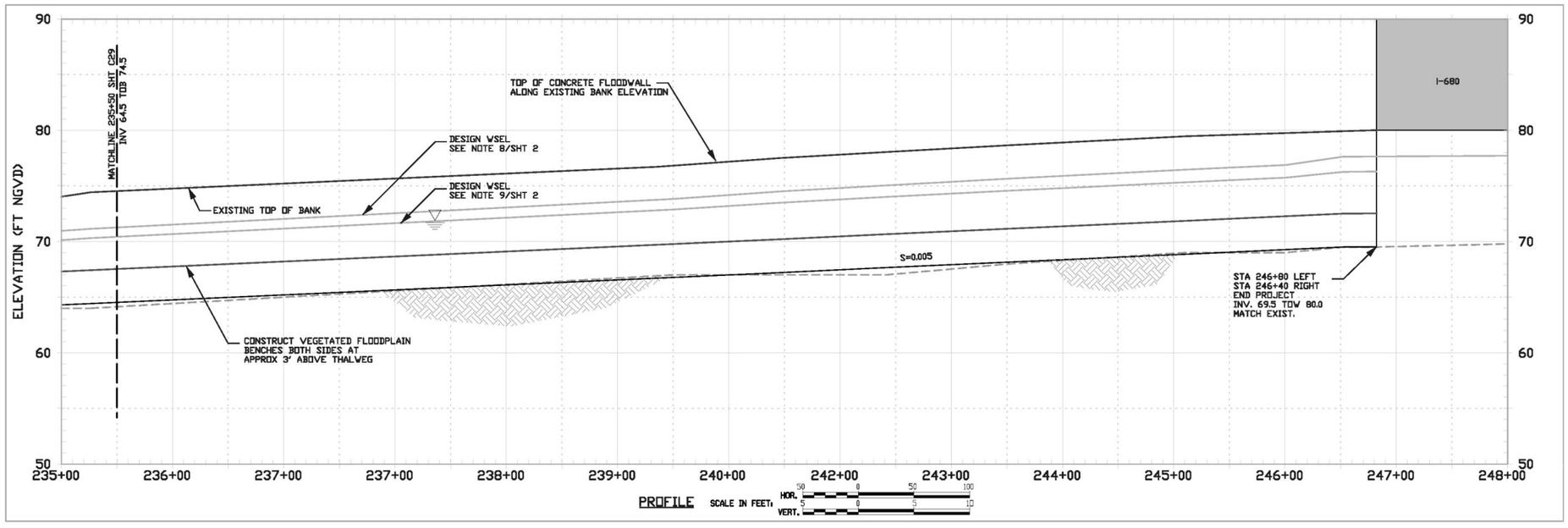

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PLAN AND PROFILE VIEW
STA. 232+00 TO 245+00

Sheet reference number:
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CHAPTER 7 – DETAILS OF RECOMMENDED PLAN

This chapter provides further details on the tentatively Recommended Plan, as determined in the preceding chapters of this report. Detailed cost estimates were developed using October 2012 price levels and the Federal interest rate of 3.75 percent, unless otherwise noted, and are presented as categorized in the various MCACES accounts. Federal and non-Federal cost apportionment responsibilities are also presented.

7.1 PLAN DESCRIPTION

7.1.1 Flood Risk Management

The NED Plan consists of a 0.01 exceedance probability event level of performance, with 50 percent assurance, downstream of the I-680 culvert. Alternatively, based on interpolation, at an assurance level of 90 percent, the NED Plan would be able to contain the equivalent of about a 0.03 exceedance probability event.

The plan would consist of an earthen trapezoidal channel section with varying bottom width and 2H:1V sideslopes. Due to real estate constraints, free-standing concrete floodwalls would be constructed instead of levees in the immediate vicinity of Montague Expressway as well as between the Piedmont Creek confluence and Calaveras Boulevard. Concrete floodwalls would include 42-inch safety railing for any wall heights above 2 feet. An access road would be located along the left bank channel slope downstream of Yosemite Avenue. Transition structures at Montague Expressway, UPRR culvert, Los Coches Street, and Calaveras Boulevard would be constructed. Transition structures (with variable sloping wingwalls) would extend for 50 to 75 feet upstream or downstream of the bridge face. The existing UPRR trestle would be replaced with a triple barrel concrete box culvert. Storm drains entering the channel, or running parallel to the channel, situated within the proposed channel excavation areas would be relocated. Individual channel and bridge/culvert modifications are shown in Table 7-1. A more detailed project footprint, including temporary construction easements, staging areas, and access routes, is presented in the overview exhibits at the end of Chapter 6.

Table 7-1 Summary of Features – NED Plan

Reach/Structure	Project Features
I-680 Bridge (Sta 248+00)	Remove accumulated sediment at downstream face
Channel Reach from I-680 to Montague Expressway (Sta 248+00 – 210+90)	Excavate 6- to 12-foot bottom width earthen channel with cellular bank protection at 2H:1V sideslope; construct 200 lineal feet of free-standing concrete floodwall to maximum height of 2 feet
Montague Expressway Culvert (Sta 210+90)	Tie floodwall into existing headwall at upstream face of structure; construct transitions to existing wingwalls
Channel Reach from Montague Expressway to UPRR Trestle (Sta 213+90 – 206+05)	Excavate 12-foot bottom width earthen channel with cellular bank protection at 2H:1V sideslope
UPRR Railroad Trestle Bridge (Sta 206+05)	Remove existing timber trestle; Construct triple 15-foot span by 12-foot rise concrete box culvert with wingwalls
Channel Reach from UPRR Trestle to UPRR Culvert	Excavate 12-foot bottom width earthen channel with cellular bank protection at 2H:1V sideslope

Table 7-1 Summary of Features – NED Plan	
Reach/Structure	**Project Features**
(Sta 206+05 - 186+80)	
UPRR Railroad Culvert (Sta 186+80)	Construct transition to existing wingwalls
Channel Reach from UPRR Culvert to Ames Avenue (Sta 186+80 – 182+10)	Excavate 12-foot bottom width earthen channel with cellular bank protection at 2H:1V sideslope
Ames Avenue Bridge (Sta. 182+10)	Excavate 12-foot bottom width channel beneath bridge; construct abutment and pier protection
Channel Reach from Ames Avenue to Yosemite Drive (Sta 182+10 – 168+80)	Excavate 15-foot bottom width earthen channel with cellular bank protection at 2H:1V sideslope
Yosemite Drive Bridge (Sta 168+80)	Excavate 15-foot bottom width channel beneath bridge transitioning to 24-foot bottom width; construct abutment and pier protection
Channel Reach from Yosemite Drive to Los Coches Street (Sta 168+80 – 137+50)	Excavate 26-foot bottom width earthen channel with cellular bank protection at 2H:1V sideslope and access road along left bank slope
Los Coches Street Bridge (Sta 137+50)	Construct transition to existing structure
Channel Reach from Los Coches Street to Calaveras Boulevard (Sta 137+50-131+05)	Excavate 40-foot bottom width earthen channel with cellular bank protection at 2H:1V sideslope and access road along left bank slope; free-standing concrete floodwalls to maximum height of 4 feet
Calaveras Boulevard Bridge (Sta 131+05)	Construct transition to existing structure
Channel Reach Downstream of Calaveras Boulevard (Sta 131+05 – 129+80)	Construct transition to downstream project

7.1.1.1 Milpitas BART Station

As introduced in section 2.3.3.1, a new BART station will be constructed near the Berryessa Creek Element. BART stations are required to be protected from the 0.002 ACE ("500-year" flood) for sensitive facilities, while all other station features, such as walkways, are to be protected from the 0.01 ACE ("100-year" flood). Because the Corps' Berryessa Creek Element will not perform at the FEMA "100-year" level, the Milpitas BART Station will implement additional FRM measures, such as ensuring that raised walkways are constructed above the "100-year" regulatory flood plain.

7.1.2 Recreation Features

As previously discussed in Section 6.2.4, a 15-foot wide obstruction-free zone covers the entire project extent and is proposed outside of any excavation or floodwall on both side of the Berryessa Creek channel. A maintenance road would be constructed to allow access to the channel for flood-fighting and inspection purposes. The use of this maintenance road as a recreational trail is being investigated in coordination with the City of Milpitas and SCVWD. As determined in the preliminary analysis of the design criteria and specifications of the city's Trail Master Plan (Sokale/Landry Collaborative 1997), several elements required by the master plan are not considered incidental recreational features, rather project betterments. Non-incidental recreational features are outside of the authorized project purpose, and adding it to the authorized

project would require additional Congressional authority, which would require a potentially lengthy process. However, these elements could be added to the project as non-Federally funded betterments without any additional authority from Congress.

7.1.3 Environmental Features/Mitigation Components

Ecosystem restoration is not included as a project purpose in the existing Coyote and Berryessa Creeks, California project authorization. Similar to recreation, as discussed above, adding this purpose to the authorized project would require a potentially lengthy process for re-authorization by Congress. However, the NED Plan provides an environmentally sensitive design and remains within the scope of the current flood risk management project.

Implementation of the NED Plan would disturb or eliminate 0.79 acres of wetlands dominated by cattails, a wetland obligate plant species. However, since stream hydrology would not be permanently affected, the cattails could reestablish naturally within a year to three years after construction, and the wetlands would re-emerge in the channel. Mitigation measures to address these short-term impacts are discussed in Chapter 5. In addition, Corps guidance would require removal of woody vegetation on the levee prism and within 15 feet of the toe of the levee. Approximately 15 trees, located between East Calaveras Boulevard and Los Coches Street, may need to be removed for construction access. Shrubs and grasses along the channel would be removed prior to construction. Vegetation communities included in this impact are located on the landside of the floodwall. Mitigation measures to address impacts are discussed in Chapter 5.

7.1.4 Health and Safety

The NED Plan would effectively reduce damages and provide additional protection to the residents currently living in flood prone areas downstream of I-680. The NED Plan would effectively provide approximately 92 percent of reduction in flood damages. Further, the plan decreases the risks for loss of life and increases safety during the 0.20 to the 0.01 exceedance probability flood event.

7.1.5 Induced Flooding Analysis

While a formal interior/induced flooding analysis was not completed for this feasibility effort, HEC-RAS and FLO-2D model results from the Existing Conditions and Selected Plan (Alt 2A/d) alternatives were reviewed by Hydraulic Analysis Section, Sacramento District, USACE (Hydraulic Analysis) to investigate the possibility of the selected plan inducing flooding elsewhere in the project area.

Hydraulic Analysis review suggests that the potential exists for new floodwall construction to impede local drainage to the creek; however measures such as flap-gated culverts will likely need to be incorporated to minimize and potentially eliminate this impact. Current modeling efforts do not include enough information to develop accurate depth data in potentially impacted areas, however, HEC-RAS hydrographic data suggests that the creek would only be high enough to potentially impede flow through culverts incorporating measures such as those identified above in instances of high tailwater for a duration that is on the order of 1 to 3 hours for large

storm events (approximately equal to the 1% Annual Chance Exceedance event and less frequent events). More frequent events could still see interior drainage issues, but they would not be likely to be impacted by high creek tailwater.

A review of HEC-RAS maximum water surface profiles does not show direct potential for induced flooding. Maximum water surface elevations at the upstream end of the model are not impacted by the selected plan design and those downstream of the project, while they do increase, do not rise high enough to spill over the banks of the downstream channel.
A review of the floodplain data (Figures 3-14, 3-15, 6-1 and 6-2 as well as Tables 3-13, 3-14, 6-1 and 6-2 of the Floodplain Development Appendix) shows only a reduction in floodplain extent generated by the FLO-2D modeling and mapping.

In conclusion, implementation of the tentatively selected plan consistent with the suggested design refinements will likely reduce and possibly eliminate any induced flooding.
[Based on the foregoing, significant induced flooding is not presently anticipated as a consequence of implementation of the tentatively selected plan. In the event that detailed H&H modeling later yields contrary results (which appears unlikely), District Real Estate finds that any potential acquisitions would be covered by existing cost contingencies.

7.2 PROJECT BENEFITS

7.2.1 Flood Risk Management

As discussed in Chapter 6, the NED Plan provides approximately $10.95 million of annual benefits from flood risk management, resulting in approximately $9.65 million in net benefits and a benefit-to-cost ratio of 8.5. More detailed information on the benefits is also presented in Appendix C, Economics.

7.2.2 Recreation

Since recreation is not an authorized project purpose for Berryessa Creek, a recreation plan component was not included in the NED Plan. Thus, no project benefits were determined. However, opportunities exist for future recreation improvements within the scope of the currently authorized flood risk management project. A feasible option is the use of the proposed maintenance road to accommodate a multi-use recreational trail. Improvement of the Berryessa Creek Element levees would allow for the extension of a local recreational trail system. In less than one mile of the project improvements, over 60,000 people reside, according to tract data of the 2000 Census. The estimated cost of trail construction on the improvement is $1.63 million. The amortized value of this construction is less than $76,000 or nearly $1 per person in the immediate area. The FY12 unit day value for general recreation with a zero point value is $3.72. Less than 60 users per day would be necessary for economic justification at this unit day value.

7.3 REAL ESTATE REQUIREMENTS

The real estate interests required for and/or impacted by the Project are owned and or held by private owners, county governments and/or municipalities, public and private utilities, and the UPRC as shown in the tract register on page 8 of the Real Estate Plan (Appendix E).

Some properties required for and/or impacted by the project are located within, adjacent to or close to SCVWD's existing rROWs along Berryessa Creek, primarily downstream of I-680. Currently, SCVWD is fee owner of 15.88 acres of the required twenty-five (25) acres for permanent project acquisition needs. The remaining 9.12 acres required for CIEs are owned as identified above. Twenty-five (25) acres of land will be required for CIEs, 11.91 acres will be required for TWAEs, and 2.08 acres for FPLEs for the required floodwalls. Of the nine (9) parcels that will be encumbered by TWAEs, four (4) parcels will be required for staging areas consisting of 7.6 acres and five (5) parcels will be required to support construction consisting of 4.31 acres.

The baseline cost estimates include a cost estimate and the Federal and non-Federal costs associated with acquiring the lands for the project. There are no federally-owned lands or other Federal projects in or partially in the study area. The total cost estimate for real estate requirements for the NED Plan is shown in Table 7-2 and includes the value of non-Federal sponsor owned estates required for this project.

Table 7-2 Real Estate Costs
November 2012 Prices[1]

Land	Acres	Cost
Lands and Easements (26 parcels)	11.91 (TWAE)[1] 25.00 (CIE)[2] 2.08 (FPLE)[3]	$7,020,000
Incremental RE Costs (30% contingency)		$2,106,000
Preliminary Severance Estimate (10%)		$702,000
Subtotal (rounded)		$9,828,000
Non-Federal Administrative Costs		$930,000
Federal Administrative Costs (including crediting)		$320,000
TOTAL Lands and Damages		**$11,078,000**

[1] Source: 2012 Real Estate Plan
[2]TWAE – temporary work area easement (i.e. vegetation, staging, construction)
[3] CIE – (permanent) channel improvement easement
[4] FPLE – flood protection levee easement

The NED Plan would also require relocations of publicly- and privately-owned utilities. The total cost for utility/facility relocations (including a 23.82% contingency) is estimated at $1,710,000 (August 2013 Real Estate Plan). The affected utilities, locations, and ownership are shown in Table 7-3. Additional information is presented in Appendix B, Design and Cost of Alternatives. More detailed information on the real estate interests is presented in Appendix E, Real Estate Plan.

Table 7-3 Affected Utilities – NED Plan			
Berryessa Creek Reach	**Location**	**Type**	**Owner**
I-680 to Montague - Channel			
	Sta 226+00	Storm Drain System	City of San Jose
	Sta 222+00 to 222+60	Electrical	PG&E
	Sta 210+80 to 214+60	Electrical	PG&E
Montague to UPRR Trestle – Channel			
	Sta 208+40	Electrical	PG&E
UPRR Trestle to Culvert – Channel			
	Sta 205+80	Electrical	PG&E
	Sta 197+60	Electrical	PG&E
UPRR Culvert to Ames – Channel			
	Sta 183+00	Waterline	City of Milpitas
Ames to Yosemite – Channel			
	Sta 181+20 to 181+80	Electrical	PG&E
Yosemite to Los Coches – Channel			
	Sta 159+00 to 160+00	Telephone Conduit	AT&T
	Sta 154+00	Storm Drain Outlet	City of Milpitas
	Sta 153+80	Sanitary Sewer System	City of Milpitas
	Sta 151+00	Electrical	PG&E
	Sta 149+20 to 151+00	Electrical	PG&E
	Sta 142+40	Sanitary Sewer System	City of Milpitas
	Sta 138+60 to 143+70	Electrical	PG&E
Los Coches to Calaveras - Channel			
	Sta 137+20	Sanitary Sewer System	City of Milpitas
	Sta 137+00	Storm Drain Outlet	City of Milpitas
	Sta 137+00	Cable	Comcast
	Sta 134+80	Sanitary Sewer System	City of Milpitas
	Sta 133+50	Storm Drain Outlet	City of Milpitas
	Sta 132+00 to 138+00	Electrical	PG&E
	Sta 131+60 to 182+40	Sanitary Sewer System	City of Milpitas

Bridge Transitions.

The TSP/NED Plan proposes the construction of transitions from the proposed flood walls to the existing wingwalls at Montague Expressway, UPRC Culvert, Los Coches St, and Calaveras Blvd. The purpose of these wingwalls is to provide transitions between the proposed channel/flood walls and the existing bridge structures in order to provide for the continued structural integrity of the bridge foundations and abutments. Additionally, abutment and pier protection is planned for the bridges at Ames Avenue and Yosemite Drive in order to protect the piers/abutments from the increased flows and from potential

undermining that may result from the planned deepening of the channel at these locations.

A review of the Authorized Project (The Coyote and Berryessa Creeks, California, Chiefs Report dated February 7, 1989 and the November 1987 Coyote Creek and Berryessa Creek Interim Feasibility Report) was conducted to determine if financial responsibility for the construction of these bridge transitions and related features, identified herein and in the GRR as project features, had previously been determined. While LERRDs costs are included in the cost estimate, no additional detail is provided in either the November 1987 Interim Feasibility Report, in the February 7, 1989 Chief's Report or in the corresponding project descriptions and construction costs breakdowns to suggest that these bridge transitions were authorized as LERRDs relocations rather than project features. Accordingly, based on the functions and purposes of the bridge transitions and features proposed for construction, and the provisions of ER 1105-2-100 (E-21)(c)(2) (22 Apr 2000) and EP 1165-2-1 (10-4)(a)(1) (30 July 1999), these features have been regarded as items of construction, included in the Engineering Cost Estimate attached to the GRR as Part IV of Appendix B, and are subject to standard cost-sharing rules.

Notwithstanding the foregoing, the construction, operation and maintenance of these project features must be supported by both temporary and permanent real estate acquisitions which are project LERRDs and the responsibility of the SCVWD. These acquisition costs are included in the 01 account of the MCACES, and any unanticipated acquisitions needs that may arise in this regard are covered within 30% 01 real estate acquisition cost contingency discussed in Section 12 of this REP and Exhibit B, attached hereto. The non-Federal sponsor will be responsible for operating and maintaining these features.

Railroad Bridge Trestle.

After the replacement of the existing railroad trestle at station 206.0+05, a triple box culvert would be installed. The concrete culvert will have openings of approximately 10-ft x 11-ft and will be cast-in-place with steel reinforcing. New railroad tracks will need to be re-built on top of the new triple box culvert. New ballast rock will be brought in along with new primary rails and wooden ties. These construction costs are included in the Engineering Cost Estimate attached to the GRR as Part IV of Appendix B.

To construct the triple box culvert, the SCVWD will be required to acquire a TWAE and a CIE from the property owner, Union Pacific Railroad Corporation (UPRC). The triple box culvert will require a CIE real estate right for maintenance and operation. The SCVWD will be responsible for maintaining the box culvert. Costs of acquiring the necessary real property interests required to support this project feature remains a non-Federal sponsor obligation and are included in the 01 account of the MCACES.

Structure	TSP/NED Proposed Work (2A/d)	Meets ER 1105-2-100 (E-21)(c)(2) criteria for consideration as a construction cost: "protection by reinforcement, underpinning, or construction to ensure the structural integrity of the bridge foundations, piers, or abutments" (Project Cost)	Cost Allocation
Montague Expressway Culvert (Sta 210+90)	Tie floodwall into existing headwall at upstream face of structure; Construct transitions to existing wingwalls	Yes	Project Cost
UPRC Railroad Trestle (Sta 206+05)	Remove existing timber trestle; Construction triple 15-foot span by 12-foot rise concrete box culvert with wingwalls	N/A (Railroad Bridge – 33 USC 701p)	Project Cost
UPRC Railroad Culvert (Sta 186+80)	Construct transition to existing wingwalls	N/A (Railroad Bridge – 33 USC 701p)	Project Cost
Los Coches Street Bridge (Sta 137+50)	Construct transition to existing structure	Yes	Project Cost
Calaveras Boulevard Bridge (Sta 131+05)	Construct transition to existing structure	Yes	Project Cost

7.4 OPERATION AND MAINTENANCE

A detailed operation, maintenance, repair, rehabilitation, and replacement (OMRR&R) plan will be developed during PED. Annual inspections of vegetation, bridges, culverts, and channel reaches will be conducted. Vegetation control, partial vegetation replacement, trash and debris removal, and periodic structural maintenance will be required. Other activities will include maintenance and repair of the channel bank protection, graffiti removal, encroachment removal to preserve clear zones and channel, and access road maintenance.

Key maintenance tasks will be sediment removal from the channel and scour hole repairs. Since 1977, an annual average of approximately 7,000 cubic yards of sediment and debris has been removed from Berryessa Creek upstream of Calaveras Blvd. Table 2-1 in the Geomorphic and Sediment Transport Appendix shows the estimated maintenance quantities for historical removal of existing debris and repair of local scour areas; results are presented for each year, and these approximate removal quantities are assumed to reflect with-project maintenance efforts.

Annual costs for OMRR&R are estimated at $63,000. The non-Federal sponsor will be responsible for these costs for as long as the project remains authorized.

7.5 COST ESTIMATE

A more detailed construction cost estimate was developed using the Corps' Micro-Computer Aided Cost Estimating System (MCACES) 2nd Generation (MII) estimating software in accordance with guidance contained in ER 1110-2-1302, Civil Works Cost Engineering. Part IV, Design and Cost, of Appendix B, contains the detailed MII cost estimate. Table 7-4 presents the total project cost summary for the NED Plan. As shown, the total economic first cost of the NED Plan is estimated at $26,763,000.

Table 7-4 MCACES Total Project Cost Summary – NED Plan
October 2014 Price Level

WBS Number	Civil Works Features	Estimated Cost[1] ($000)
01	Lands and Damages	11,552
02	Relocations	2,220
09	Channels & Canals	11,359
18	Cultural Resource Preservation	137
	SUBTOTAL	25,268
30	Planning, Engineering, and Design	1,511
31	Construction Management	984
	TOTAL FIRST COST	**26,763**
	Annual OMRR&R	*63*

[1] Estimated costs include contingencies.

It should be noted that the set of plan formulation cost estimates (shown in Table 6-5) used for plan selection rely on construction feature unit pricing. The MII cost estimate supporting the NED Plan is supported by the preferred labor, equipment, materials, and crew/production breakdown. In addition, project markups used in the MII cost estimate were lower than those used for the plan formulation cost estimates.

7.6 COST ALLOCATION AND COST APPORTIONMENT

The costs for the NED Plan were allocated to a single purpose of flood risk management. Cost allocation is shown in Table 7-5. The apportionment of costs between the Federal Government and the non-Federal sponsor is also presented in the table. Based on the cost-sharing requirements under WRDA 1986, the non-Federal sponsor's maximum cost-sharing cannot exceed 50 percent of the total project cost. The non-Federal cost-shared amount is estimated at $13,246,000.

Table 7-5 Cost Allocation and Cost Apportionment – NED Plan October 2014 Prices		
Item	**Federal**	**Non-Federal**
Construction[a] (Flood Risk Management)	$13,814,000	-
LERRD[b]	-	$13,772,000
Total First Cost (Flood Risk Management)	**$13,814,000**	**$13,812,000**
Mandatory 5% Cash	-$1,388,000	$1,388,000
Subtotals	$12,426,000	$15,200,000
% of Total Cost-Shared Amount	*45%*	*55%*
Adjustment to Meet Maximum Non-Federal Share of 50%	$1,387,000	-$1,387,000
Total Cost Shared Cost (Flood Risk Management)	**$13,813,000**	**$13,813,000**
% of Total Cost-Shared Amount	*50%*	*50%*
Cultural Resources Preservation[c]	137,000	
TOTAL FIRST COSTS	**$13,380,000**	**$13,246,000**
Annual OMRR&R[d]	-	$63,000

[a] Based on June 2013 MII. Does not include IDC or annual OMRR&R
[b] Lands and damages and utility relocation (August 2013 REP)
[c] 100% Federal Cost
[d] October 2014 price level, 3.5% interest rate, 50-year period of analysis

7.7 ENVIRONMENTAL REQUIREMENTS

Pre-construction surveys are required for nesting birds. Migratory birds and their habitats are protected under the Migratory Bird Treaty Act, as amended (16 U.S.C703 et seq.). The study area is of low habitat quality to migratory birds and lacks suitable nesting areas. However, to ensure that there would be no effect to migratory birds, preconstruction surveys by a Corps biologist would be conducted within the study area and for a radius of at least 0.25 miles around the study area if construction is to begin before August 15th of any year. If any migratory birds are found, a protective buffer would be delineated, and USFWS and CDFW would be consulted for further actions. In addition, focused bat surveys for *Myotis* or western big-eared bats should be completed prior to construction to see if these species are using the bridges for roosting.

Under the NED plan, a Mitigation and Monitoring Plan (MMP) is not required, since the project would not affect biological resources. However, a MMP would need to be developed under Alternative 5 if it was to be implemented.

7.8 ENVIRONMENTAL OPERATING PRINCIPLES

The Recommended Plan supports each of the seven USACE Environmental Operating Principles (EOPs). The re-energized Environmental Operating Principles are:

1. Foster sustainability as a way of life throughout the organization.

2. Proactively consider environmental consequences of all Corps activities and act accordingly.
3. Create mutually supporting economic and environmentally sustainable solutions.
4. Continue to meet our corporate responsibility and accountability under the law for activities undertaken by the Corps, which may impact human and natural environments.
5. Consider the environment in employing a risk management and systems approach throughout the life cycles of projects and programs.
6. Leverage scientific, economic and social knowledge to understand the environmental context and effects of Corps actions in a collaborative manner.
7. Employ an open, transparent process that respects views of individuals and groups interested in Corps activities.

The environmental operating principles are met in the following ways:

Environmental balance and sustainability (EOP 1,2,3 &4)

- Project avoids or minimizes environmental impacts while maximizing future safety and economic benefits to the community

Planning with the environment (EOP 1,2 4, and 5)

- Worked with local resource agencies during planning phase to minimize impacts to the environment

Integrate scientific, economic and social knowledge base (EOP 6)

- Updated report based on Public and Independent External Peer Reviews

Seeks Public input and Comment (Win-win solutions) (EOP 7)

- Held stakeholder meetings and public workshops throughout the process
- Worked with local groups to achieve a balance of project goals and public concerns

7.9 ENVIRONMENTAL COMMITMENTS

Environmental commitments are defined as the required measures, particularly mitigation measures, incorporated into projects as approved by the Corps. These commitments are related to the best management practices and mitigation measures described in this GRR-EIS.

Commitments related to direct environmental effects would be implemented during (1) pre-construction engineering and design, (2) project construction, or (3) O&M. Pre-construction engineering and design includes preparation of detailed mitigation plans and ongoing coordination with other agencies. During construction, the Corps is responsible for administering project construction contracts and for ensuring that the mitigation measures included in these contracts are carried out. After completion of the project, the non-Federal sponsor is required to maintain the improvements. The Corps prepares the O&M manual, which SCVWD is responsible for implementing.

The environmental commitments to mitigate the direct effects of the alternative plans are listed below.

7.9.1 Soils

- Best management practices will be instituted to reduce or prevent the erosion of soil during and after construction. Construction sites will be watered to prevent erosion of soil by the wind. Additionally, vegetation will be planted to curtail erosion due to water.
    - Since the channel will be wider with the project, and because of the cellular bank protection, sediment currently contributed from bank erosion in the project reach will be greatly minimized post-project. If timely sediment removal activities are performed in the project area (as will be prescribed in the OMRR&R plan), there should be minimal impact to the sediment transporting from the project to the downstream area.

7.9.2 Air Quality

- During project construction, the best management practices listed in Section 5.2 for combustion emissions and PM_{10} will be implemented to reduce any emissions to less than significant. Additionally, guidelines provided by the U.S. EPA to minimize emissions will be used during construction.
- To decrease the amount of dust and PM_{10}, unpaved roads, staging areas, and stockpile areas will be watered, as needed, to keep them moist.

7.9.3 Climate Change

- During project construction, the best management practices listed in Section 5.3 for reducing GHG emissions will be implemented to reduce any emissions to less than significant.

7.9.4 Water Resources and Quality

- Best management practices will consist of regular watering of construction surfaces with water trucks to prevent wind erosion of dust into water resources, refueling equipment in designated areas, monitoring and maintaining equipment for fuel leaks regularly, and reseeding soil areas with native or nonnative grass to prevent soil erosion from surface water runoff.

7.9.5 Traffic and Circulation

- Construction vehicles will not be permitted to block any travel lanes.
- Construction zones along roadways will be posted to notify approaching motorists of trucks entering and exiting, and to reduce speeds through the construction zone.

- If there are trucks or equipment which will need time to maneuver into or out of construction sites and could affect traffic, flaggers will be stationed to slow or stop approaching vehicles to avoid conflicts with construction vehicles or equipment.

7.9.6 Noise

- Ensure that construction machinery is properly equipped with mufflers.
- Limits haul truck or other vehicle speed on roads adjacent to residences and on unpaved roadways.
- Limit hours of construction in conformance with City noise ordinances.
- Notify residences about type and schedule of construction.

7.9.7 Cultural Resources

- Archeology site CA-SCL-593 may require two phases of investigation. The first phase will be used to determine if the site is an archeology site with multiple features, or a discrete burial location. If the site does turn out to be a full archeology site, then Phase 2 data recovery will be necessary. All work will be done pursuant to the MOA and approved HPTMP.
- An archeological monitor will be onsite for all ground-disturbing activities in the APE. If cultural deposits are encountered during monitoring activities, all work in the area will cease until the provisions of Stipulation IV. of the MOA, Discoveries and Unanticipated Effects are met.

7.9.8 HTRW

- Prepare a plan that identifies any necessary remediation activities including excavation and removal of on-site contaminated soils and redistribution of clean fill material within the project site, if necessary. The plan shall include measures that ensure the safe transport, use, and disposal of contaminated soil and building debris removed from the site. In the event that contaminated groundwater is encountered during site excavation activities, the contractor shall report the contamination to the appropriate regulatory agencies, dewater the excavated area, and treat the contaminated groundwater to remove contaminants before discharge into the sanitary sewer system. The contractors shall be required to comply with the plan and applicable Federal, State, and local laws. The plan shall outline measures for specific handling and reporting procedures for hazardous materials and disposal of hazardous materials removed from the site at an appropriate off-site disposal facility.
- Notify the appropriate Federal, State, and local agencies if evidence of previously undiscovered soil or groundwater contamination (e.g., stained soil, odorous groundwater) is encountered during construction activities. Any contaminated areas shall be remediated in accordance with recommendations made by the Central Valley Regional Water Quality Control Board, and/or other appropriate Federal, State, or local regulatory agencies.

7.10 COMPLIANCE WITH APPLICABLE LAWS, POLICIES, AND PLANS

The status of the approach channel project's compliance with applicable Federal, State, and local environmental requirements is summarized below. Prior to initiation of construction, the project would be in compliance with all applicable laws, regulations, and Executive Orders.

7.10.1 Federal Laws, Regulations, and Policies

Clean Air Act of 1972, as amended (42 U.S.C. 7401, et seq.)

Full compliance. Section 5.2 of this GRR-EIS discusses the effects of the project on local and regional air quality. The section discusses the issues relative to the project's compliance with the EPA's adopted *de minimus* thresholds in its general conformity rule. Since the project would have no significant adverse effects on air quality, a conformity determination would not be required.

Clean Water Act of 1972, as amended (33 U.S.C. 1251, et seq.)

Full Compliance. The potential effects of the proposed project on water quality have been evaluated and are discussed in Section 5.4. Prior to construction, the Corps will prepare and implement a Stormwater Pollution Protection Plan (SWPPP). The SWPPP will help identify the sources of sediment and other pollutants, and establish BMPs for storm water and non-storm water source control and pollutant control. As part of the permits, contractors will be required to implement best management practices to avoid and minimize any adverse effects of construction on surface waters.

Section 404 of the CWA requires the EPA and Corps to issue individual and general permits for these activities. The Corps does not permit itself but conducts an internal assessment to ensure that all requirements of Section 404 are met. A 404(b)(1) analysis is included as Appendix A, Part V.

Endangered Species Act of 1973, as amended (16 U.S.C. 1531, et seq.)

Full Compliance. A list of threatened and endangered species that have the potential to occur in the study area was obtained from USFWS on April 29, 2012. Based on the analysis contained in this document, the Corps has determined that the project would have no effect on Federally-listed threatened or endangered species, and therefore no further consultation is required with USFWS or NMFS.

Executive Order 11988, Floodplain Management

Full Compliance. The objective of this Executive Order is the avoidance, to the extent possible, of long- and short-term adverse effects associated with the occupancy and modification of the base floodplain (1 in 100 annual event) and the avoidance of direct and indirect support of development in the base floodplain wherever there is a practicable alternative. The greater Milpitas area is highly developed with residential, commercial, public, and industrial land use. The proposed project is the only practicable way to reduce flood risk to the greater Milpitas area. The Berryessa Creek Element, in combination with other area flood risk management projects,

protects the existing urban population while providing residual risk information to the appropriate agencies making land use decisions in the area. Therefore, the proposed project does not contribute to increased development in the floodplain and is in compliance with the executive order.

Executive Order 11990, Protection of Wetlands

Full Compliance. This Executive Order directs Federal agencies, in carrying out their responsibilities, to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands. There is wetland vegetation within the study area. Wetland vegetation would be disturbed during construction but implementation of mitigation will reduce effects.

Executive Order 12989, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

Full Compliance. This Executive Order states that Federal agencies are responsible for conducting their programs, policies, and activities that substantially affect human health of the environment in a manner that ensures that such programs, policies, and activities do not have the effect of excluding persons from participation in, denying persons the benefits of, or subjecting persons to discrimination under such programs, policies, and activities because of their race, color, or national origin. The proposed construction project is not located near any minority or low income communities. The benefits of the project would extend to all residences in the area; therefore it would not provide disproportionate benefits or effects to any minority or low income populations and is in compliance with this Executive Order.

Farmland Protection Policy Act (7 U.S.C. 4201, et seq.)

Full Compliance. There are no designated prime or unique farmlands within the study area; therefore there would be no adverse effects to farmland and the project is in compliance with this Act.

Fish and Wildlife Coordination Act of 1958, as amended (16 U.S.C. 661, et seq.)

Full Compliance. Federal agencies undertaking water projects are required to fully consider recommendations made by the USFWS in the provided Coordination Act Report (CAR) or Planning Aid Letter associated with the project. USFWS and CDFW have participated in evaluating the proposed project, and USFWS has prepared a CAR, dated April 26, 2013, which accompanies this document (Appendix A, Part VI).

Magnuson-Stevens Fishery Conservation and Management Act (16. U.S.C. 1801, et seq.)

Full Compliance. There is no essential fish habitat in the study area; therefore, the Corps has determined that the proposed action would have no effect on essential fish habitat. The project is in full compliance with this legislation.

Migratory Bird Treaty Act of 1936, as amended (16 U.S.C. 703, et seq.)

Full Compliance. The Migratory Bird Treaty Act implements various treaties and conventions between the United States, Canada, Japan, Mexico, and Russia, providing protection for migratory birds as defined in 16 U.S.C. 715j. The proposed action is located primarily in an industrial area. There is no suitable nesting habitat located within the study area; however, there are some potential nesting trees within a ½ mile of the study area. To ensure that the project does not affect migratory birds, preconstruction surveys would be conducted by a qualified biologist in areas adjacent to the project site. If breeding birds are found in the area, a protective buffer would be delineated and USFWS and CDFW would be consulted for further actions.

National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321, et seq.)

Full Compliance. NEPA applies to all Federal agencies and most of the activities they manage, regulate, or fund that affect the environment. This act requires full disclosure of the environmental effects, alternatives, potential mitigation, and environmental compliance procedures of proposed actions. NEPA requires the preparation of an appropriate document to ensure that Federal agencies accomplish the law's purposes. Full compliance will be achieved when the final GRR-EIS is filed with USEPA and the Corps issues a Record of Decision.

National Historic Preservation Act of 1966, as amended (16 U.S.C. 470)

Full Compliance. Section 106 of the National Historic Preservation Act requires Federal agencies to take into account the effects of a proposed undertaking on properties that have been determined to be eligible for, or included in, the National Register of Historic Places.

In a letter dated August 9, 2011, the Corps initiated consultation with the SHPO, informing the SHPO of the proposed project, and asked for comments on the determination of the APE and on the proposed efforts to identify historic properties within the APE. In a letter dated January 25, 2012, the SHPO concurred with the Corps' determination of the APE and concluded that the Corps' efforts to identify historic properties was reasonable and sufficient Additionally, SHPO re-confirmation that CA-SCL-593 is eligible for the National Register of Historic Places.

7.10.2 State of California Laws, Regulations, and Policies

California Clean Air Act

Full compliance. Section 5.2 of this document discusses the effects of the proposed project on the local and regional air quality. BAAQMD determines whether project emissions sources and emissions levels significantly affect air quality based on Federal Standards established by the U.S. EPA and State standards set by the California Air Resource Board. The project is in compliance with all provisions if the Federal and State Clean Air Acts.

California Endangered Species Act

Full Compliance. This GRR-EIS has considered the potential effects to State-listed species and has determined that due to lack of suitable habitat for these species, the project would have no effect on State-listed species. As a result, this project is in compliance with the California Endangered Species Act.

Porter-Cologne Water Quality Control Act

Full Compliance. The potential effects of the proposed project on water quality have been evaluated and are discussed in Section 5.4. This project expects to achieve full compliance with the Water Quality Control Act by achieving compliance with RWQCB certification mandates for Section 401.

CHAPTER 8 – PUBLIC INVOLVEMENT*

8.1 PUBLIC INVOLVEMENT

The public and concerned planning and resource agencies have been invited to participate in all phases of the Berryessa Creek Element since its Feasibility Study/EIS phase in the mid-1980s. This has included opportunities to comment on the 1987 Berryessa Creek Interim Feasibility Report and Final EIS. A Notice of Intent (NOI) to prepare an EIS for the Berryessa Creek Element was filed with the Federal Register October 15, 2001. A Notice of Preparation (NOP) was also submitted to the Office of Planning and Research, State Clearing House by the SCVWD on October 29, 2001. In November 2001, a Public Scoping Meeting was conducted for the general reevaluation study. After the Corps and SCVWD committed to reevaluate the authorized flood control project, additional efforts were made to solicit public input and feedback on Berryessa Creek planning efforts, including:

- Disseminating information through SCVWD web site
- Providing background information through newspaper articles covering the project in the San Jose Mercury News and the Milpitas Post
- Creating opportunities for comment and discussion through public meetings and workshops at which the Corps, SCVWD, and other involved agencies have actively participated

The November 2001 Public Scoping Meeting was held to provide background information, discuss the purpose of the study, and discuss conceptual alternatives used in flood control projects. Concerns identified during public scoping typically fell into four categories: flood control, schedule, recreational, and environmental.

Environmental issues include public concerns about the biological effects of the project including effects on vegetation, wildlife, and fish. Concerns about the project's effects on recreation were also raised during the scoping meeting. Most of the comments received indicated concern about the provision of adequate trails along the creek, although several comments indicated concern about enhancing access to the creek. The City of Milpitas has a recreation trail project on Berryessa Creek in their Trails Master Plan; the City of San Jose has also identified an interim trail project from Morrill Avenue to Piedmont Avenue. The County of Santa Clara has not identified a trail project on Berryessa Creek.

Public concerns about flood control included various issues, such as the reduction of existing and potential flood damage to private and public properties and facilities, potential high maintenance costs for a flood control project along Berryessa Creek, the length of time required to complete the project, noise impacts on adjacent landowners during construction, and removing properties from the 100-year floodplain.

All pertinent scoping concerns have been duly considered in the preparation of this document. Comments on report scoping are on file at the SCVWD and Corps office as part of the project record.

Additional public meetings were held in November 2004 and March 2005, to update the community on the progress of the project and present conceptual alternatives developed for the project. Concerns generally included the following items.

- Concerns about safety related to accessibility and fencing between property owners and the creek, especially if there is a trail system. Most people wanted safety, security, and privacy but some did not want lighting shining into their homes. It was discussed that a trail may bring users more frequently, and that more people would actually preclude burglary and other security problems.

- Interested in what type of recreational trail there would be.

- Wanted to know how we calculated the flows for the 100-year flow? (Statistics, historical records, USGS information on rainfall and flow in the channel, using predictive equations in hydrology and frequency/probability of events occurring.)

- Concerns that in the past, flow patterns changed after flood events.

- Some thought that the trees in the greenbelt caused flooding, and did not want them or the debris falling in their yards; others wanted to make sure the trees are saved as much as possible. It was explained that the Water District has adopted natural flood control principles which encourages trees and natural streams.

- A recreational representative from the City of San Jose was at the meeting, and commented that the City is not sure they will build a trail project now because of funding. Further coordination would take place towards the end of the feasibility process, during design, or once the project is constructed. Milpitas has a trail master plan downstream of I-680.

- Concern over whether there will be walls built along the backyard fences was answered by citing that the City installed a supplemental fence (7 feet high) for the Guadalupe trail, but that homeowners still maintain their existing fence. This was handled by the community projects review unit, and now the Water District has a partnership with the City that the Water District maintains the creek and the City maintains the trails.

- In the past, the Water District did not want trails on their maintenance roads. “What is driver for the District to work with the City on trails?” Passage of Measure B supporting trails.

- Concern with riparian setbacks, and credit for rooftop gardens.

- Concern over motorbikes on the trails and who will patrol? (Police will respond to motorbikes.)

- Wanted to know where property would have to be acquired … where and how much.

- How will flood project address fast flood flows? Will the velocity increase with alternatives in the greenbelt area?

- Discussion over whether the community wants plants in the downstream area, where the creek mostly adjacent to commercial/industrial property. The community said it was hard to say without cost information, but it would generally be preferred.

8.1.1 Public Review and Comments on the Draft GRR-EIS

A Notice of Availability (NOA) on the Berryessa Creek Draft Integrated General Reevaluation Report/ Environmental Impact Statement (GRR-EIS) was published in the *Federal Register* on March 22, 2013. The 45-day public review period for the draft document began on March 22, 2013 and ended on May 5, 2013. A public workshop and hearing were held on April 18, 2013 at Milpitas Community Center to provide additional opportunities for comments on the Draft GRR-EIS. As required by environmental regulatory policies – National Environmental Policy Act (NEPA), the U.S. Army Corps of Engineers (Corps) as lead agency for the Final GRR-EIS, are required to respond to substantive environmental issues raised during the review and consultation process.

During the public review period, comments were received on the Draft GRR-EIS from Federal, State, and local agencies, and the general public. Comments were received in a variety of media, including letters, emails, telephone, and public meeting comments. Three comment letters were received on the Draft GRR-EIS from Federal, and local agencies and three letters from members of the public. Most comments were focused around air quality, water quality, traffic, biological resources, and flooding impacts.

Appendix G contains copies of all written and email comments received on the Draft GRR-EIS and all written comments received at the April 18 meeting. Comments received during the review period have been considered in preparing the Final GRR-EIS, as appropriate. A notice of availability of the Final GRR-EIS will be published in the Federal Register prior to distribution for public review.

8.1.2 Public Meeting

On April 18, 2013 the Corps, together with SCVWD held a public meeting to present the status of the project and obtain public input. The meeting was publicized in a Corps press release, the Corps' website, and by Corps/SCVWD's home mailings. The meeting was video recorded by SCVWD.

The purpose of the meeting was to continue the flow of information on the Berryessa Creek Element, while gathering additional information and community comments from citizens who live, work, and commute near the project area. In attendance were agency partners from SCVWD, and Tetra Tech. Interested parties from the City of Milpitas, City of San Jose, the State Assembly office, and ten community members attended the meeting.

At the meeting, the Corps and SCVWD had visual displays explaining the project location, and descriptions of the project alternatives. The Corps gave a short presentation on the history of the Berryessa Creek Element, the tentatively selected alternative, and the National Environment Policy Act. After the Corps presentation, questions were asked regarding channel maintenance and flooding in upper portion of Berryessa Creek. Concerns were raised about sediment accumulating at a bridge near Old Piedmont Road and the lack of maintenance which contributes to flooding. A question was asked as to who was responsible for maintenance. Dennis Cheong from SCVWD explained that the City of San Jose is responsible for channel maintenance in that area. Comments were also made on the need to have flood insurance. Concerns were expressed on potential flooding to the residents and a school in the upper Berryessa Creek area. Krey Price, Tetra Tech, explained the potential flooding patterns around the Berryessa Creek study area, the multiple scenarios that were investigated, and the rational for implementing flood control measures starting downstream and working upstream.

Questions were also raised about the need for floodwalls and the heights of the proposed floodwalls. Statements encouraged higher floodwalls along the creek to handle larger flows from possible increased runoff or climate change. Cameron Sessions explained that during investigation of alternatives a balance approached was used to consider cost, risk, level of protection and safety.

A member of the public asked if the creek would remain an earthen channel or if it would be converted into a concrete lined channel. Cameron Sessions explained that the channel would remain earthen. An additional question asked, was what environmental improvements to the creek result from the project. Jamie LeFevre explained that the project would stabilize the banks reducing erosion and sediment into the creek to improve water quality. The banks would also be reseeded with native vegetation which would result in an increase to plant diversity.

Another member of the public asked about additional recreational opportunities along the creek. Cameron Sessions explained although formal recreational components are not a part of this project; the required maintenance roads make incidental walking trails. Dennis Cheong went on to further explain SCVWD's and the City's plans to improve recreational opportunities in the future.

8.2 FEDERAL, STATE, AND LOCAL AGENCY INVOLVEMENT

Throughout the history of the authorized project and General Reevaluation Study, the Corps and SCVWD have coordinated planning activities with other Federal, State, and local regulatory and planning agencies. In the 1980s, coordination with these agencies led to development of the authorized project. This coordination would continue through the reevaluation phase, leading to the design and construction of the authorized project as modified per the general re-evaluation phase. The Corps and Water District plan to engage these agencies throughout the development and refinement of a range of alternatives for public consideration that would meet the flood risk

management, recreational, and environmental objectives of the project. The primary conduit for technical feedback from other agencies and environmental groups include the Corps' interagency meetings and public outreach meetings, with members representing the following organizations:

- U.S. Army Corps of Engineers
- Santa Clara Valley Water District
- U.S. Fish and Wildlife Service
- National Marine Fisheries Service
- U.S. Environmental Protection Agency
- California Water Resources Control Board
- California Department of Fish and Game
- San Francisco Bay Regional Water Quality Control Board
- City of Milpitas
- City of San Jose
- Coyote Watershed Integrated Working Group
- Santa Clara Valley Transportation Agency
- Union Pacific Railroad

The Corps and SCVWD are currently coordinating with the cities of Milpitas and San Jose to determine their interest in participating in the study, specifically in increasing and providing recreational uses/opportunities along Berryessa Creek.

8.2.1 Views of the Non-Federal Project Partner

The SCVWD has affirmed its intent to participate in the federally authorized Berryessa Creek Elementas the non-Federal sponsor. SCVWD staff will continue working with the Corps to comple the project on schedule and within the budget.

The SCVWD will continue to participate in the cost-sharing of the project in accordance with the terms of the reevaluation cost sharing agreement. The SCVWD is fully committed to providing flood control and stream stewardship for the communities of San Jose and Milpitas.

The SCVWD also understands their responsibility in furnishing all project lands, easements, rights-of-way, and relocations, excluding relocation of railroad bridges and approaches thereto. It should be noted that the voters of Santa Clara County approved the Clean Safe Creeks and Natural Flood Protection Act, a bond measure that specifically provides funding for the non-Federal share of the project.

8.2.2 Views of Concerned Resource Agencies

The Corps has continued its coordination of the Berryessa Creek Elementwith the various resource agencies. On September 14, 2004, Corps and SCWVD representatives met with the USFWS, USEPA, and RWQCB representatives at the project site to discuss and provide an overview and history of the project, including discussion of the preliminary alternative plans. Both the USEPA and RWQCB have provided comments and recommendation in their letter dated October 14, 2004. The agencies' concerns generally included the following.

- Having the maintenance road on one side of the channel
- Project should address sediment sources, both above and within the study area
- Stabilize upstream sediment sources to reduce the need for sediment removal and maintenance of sediment basin
- Maximize opportunities for restoring active floodplain and healthy riparian habitat within the greenbelt reach
- Link maintenance frequency to project objective of reducing sedimentation and maintenance needs
- Replace Old Piedmont Road Bridge to increase channel capacity
- Consider integrating vegetated flood bench and lowered maintenance road

CHAPTER 9 – REMAINING REVIEWS, APPROVALS, IMPLEMENTATION, AND SCHEDULE

9.1 PUBLIC REVIEW OF FINAL DOCUMENT

This GRR-EIS will be circulated for a 30-day review to Federal, State, and local agencies; organizations; and individuals who have an interest in the project. A notice of availability of the GRR-EIS will be published in the Federal Register following distribution for public review. All comments received during the public review period will be considered, as appropriate.

9.2 INTENDED USES OF THE GRR-EIS

This GRR-EIS is a public information document under NEPA. Its purpose is to inform public agency decision makers and the general public of the significant effects of the project. The document also identifies measures to avoid or minimize significant effects and describes reasonable alternatives to the project. The purpose or intent of an EIS is not to recommend either approval or disapproval of a project, but to disclose the potential effects of that project.

On the State level, the SCVWD, as the project's lead agency under CEQA, will prepare a separate EIR. Local agencies may use the final GRR-EIS when they consider permits or approvals that may be associated with the project. Coordination with agencies such as the BAAQMD will be necessary to obtain permits or approvals.

9.3 REPORT REVIEW AND APPROVAL

The final GRR-EIS will be submitted to the Chief of Engineers. Once the final report is approved and a Record of Decision (ROD) signed, construction funds must be appropriated by Congress before a Project Partnership Agreement can be signed by USACE and the sponsor in order to begin construction.

9.4 COST-SHARING REQUIREMENTS

The costs for the NED Plan will be shared in accordance with Section 103 of the WRDA 1986 and cost shared as a Flood Risk Management Feature. Cost sharing for the NED Plan is presented in **Error! Reference source not found.**.

9.5 FEDERAL AND NON-FEDERAL RESPONSIBILITIES

9.5.1 Federal Responsibilities

The Corps will accomplish preconstruction engineering and design studies. After the Recommended Plan is approved by the Corps and funded by Congress, and a cash contribution, lands, relocations, and assurances are provided by the SCVWD, the Corps will construct the project.

9.5.2 Non-Federal Responsibilities

The sponsoring agency, SCVWD, will be responsible to provide cash contribution of not less than 5 percent of the project cost; provide a minimum of 35 percent, but not to exceed 50 percent, of total project costs; provide all necessary lands, easements, rights-of-way, access routes, relocation of utilities necessary for project construction and subsequent operation maintenance of the project; and assume all responsibilities and costs for operation and maintenance of the project. Detailed non-Federal responsibilities are presented in Chapter 10.

9.6 PROJECT PARTNERSHIP AGREEMENT

A Design Agreement must be executed between the Corps and the SCVWD in order to cost-share the development of detailed plans and specifications. Before construction starts, the Federal Government and the non-Federal sponsor would execute a Project Partnership Agreement. This agreement would define responsibilities of the non-Federal sponsor for project construction as well as operation, maintenance, repair, replacement, and rehabilitation and other assurances.

9.7 PROJECT SCHEDULE

The following table indicates the schedule for the remaining milestones for the study, design, and anticipated construction.

Table 9-1 Schedule of Project Milestones

Milestone/Item	Date
Feasibility Scoping Meeting	April 2004
Alternative Review Conference	May 2005
GRR Conference and Tour	July 2006
Draft GRR-EIS Report for Public and HQUSACE Circulation	Mar-Apr 2013
Public Meeting/Hearing for Draft GRR-EIS	April 2013
Final GRR-EIS Public Review	September2013
Final GRR-EIS Submittal to South Pacific Division	August 2013
MSC/SPD Commander's Approval	September 2013

CHAPTER 10 –RECOMMENDATIONS

I recommend approval of a modified plan for the I-680 to Calaveras Boulevard, separable element, of the authorized Berryessa Creek Element of the Coyote and Berryessa Creeks, California flood control project, with deferral of the portion of the authorized project upstream from I-680 until further action is warranted. The total first cost of the project is currently estimated at $26,626,000 (under October 2012 prices). The Federal share is currently estimated at $13,380,000.

The scope of the proposed project modifications is substantially in accordance with the authorized project. Based on reevaluation of the project costs and the economic benefits, and consideration of the design refinements, the Berryessa FRM project is economically justified and considered sound economic investments for the Government.

I also recommend additional studies to investigate reduction of the residual flood risk in the vicinity of Berryessa Creek upstream of I-680, which may be undertaken as part of or coordinated with any future comprehensive investigation of the Berryessa and Coyote Creeks watershed, or a portion thereof.

It is recommended that this report be approved and that the project continue toward project implementation, subject to cost-sharing, financing, and other applicable requirements of Federal and State laws and policies, including Public Law 99-663, the Water Resources Development Act of 1986, as amended by Section 202 of Public Law 104-303, the Water Resources Development Act of 1996, and in accordance with the following requirements, which the non-Federal sponsor must agree to prior to project implementation.

1. Provide a minimum of 35 percent, but not to exceed 50 percent, of total project costs assigned to structural flood control, as specified below:

   a. Enter into an agreement which provides, prior to construction, 35 percent of preconstruction engineering and design (PED) costs.

   b. Provide, during construction, any additional funds needed to cover the non-Federal share of PED costs.

   c. Provide, during construction, a cash contribution equal to 5 percent of total project costs.

   d. Provide all lands, easements, and rights-of-way, including suitable borrow and dredged or excavated material disposal areas, and perform or assure the performance of all relocations, except railroads, determined by the Government to be necessary for the construction, operation, and maintenance of the project.

   e. Provide or pay to the Government the cost of providing all retaining dikes, wasteweirs, bulkheads, and embankments, including all monitoring features and stilling basins, that may be required at any dredged or excavated material disposal areas required for the construction, operation, and maintenance of the project.

f. Provide, during construction, any additional costs as necessary to make its total contribution equal to at least 35 percent of total project costs.

2. Give the Government a right to enter, at reasonable times and in a reasonable manner, upon land that the local partner owns or controls for access to the project for the purpose of inspection, and, if necessary, for the purpose of completing, operating, maintaining, repairing, replacing, or rehabilitating the project.

3. Assume responsibility for operating, maintaining, replacing, repairing, and rehabilitating the project or completed functional portions of the project, including mitigation features, without cost to the Government, in a manner compatible with the project's authorized purpose and in accordance with applicable Federal and State laws and specific directions prescribed by the Government in the OMRR&R manual and any subsequent amendments thereto.

4. Comply with Section 221 of Public Law 91-611, Flood Control Act of 1970, as amended, and Section 103 of the Water Resources Development Act of 1986, Public Law 99-662, as amended, which provides that the Secretary of the Army shall not commence the construction of any water resources project, or separable element thereof until the non-Federal partner has entered into a written agreement to furnish its required cooperation for the project or separable element.

5. Hold and save the Government free from all damages arising from the construction, operation, maintenance, repair, replacement, and rehabilitation of the project and any project-related betterments, except for damages due to the fault or negligence of the Government or the Government's contractors.

6. Keep and maintain books, records, documents, and other evidence pertaining to costs and expenses incurred pursuant to the project to the extent and in such detail as will properly reflect total project costs.

7. Perform, or cause to be performed, any investigations for hazardous substances that are determined necessary to identify the existence and extent of any hazardous substances regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 USC 9601-9675, that may exist in, on, or under lands, easements, or rights-of-way necessary for the construction, operation, and maintenance of the project, except that the non-Federal partner shall not perform such investigations on lands, easements, or rights-of-way that the Government determines to be subject to the navigation servitude without prior specific written direction by the Government.

8. Assume complete financial responsibility for all necessary cleanup and response costs for any CERCLA-regulated materials located in, on, or under lands, easements, or rights-of-way that the Government determines necessary for the construction, operation, or maintenance of the project.

9. Agree that, as between the Federal Government and the Non-Federal Sponsor, the Non-Federal Sponsor shall be considered the operator of the project for the purpose of CERCLA

liability, and, to the maximum extent practicable, operate, maintain, repair, replace, and rehabilitate the project in a manner that will not cause liability to arise under CERCLA.

10. Prevent obstructions or encroachments on project lands, easements, and rights-of-way (including prescribing and enforcing regulations to prevent such obstructions or encroachments) which might reduce the level of protection the project affords, hinder operation and maintenance of the project, or interfere with the proper functioning of the project.

11. Comply with the applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646), as amended by Title IV of the Surface Transportation and Uniform Relocation Assistance act of 1987 (Public Law 100-17), and the Uniform Regulations contained in 49 CFR part 24, in acquiring lands, easements, and rights-of-way, and performing relocations for construction, operation, and maintenance of the project, and inform all affected persons of applicable benefits, policies, and procedures in connection with said act.

12. Comply with all applicable Federal and State laws and regulations, including Section 601 of the Civil Rights Act of 1964, Public Law 88-352, and Department of Defense Directive 5500.11 issued pursuant thereto, as well as Army Regulation 600-7, entitled "Nondiscrimination on the Basis of Handicap in Programs and Activities Assisted or Conducted by the Department of the Army": and all applicable Federal labor standards requirements including, but not limited to, 40 U.S.C. 3141-3148 and 40 U.S.C. 3701-3708 (revising, codifying and enacting without substantive change the provisions of the Davis-Bacon Act (formerly 40 U.S.C. 276a et. seq.), the Contract Work Hours and Safety Standards Act (formerly 40 U.S.C. 327 et. seq.) and the Copeland Anti-Kickback Act (formerly 40 U.S.C. 276c)).

13. Comply with Section 402 of the Water Resources Development Act of 1986, as amended (33 U.S.C. 701b-12), which requires a non-Federal interest to prepare a floodplain management plan within one year after the date of signing a Project Cooperation Agreement. The plan shall be designed to reduce the impacts of future flood events in the study area, including but not limited to, addressing those measures to be undertaken by non-Federal interests to preserve the level of flood control provided by the project. As required by Section 402, implement the plan not later than one year after completion of the construction of the project. Provide an information copy of the plan to the Government upon its preparation.

14. Provide the non-Federal share of that portion of the costs of archeological data recovery activities associated with historic preservation, that are in excess of 1 percent of the total amount authorized to be appropriated for the project, in accordance with the cost sharing provisions of the agreement.

15. Participate in and comply with applicable Federal floodplain management and flood insurance programs.

16. Publicize floodplain information in the area concerned and provide this information to zoning and other regulatory agencies for their use in adopting regulations, or taking other actions, to prevent unwise future development and to ensure compatibility with protection levels provided by the project.

17. Do not use Federal funds to meet the Non-Federal Sponsor's share of total project costs unless the Federal granting agency verifies in writing that the expenditure of such funds is authorized.

18. Inform affected interests, at least annually, regarding the extent of protection afforded by the project.

The Corps, Sacramento District, has carefully reviewed the authorities for approving post-authorization changes presented in ER 1105-2-100, *Planning Guidance Notebook*, as amended. This review indicates that it is within the discretionary authority of the Commander, USACE, to approve the post-authorization changes to the Berryessa Creek Element. Under Section 2855 of the National Defense Authorization Act for Fiscal Year 1994 (P.L. 103-160), the project is exempt from the cost increase limitation in Section 902 of the Water Resources Development Act of 1986. There would be no changed features or conditions resulting from the project modifications that require Congressional authorization.

The Recommendations contained herein reflect the information available at this time and current departmental policies governing formulation of individual projects. They do not reflect program and budgeting priorities inherent in the formulation of a national Civil Works construction program or the perspective of higher review levels within the Executive Branch. Consequently, the recommendations may be modified before they are approved. However, prior to approval, the partner, the State, interested Federal agencies, and other parties will be advised of any modifications and will be afforded an opportunity to comment further.

Michael J. Farrell
Colonel, U.S. Army
District Commander

CHAPTER 11 – LIST OF PREPARERS*

The following individuals participated in the preparation of this GRR-EIS.

Table 11-1 List of Preparers	
U.S. Army Corps of Engineers: Project Development Team	
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Sherman Fong	Sr. Cost Engineer
Paul Hsia	Civil Engineer
Jane Bolton	Geotechnical Engineer
Jeremy Hollis	Real Estate Specialist
George Heubeck	Real Estate Manager
Richard Perry	Archeologist
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Carolyn Alexander Alarice Hansberry	Counsel
Elizabeth Wegenka	Geographic Information Systems Specialist
Santa Clara Valley Water District	
Dennis Cheong	Senior Project Manager
Scott Katric	Engineering Unit Manager
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Ira Artz	Program Manager
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Chris Lee	Sr. Planner
Merri Martz	Sr. Biologist
Richard McCallan	Sr. Water Resources Engineer
Krey Price	Sr. Civil Engineer/Designer
Michael Gorecki	Sr. Economist
Scott Vose	Cost Estimator
Jim Medlen	Environmental Planner
Kittelson & Associates	Subconsultant – Traffic Analysis

CHAPTER 12 – DOCUMENT RECIPIENTS*

The following Federal, State, and local agencies and organizations would either receive a copy of the GRR-EIS or a notification of document availability. Individuals who may be affected by the project or have expressed interest through the public involvement process would also be notified.

12.1 ELECTED OFFICIALS AND REPRESENTATIVES

Governor of California

- Honorable Edmund G. Brown, Jr.

United States Senate

- Honorable Barbara Boxer
- Honorable Dianne Feinstein

United States House of Representatives

- Honorable Mike Honda
- Honorable Zoe Lofgren

California Senate

- Honorable Ellen Corbett

California State Assembly

- Honorable Robert Wieckowski

12.2 U.S. GOVERNMENT DEPARTMENTS AND AGENCIES

- Council on Environmental Quality
- Federal Emergency Management Agency
- National Marine Fisheries Service
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service
- U.S. Geological Survey

12.3 STATE OF CALIFORNIA GOVERNMENT AGENCIES

- Senate Committee on Natural Resources
- Assembly Committee on Water, Parks, and Wildlife
- California Air Resources Board
- Central Valley Flood Protection Board
- San Fransisco Bay Regional Water Quality Control Board
- California Department of Conservation
- California Department of Fish and Game
- California Department of Parks and Recreation
- California Department of Transportation
- California Department of Water Resources
- Native American Heritage Commission
- State Office of Historic Preservation
- State Lands Commission
- State Water Resources Control Board
- Governor's Office of Emergency Services

12.4 LOCAL GOVERNMENT

- Bay Area Metropolitan Air Quality Management District
- City of Milpitas
- City of San Jose
- Santa Clara County Water District
- Santa Clara County

CHAPTER 13 – REFERENCES

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CHAPTER 14 – INDEX*

EXHIBIT 4

Berryessa Creek Element
Coyote and Berryessa Creeks
Flood Control Project
Santa Clara County, California

Appendix A: Environmental

Part V

404(b)(1) Water Quality Evaluation

BERRYESSA CREEK
GENERAL REEVALUATION STUDY

SECTION 404(b)(1) WATER QUALITY EVALUATION

SANTA CLARA COUNTY, CALIFORNIA

I. Project Description

a. Purpose and General Description

The U.S. Army Corps of Engineers (Corps) and the project sponsor, Santa Clara Valley Water District (SCVWD), have coordinated to initiate a General Reevaluation Study to determine the acceptability and feasibility of modifying a flood damage reduction project along Berryessa Creek. The proposed project would modify the channel downstream of the I-680 Bridge to consist of an earthen trapezoidal shape. Replacement of bridges and free-standing concrete floodwalls at a maximum height of 6feet would also be constructed.

The proposed project would result a reduction of flood risk to populated areas and a reduction of sedimentation and maintenance requirements. In addition, the project would use a cellular confinement system to control erosion and encourage revegetation of native grasses.

This analysis has been prepared in accordance with 40 CFR Part 230- Section 404(b)(1) guidelines and USACE Planning Guidance Notebook, ER 1 105-2- 100.

b. Location

The project area is located along Berryessa Creek between East Calaveras Blvd and Interstate 680, Milpitas, California. The project area extends approximately 2.25 miles.

c. Background

The proposed action is needed to reduce the risk of flood damages to the cities of Milpitas and San Jose. The Berryessa Creek Project was authorized by the Water Resources Development Act (WRDA) of 1990 following transmittal of the Chief of Engineer's Report in Coyote and Berryessa Creek in February 1989. After Congressional authorization in WRDA 1990, discussions with SCVWD, and interested environmental groups and community members showed that the project did not have wide support in the community. Issues included the damages to the riparian zone from a trapezoidal concrete channel, loss of aesthetics, recreation, and natural resources in the upstream project area. In 2001, SCVWD requested that the Corps reevaluate the flood protection alternatives along Berryessa Creek to find a more economical and environmentally acceptable solution.

d. Authority

The Berryessa Creek Project was initiated in partial response to Section 4 of the 1941 Flood Control Act, Public Law 77-228 and focused on flood and related problems and solutions along lower Coyote Creek and on Berryessa Creek. An Interim Feasibility Report for Coyote Creek and Berryessa Creek was transmitted to Congress and

authorized under Section 101(a)(5) of the Water Resources Development Act (WRDA) of 1990, Public Law 101-640.

e. Project Alternatives

It is not possible to avoid placing fill material into the waters of the United States (U.S.) and meet the project purpose. Under Alternatives 2a, 2B, and 4, material from the channel would be primarily excavated and removed but some reshaping and recontouring of the slopes would be necessary. Fill material needed to reshape the channel would be used from onsite material. Some sections of the side channel banks would require riprap slope projection. Alternative 5, proposes a trapezoidal concrete lined channel from Interstate 680 to Calaveras Blvd, where a rock transition would place transition flows from the concrete channel into the existing earth-bottomed channel.

f. General Description of Dredged or Fill Material

(1) General Characteristics of Material

Streambanks are formed of fairly erosion-resistant material; the soils contain a large clay component primarily consisting of silty and sandy clay. Upstream of I-680, soils retain a significant clay component but exhibit more frequent clayey silt and clayey sand lenses with occasional gravels. As a result, eroded sections of streambanks in this area are near vertical. Bed material is somewhat variable due to the high level of channel alteration and the presence of numerous bridges and several other hydraulic structures. In general, the bed material is composed of sands and gravels. The average distribution for the entire urbanized reach upstream of Calaveras Boulevard, is 28 percent sand, 69 percent gravel and 3 percent cobble with a median diameter of 5.5 mm (fine gravel). Completion of the actions would require excavation of native alluvial substrate and topsoil within some of the adjacent areas. The excavated material would be placed on-site and spread out to build up upland areas adjacent to the creek or removed from the site.

(2) Quantity of Material

Approximately 45 thousand cubic yards of material would be excavated and redistributed on-site.

(3) Source of Material

Fill would come from on-site material. Riprap would be trucked into the project site from a local quarry.

g. Description of the Proposed Discharge Site

(1) Location

The location of the discharge sites would be along Berryessa Creek between Calaveras Blvd and Interstate 680 (Exhibit C). provide a map that outlines the waters.

(2) Size

Total area of disturbance to waters of the United Sates are approximately 2.25 acres.

(3) Type of Site

The type of disposal site is a river channel.

(4) Type of Habitat

The project area into six reaches for the habitat surveys. The following habitat types were identified at and around the project area.

In Reach H-6, upstream of Old Piedmont Road, the riparian vegetation is diverse, including willows (*Salix* sp.), western sycamore (*Platanus racemosa*), Fremont cottonwood (*Populus fremontii*), and blue elderberry (*Sambucus mexicana*). The herbaceous species included many non-natives such as pennyroyal (*Mentha pulegium*) and Canada thistle (*Cirsium arvense*). The lower end of this reach is dominated by eucalyptus, which may be a cause of the subsurface flow at the lower end of the reach, due to high rates of evapotranspiration.

In Reach H-5, the riparian zone ranges from mostly bare dirt to forest in the greenbelt. Dominant species in the greenbelt include blue elderberry, California black walnut (*Juglans californica*), English walnut (*Juglans regia*), Coast live oak (Q*uercus agrifolia*), and willows. Mowed grass is present within and adjacent to the riparian zone.

In Reach H-4, the riparian zone is minimal to non-existent. The bank slopes are dominated by weedy annuals such as spiny sow thistle (*Sonchus asper*), dock (*Rumex* sp.), and perennial rye grass (*Lolium perenne*). This reach has the least vegetation present and the most channel alteration (concrete).

In Reach H-3, the riparian zone is very similar to Reach H-4, with weedy annuals such as rabbit foot grass (*Polypogon monspeliensis*) and barnyard grass (*Echinochloa crusgalli*). This reach has the highest banks (levees) and is entrenched in a narrow ditch.

In Reach H-2, the riparian zone is also very minimal, but the channel is much wider and more emergent wetland species are present. Species include cattails, floating primrose willow (*Ludwigia peploides*), hyssop loosestrife (*Lythrum hyssopifolia*), watercress (*Rorippa nasturtium aquaticum*), brooklime (*Veronica americanum*), and knotweed (*Polygonum* sp.). A few very sparse trees are also present.

In Reach H-1, the creek is tidal, and the vegetation is dominated by emergent wetland species such as bulrushes (*Scirpus acutus* and *S. maritimus*), cattails (*Typhsa angustifolia* and *T. latifolia*), and sedges (*Carex* sp). Willows and other riparian vegetation are present in a few locations, but the riparian zone is primarily dominated by weedy annual herbaceous species. Lower Penitencia Creek is still confined between steep-sided levees in much of this reach.

(5) Timing and Duration of Discharge

Construction of the project would be conducted in one phase and is estimated to take 60-90 days, with earthwork beginning in August and going to October. Revegetation would occur immediately after construction from October to December

h. Description of Disposal Method

A hydraulic excavator would be used to remove and stockpile material. Backfill would be performed with a front end loader. Riprap would be placed with a hydraulic excavator. Upland staging areas have been designated at each site for stockpiling of excavated and/or fill material.

II. Factual Determinations

a. Physical Substrate Determinations

(1) Comparison of Existing Substrate and Fill

The proposed fill material is from the same parent source as the existing material in the project area. No toxic or unnatural materials would be introduced at the sites, and substrates would retain their existing characteristics.

(2) Changes to Disposal Area Elevation

Substrate elevations will be modified from existing elevations throughout the project area. The current channel gradient varies dramatically from near 3 percent at the upstream end to below 0.5 percent at the downstream end. Though there is a strong trend for decreasing gradient in the downstream direction, there are localized areas where the gradient changes abruptly. This is partially due to the wide range of channel configurations currently found in the project area. At the current level of design, the proposed channel sections have been superimposed on the existing channel gradient. In the next level of design, the profile needs to be refined considering minimizing changes in sediment transport capacity that result from local variations in the gradient. Additionally, this exercise will likely have benefits to the providing the most efficient flood control design.

(3) Migration of Fill

The increased volume and velocity of flow is expected to flush silts and to increase the diversity of in-channel habitat structure. Geotextie fabric and cellular confinement system will be installed for bank stabilization.

(4) Duration and Extent of Substrate Change

Soil compaction could occur from heavy equipment operation. Most of the project area is located in areas that already experience sediment and soil compaction due to ongoing sediment removal and maintenance.

(5) Changes to Environmental Quality and Value

Native grasses and forbs would be established on banks to stabilize soils and prevent recolonization by invasive species.

(6) Actions to Minimize Impacts

Construction would have minor, short-term impacts. Standard erosion prevention practices would be employed. These measures would minimize erosion of soils and substrate during and after construction.

b. Water Circulation, Fluctuation, and Salinity Determinations

(1) Alteration of Current Patterns and Water Circulation

The project would not alter current flows.

(2) Interference with Water Level Fluctuation

Water levels in Berryessa Creek seasonally fluctuate from an intermitted flow in the winter and low to no flow in the summer. The project would not alter stream hydrology.

(3) Salinity Gradients Alteration

Salinity gradients would not be affected.

(4) Effects on Water Quality

(a) Water Chemistry

Disposal material would be excavated from on-site sources and would not contain foreign chemicals. The project would not change water chemistry.

(b) Salinity

The project would not change salinity levels.

(c) Clarity

Excavation and placement excavated material would be timed to occur in the dry or low water conditions.

(d) Color

Excavation and placement excavated material in the disposal area would material would be timed to occur in the-dry or low water conditions.

Construction activities would be short in duration and conditions would return to pre-construction levels.

(e) Odor

The project would not affect odor.

(f) Taste

The project would not affect taste.

(g) Dissolved Gas Levels

The proposed project would have no effect on dissolved gas levels.

(h) Temperature

The project would not change the temperature of the creek.

(i) Nutrients

The proposed project would not result in nutrient loading and reduction.

(j) Eutrophication

The project would not input excess nutrients into the stream or promote excessive plant growth. The project would not contribute to eutrophication.

(k) Other Characteristic

During construction

(5) Changes to Environmental Quality and Value

Flow patterns in the stream are greatly modified from natural patterns, due to various human disturbances. Sediment deposited would nearly equal to that under without-project conditions. The implementation of the project would not change the value and quality of the stream.

(6) Actions to Minimize Impacts

Construction and excavation would be timed with low water stages to minimal impacts. Best management practices (BMP) listed in section 5.4.3 of the environmental impact statement/ environmental (EIS/EIR) would avoid or reduce the potential for adverse impacts.

c. Suspended Particulate/Turbidity Determinations

(1) Alteration of Suspended Particulate Type and Concentration

Material excavated onsite would be used to beneficially to stabilize banks and create (aquatic, riparian) habitat. Excavation and placement excavated material would be timed to occur in the-dry or low water conditions. Particulates suspended during project construction would dissipate after construction activities are complete.

(2) Particulate Plumes Associated with Discharge

Temporary and local particulate plumes may occur during construction activities but would quickly dissipate after construction is complete.

(3) Changes to Environmental Quality and Value

Particulate plumes resulting from any construction activity are not expected to persist after project completion. Particulates suspended within the disposal area are not expected to differ in type from particulates currently within the project area.

(4) *Actions to Minimize Impacts*

Effects would be minimized by performing work during low flow periods in the dormant season. The duration of construction would be limited to the shortest timeframe practicable. As a result of mitigation measures, increases in sedimentation and turbidity would be minor and temporary.

d. Contaminant Determinations

A Phase I Environmental Site Assessment completed for the project revealed there are two historic releases below the surface of the project area. Plumes may contain the following substances: volatile organic compounds, PAHs and metals such as copper, cadmium, and mercury. At this time, the depth of construction has not been determined and it is not known if these plumes would interfere with construction. If construction is expected to be at least 6 feet deep in the vicinity of the plumes, then additional testing and precautionary measures would be implemented.

To minimize the potential for soil or water contamination from fuel or grease spills, maintenance and refueling of motorized equipment will be performed in upland areas at least 100 feet from waters of the U.S. and wetlands. BMP listed in section 5.4.3 of the EIS/EIR would avoid or reduce the potential for adverse impacts.

e. Aquatic Ecosystem and Organism Determinations

(1) Effects on Plankton

Plankton are drifting organisms that inhabit the pelagic zone of oceans, seas, or bodies of fresh water. The presence of plankton is generally low in high order streams. Construction of the project would be temporary, short termed, and timed during low flow conditions. There would be no effect to plankton as a result of the project.

(2) Effects on Benthos

Benthic organisms are found in the benthic zone which is the ecological region at the lowest level of a body of water such as an ocean or a lake, including the sediment surface and some sub-surface layers. Construction would be temporary, short termed and timed during low flow conditions. There would be no effect on benthos as a result of the project.

(3) Effects on Nekton

Nekton are of actively swimming aquatic organisms. Construction would be temporary, short termed, and timed during low flow conditions. There would be no effect to nekton as a result of the project.

(4) Effects on Aquatic Food Web

The project would have no effect on the aquatic food web.

(5) Effects on Special Aquatic Sites

(a) Sanctuaries and Refuges

No sanctuaries and refuges are within the project area.

(b) Wetlands

Wetlands are typically characterized by hydric soils. Hydric soils usually require hundreds of years for development. The stream channel alignment downstream of I-680 is artificial and was constructed in 1961. The presence of hydric soils was not verified. However, wetland vegetation was present in the project area. Vegetation primarily included cattails. Other wetland plant species included horsetail, watercress, and smartweed.

Construction activities would temporarily disturb or eliminate the vegetation. However, since the stream hydrology would not be permanently affected, the cattails would reestablish within one to three years after construction.

(c) Mud Flats

No mud flats are within the project area.

(d) Vegetated Shallows

No vegetated shallows are within the project area.

(e) Coral Reefs

No coral reefs are within the project area.

(f) Riffle and Pool Complexes

The downstream portion of Berryessa Creek has been highly altered to a trapezoidal channel and levees and is regularly maintained by removal of sediment and vegetation. The instream habitat diversity is extremely low and the riparian zone within this area provide little to no cover for the creek or wildlife habitat.

(6) Threatened and Endangered Species

Chapter 4 Section 5 of the EIS/EIR discusses Federal and State listed species is detail. No special status species are in or near the project area.

(7) Other Wildlife

The project could have short-term effects on resident mammals, birds, reptiles, and amphibians. Noise from construction equipment and increased human presence could temporarily displace some wildlife, and temporary alteration of the channel

would occur. However, these adverse effects would be minor and temporary. The project area would be reseeded with native grasses.

(8) Actions to Minimize Impacts

Adverse effects would be temporary, and minimized by mitigation measures to prevent erosion and turbidity increases. Excavation would be timed to avoid spawning, nesting, or migration seasons. Placement of material excavated for construction of project features was designed in the context for beneficial use and bank stabilization to directly benefit the aquatic ecosystem.

f. Proposed Disposal Site Determinations

(1) Mixing Zone Size Determination

Not applicable.

(2) Determination of Compliance with Applicable Water Quality Standards

The fill material would not violate Environmental Protection Agency or State water quality standards or violate the primary drinking water standards of the Safe Drinking Water Act (42 USC 300 et seq.).

Project design, standard construction and erosion practices would preclude the introduction of substances into surrounding waters. Materials removed for disposal off-site would be disposed of in an appropriate landfill or other upland area.

(3) Potential Effects on Human Use Characteristics

a) Municipal and Private Water Supplies

The fill material would not violate Environmental Protection Agency or State water quality standards or violate the primary drinking water standards of the Safe Drinking Water Act (42 USC 300 et seq.).

Project design, standard construction and erosion practices would preclude the introduction of substances into surrounding waters. Materials removed for disposal off-site would be disposed of in an appropriate landfill or other upland area.

b) Recreation and Commercial Fisheries

The project area does not support recreational or commercial fishing. Two fish species, the mosquitofish *(Gambusia affinis)* and California roach *(Lavina symmetricus)* were collected during field investigations. The mosquitofish is a non-native freshwater species introduced throughout California for mosquito control. This fish is adapted for life in shallow, often stagnant water where predatory fish are absent and temperatures are too high for other species. The California roach is a native species widely distributed throughout central and northern California. This species is tolerant of high temperatures and low oxygen levels, which enables them

to survive in areas unsuitable for most other fish species. California roach thrive when found alone or in association with one or two other species. Neither the mosquitofish or California roach is State or Federally listed or has any special status (ESA, 2002). Based on the results of the ESA fisheries investigation, the only fish species likely to be found in the project area are the mosquitofish and California roach and only in the reach between Calaveras Boulevard and Piedmont Creek where there are constant flows.

c) Water-related recreation

There is no water-related recreation within the project area.

d) Aesthetics

The visual character of the creek in most areas would change permanently. The shape of the channel would change to a trapezoidal configuration with floodwalls in some sections. However, this change would not degrade the visual character because the channel would continue to be earthen. Grasses and other vegetation would be removed to construct the trapezoidal channel and floodwalls. The side channels would be planted with a seed mix to control erosion and appear as annual grassland habitat. All modification and replacement of bridges and culverts would be consistent with existing bridge designs in the area so there would be no change in the visual character of the modified or new structures.

e) Parks, National and Historic Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves.

There are no parks, National Monuments, Historical Monuments, Wilderness Areas, Research Sites, Wild and Scenic Rivers, Gold Medal Trout Waters, or similar designated preserves near the project area.

g. Determination of Cumulative Effects on the Aquatic Ecosystem

Construction of the flood walls in the dry would be the environmentally preferred alternative. Without implementation of this proposed action, it is likely that this action would be constructed at a later time in the wet, which would result in adverse effects on the aquatic ecosystem. Construction of the project in the dry would avoid these adverse effects to water quality, and aquatic species.

h. Determination of Secondary Effects on the Aquatic Ecosystem

No adverse secondary effects are expected to occur.

III. Findings of Compliance or Non-Compliance with the Restrictions on Discharge

(1) No significant adaptations of the guidelines were made relative to this evaluation.

(2) No practicable alternative exists which meets the study objectives that does not involve discharge of fill into waters of the United States.

(3) The discharges of fill materials will not cause or contribute to, after consideration of disposal site dilution and dispersion, violation of any applicable State water quality standards for waters. The discharge operations will not violate the Toxic Effluent Standards of Section 307 of the Clean Water Act.

(4) The placement of fill materials in the project area(s) will not jeopardize the continued existence of any species listed as threatened or endangered or result in the likelihood of destruction or adverse modification of any critical habitat as specified by the Endangered Species Act of 1973.

(5) The placement of fill materials will not result in significant adverse effects on human health and welfare, including municipal and private water supplies, recreational and commercial fishing, fish, shellfish, wildlife, and special aquatic sites. The life stages of aquatic species and other wildlife will not be adversely affected. Significant adverse effects on aquatic ecosystem diversity, productivity and stability, and recreational, aesthetic, and economic values will not occur.

(6) Appropriate steps to minimize potential adverse impacts of the discharge on aquatic systems include cessation of disposal activities during extreme tidal velocities associated with spring tides.

(7) On the basis of the guidelines the proposed disposal site for the discharge of dredged material is specified as complying with the inclusion of appropriate and practical conditions to minimize pollution or adverse effects to the aquatic ecosystem.

EXHIBIT 5

Upper Berryessa Creek Flood Risk Management Project
Santa Clara County, California

Final Environmental Impact Report

(State Clearinghouse No. 2001104013)

January 2016

Prepared for:

Santa Clara Valley Water District

Prepared by:

TETRA TECH

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EXECUTIVE SUMMARY

ES.1 INTRODUCTION

This document addresses proposed modifications to Upper Berryessa Creek within the cities of Milpitas and San Jose, California. These modifications include flood risk management improvements along 2.2 miles of Upper Berryessa Creek, stretching from I-680 downstream to Calaveras Boulevard. The primary improvements include:

- Constructing a floodwall at the area identified as being most in danger of overtopping;
- Excavating sediment and vegetation;
- Enhancing flood passage through culverts and bridges; and
- Improving access for maintenance, including sediment removal and vegetation management.

As the primary water resources agency for Santa Clara County (the County), the Santa Clara Valley Water District (the District) provides water-related services including wholesale distribution, stream maintenance, and flood protection throughout the Santa Clara Valley. In order to alleviate flooding in the Upper Berryessa Creek area, the District is proposing flood risk management measures that would provide protection from the base flood (also referred to as the 100-year flood).

The District has formed a partnership with the U.S. Army Corps of Engineers (USACE) to plan and implement the proposed project. The USACE is the Federal project sponsor and the District is the local sponsor. USACE would be responsible for permitting, contracting and oversight of construction activities and the District would be responsible for acquiring real property needed for the project (including temporary and permanent easements), making real property owned or to be acquired by the District for the project available for construction, and operating and maintaining the creek channel after construction is complete.

As part of the process of studying the feasibility of the proposed project and its alternatives, the USACE prepared the Berryessa Creek Integrated General Reevaluation Report (GRR) and Environmental Impact Statement (EIS), which was finalized in 2014. The GRR/EIS documents the planning and evaluation process that identified the USACE's preferred alternative, the results of hydraulic, economic, geotechnical, and other studies that informed the process, and the environmental impacts that could occur during construction and operation of the proposed project. As the GRR/EIS has been finalized, the USACE is preparing the project designs and intends to implement the selected plan. The District's proposed project consists of the project as selected by the USACE with an improvement that would increase the level of flood protection to meet Federal Emergency Management Agency (FEMA) certification standards. The improvement that would be added to the USACE-selected project to achieve FEMA certification is increasing the length and height of a concrete floodwall located on the west bank of the creek in Reaches 2 and 3. The USACE-selected project design includes a roughly 1,300 foot long, 1.5 foot high floodwall at this location; the proposed project would increase the length of the floodwall to about 2,200 feet. The maximum height of the floodwall would be 2 feet above ground level.

The District determined that construction of the proposed project could have a significant effect on the environment and ~~is~~ has therefore prepared~~ing~~ this Environmental Impact Report (EIR) in compliance with the California Environmental Quality Act (CEQA). This ~~Draft~~ EIR ~~(DEIR)~~ is intended to:

- Provide a complete description of the proposed project to the public;
- Inform the public of any significant impacts that could occur as a result of project implementation;
- Identify measures that would avoid, reduce, or mitigate any significant effects; and

- Describe and evaluate other alternatives that may feasibly accomplish the goals and objectives of the proposed project.

ES.2 OBJECTIVES

The District developed three project-specific objectives, which provide the basis for potential modifications to complete the proposed project.

Objective 1: *Reduce flood damages from Berryessa Creek upstream of Calaveras Boulevard throughout the study reach during the 50-year period of analysis beginning in 2017. Completed project would meet FEMA certification standards in all 4 project reaches.*

Objective 2: *Use environmentally sustainable design practices in addressing the flood risk management purpose of the project wherever possible within the study reach, including taking advantage of restoration opportunities that may be pursued incidentally to the flood damage reduction purpose.*

Objective 3: *Be consistent with Berryessa Creek Flood Risk Management Project Plan selected by USACE in the Director's Report of May 29, 2014.*

ES.3 BACKGROUND

Flooding within the Berryessa Creek watershed and vicinity has occurred often during the past decades. Stormwater flooding that inundates streets and yards occurs an average of at least once every 4 years. Overflow channel flooding also occurs along Upper Berryessa Creek on average of once every 10 to 20 years, which results in significant damage to homes, businesses, infrastructure, and automobiles.

High rainfall events occurring in 1982, 1983, and 1998 caused extensive flooding and damage to areas along creeks in the cities of San Jose and Milpitas. As a result of these and other floods, the District and the USACE commenced studies to identify areas of Berryessa Creek and its tributaries, a part of the Coyote Watershed, that are most vulnerable to flooding. Teams of hydraulic engineers, planners, and field inspectors reviewed historic flood information, topographic maps, and other available data and reports, and prepared detailed hydraulic models of the Upper Berryessa Creek system. The resulting studies in hydraulics, economics, geotechnical issues, hazardous materials, and sediment movement resulted in the Berryessa Creek Project GRR-EIS. These studies indicate that Upper Berryessa Creek does not have sufficient capacity to contain the 1 percent (100-year) recurrence flood, meaning that destructive flooding would continue to occur unless measures are taken to expand flow capacity. The dollar value of flood damage from the 1 percent flood is estimated at $528 million in 2011 dollars (USACE 2014).

ES.4 PROJECT SUMMARY

Working closely with USACE, the District has developed the Upper Berryessa Creek Flood Risk Management Project, which is described and analyzed in this EIR. The proposed project would provide flood protection and flood damage reduction benefits along Upper Berryessa Creek by incorporating channel, bridge, and top of bank improvements designed to convey the 1 percent recurrence flood within its banks. The proposed project consists of the USACE-selected project with addition of a taller and longer concrete floodwall in Reaches 2 and 3 compared to the USACE-selected project. The proposed project is designed to meet FEMA certification standards. The proposed project would remove an estimated 500 parcels of land from the flood hazard zone. Under the proposed project, all work would occur downstream of I-680 and upstream of Calaveras Boulevard. The District is implementing a separate project to improve the flow conveyance capacity of Lower Berryessa Creek between Calaveras

Boulevard and the Lower Penitencia Creek confluence. Calaveras Boulevard forms the boundary between the Upper Berryessa Creek Flood Risk Management Project and the Lower Berryessa Creek Flood Protection Improvements Project. Both projects would be designed to contain the 1 percent flow without overtopping of banks. The channel of Upper Berryessa Creek would be designed with vegetated side walls to add capacity and provide bank protection within the existing right-of-way (ROW). The channel banks would be protected with biodegradable erosion control blankets and hydroseeded, an approach that has been shown in the Design Documentation Report (Tetra Tech 2015f) to be sufficient to prevent significant erosion. The channel would also have an earthen channel bottom with buried rock revetments for channel stability. The existing access road alignments would be retained and additional access added on the east bank at the downstream end of the project area.

ES.5 CONSTRUCTION AND MAINTENANCE

Construction of the proposed project would include excavating a wider channel, constructing a floodwall on the west bank, installing a concrete box culvert to replace an existing railroad trestle as well as installing new culverts at the mouths of Piedmont and Los Coches Creeks, revegetating affected areas, and constructing or upgrading access roads. Construction would occur over 1 to 2 years, with construction primarily occurring between May and October to coincide with the driest time of year. Construction hours would generally be during normal business hours, but after-hours work may be needed to pour concrete or replace the existing UPRR trestle with a concrete box culvert.

As part of the District's Stream Maintenance Program 2 (SMP2), after construction is complete, District maintenance staff would periodically remove sediment as needed to ensure the capacity of the channel is sufficient to convey the design flow, mow or spray vegetation to facilitate access and reduce fire hazards, and inspect access roads for erosion or ~~blockages~~obstructions. Maintenance staff would also inspect and repair structures such as rock revetment, concrete linings, and stormwater outfalls as needed. The District would also remove trash or obstacles that may hinder flood flows. Because the improved channel would more efficiently pass flood flows and would be less prone to erosion, future maintenance needs would be reduced compared to current conditions.

SMP2 is an ongoing District activity that is not part of the proposed project. SMP2 activities are permitted by regulatory agencies and all SMP2 activities on Upper Berryessa Creek will be implemented in conformance with the SMP2 permits. The cumulative impacts section of this EIR addresses potential environmental effects of SMP2 activities that could add to the environmental effects of the proposed project.

After construction of the proposed project is completed, the District would continue the ongoing SMP2 maintenance practices at the Upper Berryessa Creek project area, and would ~~add measures to maintain~~perform inspection of the newly constructed floodwalls and culverts. Additional maintenance activities associated with the project include inspection and graffiti abatement at floodwalls and culverts, ~~and~~ additional access road inspections, and maintenance. These activities would occur regularly to maintain channels and structures at design conditions.

ES.6 SUMMARY OF ALTERNATIVES

In accordance with CEQA Guidelines § 51526.6(a), this EIR analyzes four alternatives to the proposed project. They are intended to provide a range of alternative actions that could feasibly achieve the project objectives while avoiding or substantially reducing significant environmental impacts. The alternatives are as follows:

- **No Project Alternative**

- **Alternative 2A**: U.S. Army Corps of Engineers Selected Project
- **Alternative 2B**: Expanded Incised Trapezoidal Channel (FEMA Certification Performance)
- **Alternative 4**: Walled Trapezoidal Channel (FEMA Certification Performance)

The proposed project would achieve all project objectives (see Table ES-1).The No Project Alternative would not meet project objectives and is analyzed in this EIR for comparison purposes. Alternatives 2A, 2B, and 4 would partially meet project objectives. Specifically, Alternative 2A would not meet FEMA certification standards and would only partially achieve Objective 1. Alternatives 2B and 4 would meet Objectives 1 and 2, but would not meet Objective 3 (Be consistent with USACE-selected plan).

Table ES.1: Project Alternatives Compared to Project Objectives

Alternative	Objective 1	Objective 2	Objective 3
Proposed Project	Meets	Meets	Meets
No Project	Does not meet	Does not met	Does not meet
Alternative 2A	Partially meets	Meets	Meets
Alternative 2B	Meets	Meets	Does not meet
Alternative 4	Meets	Meets	Does not meet

These alternatives and the proposed project are analyzed in this EIR to determine the environmentally superior alternative. Based on the evaluation of potential impacts presented in Chapters 3, 4, and 5 of the Draft EIR, the proposed project is environmentally superior because it would accomplish the project objectives (reduce flood damages, incorporate environmentally sustainable design practices, and be consistent with the USACE's selected plan) while minimizing construction-period environmental impacts.

ES.7 IMPACTS AND MITIGATION MEASURES

Table ES-2 identifies potential impacts that would occur under the various alternatives. With the exception of impacts to air quality, construction noise, and emissions of greenhouse gases, all significant environmental impacts could be reduced to less than significant levels by implementing mitigation measures described at the end of each resource section.

For all alternatives other than the No Project Alternative, emissions of nitrogen oxides (NOx), temporary noise impacts during construction, and greenhouse gas emissions would exceed applicable significance thresholds. Feasible measures to mitigate these impacts are identified in this EIR, but would not reduce these impacts to a less than significant level. These impacts would be significant and unavoidable under the proposed project, as well as under Alternative 2A, Alternative 2B, or Alternative 4.

The cumulative impacts of the proposed project and alternatives combined with impacts from other recent, ongoing, or reasonably foreseeable projects were also assessed. This analysis found that, in combination with other projects, the proposed project would make cumulatively considerable contributions to significant cumulative impacts on air quality, noise, and greenhouse gas emissions. In all other resource categories, cumulative impacts would either be less than significant, or if the cumulative impact would be significant, the proposed project's post-mitigation contribution to the impact would not be cumulatively considerable.

ES.8 AREAS OF KNOWN CONTROVERSY

The District issued a Notice of Preparation and invited individuals, organizations, and agencies to comment on the scope of the ~~Draft~~ EIR in October, 2001. Notable concerns focused on addressing degradation of natural resources by reducing channelization and eliminating concrete lining to the

degree possible; designing the channel to allow for natural fluvial processes to occur; positioning maintenance roads outside of the channel; and ensuring that the completed project accommodates existing storm drainage facilities at any State highway bridge crossings.

USACE and the District have addressed these concerns in the project designs, as reflected in this ~~Draft~~ EIR. Although the proposed project evaluated in this ~~Draft~~ EIR is reduced in scope from the project as proposed in 2001, the design includes widened channel that will allow for more natural fluvial processes, and which has an earthen bottom except beneath bridges and culverts; maintenance roads positioned in the overbank areas except for ramps needed to allow access to the channel bottom; and storm drainage facilities that are maintained or improved relative to their original condition. Other areas of controversy have not been identified.

ES. 9 ISSUES TO BE RESOLVED

Consultation between the project sponsors and permitting agencies has either been initiated or will be required in order to resolve any permitting issues that may arise. USACE regulations generally require USACE to seek Section 401 water quality certification for USACE projects involving a discharge into waters of the U.S. even though USACE does not issue itself a Section 404 permit. However, the project, as a project authorized by Congress that has completed an EIS, qualifies for exemption under 33 U.S. Code 1344(r). USACE will either obtain a Section 401 water quality certification or claim exemption under 33 U.S. Code 1344(r) for the proposed project. Also, USACE will refine the project design to determine the most appropriate location and sizes of mitigation areas for planting of native tree and shrubs in accordance with the U.S. Fish and Wildlife Service Coordination Act Report of April 2013 and follow-on consultations between USACE and USFWS.

Maintenance and operation of the reconstructed creek channel would be the responsibility of the District. Most maintenance activities would be similar to the creek maintenance activities currently performed under the District Stream Maintenance Program (SMP). Regulatory permits for the SMP cover vegetation management, sediment removal, bank stabilization, management of animal conflicts, and minor maintenance (e.g. fence repairs, access road maintenance, minor sediment removal of less than 25 cubic yards, graffiti abatement), which would be the same activities needed to maintain the creek after construction is complete. However, the reconstructed creek channel would be widened compared to the existing channel and the SMP permits may not account for the area of channel enlargement. If necessary maintenance activities are not covered by SMP permits, the District would obtain approval and permits for the uncovered activities from The San Francisco Bay Regional Water Quality Control Board, California Department of Fish and Wildlife, and USACE Regulatory Branch as required by law.

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Table ES.2 Summary of Significant Effects, Mitigation Measures, and Level of Significance by Alternative

ENVIRONMENTAL RESOURCE	**PROPOSED PROJECT** Widened Trapezoidal Channel (FEMA Certification Performance)	**NO PROJECT ALTERNATIVE**	**ALTERNATIVE 2A** USACE-Selected Alternative	**ALTERNATIVE 2B** Expanded Incised Trapezoidal Channel (FEMA Certification Performance), Accommodate Upstream Bypass Channel	**ALTERNATIVE 4** Walled Trapezoidal Channel (FEMA Certification Performance)
KEY: (+) Impacts greater than for Proposed Project, **(=)** Impacts equal to Proposed Project, **(-)** Impacts less than for Proposed Project, **(NI)** No Impact, **(LS)** Less than Significant Impact, **(LM)** Less than Significant Impact with Mitigation, **(S)** Significant Impact, **(SU)** Significant and Unavoidable Impact * Although impacts associated with these resource types were determined to be less than significant, a mitigation measure is proposed, or a measure proposed to address another significant impact would further reduce this already LTS impact.					
Aesthetics	No significant impacts	**(-)** No significant impacts	No significant impacts	No significant impacts	No significant impacts
BIO-B: Compensate for Trees Removed During Construction*	✓		✓	✓	✓
Significance Determination Before Mitigation/After Mitigation	LS	NI	LS	LS	LS
Air Quality	NOx emissions above BAAQMD thresholds (AIR-2 and AIR-3)	**(-)** No significant impacts	**(=)** NOx emissions above BAAQMD thresholds (AIR-2 and AIR-3)	**(+)** NOx emissions above BAAQMD thresholds (AIR-2 and AIR-3)	**(+)** NOx emissions above BAAQMD thresholds (AIR-2 and AIR-3)
AIR-A. Reduce Construction Period Dust Emissions	✓		✓	✓	✓
AIR-B. Reduce Construction Equipment Emissions	✓		✓	✓	✓
Significance Determination Before Mitigation / After Mitigation	S / SU	NI	S / SU	S / SU	S / SU
Agriculture and Forestry	None	None	None	None	None
Significance (No Mitigation)	NI	NI	NI	NI	NI
Biological Resources	Adverse impacts on riparian habitat and healthy trees/shrubs (BIO-2).Adverse impacts on bird migration (Impact BIO-4). Conflict with policies in Milpitas Tree Ordinance (BIO-5)	**(-)** No significant impacts	**(=)** Adverse impacts on riparian habitat and healthy trees/shrubs (BIO-2). Adverse impacts on bird migration (Impact BIO-4). Conflict with policies in Milpitas Tree Ordinance (BIO-5)	**(+)** Adverse impacts on riparian habitat and healthy trees/shrubs (BIO-2). Adverse impacts on bird migration (Impact BIO-4). Conflict with policies in Milpitas Tree Ordinance (BIO-5)	**(+)** Adverse impacts on riparian habitat and healthy trees/shrubs (BIO-2). Adverse impacts on bird migration (Impact BIO-4). Conflict with policies in Milpitas Tree Ordinance (BIO-5)

ENVIRONMENTAL RESOURCE	PROPOSED PROJECT Widened Trapezoidal Channel (FEMA Certification Performance)	NO PROJECT ALTERNATIVE	ALTERNATIVE 2A USACE-Selected Alternative	ALTERNATIVE 2B Expanded Incised Trapezoidal Channel (FEMA Certification Performance), Accommodate Upstream Bypass Channel	ALTERNATIVE 4 Walled Trapezoidal Channel (FEMA Certification Performance)
BIO-A. Perform Pre-Construction Nesting Bird Surveys	✓		✓	✓	✓
BIO-B. Compensate for Trees and Shrubs Removed During Construction	✓		✓	✓	✓
BIO-C. Use native grasses and forbs to hydroseed disturbed areas.	✓		✓	✓	✓
BIO-D. Provide Buffers Around Riparian Trees	✓		✓	✓	✓
Significance Determination Before Mitigation / After Mitigation	S / LM	NI	S / LM	S / LM	S / LM
Cultural Resources	Adverse impact on historical/archaeological site CA-SCL-593 (Impact CUL-1 and CUL-2) Potential adverse impacts on unknown cultural resources and human remains (CUL-4)	**(=)** No significant impacts	**(=)** Adverse impact on historical/archaeological site CA-SCL-593 (Impact CUL-1 and CUL-2). Potential adverse impacts on unknown cultural resources and human remains (CUL-2 and CUL-4)	**(+)** Adverse impact on historical/archaeological site CA-SCL-593 (Impact CUL-1and CUL - 2).Potential adverse impacts on unknown cultural resources and human remains (CUL-2 and CUL-4)	**(+)** Adverse impact on archeological site CA-SCL-593 (Impact CUL-1 and CUL-2). Potential adverse impacts on unknown cultural resources and human remains (CUL-2 and CUL-4)
CUL-A. Implement the CA-SCL-593 MOA and HPMP	✓	✓	✓	✓	✓
CUL-B. Archaeological Monitoring and Unanticipated Discovery Plan	✓		✓	✓	✓
Significance Determination Before Mitigation / After Mitigation	S / LM	S / LM	S / LM	S / LM	S / LM
Geology, Soils, and Mineral Resources	Potential to expose structures or engineered slopes to adverse effects from seismic ground shaking (GEO-1). Potential for soil erosion or loss of topsoil (GEO-2)	**(-)** No significant impacts	**(-)** Potential to expose structures or engineered slopes to adverse effects from seismic ground shaking (GEO-1). Potential for soil erosion or loss of topsoil (GEO-2)	**(+)** Potential to expose structures or engineered slopes to adverse effects from seismic ground shaking (GEO-1). Potential for soil erosion or loss of topsoil (GEO-2)	**(+)** Potential to expose structures or engineered slopes to adverse effects from seismic ground shaking (GEO-1). Potential for soil erosion or loss of topsoil (GEO-2)
GEO-A. Implement Geotechnical Recommendations	✓		✓	✓	✓

ENVIRONMENTAL RESOURCE	**PROPOSED PROJECT** Widened Trapezoidal Channel (FEMA Certification Performance)	**NO PROJECT ALTERNATIVE**	**ALTERNATIVE 2A** USACE-Selected Alternative	**ALTERNATIVE 2B** Expanded Incised Trapezoidal Channel (FEMA Certification Performance), Accommodate Upstream Bypass Channel	**ALTERNATIVE 4** Walled Trapezoidal Channel (FEMA Certification Performance)
WAQ-C. Prepare and Implement a Rain Event Action Plan	✓		✓	✓	✓
Significance Determination Before Mitigation / After Mitigation	S / LM	LS	S / LM	S / LM	S / LM
Greenhouse Gases and Energy Use	Emissions of GHGs in excess of SMAQMD threshold (GHG-1)	**(-)** No significant impacts	**(=)** Emissions of GHGS in excess of SMAQMD threshold (GHG-1)	**(+)** Emissions of GHGs in excess of SMAQMD threshold (GHG-1)	**(+)** Emissions of GHGs in excess of SMAQMD threshold (GHG-1)
AIR-A. Reduce Construction Period Dust Emissions	✓		✓	✓	✓
AIR-B. Reduce Construction Equipment Emissions	✓		✓	✓	✓
Significance Determination Before Mitigation / After Mitigation	S / SU	NI	S / SU	S / SU	S / SU
Hazardous Materials	Potential for accidental spills or exposure to contaminated groundwater (HWM-1). Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment (HWM-2)	**(-)** No significant impacts	**(-)** Potential for accidental spills or exposure to contaminated groundwater (HWM-1). Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment (HWM-2)	**(+)** Potential for accidental spills or exposure to contaminated groundwater (HWM-1). Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment (HWM-2)	**(+)** Potential for accidental spills or exposure to contaminated groundwater (HWM-1). Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment (HWM-2)
HWM-A. Prepare and Implement Spill Prevention and Response Plan (SPRP)	✓		✓	✓	✓
HWM-B. Prepare and Implement Emergency Evacuation Plan	✓		✓	✓	✓
HWM-C. Treat VOC-Contaminated Groundwater Encountered at JCI Off-Site Area.	✓		✓	✓	✓

ENVIRONMENTAL RESOURCE	PROPOSED PROJECT Widened Trapezoidal Channel (FEMA Certification Performance)	NO PROJECT ALTERNATIVE	ALTERNATIVE 2A USACE Selected-Alternative	ALTERNATIVE 2B Expanded Incised Trapezoidal Channel (FEMA Certification Performance), Accommodate Upstream Bypass Channel	ALTERNATIVE 4 Walled Trapezoidal Channel (FEMA Certification Performance)
TRA-A: Prepare and Implement a Transportation Management Plan*	✓		✓	✓	✓
WAQ-C. Prepare and Implement a Rain Event Action Plan*	✓		✓	✓	✓
Significance Determination Before Mitigation / After Mitigation	S / LM	NI	S / LM	S / LM	S / LM
Land Use and Planning	Conflict with Milpitas Trails Master Plan (LND-2)	(-= No significant impacts	**(=)** Conflict with Milpitas Trails Master Plan (LND-2)	**(+)** Conflict with Milpitas Trails Master Plan (LND-2)	**(+)** Conflict with Milpitas Trails Master Plan (LND-2)
LND-A: Allow Public Access to Creek Right of Way	✓		✓	✓	
Significance Determination Before Mitigation / After Mitigation	S / LM	NI	S / LM	S / LM	S / LM
Noise	Short-term exceedance of local noise standards (NOI-1) and substantial temporary increase in noise levels (NOI-4)	**(-)** No significant impacts	**(=)** Short-term exceedance of local noise standards (NOI-1) and substantial temporary increase in noise levels (NOI-4)	**(+)** Short-term exceedance of local noise standards (NOI-1) and substantial temporary increase in noise levels (NOI-4)	**(+)** Short-term exceedance of local noise standards (NOI-1) and substantial temporary increase in noise levels (NOI-4)
NOI-A. Alert Neighbors	✓		✓	✓	✓
NOI-B. Use Noise Suppression Techniques	✓		✓	✓	✓
NOI-C. Limit Construction Hours	✓		✓	✓	✓
Significance Determination Before Mitigation / After Mitigation	S / SU	LS	S / SU	S / SU	S / SU
Population and Housing	No significant impacts	**(=)** No significant impacts	**(=)** No significant impacts	**(=)** No significant impacts	**(=)** No significant impacts
Significance (No Mitigation)	LS	NI	LS	LS	LS

ENVIRONMENTAL RESOURCE	PROPOSED PROJECT Widened Trapezoidal Channel (FEMA Certification Performance)	NO PROJECT ALTERNATIVE	ALTERNATIVE 2A USACE Selected-Alternative	ALTERNATIVE 2B Expanded Incised Trapezoidal Channel (FEMA Certification Performance), Accommodate Upstream Bypass Channel	ALTERNATIVE 4 Walled Trapezoidal Channel (FEMA Certification Performance)
Public Services	No significant impacts	**(=)** No significant impacts	**(+)** No significant impacts	**(+)** Adversely affect response times of emergency vehicles (PBS-1)	**(+)** Adversely affect response times of emergency vehicles (PBS-1)
TRA-A: Prepare and Implement a Transportation Management Plan*	✓		✓	✓	✓
Significance Determination Before Mitigation / After Mitigation	LS	LS	LS	S / LM	S / LM
Recreation	No significant impacts	**(-)** No significant impacts	**(=)** No significant impacts	**(=)** No significant impacts	**(=)** No significant impacts
REC-A. Detour Signage for Pedestrians and Cyclists*	✓		✓	✓	✓
LND-A: Allow Public Access to Creek Right of Way*	✓		✓	✓	
Significance Determination Before Mitigation / After Mitigation	LS	LS	LS	LS	LS
Transportation and Traffic	Conflict with a plan ordinance or policy establishing measures of effectiveness for performance of the circulation system (TRA-1). Hazards design features or construction vehicles (TRA-4). Inadequate emergency access (TRA-5). Conflict with plan or policy regarding public transit, bicycle, or pedestrian facilities (TRA-6).	**(-)** No significant impacts	**(=)** Conflict with a plan ordinance or policy establishing measures of effectiveness for performance of the circulation system (TRA-1). Hazards design features or construction vehicles (TRA-4). Inadequate emergency access (TRA-5). Conflict with plan or policy regarding public transit, bicycle, or pedestrian facilities (TRA-6).	**(+)** Conflict with a plan ordinance or policy establishing measures of effectiveness for performance of the circulation system (TRA-1). Hazards design features or construction vehicles (TRA-4). Inadequate emergency access (TRA-5). Conflict with plan or policy regarding public transit, bicycle, or pedestrian facilities (TRA-6).	**(+)** Conflict with a plan ordinance or policy establishing measures of effectiveness for performance of the circulation system (TRA-1). Hazards design features or construction vehicles (TRA-4). Inadequate emergency access (TRA-5). Conflict with plan or policy regarding public transit, bicycle, or pedestrian facilities (TRA-6).
TRA-A. Prepare and Implement a Traffic Management Plan	✓		✓	✓	✓

ENVIRONMENTAL RESOURCE	PROPOSED PROJECT Widened Trapezoidal Channel (FEMA Certification Performance)	NO PROJECT ALTERNATIVE	ALTERNATIVE 2A USACE Selected-Alternative	ALTERNATIVE 2B Expanded Incised Trapezoidal Channel (FEMA Certification Performance), Accommodate Upstream Bypass Channel	ALTERNATIVE 4 Walled Trapezoidal Channel (FEMA Certification Performance)
HWM-B. Prepare and Implement Emergency Evacuation Plan*	✓		✓	✓	✓
Significance Determination Before Mitigation / After Mitigation	S / LM	LS	S / LM	S / LM	S / LM
Utility and Service Systems	Contaminated groundwater may exceed RWQCB water quality standards (UTL-1)	**(-)** No significant impacts	**(=)** Contaminated groundwater may exceed RWQCB water quality standards (UTL-1)	**(+)** Contaminated groundwater may exceed RWQCB water quality standards (UTL-1)	**(+)** Contaminated groundwater may exceed RWQCB water quality standards (UTL-1)
HWM-C. Treat VOC–contaminated Groundwater Encountered at JCI Off-site Area*	✓		✓	✓	✓
Significance Determination Before Mitigation / After Mitigation	S / LM	LS	S / LM	S / LM	S / LM
Hydrology and Water Quality	Significant water quality impacts from spills of hazardous materials, contaminated groundwater, and creek dewatering (WAQ-1, WAQ-5, and WAQ-6)	**(-)** No significant impacts	**(+)** Significant water quality impacts from spills of hazardous materials, contaminated groundwater, and creek dewatering (WAQ-1, WAQ-5, and WAQ-6)	**(+)** Significant water quality impacts from spills of hazardous materials, contaminated groundwater, and creek dewatering (WAQ-1, WAQ-5, and WAQ-6)	**(+)** Significant water quality impacts from spills of hazardous materials, contaminated groundwater, and creek dewatering (WAQ-1, WAQ-5, and WAQ-6)
WAQ-A. Implement Measures for Reducing Erosion and Protecting Water Quality	✓		✓	✓	✓
WAQ-B. Prepare and Implement a Dewatering Plan	✓		✓	✓	✓
WAQ-C. Prepare and Implement a Rain Event Action Plan	✓		✓	✓	✓
HWM-A. Prepare and Implement a Spill Prevention and Response Plan*	✓		✓	✓	✓
HWM-C. Treat VOC-contaminated groundwater encountered at the JCI off-site area*	✓		✓	✓	✓

ENVIRONMENTAL RESOURCE	**PROPOSED PROJECT** Widened Trapezoidal Channel (FEMA Certification Performance)	**NO PROJECT ALTERNATIVE**	**ALTERNATIVE 2A** USACE Selected-Alternative	**ALTERNATIVE 2B** Expanded Incised Trapezoidal Channel (FEMA Certification Performance), Accommodate Upstream Bypass Channel	**ALTERNATIVE 4** Walled Trapezoidal Channel (FEMA Certification Performance)
Significance Determination Before Mitigation/After Mitigation	S / LM	LS	S / LM	S / LM	S / LM

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ACRONYMS AND ABBREVIATIONS

ACE	Annual Chance of Exceedance
AQMP	Air Quality Management Plan
AST	Above-ground storage tanks
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
Bgs	Below ground surface
BMP	Best Management Practices
BP	Before present
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standard
Cal-OSHA	California Occupational Safety and Health Administration
Caltrans	California Department of Transportation
CAP	Clean Air Plan
CAR	Coordination Act Report
CARB	California Air Resources Board
CBC	California Building Code
CCAA	California Clean Air Act
CCCR	Citizens Committee to Complete the Refuge
CCR	California Code of Regulations
CDC	California Department of Conservation
CDF	California Department of Forestry
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act of 1970
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CGS	California Geologic Survey
CHP	California Highway Patrol
CMP	Congestion Management Plan
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	Carbon monoxide
CO2e	Carbon dioxide equivalent
CRAM	California Rapid Assessment Method
CRHR	California Register of Historical Resources
CWA	Clean Water Act
Cy	Cubic yards
dB	Decibels
DCA	Dichloroethane
DCE	Dichloroethene
DEH	Santa Clara Department of Environmental Health
DEIR	Draft Environmental Impact Report
DTSC	California Department of Toxic Substances Control
DWR	Department of Water Resources
EIR	Environmental Impact Report
EIS	Environmental Impact Statement

EPA	U.S. Environmental Protection Agency
ERD	Enhanced reduction dechlorination
ESA	Endangered Species Act
ESL	Environmental Screening Levels
EV	Electron volt
Fed-OSHA	Federal Occupational Safety and Health Administration
FEIR	Final Environmental Impact Report
FEMA	Federal Emergency Management Agency
FHA	Federal Highway Administration
FHWA	Federal Highway Administration
Foot/Ft	Feet per Feet
FWCA	Fish and Wildlife Coordination Act
GHG	Greenhouse Gas
GIS	Geographical Information Systems
GRR-EIS	General Reevaluation Report/Environmental Impact Statement
GWETS	Groundwater extraction and treatment system
HCP	Habitat Conservation Plan
HOV	High-occupancy vehicle
HPMP	Historic Property Management Plan
HTRW	Hazardous, toxic, and radiological waste
JCI	Jones Chemical, Inc. Site
JUA	Joint Use Agreement
Ldn	Day-night average sound level
LEDPA	Least Environmentally Damaging Practicable Alternative
LOS	Level of Service
LRT	Light Rail Transit
LS	Less than Significant
MBTA	Migratory Bird Treaty Act
MLD	Most Likely Descendant
MMRP	Mitigation Monitoring and Reporting Program
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MSL	Mean Sea Level
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NAT	North American Transformer Site
NCCPs	Natural Community Conservation Plans
NEPA	National Environmental Policy Act
NER	National Ecosystem Restoration
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NI	No Impact
NMFS	National Marine Fisheries Service
NO_2	Nitrogen dioxide
NOI	Notice of Intent
NOP	Notice of Preparation
NOx	Nitrogen oxides

NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
O_3	Ozone
OHP	Office of Historic Preservation
OHWM	Ordinary High Water Mark
OSHA	Occupational Safety and Health Administration
PCE	Perchloroethylene
PELS	Permissible Exposure Limits
PG&E	Pacific Gas and Electric
PID	Photoionization detector
PM_{10}, $PM_{2.5}$	Particulate matter
Ppm	Parts per million
PRC	Public Resources Code
REAP	Rain Event Action Plan
ROG	Reactive organic gases
RWQCB	Regional Water Quality Control Board
SCVWD or the District	Santa Clara Valley Water District
SFBRWQCB	San Francisco Bay Region Water Quality Control Board
SGMP	Soil and Groundwater Management Plan
SIP	State Implementation Plans
SM	Less than Significant with Mitigation
SMP	Stream Maintenance Plan
SO_2	Sulfur dioxide
STELs	Short-term Exposure Limits
SU	Significant, Unavoidable
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TCA	Trichloroethane
TCE	Trichloroethylene
TWA	time-weighted average
µg/m3	Micrograms per cubic meter
UPRR	Union Pacific Railroad
USA North	Underground Service Alert Northern California

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APPENDICES

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FIGURES

1. INTRODUCTION

This ~~Draft~~ Final Environmental Impact Report (~~D~~FEIR) identifies the possible environmental impacts associated with implementing the Upper Berryessa Creek Flood Risk Management Project (proposed project). This ~~D~~FEIR~~EIR~~ has been prepared to comply with the California Environmental Quality Act (CEQA), which requires that all state and local governmental agencies consider the environmental consequences of programs and projects over which they have discretionary authority before taking action. CEQA requires preparation of an EIR to inform agencies and the public of significant environmental effects associated with a proposed project, to identify ways to minimize significant effects of the project, and to describe reasonable alternatives to the project that would avoid or reduce the project's significant effects (CEQA Guidelines, Section 15121(a)).

The Santa Clara Valley Water District (the District) is the primary water resources agency for Santa Clara County (the County). The District is charged with local flood protection in the 322-square-mile Coyote Creek Watershed, the largest of the County's five watersheds. Berryessa Creek is one of the major waterways draining this watershed, and carries runoff from undeveloped areas east of the I-680 Freeway, through developed neighborhoods, commercial areas, and industrial areas before it enters San Francisco Bay. The District is cooperating with the U.S. Army Corps of Engineers (USACE) in implementing the proposed project. USACE is responsible for project design, construction, and initial maintenance of the improvements. The District is partially funding the project; cooperating with USACE in project planning and design; providing all necessary lands, easements, rights-of-way, and other land rights for project construction, and long-term maintenance of the constructed improvements.

To fulfill requirements of the National Environmental Policy Act (NEPA), USACE prepared a Final General Reevaluation and Environmental Impact Statement (GRR-EIS) for the project in early 2014 (USACE 2014), in which it evaluated a range of five alternatives for the Upper Berryessa Creek flood risk management project, including a No Action Alternative. These alternatives are identified in Table 1.1.

Table 1.1 Final Array of Alternative Plans Assessed in USACE GRR/EIS

Alternative	Description
1	No Action
2A	Incised Trapezoidal Channel (Moderate Protection)
2B	Incised Trapezoidal Channel (NFIP-Certification Protection)
4	Walled Trapezoidal Channel (NFIP-Certification Protection)
5	1990 Authorized Project

Alternative 5 is the project authorized by Congress in the Water Resources Development Act of 1990. The 1990 authorized project included channel improvements to about 3.3 miles of Berryessa Creek upstream of I-680. In response to concerns that the improvements upstream of I-680 would be environmentally harmful and economically unjustified, USACE undertook a General Re-evaluation in 2012, which resulted in preparation of the 2014 GRR-EIS document (USACE 2014). The GRR-EIS explored a number of alternatives to the authorized project and included detailed analysis of the short list of alternatives listed in Table 1.1. These alternatives were intended to provide a range of flood protection, recreational benefits, costs, and environmental protections. The alternatives included flood protection measures extending upstream beyond the limits of the proposed project. After evaluating the alternatives, the USACE selected Alternative 2A, which is intended to provide flood protection at the 1

percent annual chance of exceedance (ACE) or 100-year level. USACE completed the Final GRR/EIS in March 2014. In May 2014, the USACE Director of Civil Works approved the NEPA Record of Decision (ROD) and issued the Director's Report for the selected plan. The ROD states:

> The recommended plan is considered the environmentally preferred alternative. The recommended plan avoids or minimizes impacts to environmental resources to a greater extent than do the other alternatives, mainly due to a shorter construction period, while meeting the flood risk management purpose, although there would still be temporary disturbance of habitats and air quality in the construction area. Adverse environmental effects will be reduced to a less than significant level through project design, construction practices, preconstruction surveys and analysis, regulatory requirements and best management practices. All practicable means to avoid, minimize, and mitigate adverse environmental impacts were included in the plan formulation process and have been incorporated into the selected plan. Although the selected plan would not result in any long-term significant impacts, there would be short-term effects to air quality, water quality, wildlife, cultural resources, transportation and noise.
>
> Technical and economic criteria used in the formulation of alternative plans were those specified in the Water Resources Council's Economic and Environmental Principles and Guidelines for Water and Related Land Resource Implementation Studies. All applicable laws, executive orders, regulations, and guidelines were considered in the evaluation of alternatives and the selection of the recommended plan. Based on review of these evaluations, I find that the flood risk management and recreation benefits gained by construction of the recommended plan serve the public interest and outweigh any adverse effects. This ROD completes the National Environmental Policy Act process.

Alternative 2A (i.e. USACE-selected project) is similar to the proposed project and would protect against the 1 percent ACE event, but not with the 95 percent level of certainty required to meet certification standards of the Federal Emergency Management Agency (FEMA) National Flood Insurance Program (NFIP). Because the District wants the project to achieve FEMA certification, the District requested modification of the Alternative 2A design. The required design modification consists of increasing the length and height of the concrete floodwall located on the west bank of the creek in Reaches 2/3 and 4. In Reaches 2/3 the USACE-selected project (Alternative 2A) design includes a roughly 1,300 foot-long, 1.5 foot-high floodwall at this location; the proposed project would increase the length of the floodwall to about 2,200 feet, and increase the height to 2 feet above ground level. In Reach 4, both the proposed project and Alternative 2A include a completely buried, 450-ft long concrete floodwall. The modified Alternative 2A design is the proposed project analyzed in this FEIR.

1.1. PURPOSE OF THE EIR

According to CEQA, projects with significant environmental effects require preparation of an EIR that fully describes the environmental effects of a project (CEQA Guidelines §15064(a)(1)). An EIR is intended to provide information that allows the public to identify and evaluate potential environmental consequences of a proposed project, to identify mitigation measures to lessen or eliminate significant adverse impacts, and to examine feasible alternatives to the project. The final decision to approve, disapprove, or modify the proposed project is not made until the information contained in the EIR is reviewed and considered by the lead and responsible agencies.

CEQA states that a lead agency, in this case, the District, shall not "approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects…" (Public Resource Code § 21002). The lead agency shall neither approve nor implement a project as proposed unless the significant environmental effects of that project have been reduced to a less than significant level, essentially "eliminating, avoiding, or substantially lessening" the expected impacts (Public Resource Code § 21081). If the lead agency approves the project despite residual significant adverse impacts that cannot be mitigated to less than significant levels, the agency must state the reasons for its action in writing. This "statement of overriding considerations" must be included in the record of project approval.

The District determined that construction of the project could have a significant effect on the environment and ~~is~~ has therefore prepared~~ing~~ an EIR in compliance with CEQA. This ~~D~~EIR~~EIR~~ is intended to:

- Provide a complete description of the proposed project to the public;
- Inform the public of any significant impacts that could occur as a result of project implementation;
- Identify measures that would avoid, reduce, or mitigate any significant effects; and
- Describe and evaluate other alternatives that may feasibly accomplish the goals and objectives of the proposed project.

1.2. EIR PROCESS

1.2.1. Notice of Preparation and Scoping

On October 27, 2001, in accordance with Section 15082 of the CEQA Guidelines, the District, as the CEQA lead agency, prepared a Notice of Preparation (NOP) for this EIR. At the same time, the USACE prepared a Notice of Intent (NOI) as the lead agency under the National Environmental Policy Act (NEPA). The NOP contained a description of the project and a map of the project area, identified possible alternatives to the proposed project, and provided a summary of the probable environmental effects of the project to be addressed in the EIR. The NOP was mailed to 11 interested parties, including local and state agencies and to the State Clearinghouse. Copies of the NOP were made available for public review at the Santa Clara County Public Library in Milpitas and at the County Clerk's office. The 30-day scoping period for the project occurred between October 27 and November 27, 2001. A public scoping meeting was held on November 7, 2001, at the City of Milpitas Police Department.

Two comment letters were received during the public scoping period. These letters, along with a copy of the NOP, are attached as Appendix A of this EIR. Because of the relatively long period of time that elapsed between the issuance of the NOP and the preparation of this ~~D~~EIR, the District attempted to contact the original comment authors to allow them to update their comments. One of the commenting agencies, Streams for Tomorrow, could not be reached. The other commenting agency, California Department of Transportation (Caltrans), responded by sending a letter that it had sent to the USACE during the public review process for its EIS, which occurred in 2014. This letter is also attached as part of Appendix A.

1.2.2. Preparation of Draft EIR

The~~is~~ DEIR ~~will be~~was made available by the District for review and comment by the public and other interested parties, agencies, and organizations for a 4~~5~~-day period ~~starting on~~of September 25, 2015 to

November 12, 2015. A notice of completion (NOC) was sent to regulatory agencies, state and local government agencies, non-profit organizations, private citizens, and other entities that expressed an interest or which may have an interest in the project.

During the public comment period, written comments ~~on the adequacy of the DEIR may be submitted to District~~were submitted to:

James Manitakos
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118

Comments ~~may be~~were also submitted electronically ~~by November 12, 2015~~at the District website at www.valleywater.org. All comment letters and emailed comments have been compiled and are presented in Appendix G.

1.2.3. Final EIR

All comments on environmental issues received during the DEIR public review period ~~will~~ have been addressed in a "response to comments" ~~document~~section (Chapter 7), which has been added in its entirety to the DEIR. ~~which, together with a revised DEIR, will constitute the Final EIR.~~ The response to comments document ~~will also~~ presents any changes to the DEIR resulting from public and agency input. This~~e Final EIR (~~FEIR~~)~~ ~~will~~ incorporates all changes to the DEIR from public and agency input, as well as staff-initiated text changes. Revisions to the DEIR are tracked in this FEIR by including strikethrough lines for deleted text and colored text for additions.

Prior to any decision to approve, revise, or reject the project, the District's Board of Directors will review the FEIR and consider EIR certification at a regularly scheduled board meeting. Upon EIR certification, the District may proceed with project approval actions. Approval of the project would be preceded by written findings for each significant adverse environmental effect identified in the EIR (CEQA Guidelines §15091). At the time that CEQA findings are adopted, the District will also adopt a Mitigation Monitoring and Reporting Program (MMRP) for adopted mitigation measures (further discussed below).

1.2.4. Mitigation, Monitoring, and Reporting

California law requires lead agencies to adopt an MMRP for mitigation measures that have been identified as necessary to reduce or avoid significant effects on the environment, and which will become conditions of program approval. All measures proposed for adoption have been included in the MMRP to ensure CEQA compliance during program implementation (CEQA Guidelines §15097 (a)).

1.3. ORGANIZATION OF THE EIR

This report has been organized into seven chapters and six appendices.

CHAPTER 1 INTRODUCTION provides an overview of the purpose of an ~~D~~EIR and the process of preparing the ~~D~~EIR ~~and subsequent FEIR~~. Reports previously prepared in relation to Berryessa Creek are also reviewed.

CHAPTER 2 PROJECT DESCRIPTION describes the project in terms of its original authorization, purpose, current configuration and uses. The purpose and need for the proposed project are described, along with the conceptual actions that could be undertaken to achieve the purpose and objectives. The Proposed Project, which is the project selected from among the alternatives analyzed, is presented in detail.

CHAPTER 3 ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES presents the existing environmental conditions throughout the project area. It then provides analysis of significant adverse effects of the proposed project and describes mitigation measures to avoid or reduce significant environmental impacts. Environmental conditions assessed and analyzed for impacts include aesthetics, air quality, agriculture and forestry, biological resources, climate change, cultural resources, geology, hazardous materials, land use and planning, noise, population and housing, public services, recreation, transportation, and utilities and service systems, and water resources.

CHAPTER 4 CUMULATIVE IMPACTS ANALYSIS describes the cumulative effects on the surrounding area that would result from the combination of the proposed project with other ongoing probable future projects in the area and determines whether the proposed project's incremental impacts would be cumulatively considerable.

CHAPTER 5 ALTERNATIVES ANALYSIS describes the alternatives to the proposed project, including the No Project Alternative and three other action alternatives, and analyzes the potential impacts that could result from their implementation.

CHAPTER 6 OTHER STATUTORY CONSIDERATIONS presents analyses required by CEQA for additional impacts of the alternatives, including growth-inducing impacts, unavoidable significant impacts, and significant irreversible changes to existing resources.

CHAPTER 7 ~~Name **HERE**~~**PUBLIC COMMENTS AND DISTRICT RESPONSES TO THE DRAFT EIR** presents the comments submitted by regulatory and planning agencies, local governments, and non-profit organizations during the public review period, and the District's responses to those comments.

CHAPTER 8 AGENCIES AND PERSONS CONTACTED, REFERENCES AND LITERATURE CITED, AND REPORT PREPARERS lists the persons and agencies contacted during preparation of this EIR, references for cited literature, and the report preparers.

APPENDICES:

- Appendix A Public Comments and Notice of Preparation
- Appendix B Air Quality Data Sheets
- Appendix C Wetlands/ Other Waters of the U.S. / Waters of the State Delineation Report
- Appendix D Geotechnical Report
- Appendix E Hazardous Toxic, and Radioactive Waste (HTRW) Soil Sampling Report
- Appendix F Tree and Shrub Survey Report
- Appendix G Public Comments on the DEIR
- Appendix H Draft Groundwater Management Plan

1.4. PREVIOUS REPORTS

Reports prepared in association with this project, or other portions of Berryessa Creek or its tributaries, are included in the list below in chronological order.

Gill and Pulver Engineers, Inc. 1982. Berryessa Creek Preliminary Design Summary Report and Cost Estimate.

Santa Clara Valley Water District. 1982. Lower Penitencia Creek Planning Study (Coyote Creek to Montague Expressway).
Gill and Pulver Engineers, Inc. 1983. Section 205 Draft Report for Flood Control on Berryessa Creek, San Jose, Milpitas, Santa Clara County, California. Preliminary Designs for Channel Modifications (Old Piedmont Road to Calaveras Boulevard).

U.S. Army Corps of Engineers, Sacramento District. 1983. Section 205 Draft Report for Flood Control on Berryessa Creek, San Jose, Milpitas, and Santa Clara County, California. Preliminary Designs for Channel Modifications (Old Piedmont Road to Calaveras Boulevard).

U.S. Army Corps of Engineers, Sacramento District. 1984. Concrete Materials. Berryessa Creek, California.

U.S. Army Corps of Engineers, San Francisco District. 1987. Interim Feasibility Report and Environmental Impact Statement, Coyote Creek and Berryessa Creek, Santa Clara County, California.

Harvey and Stanley Associates, Inc., and Kinetic Laboratories, Inc. 1988. Lower Coyote Creek Fisheries Evaluation.

Northwest Hydraulics Consultants Inc. 1990. HEC-2 Data Deck Development, Berryessa Creek, Santa Clara County, California.

Northwest Hydraulic Consultants Inc. 1990. Sediment Engineering Investigation and Preliminary Hydraulic Design of the Berryessa Creek Flood-Control Project. U.S. Army Corps of Engineers, Sacramento District. 1993. Draft General Design Memorandum, Coyote and Berryessa Creeks, Volume I of II (Berryessa Creek), California.

U.S. Army Corps of Engineers, Sacramento District. 1993. Draft General Design Memorandum, Coyote and Berryessa Creeks, Volume II of II, California.

U.S. Army Corps of Engineers, Sacramento District. 1994. Value Engineering Study on Coyote and Berryessa Creeks, Berryessa Creek Element, Santa Clara County, California.

Kennedy/Jenks Consultants. 1996. Phase II Hazardous Materials Investigation, Calaveras Boulevard to Old Piedmont Road, Berryessa Creek Flood Control Project.

Kennedy/Jenks Consultants. 1996. Preliminary Health Risk Assessment, Berryessa Creek Flood Control Project.

Harvey, H.T. and Associates. 1997. Santa Clara Valley Water District: California Red-Legged Frog Distribution and Status.

City of Milpitas. 2000. Berryessa Creek Trail and Coyote Creek Trail Feasibility Report. May 2000

U.S. Army Corps of Engineers, Sacramento District. 2005. Value Engineering Report, Berryessa Creek Flood Control Project, Santa Clara County, California.

Dowling Associates. 2008. Existing Conditions Report for Berryessa Creek Modifications Traffic Analysis. Prepared for Tetra Tech.

Santa Clara Water Valley District. 2011. Lower Berryessa Creek Program. Final Environmental Impact Report SCH #2007092084. Prepared by ESA Associates.

Kittelson and Associates. May 2012. Traffic Analysis Report for Berryessa Creek Modifications. Prepared for USACE San Francisco District.

U.S. Army Corps of Engineers, Sacramento District. 2014. Berryessa Creek Element, Coyote and Berryessa Creek Flood Control Project, Santa Clara County California. Final General Reevaluation Report and Environmental Impact Statement.

U.S. Army Corps of Engineers, Sacramento District. 2014. Record of Decision. Berryessa Creek Project, Santa Clara County California.

U.S. Army Corps of Engineers. Secretary of the Army. 2014. Directors Report for the Berryessa Creek Element of the Coyote and Berryessa Creeks, Santa Clara County California. Memorandum for Assistant Secretary of the Army (Civil Works).

U.S. Army Corps of Engineers and California State Historic Preservation Office. 2014. Memorandum of Agreement between U.S. Army Corps of Engineers and California State Historic Preservation Office, Regarding Resolution of Adverse Effects for the Proposed Berryessa Creek Flood Control Project.

Basin Research Associates. December 2015. Upper Berryessa Creek Flood Risk Management Improvements Field Summary of Archaeological Phase 1 Testing and Burial Removal.

Tetra Tech. 2015a. Wetland and Vegetation Survey of the Upper Berryessa Creek Project Area. Prepared for Santa Clara Valley Water District. Update to 2014 Wetland and Vegetation Survey of Upper Berryessa Creek Project Area.

Tetra Tech. 2015b. Geotechnical Report. Upper Berryessa Creek Flood Risk Management Project. I-680 to Calaveras Boulevard. Santa Clara County, Milpitas, CA. Prepared for Santa Clara Valley Water District.

Tetra Tech. 2015c. HTRW Soil Sampling Report. Upper Berryessa Creek Flood Risk Management Project between Montague Expressway and Yosemite Drive. Santa Clara County. Milpitas, CA. Prepared for Santa Clara Valley Water District, San Jose, CA.

Tetra Tech. 2015d. HTRW Soil Sampling Report. Upper Berryessa Creek Flood Risk Management Project Between Montague Expressway and Yosemite Drive. Santa Clara County. Milpitas, CA. Prepared for Santa Clara Valley Water District, San Jose, CA.

Tetra Tech. 2015e. 60% Design Plans for the Upper Berryessa Creek Flood Risk Management Project. Prepared for Santa Clara Valley Water District.

Tetra Tech. 2015f. Final 60% Design Documentation Report for the Upper Berryessa Creek Flood Risk Management Project. Prepared for Santa Clara Valley Water District.

Tetra Tech. 2015g. Sediment Transport Analysis Report for the Upper Berryessa Creek Flood Risk Management Project. Prepared for Santa Clara Valley Water District.

Tetra Tech. 2015h. Draft Groundwater Management Plan Upper Berryessa Creek Flood Risk Management Project Jones Chemical Inc. Plume Area, Milpitas, Santa Clara County, California.

2. PROJECT DESCRIPTION

2.1. INTRODUCTION

This ~~D~~FEIR addresses potential impacts of the proposed Upper Berryessa Creek Flood Risk Management Project within the cities of Milpitas and San Jose (Figure 2.1). Proposed channel modifications include flood risk improvements along 2.2 miles of Upper Berryessa Creek.

As the primary water resources agency for Santa Clara County, the District provides water-related services including wholesale distribution of potable water, stream maintenance, and flood protection throughout Santa Clara County. In order to alleviate flooding in the Upper Berryessa Creek area, the District is proposing flood risk management measures that would provide protection from the 100-year flood (also referred to as the 1 percent recurrence flow).

The proposed project was originally authorized for study under the Water Resources Development Act of 1990, and engineering and design studies were prepared by the USACE in 1993. These designs were viewed unfavorably by the local community due to the high cost of the project and the concrete channel features. In 2001, the District signed a Re-evaluation Cost-Sharing Agreement with the USACE to initiate an effort to find a more environmentally acceptable solution.

As part of the process of studying the feasibility of the proposed project and its alternatives, the USACE prepared the Berryessa Creek Integrated General Reevaluation Report and Environmental Impact Statement (USACE 2014). The GRR/EIS documents the planning and evaluation process that identified the USACE's preferred alternative, the results of hydraulic, economic, geotechnical, and other studies that informed the process, and the potential environmental impacts that could occur during construction and operation of the proposed project. As the GRR/EIS has been finalized, the USACE intends to implement the selected project (i.e. Alternative 2A) with improvements sought by the local partner. The proposed project consists of the USACE-selected project with modifications that would increase the level of flood protection to meet FEMA certification standards. The design modification to the USACE-selected project required to meet FEMA certification is increasing the length and height of a concrete floodwall located on the west bank of the creek in Reaches 2 and 3. The USACE-selected project includes a roughly 1,300 foot-long floodwall at this location; the proposed project would increase the length of the floodwall to about 2,200 feet. The maximum height of the floodwall would be 2 feet above ground level.

The District and USACE have formed a partnership to plan and eventually implement the proposed project following CEQA review. The USACE is the project lead and the District is the local partner (the USACE and the District are collectively referred to as project sponsors in this FEIR). USACE would be responsible for contracting and oversight of construction activities and the District would be responsible for acquiring real property needed for the project (including temporary and permanent easements), making real property owned or to be acquired by the District for the project available for construction, and operating and maintaining the creek channel after construction is complete. In July of 2014, the District and the USACE signed a Design Agreement, with the District as the Non-Federal Interest (SCVWD 2014). USACE would be responsible for project design, construction, and initial maintenance of the improvements. The District would partially fund the project; cooperate with USACE in project planning and design; provide all necessary lands, easements, rights-of-way, and other land rights for project construction, and maintain the constructed improvements in the long term. Both partners also committed to appointing senior representatives to a Design Coordination Team, which meets regularly and makes recommendations to the District Engineer on matters related to the project.

2.2. PROJECT LOCATION AND EXISTING FACILITIES

The Berryessa Creek drainage basin covers 22.4 square miles in northeastern Santa Clara County (Figure 2.2). Berryessa Creek flows westerly from its origin in the Los Buellis Hills in the Diablo Range through the cities of Milpitas and San Jose. It then turns north and flows into Lower Penitencia Creek, a tributary to Coyote Creek, which in turn flows into southern San Francisco Bay. The upper watershed in the Diablo Range has steep mountainous areas with clay surface soils that are highly erodible and subject to slope failure, settlement, and transport of sediments downstream. The upper watershed is primarily in recreation, conservation, agricultural or mining use. The lower basin consists of a large proportion of flat valley and hill areas that have been urbanized and channelized where sediment from the upper watershed is delivered and deposited.

This chapter describes Berryessa Creek both upstream and downstream of the project area. Upstream of the project area, the creek flows west out of the Buellis Hills and runs through a steep ravine surrounded by grazing land. The creek and ravine have a well-developed riparian zone, including mature sycamore and eucalyptus trees. At Old Piedmont Road, the creek emerges from the ravine and enters a predominantly residential section of San Jose to Piedmont Road.

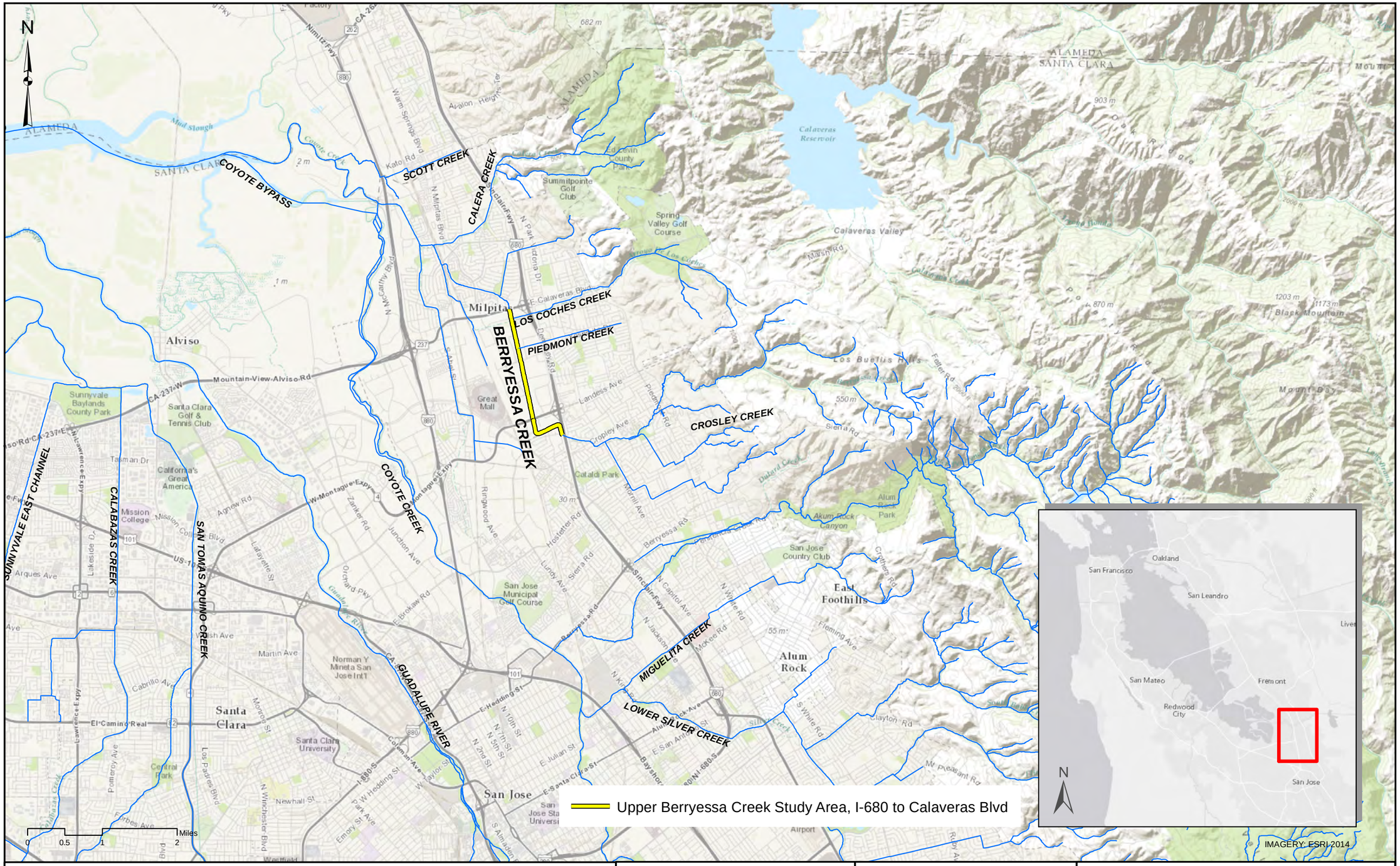

Figure 2.1 Project Location & Vicinity

Tetra Tech
17885 Von Karman Avenue, Suite 500
Irvine, CA 92614
Tel. (949) 809-5000 Fax. (949) 809-5003

Santa Clara Valley Water District

UPPER BERRYESSA CREEK
FLOOD RISK MANAGEMENT PROJECT
0554

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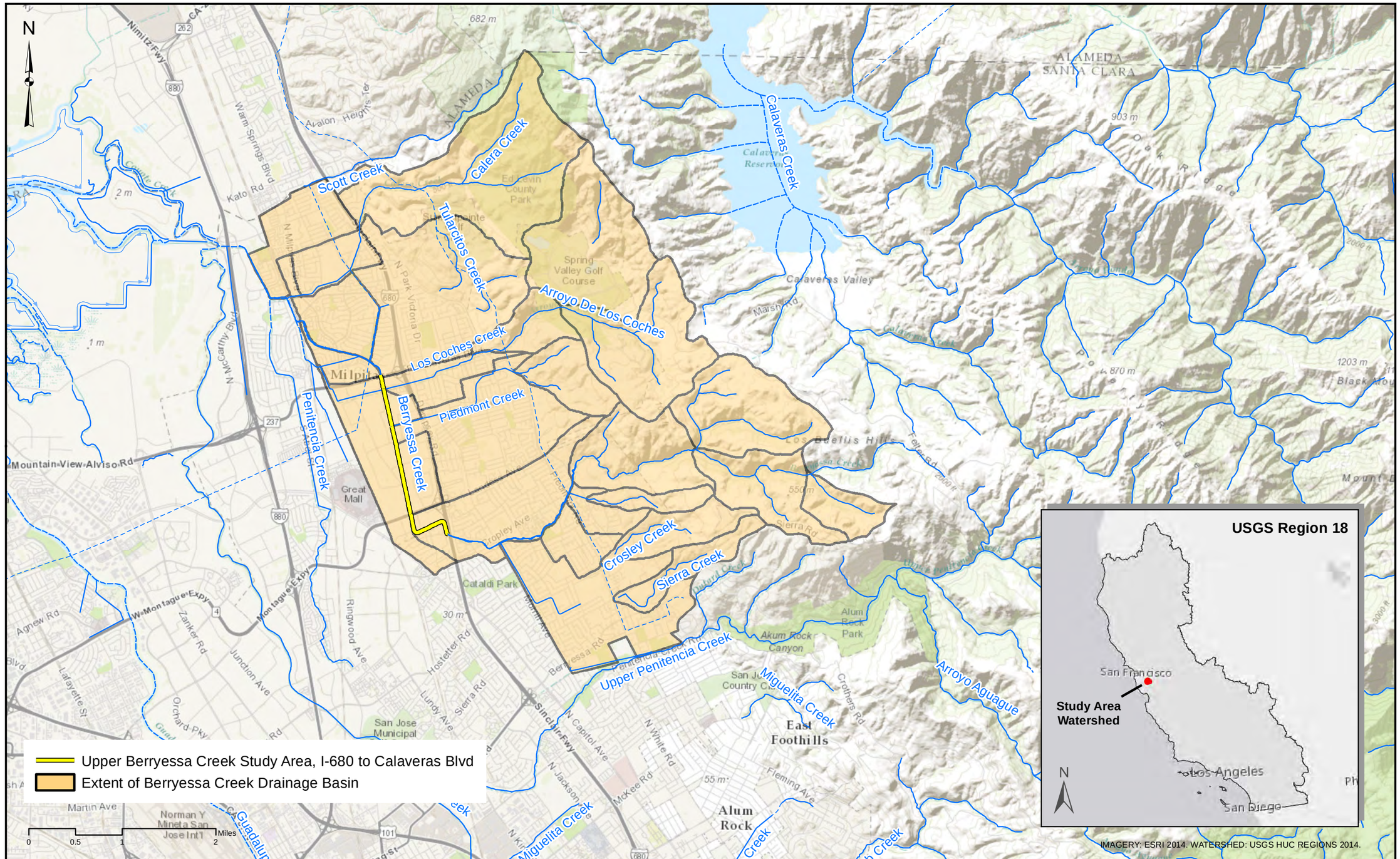

Figure 2.2 - Berryessa Creek Drainage Basin

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Santa Clara Valley Water District

UPPER BERRYESSA CREEK
FLOOD RISK MANAGEMENT PROJECT
0556

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From Piedmont Road to Morill Avenue, the creek flows through a riparian greenbelt known as Berryessa Creek Park. Downstream of Morill Avenue, the creek continues to flow west through earth and concrete-lined channels maintained by the District. The creek then abruptly turns north after flowing under Interstate 680 (I-680) and continues through artificially built earth channels until crossing Calaveras Boulevard. The proposed project would modify the section of creek channel between I-680 (the upstream boundary of the proposed project) and Calaveras Boulevard (the downstream boundary). Downstream of Calaveras Boulevard, the creek flows through about 2 miles of artificial earth and concrete-lined channels and then discharges to Lower Penitencia Creek. The District's Lower Berryessa and Lower Calera Creek Flood Protection Improvements Project, a separate project, is currently under construction. That project is planned for three years of construction (i.e. through 2017) and would increase the flow capacity of Lower Berryessa and Lower Calera Creeks, allowing them to convey the 100-year flood without overtopping of banks (SCVWD 2011).

Downstream of Calaveras Boulevard and outside of the ~~D~~EIR project area, Berryessa Creek is bordered by residential development on both sides. Much of this reach parallels the Union Pacific Railroad (UPRR). The creek crosses the Hetch Hetchy pipeline near Hillview Avenue downstream of Calaveras Boulevard. Planned modifications to Berryessa Creek and its tributaries downstream of Calaveras Boulevard were evaluated in the Lower Berryessa Creek Program Final EIR and are not part of the project evaluated in this ~~D~~EIR.

The project area (i.e., the four creek reaches where project activities would occur) is located within the central portion of the watershed described above and extends for approximately 2.2 miles along the creek. The project area is located primarily within the city limits of Milpitas, with a small stretch at the south end falling within the city limits of San Jose. Nearby major roads include Calaveras Boulevard (Highway 237), Milpitas Boulevard Interstate 880 (I-880), and I-680 (Figure 2.3). Surrounding land uses are primarily industrial and commercial, with two residential areas abutting the project area.

The project area has been divided into four reaches (from downstream to upstream) for overall description, analysis, and reporting purposes, as shown in Table 2.1. These reaches also correspond to the hydraulic reaches used in the hydraulic studies described below. The reaches are shown on Figure 2.3.

Table 2.1 Upper Berryessa Creek Project Area Reaches

Reach No.	Location	Length (feet)	Description
1	Calaveras Boulevard to Los Coches Street Bridge (Stream Miles 1.68 to 1.77)	500	The existing channel is a trapezoidal earth channel passing through an industrial/commercial area of Milpitas. This reach includes a vehicle/pedestrian bridge at Calaveras Blvd.
2	Los Coches Street Bridge to Piedmont Creek (Stream Miles 1.77 to 2.18)	2,150	The existing channel is a trapezoidal earth channel passing through industrial and residential areas of Milpitas. This reach includes a vehicle bridge and a separate pedestrian bridge at Los Coches Street. Los Coches Creek discharges into Berryessa Creek from the east upstream of Los Coches Street. Piedmont Creek discharges into Berryessa Creek from the east at the upper limit of the reach.
3	Piedmont Creek to Montague Expressway (Stream Miles 2.18 to 3.15)	5,150	The existing channel is a trapezoidal earth channel through an industrial area of Milpitas. This reach includes vehicle/pedestrian bridges at Yosemite Drive and Ames Avenue, a culvert serving the UPRR rail line, and a trestle serving the UPRR rail line downstream of Montague Expressway.
4	Montague Expressway to I-680 (Stream Miles 3.15 to 3.81)	3,450	The existing channel is a trapezoidal earth channel crossing the Milpitas-San Jose city boundary. Commercial and residential development is present along this reach. Concrete channel lining is present at two large creek bends. This reach includes a vehicle/pedestrian bridge at Montague Expressway and a pedestrian overpass downstream of I-680.

2.3. PROJECT BACKGROUND AND OBJECTIVES

The District is charged with providing flood protection within the overall Coyote Watershed, as well as four other watersheds within its jurisdiction. The Coyote Watershed includes numerous tributaries to Coyote Creek, of which Berryessa Creek is one of the largest. Along these and other streams, the District implements improvements to contain the base flood, also known as the 100-year flood. District standards also require an additional 3 feet of freeboard, except at bridges where 4 feet of freeboard is required 100 feet upstream and downstream of bridges. The proposed project would meet these District requirements.

Flooding within the Berryessa Creek watershed and vicinity has occurred often during the past decades. Stormwater flooding inundating streets and yards is estimated to occur on an average of at least once every 4 years. Floodwaters overtop the channel banks of Berryessa Creek an average of once every 10 to 20 years (USACE 2014), and cause significant damage to homes, businesses, infrastructure, and automobiles. The dollar value of flood damage from the 1 percent flood is estimated at $528 million in 2011 dollars.

High rainfall events occurring in 1982, 1983, and 1998 caused extensive flooding and damage to the east and central portions of San Jose and western Milpitas. High flows overtopped tributaries to Berryessa Creek and overtopped Upper Berryessa Creek approximately 1,000 feet upstream of Calaveras Boulevard. The 1983 floods, which affected parts of Upper Berryessa Creek, caused sufficient damage that the Governor of California issued a State of Emergency Declaration, and the President of the United States issued a Declaration of a Major Disaster for Public Assistance. Floodwaters occurring in the 1998 event breached a levee in a tributary downstream of the project area, causing failure of a stormwater pump station and flooding of up to 4 feet in the California Landing area of Milpitas (USACE 2014).

As a result of these and other floods, a team composed of staff from the District and the USACE commenced studies to identify areas of Berryessa Creek and its tributaries that are most vulnerable to flooding. One of the key products was a detailed hydraulic model of the Berryessa Creek system. Table 2.2 identifies the channel capacity that was modeled for each reach under existing conditions, as well as the size of the 1 percent recurrence flow.

Table 2.2 Channel Flows and Capacities

Reach	Description	1% Recurrence Flow (cfs)	Existing Channel Capacity (cfs)
4	I-680 to Montague Expressway	2,140	830 – 3,140
3	Montague Expressway to Piedmont Creek	2,780	1,350 – 3,500
2	Piedmont Creek to Los Coches Street	3,880	840 – 2,250
1	Los Coches Street to Calaveras Boulevard	4,990	1,600 – 2,550

Source: NHC 2006

The team mapped areas that would be flooded under the 100-year ~~flow.~~storm event. These areas are shown in Figure 2.4. The floodplain shown in Figure 2.4 is based on modeling performed during preparation of the USACE's GRR/EIS (USACE 2014) and is not necessarily consistent with the FEMA Special Flood Hazard Areas, shown in Figure 2.5, because of the availability of more recent hydrologic information and updated modeling. Based on the mapping of the FEMA Special Flood Hazard Areas shown in Figure 2.5, approximately 650 parcels would be removed from the flood hazard area. The following section describes the ability of each reach to contain flood flows (USACE 2014).

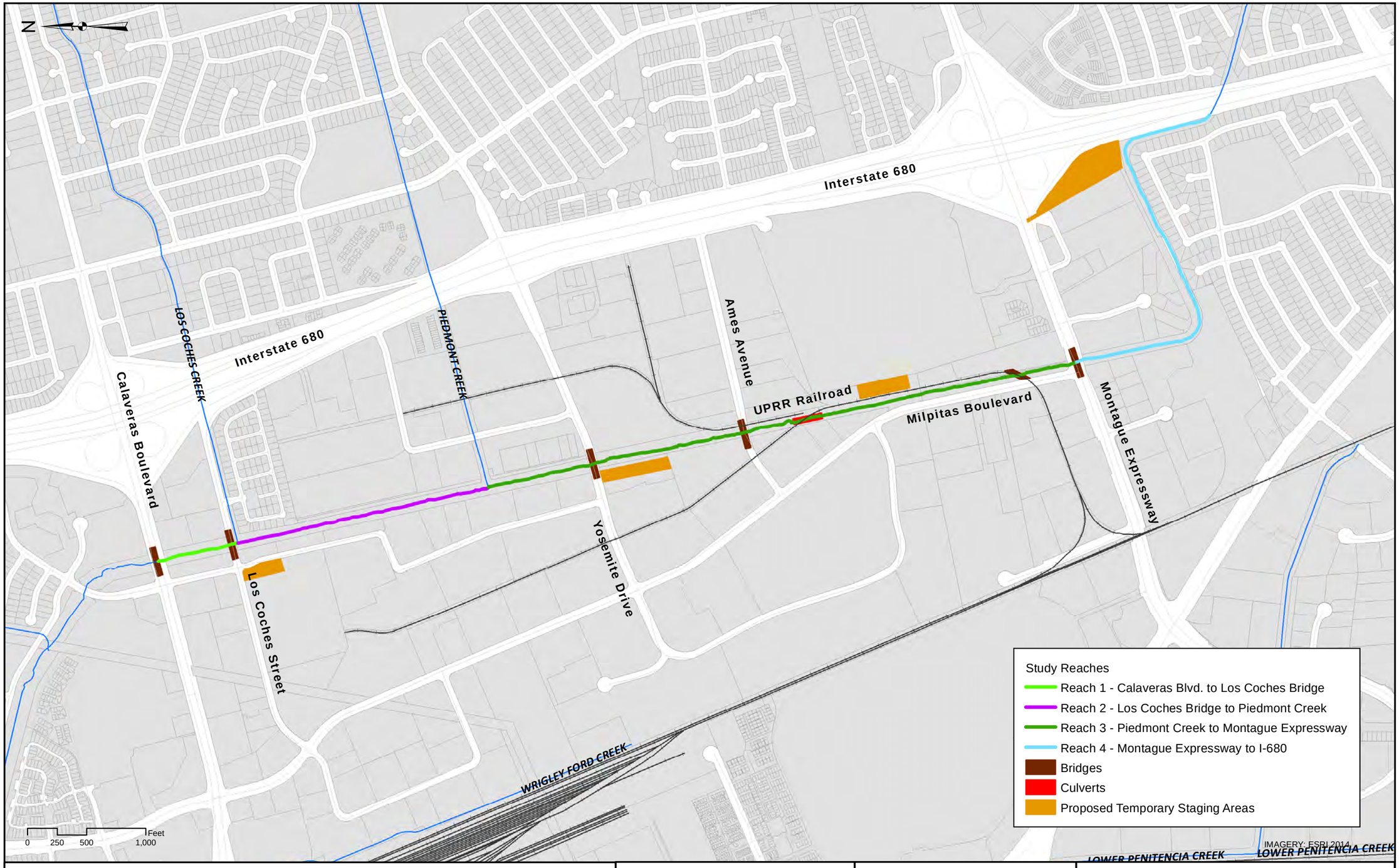

Figure 2.3 Project Reaches

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Santa Clara Valley Water District

UPPER BERRYESSA CREEK
FLOOD RISK MANAGEMENT PROJECT
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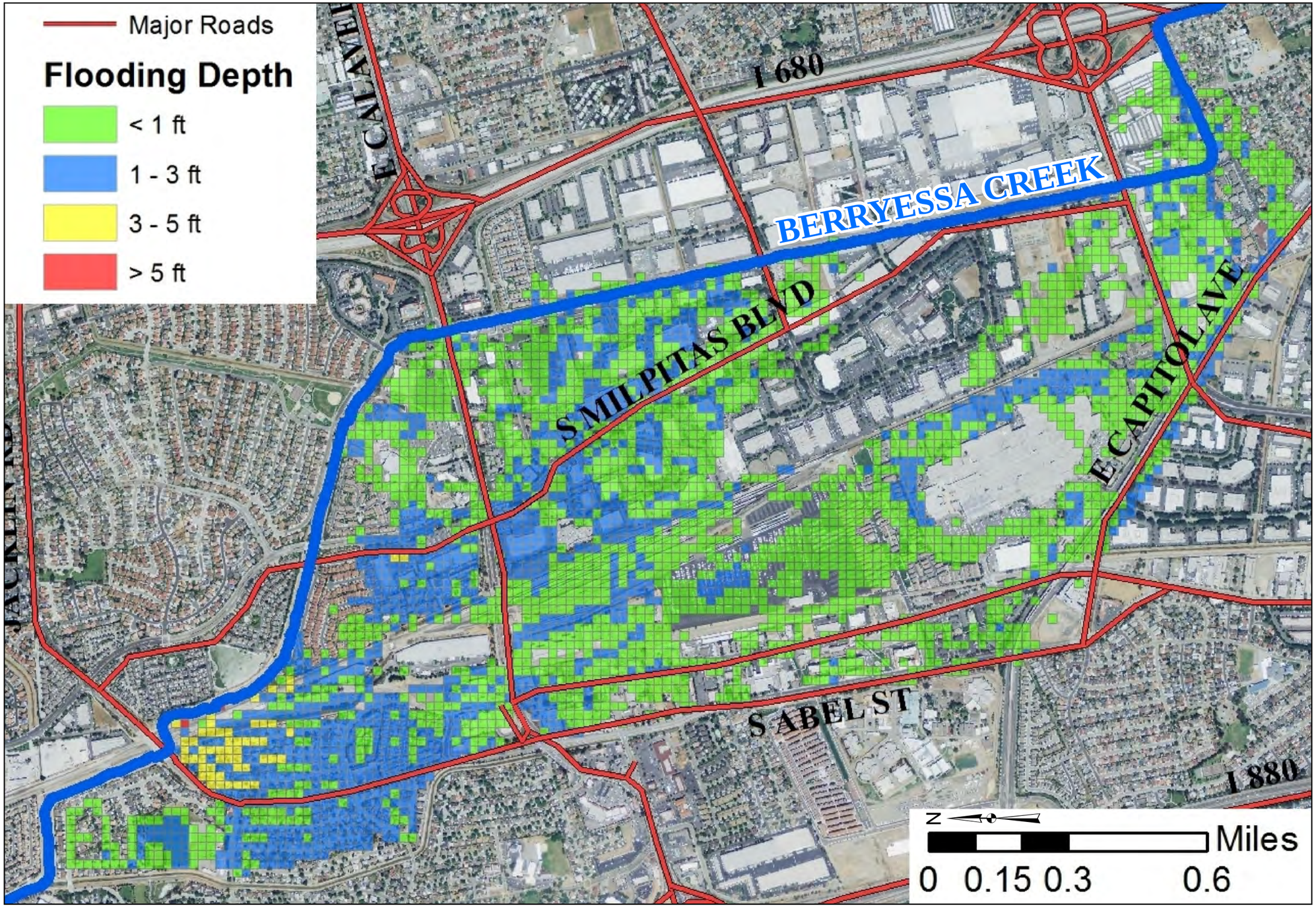

Figure 2.4 100-Year Flood Zone

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2.3.1. I-680 to Montague Expressway (Reach 4)

The channel in this reach is an earthen trapezoidal shape from I-680 to the Montague Expressway Bridge. In this reach, there are two greater than 90 degree bends, one downstream of I-680 and one upstream of Montague Expressway. The two bends are concrete-lined and bank erosion is present at the transitions. The channel through each bend has the capacity to carry only a 20- to 25-year event. Flows breaking out of the main channel will flow to the area of low elevation near Lower Penitencia Creek and continue north to its confluence with Berryessa Creek. These overflows would cause significant damage to commercial and industrial structures and contents. There is essentially no floodplain to allow flood attenuation in this reach.

2.3.2. Montague Expressway to Piedmont Creek (Reach 3)

This reach has an earthen, generally trapezoidal-shaped channel. However, much of the channel also has steeply sloped banks experiencing substantial erosion. The channel is estimated to have the capacity to carry the 25-year flow. During high flow events, overflow occurring upstream of Montague Expressway will limit the channel flows through this reach. Overflow from the channel in this reach is thus limited. The UPRR trestle crossing the channel is constructed of timber and is old and in poor condition. Overflows will occur due to backwater at the trestle about 400 feet downstream of Montague Expressway and at the Yosemite Drive Bridge. There is essentially no floodplain to allow flood attenuation in this reach.

2.3.3. Piedmont Creek to Los Coches Creek (Reach 2)

The channel in this reach is earthen and generally of trapezoidal shape with bank erosion occurring in various areas. The inflow from Piedmont Creek and a low 1,500-foot segment along the west bank will result in channel overflows during the 5-year event. The overflows will cause shallow flooding, but not significant damage to nearby commercial and industrial buildings and their contents. There is essentially no floodplain to allow flood attenuation in this reach.

2.3.4. Los Coches Creek to Calaveras Boulevard (Reach 1)

The existing channel is earthen and generally of trapezoidal shape with bank erosion occurring in various areas. The inflow from Los Coches Creek exacerbates the limited capacity of the existing channel. However, the overflows at the upstream reach below Piedmont Creek will somewhat reduce flows and the flood threat in this reach. Still, the Calaveras Boulevard Bridge could be overtopped from coincident high flows of Upper Berryessa and Los Coches Creeks. There is essentially no floodplain to allow flood attenuation in this reach.

2.3.5. Project Objectives

Hydraulics studies, and associated studies regarding economics, geotechnical issues, hazardous materials, and sediment movement, were prepared in support of the final Berryessa Creek Project GRR-EIS issued in 2014 (USACE 2014). In summary, the studies conducted for the GRR found that several of the reaches do not have sufficient capacity to contain the 100-year or 1 percent flood, meaning that destructive flooding will continue to occur unless flood risk management measures are taken. The studies also show that continued flooding will result in extensive economic impacts, with expected annual damages in Economic Impact Area E, which includes the project area, expected to be over $5 million (USACE 2014).

The District developed the following objectives for the proposed project:

- ***Objective 1:*** *Reduce flood damages from Berryessa Creek upstream of Calaveras Boulevard throughout the study reach during the 50-year period of analysis beginning in 2017. Completed project would meet FEMA certification standards in all 4 project reaches.*

- ***Objective 2:*** *Use environmentally sustainable design practices in addressing the flood risk management purpose of the project wherever possible within the study reach, including taking advantage of restoration opportunities that may be pursued incidentally to the flood damage reduction purpose.*

- ***Objective 3****: Be consistent with the Berryessa Creek Flood Risk Management Project Plan selected by USACE in the Director's Report of May 29, 2014.*

2.4. RELATIONSHIP TO OTHER DISTRICT ACTIVITIES

2.4.1. Lower Berryessa Creek Program

The nearest District capital project is just downstream of the project area (i.e. downstream of Calaveras Boulevard). Referred to as the Lower Berryessa Creek Program, it includes flood risk management elements for Calera, Tularcitos, and Lower Penitencia Creeks, as well as Lower Berryessa Creek (SCVWD 2011). The purpose of the Lower Berryessa Creek Program is to provide flood protection for a design flow of the 100-year flood event. Its implementation would ensure that the increased flow associated with the Upper Berryessa Creek project would also be contained with appropriate freeboard. Additional actions that are part of the Lower Berryessa Creek Program include improving access for long-term channel maintenance, enhancing riparian and stream habitat, and integrating levees with the City of Milpitas' Trail System. The Lower Berryessa Creek and Lower Calera Creek Flood Protection Improvements Project, part of the Lower Berryessa Creek Program, is currently under construction by the District. The Lower Berryessa Creek Program is a separate activity with independent utility from that of the proposed project. Implementation of the Lower Berryessa Creek Program is not dependent upon implementation of the proposed project.

2.4.2. Stream Maintenance Program 2

The Stream Maintenance Program 2 (SMP2) provides support for District implementation of routine stream and canal maintenance activities in a manner that allows the District to meet designed flood protection mandates in an environmentally sensitive manner (SCVWD 2012). The SMP2 specifies maintenance measures related to sediment removal, vegetation management, bank protection, trash removal, and fence and access repair. SMP2 activities are permitted by regulatory agencies and will continue to occur throughout the District (including Upper Berryessa Creek) in conformance with those permits.

2.5. DESCRIPTION OF THE PROPOSED PROJECT

The proposed project has been designed to provide flood damage reduction benefits along Upper Berryessa Creek from the overpass of I-680 in the City of San Jose to the upstream side of Calaveras Boulevard in the City of Milpitas. The proposed project would provide increased flood protection by constructing channel and other improvements designed to convey the 1 percent exceedance probability event (also referred to as the 100-year flood event) within the channel banks. The proposed project would remove ~~an estimated 500~~approximately 650 parcels of land from the flood hazard zone (Figure 2.5).~~—~~ The proposed project would integrate with the Lower Berryessa Creek channel located

downstream of Calaveras Boulevard, which is currently being enlarged by the District to accommodate the 1 percent flow without overtopping of the creek banks. Construction of the Lower Berryessa Creek and Lower Calera Creek Flood Protection Improvements Project is scheduled for completion in 2017, which is the same year that the Upper Berryessa Creek project would be completed.

Proposed flood protection measures include a combination of features that are intended to modify the Berryessa Creek's hydrology to move flood flows through the stream channel more efficiently than under existing conditions, and installation of a floodwall to contain flows that break out and cause flooding under existing conditions. Table 2.3 summarizes hydrologic performance of the existing channel and performance of the channel that would occur under the current USACE-selected project (Alternative 2A in the USACE EIS and this EIR) and under the proposed project as documented in the Draft Hydraulic Technical Memorandum (Tetra Tech 2015a). The memorandum indicates that the project objectives of meeting FEMA certification standards and using environmentally sustainable design practices can be met by modifying Alternative 2A (the current USACE-selected project). The required modification consists of increasing the length and height of the floodwall on the west bank of the creek in Reaches 2 and 3. Compared to Alternative 2A, the proposed project would lengthen the floodwall from 1,300 feet to 2,200 feet and increase its height from 1.5 foot to 2 feet above ground level. Both the proposed project and Alternative 2A would include a completely buried concrete floodwall with a length of about 450 feet in Reach 4. These modifications would result in a conditional, non-exceedance probability of 95 percent that flood waters will not overtop the banks during the 1 percent flow event, which is required to meet FEMA certification standards. The Hydraulic Technical Memorandum also indicates that maximum stream velocities under both Alternative 2A and the proposed project would be reduced compared to existing conditions in all locations other than transitions located at bridges and culverts.

Table 2.3 Upper Berryessa Creek Discharge and Stream Velocity

Location	Baseline (2014 conditions)	Baseline (2014 conditions)	ALT 2A/Proposed Project
	Q_{100} (cfs)	Max Velocity (ft/sec)	Max Velocity (ft/sec)
Reach 1: Calaveras to Los Coches	3,875/4,095	11.3	5.87
Reach 2: Los Coches to Piedmont Creek	3,013	8.19	8.17
Reach 3: Piedmont Creek to Yosemite	2,170	9.02	12.63
Transition	2,010	13.3	17.52
Reach 3: Yosemite to Montague	2,010		10.25
Reach 4: Montague to Upstream Limit	2,010/1,545	9.21	9.73

Source: Tetra Tech 2015a

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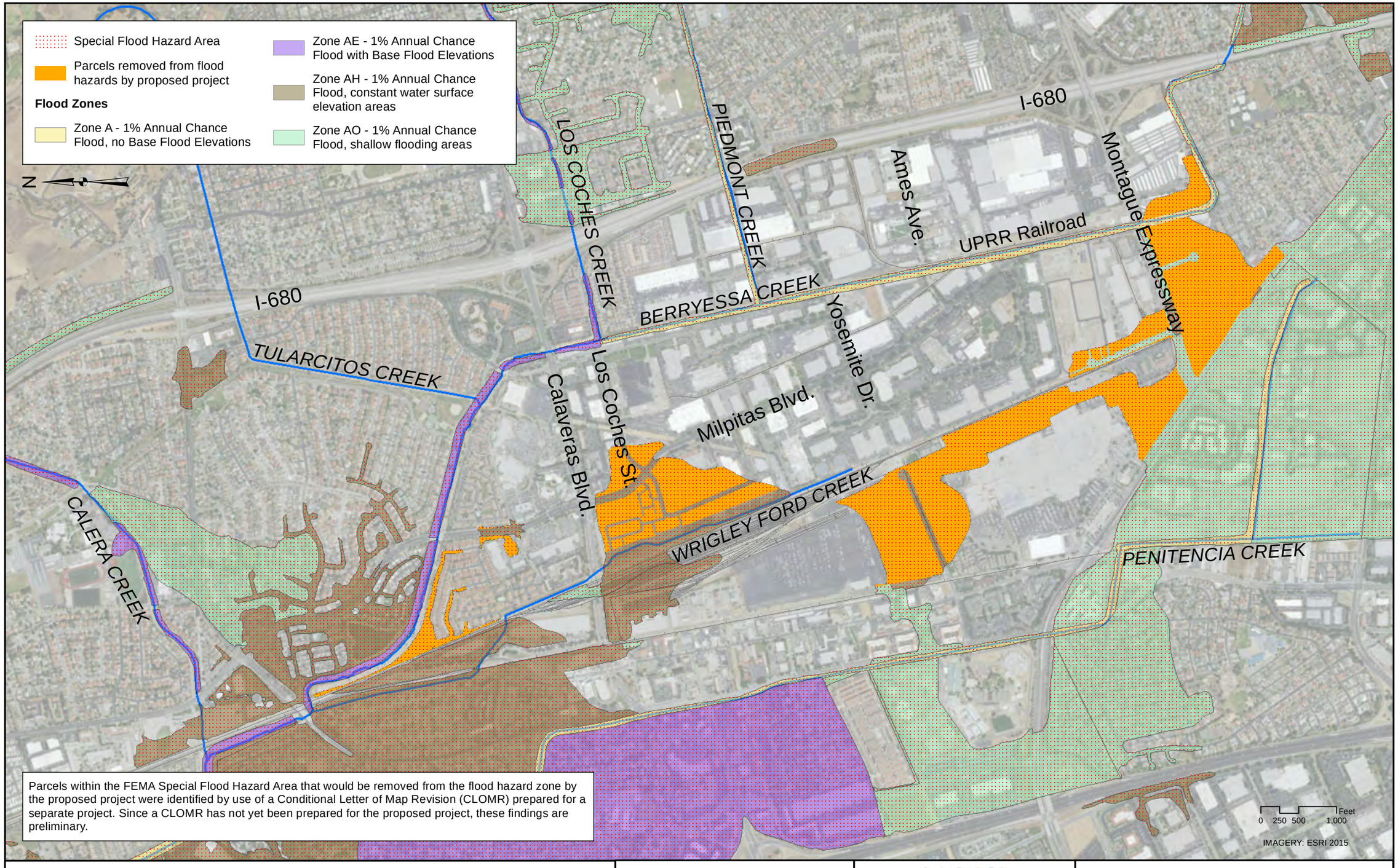

Parcels within the FEMA Special Flood Hazard Area that would be removed from the flood hazard zone by the proposed project were identified by use of a Conditional Letter of Map Revision (CLOMR) prepared for a separate project. Since a CLOMR has not yet been prepared for the proposed project, these findings are preliminary.

Figure 2.5 FEMA Special Flood Hazard Areas

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The major features of the proposed project include widening of the creek channel, construction of transition structures at bridges, expanding or surfacing with aggregate paving existing access roads, and adding concrete floodwalls in two areas where adequate channel width cannot be attained due to physical limitations of the project area. The maximum depth of creek bed excavation within the project area would be seven feet, of which five feet would be backfilled after placement of materials to stabilize the toe of the channel bank. The average depth of excavation would be between 18 and 24 inches. Specific features of the proposed project include the following:

- Channel excavation and shaping of earthen trapezoidal channels up to the water surface level of the 50 percent certainty and 1 percent exceedance probability event discharge, extending from I-680 to Calaveras Boulevard;
- Shaping of 2H:1V channel sideslopes along trapezoidal walls with buried rock revetment scour protection placed from the toe of bank to between the 2.5-year and 10-year flood elevation and installation of biodegradable erosion control blankets and vegetation between the top of the rock revetment and the top of the bank;
- A roughly 2,200-foot long concrete floodwall on the west bank of Upper Berryessa Creek with a maximum height of 2 feet above ground level. The floodwall would extend from roughly the Piedmont Creek confluence to about 1,500 feet upstream of Los Coches Street;
- A roughly 450-foot buried floodwall located on the west bank of the creek upstream of Montague Expressway
- Installation of concrete box culverts and wingwalls at Los Coches and Piedmont Creeks, with access roads constructed over the top of the culverts;
- New access road located along the east bank channel slope downstream of Yosemite Drive, and a concrete-paved ramp to access the channel bottom in Reach 4;
- Replacement of the existing UPRR trestle with a double-barreled box culvert;
- Construction of transition structures (concrete warped wingwalls between the channel banks and bridge abutments) at upstream and downstream faces of the newly constructed UPRR trestle, existing UPRR culvert, and existing Los Coches Street Bridge, and at the upstream face of existing Calaveras Boulevard Bridge;
- Shoring of existing bridge abutments and construction of transition structures at Ames Avenue and Yosemite Drive to accommodate widened channel; and
- Relocation of utilities and storm drains entering the channel or running parallel to the channel located within the channel excavation areas.

Temporary road closures during construction may occur as follows:

- One traffic lane and one parking lane closed on Yosemite Drive for up to 10 days. Traffic would continue to use two lanes in one direction but only one lane in the other direction. This would add delays to traffic on Yosemite Drive but would not require diversion to alternative routes.
- One traffic lane and one parking lane closed on Ames Road for up to 10 days. The traffic flow on Ames Avenue could be maintained in the single available lane during the period of lane closure.
- One traffic lane and one parking lane closed on Los Coches Street for up to 10 days. The traffic flow on Los Coches Street would be maintained in the single available lane during the period of lane closure.
- On-street parking lanes would be temporarily closed in the vicinity of all construction ingress and egress sites, including at Montague Expressway, Yosemite Drive, Ames Avenue, Los Coches Street and Calaveras Boulevard.

2.5.1. Detailed Project Features and Construction Schedule

Construction would occur over the course of 1 to 2 years, with construction occurring primarily during the dry season between May and October. Construction is expected to be completed by fall 2017. The

specific improvements described below are segmented between successive bridge crossings. Creek banks are referred to as right or left bank, determined from the perspective of looking downstream from the center of the channel. Right bank will be the east side of the channel, while left bank will be the west side, except in Reach 4, where the creek runs from east to west for a short distance.

PROPOSED PROJECT FEATURES AND PROPERTY ACQUISITION. General project features are shown in Figures 2.~~5~~ 6 and 2.~~6~~7. While the overall project configuration has been designed to fall within the existing public rights-of-way, the acquisition of several small parcel areas would be required to maintain continuous access along the channel. Additionally, temporary construction easements would be required from the City of Milpitas, UPRR, and the City of San Jose for permanent project access, staging areas and construction access routes. They are shown on Figure 3.14 and include:

- A small strip of land downstream of Montague Expressway (10 by 100 feet) (APN 086-32-021) (permanent easement, in fee);
- Staging area at undeveloped parcel along left bank upstream of Yosemite Drive (APN 086-30-048) (temporary construction easement);
- Staging area at corner of Los Coches Street and Hillview Drive (APN 086-28-049) (easement);
- Staging area downstream of Montague Expressway on east bank near intersection of Milpitas Boulevard and Gibraltar Drive (APN 086-30-028) (temporary construction easement);
- Staging area in a San Jose Water Company parcel southwest of the I-680/Montague Expressway interchange (APN 092-08-016) (temporary construction easement);
- Permanent access easement from San Jose Water Company on right bank of upstream bend in Reach 4 (permanent easement, in fee);
- Maintenance easements from the City of Milpitas below bridges at Montague Expressway, Ames Avenue, Yosemite Drive, Los Coches Street, and Calaveras Boulevard (permanent easements, in fee); and
- Easements from UPRR on both sides of the creek in the vicinity of the UPRR trestle (permanent easements, in fee).

STAGING AREAS. As noted above, four parcels adjacent to the construction right-of-way would serve as construction staging areas (Figures 2.~~6~~5 and 2.~~7~~6). The southernmost staging area is located in Reach 4, at the southwest corner of Montague Expressway and I-680. The site is undeveloped and portions appear to have served as a storage facility for construction materials in the past. The next downstream staging site is located on the east side of the creek between Ames Avenue and Montague Expressway, and would be accessed via Ames Avenue. The site is undeveloped and located between a warehouse structure and a railroad track. The next staging area is west of the creek and just south of Yosemite Drive, and would be accessed via Yosemite Drive. The northern portion of the site has been cleared and graded and used as overflow parking for an adjacent manufacturing and distribution business. The remainder of the site is undeveloped. The fourth site, located at the southwest corner of Los Coches Street and S. Hillview Drive, is undeveloped and would be accessed via Los Coches Street.

At each site, minor grading and vegetation removal would occur prior to its use for staging. Workers may access the sites using the streets identified above or by using the access roads located in the overbank areas. Haul trucks would use the same routes.

CHANNEL MODIFICATIONS. Channel widening is proposed in combination with floodwalls to meet the desired level of flood protection. The channel designs are depicted in the typical sections shown in Figure 2.~~8~~7. The extent of proposed armoring, including toe-down depths and armor rock gradation, may vary from section to section as the design is refined. Turf reinforcement mats (TRM) (a.k.a. erosion control blankets), which are biodegradable mats made from coconut fiber, would be placed from the top of rock revetments to the top of each bank and would be buried and hydroseeded to grow

vegetative cover. In narrow reaches, the toe protection would be continuous to maintain the integrity of the channel. Disturbed areas would be hydroseeded to promote vegetative growth and prevent soil erosion. Grass and forbs seeds would be hydroseeded on the banks and upland disturbed areas and native wetlands seeds would be hydroseeded in the disturbed bed of the creek.~~The channel profile may require grade control at bridge or utility crossing locations to prevent downcutting of the channel. Additional geomorphic and sediment transport analyses would determine whether there is a need for additional grade control.~~

2.5.1.1. *Channel Reach from I-680 to Montague Expressway (Reach 4)*

In the upstream portion of this reach, minor grading along the left bank would be performed to install the rock revetment and the TRM. Trees located along the southwest bank would be protected in place. Channel improvements at the downstream portion of this reach consist of excavating a 9- to 12-foot-deep, 16-foot-wide-bottom earthen channel with buried rock revetment and installation of TRM on 2H:1V side slopes. Along this segment, an 18-foot-wide aggregate-paved maintenance road would be provided due to the limited right-of-way along the south bank. A 12-foot-wide concrete access road would also be constructed from the right bank down into the channel. Additionally, the existing concrete channel lining (located at the westernmost 90-degree bend just upstream of Montague Expressway) would be removed and replaced with an earthen, graded trapezoidal channel. A 450-foot buried floodwall would be installed upstream of Montague Expressway for the purpose of reinforcing an existing retaining wall found in this area. The buried floodwall would be installed on the west bank of the creek, between 400 feet and 850 feet upstream of Montague Expressway.

2.5.1.2. *Channel Reach from Montague Expressway to UPRR Culvert (Reach 3)*

Downstream of Montague Expressway and extending to the UPRR trestle, channel improvements consist of excavating a 10.5-foot-deep, 12-foot-wide-bottom earthen channel with rock revetment and biodegradable TRMs on 2H:1V side slopes. Moving downstream of the UPRR trestle, channel improvements consist of excavating a 9- to 13-foot-deep, 12-foot-wide-bottom earthen channel with biodegradable turf reinforcement mats and rock revetment at 2H:1V side slopes. Two aggregate-paved maintenance roads, 18 feet wide and 15 feet wide, would be provided on the right and left banks, respectively, throughout this reach. Buried rock revetment would continue along the bottom of the channel.

UPRR TRESTLE. The existing UPRR trestle across Berryessa Creek about 500 feet downstream of Montague Expressway is a timber railroad crossing with four sets of piers. The trestle would be replaced with a double-barrel concrete box culvert, with each barrel measuring 10-feet wide by 9-feet high. A transition structure would allow for stabilization of the culvert within the trapezoidal channel and would consist of a concrete warped wingwall, which is a concrete retaining wall structure which assists in the transition from a box culvert, storm drain, or a bridge to an open graded channel or natural wash. The trestle would be replaced on an expedited schedule, which would require the closure of the rail line for up to 3 days.

UPRR CULVERT. The UPRR culvert is a triple 11-foot-by-11-foot box culvert that crosses Upper Berryessa Creek at an angle of almost 60 degrees. The structure has sufficient conveyance to meet the requirements of the proposed project, but would require the installation of a transition structure similar to that described above for the UPRR trestle.

2.5.1.3. *Channel Reach from UPRR Culvert to Ames Avenue (Reach 3)*

Channel improvements consist of excavating an 11-foot-deep, 12-foot-wide-bottom earthen channel with rock revetment and biodegradable TRMs on 2H:1V side slopes. Two 18-foot-wide aggregate-paved maintenance roads would be provided on the right and left banks. Buried rock revetment would continue along the bottom of the channel. Chain-link fencing would be installed along the access road on the east and west banks, except adjacent to Milpitas Boulevard where a black metal picket fence would be installed.

2.5.1.4. *Channel Reach from Ames Avenue to Yosemite Drive (Reach 3)*

Channel improvements consist of excavating a 9.5-foot-deep, 12-foot-wide-bottom earthen channel with rock revetment and biodegradable TRMs at 2H:1V side slopes. Two 18-foot-wide aggregate-paved maintenance roads would be provided on the right and left banks. Buried rock revetment would continue along the bottom of the channel. A 15-inch sewer line owned by City of Milpitas along the right bank would be protected in place during construction.

AMES AVENUE BRIDGE. The Ames Avenue Bridge is a two-lane bridge with a single continuous pier. The span is approximately 80 feet; however, vegetation and sediment blocks much of the cross section below the bridge deck. The existing bridge would be retained, although the concrete channel lining beneath it would be replaced. Transition from bridge to channel would be graded, but would not include a concrete transition structure.

2.5.1.5. *Channel Reach from Yosemite Drive to Los Coches Street (Reaches 2 and 3)*

From Yosemite Drive Bridge to the Piedmont Creek confluence, the channel improvements consist of excavating an 11- to 13.5-foot-deep, 20-foot-wide-bottom earthen channel with rock revetment and biodegradable turf reinforcement mats at 2H:1V side slopes. Two 18-foot-wide aggregate-paved maintenance roads would be provided on the right and left banks. Since the bottom width would be 20 feet wide, the buried rock revetment toe protection would continue along the bottom of the channel. Within this section, two existing groundwater extraction vaults along the right bank, an existing Pacific Gas & Electric (PG&E) electrical vault, and a 15-inch sewer line owned by City of Milpitas along the right bank would be protected in place during construction. No utility relocations would be required through this reach.

From the Piedmont Creek confluence to the Los Coches Street vehicle and pedestrian bridges, the channel improvements consist of excavating a 9- to 14-foot-deep, 40-foot-wide-bottom earthen channel with biodegradable TRMs and rock revetment at 2H:1V side slopes. An 18-foot-wide and 15-foot-wide aggregate-paved maintenance road would be provided on the right and left banks, respectively. A 2-foot-high floodwall would be provided along the west bank for 2,200 linear feet starting at roughly the Piedmont Creek confluence, and ending at approximately 1,500 linear feet upstream of Los Coches Street to maintain a minimum channel depth of 11.5 feet.

YOSEMITE DRIVE BRIDGE. Yosemite Drive crosses a two-lane road over Berryessa Creek. Along the upstream face of the bridge, a water pipeline is supported by cantilevers. The proposed channel modifications in this reach include an access road on the overbank. The trapezoidal cross section with 2H:1V side slopes would continue on either side of the bridge. Transition from bridge to channel would be graded, but would not include a concrete transition structure.

PIEDMONT CREEK. The angle of confluence of Piedmont and Berryessa Creeks would be modified from the existing 90-degree confluence to 30 degrees to improve the channel hydraulics. Construction of a 6-foot-high by 14-foot-wide reinforced concrete box culvert approximately 40 feet upstream of the

confluence with Upper Berryessa Creek would allow the proposed access road on the east bank to continue across Piedmont Creek downstream of the railroad tracks. Both the railroad tracks and the access road would use the culvert to cross Piedmont Creek.

LOS COCHES CREEK. Los Coches Creek enters Upper Berryessa Creek from the east bank in this reach. This creek would be modified by installing a 7-foot-high by 14-foot-wide box culvert in the channel just upstream of its confluence with Upper Berryessa Creek, which would allow the construction of an access road over the tributary. The culvert would be wide enough to allow for extension of the east bank access road to Los Coches Street. The east bank access road currently ends 600 feet south of Los Coches Street.

POCKET PARK. The exercise equipment on the east bank just upstream of Los Coches Street and associated recreational trail would be removed to allow construction of the Los Coches Creek culvert and access road.

2.5.1.6. *Channel Reach from Los Coches Street to Calaveras Boulevard (Reach 1)*

Channel improvements consist of excavating a 12- to 14-foot-deep, 40-foot-wide-bottom earthen channel with rock revetment and biodegradable turf reinforcement mats at 2H:1V side slopes. An 18-foot-wide and 15-foot-wide aggregate-paved maintenance road would be provided on the east and west banks, respectively. A sampling/gauging station would be removed and replaced to allow for construction of the channel improvements. No utility relocations would be required through this reach.

LOS COCHES STREET BRIDGE. The Los Coches Street Bridge carries two lanes of traffic over a trapezoidal cross section with a single continuous pier at the center. The left side of the channel is concrete, and the right side of the channel is earthen with sacked concrete bank protection. On both the upstream and downstream faces of the bridge, a concrete warped wingwall transition structure would be constructed to provide integration into the trapezoidal channels.

CALAVERAS BOULEVARD BRIDGE. The Calaveras Boulevard Bridge serves an eight-lane divided roadway. The crossing is composed of a four-barreled culvert with 8-by-11-foot barrels. The outer two barrels are partially filled with the earthen sideslope that projects to the outside toe of the middle culvert barrels. Debris has accumulated to about 1 to 2 feet high within the inner two barrels. The bridge provides sufficient conveyance to accommodate flows under the proposed project, provided the sediment in the outer barrels is removed and the channel walls are tied into the existing structure. A concrete transition structure would be installed on the upstream side of bridge to assist in the conveyance of storm flows.

2.5.2. Construction Methodology

The main construction components are listed below. The components are listed roughly in the sequence in which they would occur, although several of them may occur concurrently. These construction activities would occur in all four reaches with some variation in intensity from reach to reach, except where noted in the descriptions below.

UTILITY RELOCATIONS. Various utilities run through the project area. Most utilities would be relocated prior to the primary construction items being performed. Clearing and grubbing would occur before the utility relocations take place. The types of utilities that may be relocated include underground electric cables, piping, outlet structures, and overhead lines. The new utility materials would be buried deeper than current conditions to avoid the channel improvement work. The storm drain outlet structures would be demolished and replaced during construction. The relocations would occur within the right-of-

way limits shown on the design plans and would involve underground relocations of utility lines (i.e., no aboveground utilities would be relocated).

CLEARING AND GRUBBING. The entire channel area would require clearing and grubbing prior to construction, which includes the removal of vegetation, debris, and soils to allow for a clear construction site. Clearing and grubbing would be performed with a crew using chainsaws and a bulldozer. This material would be hauled away and disposed of or chipped and reused on site for mulch.

DEWATERING (REACHES 1-3). Temporary methods to dewater the creek channel during construction may include use of cofferdams, sumps, or groundwater extraction wells. In Piedmont Creek and reaches of Upper Berryessa Creek downstream of Yosemite Drive, earthen cofferdams would be constructed at the upstream and downstream sections of the reaches under construction. The dams would consist of on-site excavated material, and would be covered with a waterproof liner. Dewatering pumps and a diversion pipe would be placed within the creek or in top of bank areas to dewater the channel and maintain dry conditions for the duration of construction. Surface water would be piped downstream and discharged back into the stream channel below the construction zone. Once the construction for the dewatered channel is complete, the cofferdams would be removed and replaced at the next construction location.

Groundwater may be encountered during excavation of the stream channel in all reaches. Groundwater that collects in the work area would be ~~tested for contaminants and, assuming it is free of contaminants,~~ discharged in a similar manner as surface water. Contaminated groundwater would either be treated to standards required by the San Francisco Bay Regional Water Quality Control Board and discharged downstream, or would be handled according to methods described in Section 3.9.6.

Pumping, treatment, and discharge of contaminated groundwater would require temporary use of portable generators. Up to 3 generators would be operated 24 hours/day for up to three weeks in the vicinity of the UPRR trestle (Reach 3) to power pumps and filtering equipment.

EXCAVATE AND HAUL. The construction of the channel would require material to be excavated, stockpiled, and hauled off-site for disposal. A loader would load the trucks with any materials that cannot be reused on-site. The trucks are assumed to travel 5 miles to an approved upland dump site, composting facility, or recycling facility.

PLACE AND COMPACT FILL. This item includes filling and compacting on-site excavated material. The backfill would be performed with a front-end loader. The compaction would be performed with a vibratory roller along with a water truck to prevent dust.

GEOTEXTILE FABRIC. Geotextile fabric would be installed in various reaches throughout the project to provide a barrier between existing ground and newly placed materials, such as rock revetment or biodegradable turf reinforcement mats. The fabric would be placed using a crane and crew.

FENCES AND GATES. In Reaches 1 through 3, chain-link fencing would be installed on both banks along the majority of the ROW for security and safety purposes. Gates or bollards would be installed on the west bank at the intersections of the access roads with Calaveras Boulevard, Los Coches Street and Yosemite Drive to restrict vehicle entry, but would be designed to allow access for pedestrians and bicyclists. Locked gates preventing public access would be installed on the east bank at the connections of the access road with Calaveras Boulevard, Los Coches Street, Ames Avenue, Yosemite Drive, and Montague Expressway and on the west bank at the connections with Yosemite Drive and Montague

Expressway. In Reach 4, locked gates preventing public access would be installed at the connections of the access road with Montague Expressway on the east and west banks of the channel.

IMPORT AND PLACE ROCK REVETMENT. Throughout the 11,500-foot length of the project area, the channel banks would require slope protection in the form of a rock revetment at the toe of the bank. The rock would be trucked into the project area from a local quarry. The nearest quarry that has been identified as having appropriate rock is located approximately 60 miles from the project area, but the project sponsors would attempt to identify a closer quarry. The rock would then be placed with a hydraulic excavator.

TURF REINFORCEMENT MATS. Biodegradable turf reinforcement mats would be installed above the 10-year flow elevation in newly graded channels to prevent bank erosion. The mats consist of 100% mattress-grade coconut fiber mechanically bound and covered on both sides by netting. These mats biodegrade after 3+ years, and protect against erosion in the short term until vegetation becomes established. The mats would be placed using a crane, and would be hydroseeded to establish vegetative cover. The Design Documentation Report (Tetra Tech 2015f) analyzed this bank protection method and determined it would be sufficient to minimize bank erosion.

CONCRETE. A 2,200-linear-foot concrete floodwall with a maximum height of 2 feet above the ground surface would be constructed on the west bank of Upper Berryessa Creek in Reach 2. Concrete would also be used as part of the transition structures installed upstream of the bridges at Calaveras Boulevard, Los Coches Creek, and Ames Avenue; to form the culvert which would replace the UPRR trestles on Upper Berryessa Creek and Piedmont Creek; and as part of a 450-foot buried floodwall support on the west bank upstream of Montague Expressway.

DEMO, HAUL, AND DISPOSE RAILS AND TIMBER (REACHES 2 AND 3). The railroad line on top of the existing wood trestles crossing Piedmont and Upper Berryessa Creeks and the timber in the trestle would be removed. The rails, ballast, timber and ties would be demolished, and then hauled off-site for disposal. Approximately 75 cubic yards of waste material would be removed from these locations.

CONSTRUCT REPLACEMENT CULVERTS (REACHES 2 AND 3). The railroad trestle crossing Upper Berryessa Creek in Reach 3 located about 400 feet north of Montague Expressway would be demolished and removed. The trestle would be replaced by a newly constructed railroad bridge. After the removal of the UPRR railroad trestle, a pre-cast, double-barrel box culvert would be installed. Each barrel would measure 10 feet wide by 9 feet high (10 x 9 feet).

The railroad trestle crossing Piedmont Creek would be removed and replaced with a pre-cast, single-barreled concrete culvert measuring 14 x 6 feet. A similar 14 x 6 ft. concrete culvert with concrete wingwalls would be installed at the mouth of Los Coches Creek.

RECONSTRUCT RAILS AND TIES (REACHES 2 AND 3). Replacement tracks would be built on top of new box culverts at Piedmont and Upper Berryessa Creeks. The bridge would include one new track connecting to the existing on either side of the bridge. Construction of the new track would require placement of new ballast rock on the culvert, and installation of new ties and rails.

SHEET PILING (REACHES 2 AND 3). At the bridges at Ames Avenue and Los Coches Street, sheet piling may be installed to protect some of the structures during construction, and would be removed after construction was complete.

ROADWAY BASE. A 3-inch-thick aggregate base layer would be placed on access roads in several reaches. The aggregate base material would be trucked to the project area and then placed by a front-end loader and grader.

2.5.3. Import and Disposal

An estimated 90,000 cubic yards of soil, reinforcing steel, vegetation, and concrete would be excavated during construction. About 3 percent of clean excavated soils would be reused on-site, eliminating the need for removal from the project area. Vegetation would be composted, steel and concrete debris would be recycled, and the balance of the materials would be disposed of at one or more approved landfills, which are identified in Section 3.16.2. Assuming 16-yard trucks are used, an estimated 2,459 truckloads of construction materials would be imported to the project area, and an estimated 5,625 truckloads of materials would be exported. Estimated quantities of materials that would be imported or exported are shown in Table 2.4. Although the construction contractor would be responsible for procurement of materials, it is expected that most construction materials would be locally sourced because most construction materials are available in the Bay Area and transporting materials from distant sources would be uneconomical.

Truck access to and from the project area and staging areas would be via designated truck routes and arterials. In general, trucks would access the creek corridor via Montague Expressway and Calaveras Boulevard from either I-680, I-880, or other truck routes. From these streets, trucks would access local arterials, such as S. Milpitas Boulevard, and then local streets, such as Los Coches Street, Ames Avenue, and Yosemite Drive, to access specific reaches.

Table 2.4 Quantities of Materials Exported and Imported to Construct the Proposed Project*				
Material	**Reaches 1-3**		**Reach 4**	
	Quantity	**Notes**	**Quantity**	**Notes**
Imported				
Cast in place concrete (cubic yards)	800	Includes all channel transition structures, floodwall, and RR culvert	220	Includes channel transition structure
Reinforcing steel (tons)	80		22	
Compacted fill (cubic yards)	520	Latest earthwork grading from AutoCAD dated 11/2014	2,100	Latest earthwork grading from AutoCAD dated 11/2014
Turf reinforcement mats (square yards)	43,620	Bank to bank and assume 10 percent overlapping	18,222	10-year flood elevation to top of bank and assume 10 percent overlapping.
Geotextile (square yards)	36,882	Geotextile underneath buried rock revetment, and toe down protection	18,222	Geotextile underneath buried rock revetment, and toe down protection
Rock revetment (tons)	57,600	Includes rock revetment at the toe down protection and at channel transitions	8,610	Includes the rock revetment at the toe down protection and at channel transitions
Hydroseeding (acres)	19		10	
Aggregate base access road (square yards)	27,800		7,270	
Exported				
Materials	**Reaches 1-3**		**Reach 4**	
	Quantity	**Notes**	**Quantity**	**Notes**
Demo and reconstruction of pavement, curb & gutter (square yards)	23	Materials would be reused on-site, or recycled to the degree possible	0	Materials would be reused on-site, or recycled to the degree possible
Demolish UPRR trestles (cubic yards)	75	All trestle materials would be exported to a landfill	0	
Excavate and haul to landfill (cubic yards)	74,500	Vegetation would be composted.	15,500	Vegetation would be composted.

*Estimates taken from Tetra Tech, 2013

2.5.4. Construction Equipment and Workers

The following types of equipment would likely be used for construction of the proposed project:

- Backhoes
- Bulldozers
- Crane
- Compactors
- Concrete Trucks
- Dump Trucks
- Excavators
- Jackhammers
- Graders
- Loaders
- Pumps
- Scrapers
- Portable generators

Construction would either occur over one to two years, primarily during the dry season from May to October. Construction hours would generally be during normal business hours, but after-hours work may be needed for concrete pours or replacement of the existing UPRR trestle with a concrete box culvert. The types of construction equipment in use and the number of workers actively working at the project area would vary depending on the phase of construction. The number of workers present on any given day is estimated at 25 in general, and up to 40 on occasion.

2.5.5. Maintenance

The District's SMP2 is an ongoing program that has permits from federal and state regulatory agencies. In conformance with those permits, District maintenance staff regularly perform a number of existing maintenance activities in the project reaches. District staff would continue to remove sediment and debris as needed to ensure proper flow, mow or spray vegetation to allow access and to reduce fire danger, inspect access roads for erosion or blockages, remove trash and graffiti for aesthetic and water quality purposes, and conduct vector and wildlife management to reduce hazards and potential damage to structures. These ongoing permitted activities are part of the environmental baseline, would not be modified by the proposed project (except as described in the next paragraph), and thus are and not part of the proposed project.

The proposed project would result in a channel slope that is very similar to the existing conditions (longitudinal grade between 0.2% and 0.5%), but with a widened channel with capacity to handle the 1 percent flood flows. The proposed channel design includes armoring of the bed and bank toe to prevent erosion, and according to the project sediment analyses (Tetra Tech 2015g), the proposed project area will act as a threshold channel section passing input sediment through with minimal deposition. The existing project reach is mainly filled with fine sediment from local rill and gully erosion, which appears to be the primary source of sediment in the project area. Most coarse sediment deposits in the upstream reaches (especially at the upstream Piedmont Road debris basin), or is removed from the upstream channel during periodic channel maintenance. With the proposed project, the banks will be stabilized and local sediment input will be reduced. According to the sediment transport model prepared by the District for this project (Tetra Tech 2015g), sediment deposition would only occur at two locations, at the UPRR trestle and UPRR culvert locations. The total depositional volume for the entire reach downstream of I-680 would be less than under the existing creek conditions. The District will continue to follow its Stream Maintenance Program Manual including implementing applicable BMPs.

After construction of the proposed project, the amount of sediment deposition and bank erosion in the project area would be expected to decrease, thereby reducing the amount of sediment removal and bank stabilization activities compared to existing levels. The level of animal conflicts would not change due to the project. Vegetation management would activities would also be unchanged because vegetation in the channel would not substantially change from existing conditions. As part of the project, a number of native trees and shrubs would be planted at top of bank areas. Because these trees and shrubs would be located outside the channel, they would require minimal maintenance consisting of pruning as necessary to prevent obstruction of adjacent roads or paths and maintain tree health.

In addition to the existing maintenance activities conducted by SMP2, the District would inspect and maintain floodwalls and other newly constructed project structures (i.e. floodwalls in Reach 2/3 and Reach 4, new concrete box culverts at the confluences of Berryessa Creek with Los Coches and Piedmont creeks, and the concrete box culvert replacing the existing UPRR trestle). In accordance with USACE standards for flood control structures including floodwalls, woody vegetation would be removed from within 15 feet of the floodwall. Other vegetation would be removed within 5 feet of the floodwall. The

floodwall would be visually inspected on a monthly basis and graffiti removed if necessary. Additional measures may be needed to maintain the floodwalls, their supports, and foundations, and would be detailed in maintenance guidelines for the floodwalls, UPRR culvert, and other structures that are constructed as part of the project. The incremental increase in maintenance activities over those currently occurring as part of SMP2 would result directly from implementation of the project and are analyzed in this ~~D~~FEIR to determine resulting environmental effects.

2.5.6. Required Permits and Approval, Agencies Using EIR

The following permits or approvals are required for implementation of the project:

- **U.S. Army Corps of Engineers 404(b) (1) analysis**: USACE has completed a 404(b) (1) analysis, which assessed the potential impacts to waters of the U.S. occurring under each of the project alternatives, examined if there are other methods to meeting the goals and objectives of the project while reducing impacts to waters of the U.S., and assessed other potential project impacts. The 404(b)(1) analysis concluded that the selected plan (i.e. Alternative 2A) is the Least Environmentally Damaging Practicable Alternative (LEDPA) and it is not possible to avoid placing fill material into waters of the U.S.; the alternatives would have minor, short-term impacts to soils and substrate quality; the alternatives would not alter stream hydrology, water chemistry, or other components of water quality other than short-term turbidity; would have no effects on the aquatic food web, special aquatic sites, threatened or endangered species or other wildlife; and would not violate federal or state water quality standards.
- **California State Water Resources Control Board** (**Construction General Permit):** Construction stormwater discharges would be authorized by the SWRCB General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) in order to avoid and minimize water quality impacts attributable to such activities. The Construction General Permit applies to all projects where construction activity disturbs one or more acres of soil. Construction activities subject to this permit includes clearing, grading, and disturbances to the ground, such as stockpiling or excavation. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP), which includes and specifies BMPs designed to prevent pollutants from contacting stormwater and keep all products of erosion from moving off-site into receiving waters. Routine inspection of all BMPs is required under the provisions of the Construction General Permit. In addition, the SWPPP must contain a visual monitoring program, a chemical monitoring program for non-visible pollutants, and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment.
- **San Francisco Bay Regional Water Quality Control Board Section 401 Water Quality Certification:** USACE regulations generally require USACE to seek Section 401 water quality certification for USACE projects involving a discharge into waters of the U.S. even though USACE does not issue itself a Section 404 permit. However, the project, as a project authorized by Congress that has completed an EIS, qualifies for exemption under 33 U.S. Code 1344(r). USACE will either obtain a Section 401 water quality certification or claim exemption under 33 U.S. Code 1344(r) for the proposed project.
- **California Department of Transportation** (**Encroachment Permit**): Work that encroaches onto a State ROW requires an encroachment permit that is issued by Caltrans. To support the process of applying for an encroachment permit, traffic-related mitigation measures would be incorporated into the construction plans and a Traffic Management Plan would be developed, as described in Section 3.15.6.
- **California Public Utilities Commission (CPUC)**: Any modifications of existing crossings, either at-grade or grade separated, require authorization from CPUC. A General Order 88-B may be required for modifications of existing crossings.

- **City of Milpitas Encroachment Permit**: Project improvements to the transition structures at the Los Coches Street, Yosemite Drive, and Ames Avenue crossings would require work within the City-owned property at these locations. The District plans to obtain required encroachment permits from the City of Milpitas to allow this work.

In addition, if necessary maintenance activities are not covered by SMP permits, the District would obtain approval and permits for the uncovered activities from The San Francisco Bay Regional Water Quality Control Board, California Department of Fish and Wildlife, and USACE Regulatory Branch as required by law.

The following agencies may use the EIR in their decision-making process to issue permits or approvals for the proposed project:

- California State Water Resources Control Board
- SFB RWQCB
- California Department of Transportation
- California Department of Fish and Wildlife
- CPUC
- City of Milpitas

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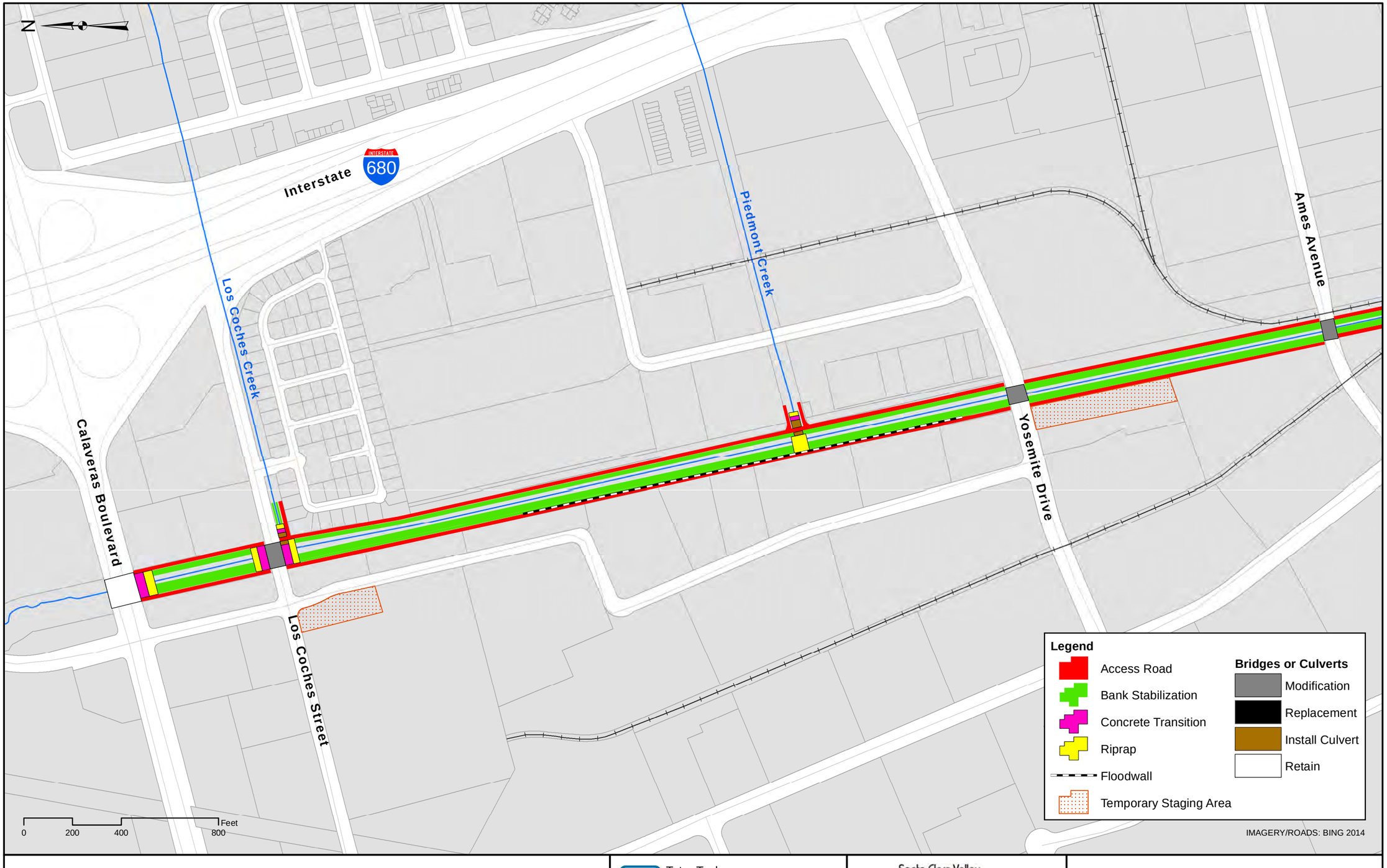

Figure 2.6 Proposed Project Overview
Ames Avenue to Calaveras Bouldevard

Tetra Tech
17885 Von Karman Avenue, Suite 500
Irvine, CA 92614
Tel. (949) 809-5000 Fax. (949) 809-5003

Santa Clara Valley Water District

UPPER BERRYESSA CREEK
FLOOD RISK MANAGEMENT PROJECT
0584

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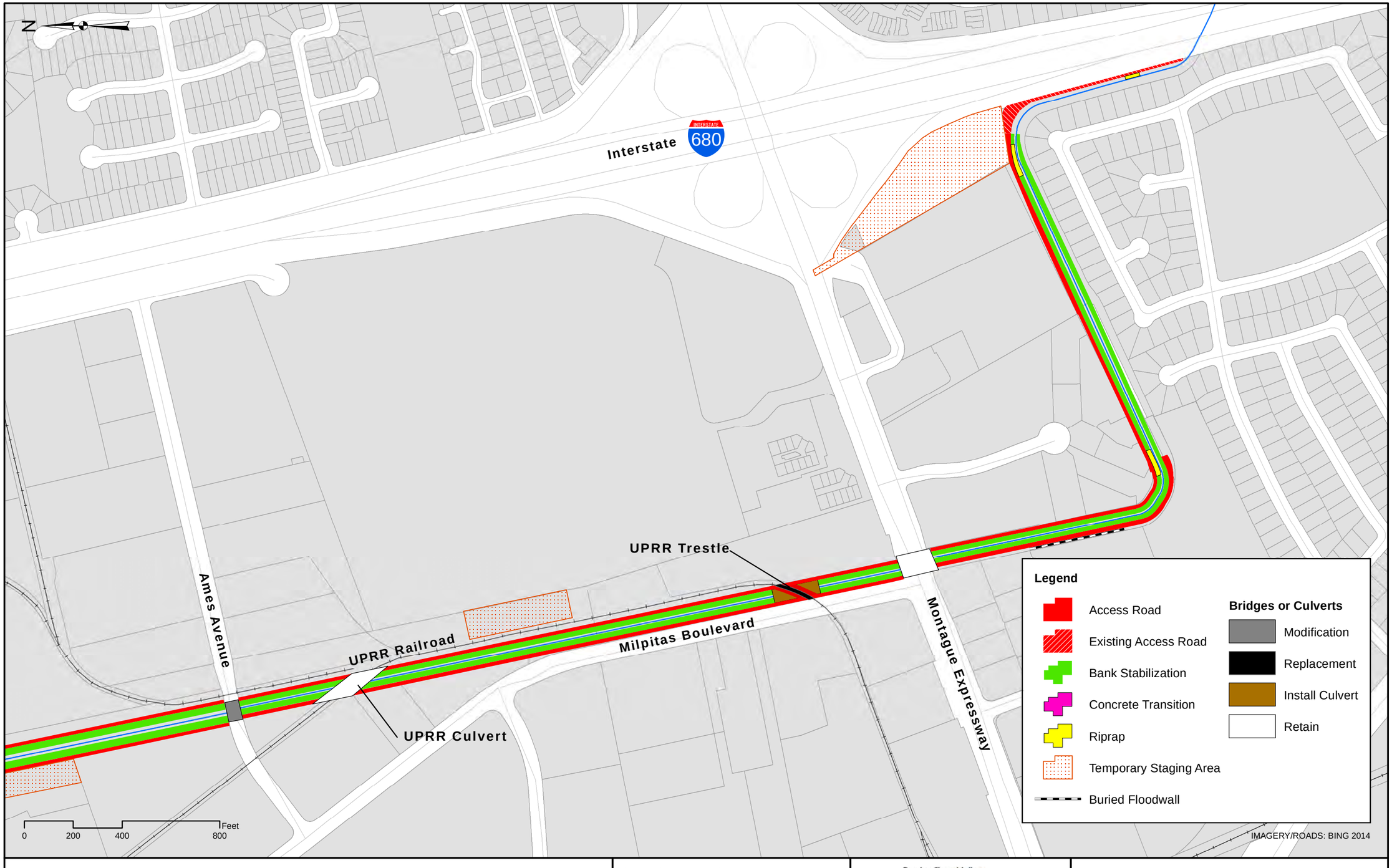

Figure 2.7 Proposed Project Overview
Interstate 680 to Ames Avenue

Tetra Tech
17885 Von Karman Avenue, Suite 500
Irvine, CA 92614
Tel. (949) 809-5000 Fax. (949) 809-5003

Santa Clara Valley Water District

UPPER BERRYESSA CREEK
FLOOD RISK MANAGEMENT PROJECT
0586

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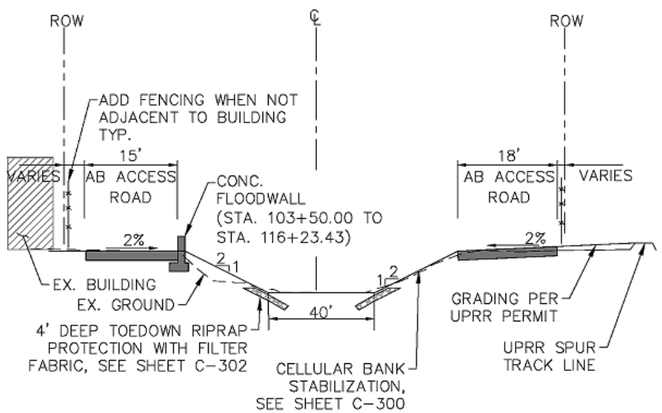
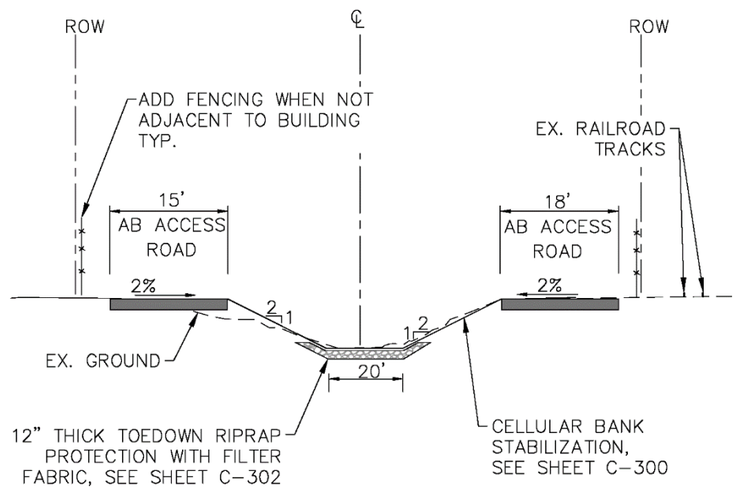
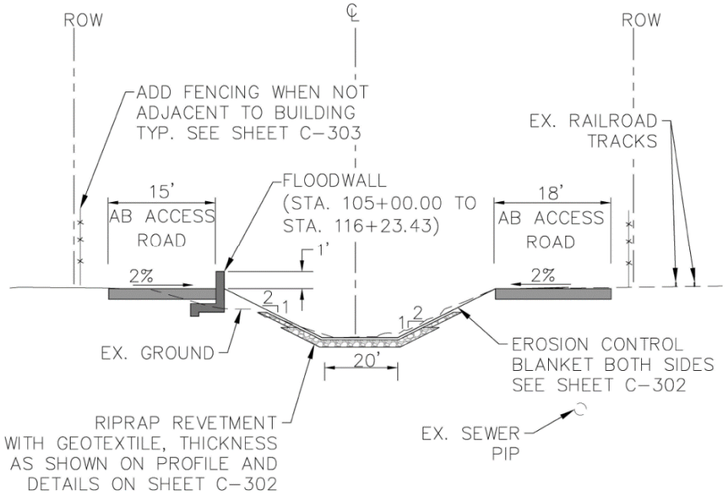


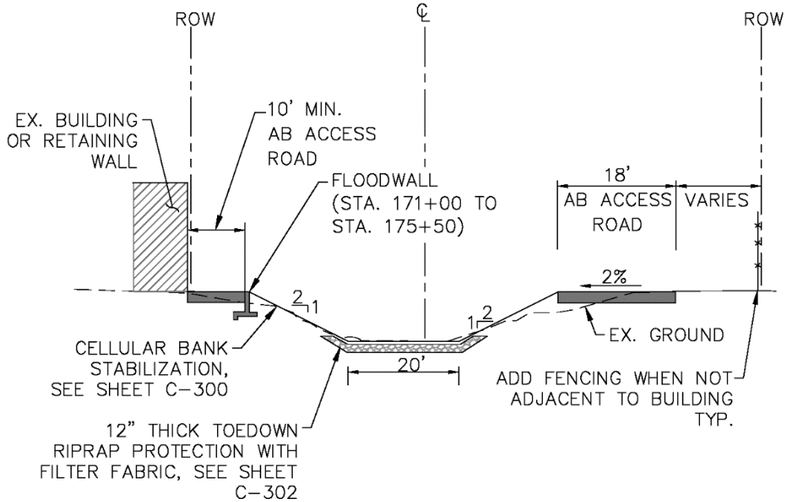
Typical section between Calaveras Boulevard and Piedmont Creek



Typical section between Yosemite Drive and Montague Expressway



Typical section between Piedmont Creek and Yosemite Drive



Typical section south of Montague Expressway

Figure 2.8 Proposed Project Typical Sections

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3. ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

3.1. OVERVIEW

This chapter describes resources that are found in the study area and describes the effects that implementation of the proposed project (described in Section 2.5) may have on those resources. Impacts to resources may typically result from the construction of the proposed project, or the operation and maintenance of the project. For each resource area, the potential impacts resulting from implementation of the proposed project are evaluated for their level of significance.

The categories used to designate impact significance are described below:

- *No Impact (NI)*. A project is considered to have no impact if there is no potential for impacts, or if the environmental resource does not exist within the project area or the area of potential effect. For example, there would be no impacts related to wastewater disposal if the project would not involve the production of wastewater.
- *Less than Significant (LS).* This determination applies if there is some impact, but not one that qualifies under the significance criteria as a significant impact.
- *Less than Significant with Mitigation (LM)*. This determination applies to impacts that exceed significance criteria, but for which feasible mitigation is available to reduce the impacts to a less than significant level.
- *Significant Unavoidable (S).* This determination applies to impacts that are significant but for which: (1) no feasible mitigation has been identified to reduce the impact to a less than significant level, or (2) feasible mitigation has been identified but the residual impact remains significant after mitigation is applied. Therefore, the impact is considered significant and unavoidable.

The analysis of potential impacts and mitigation measures is based on pre-determined significance criteria. The significance criteria used in this EIR are taken from the Environmental Checklist Form included in the CEQA Guidelines (CEQA Guidelines, Appendix G). Significance criteria are denoted by an abbreviated form of the topic area and numbered (e.g., AIR-1 for Air Quality Significance Criterion 1). Mitigation measures are denoted by an abbreviated form of the topic area and lettered (e.g., AIR-A for Air Quality Mitigation Measure 1).

Where impacts are significant, feasible mitigation measures are presented. The ~~Draft~~ EIR then evaluates the effectiveness of mitigation measures in reducing the significant impact to less than significant levels.

In some cases, when impacts are not significant and thus no mitigation is required, the ~~Draft~~ EIR nevertheless discusses "voluntary" mitigation measures that would further reduce the less-than-significant impact. Sometimes these are mitigation measures that have already been developed for other impacts but would also reduce a less-than-significant impact, and sometimes they are new mitigation measures. At the end of the CEQA process, CEQA findings regarding the effectiveness of mitigation measures will not be made for less-than-significant impacts, because such findings are required only for significant impacts per CEQA Guidelines Section 15091(a).

Evaluation of potential impacts is reported for two stretches of the project area: (1) the entire stretch of channel encompassed by Reaches 1 through 3, and (2) Reach 4 alone. For each resource area, potential impacts are described for Reaches 1–3 and then again for Reach 4. In some cases, impacts are not different between these two areas and are addressed together (All Reaches).

Impact assessment takes into consideration construction and operational impacts. Construction impacts are those that may occur during implementation of construction actions, and are compared to baseline conditions occurring in Year 2015.

Operational impacts are those that may occur after the project has been completed. After completion of work under this project, ongoing maintenance of the Upper Berryessa Creek channel area would be conducted under the Stream Maintenance Program 2 (SMP2), following the methods described in the 2014-2023 SMP2 Program Manual (SCVWD 2014). The SMP has been reviewed and adopted in compliance with CEQA requirements.

Because the proposed project is being designed to result in less erosion due to lower flow velocities, more stable bank design, and enhanced flow conveyance through bridges and culvert openings, operations and SMP2 maintenance actions associated with sediment removal and repair of eroded banks or access roads are likely to be reduced in magnitude compared to existing channel operations and maintenance activities. In addition to the existing maintenance activities conducted by SMP2, the District would inspect and maintain the new floodwalls and other project structures constructed as part of the proposed project. In accordance with USACE standards for flood control structures including floodwalls, woody vegetation would be prevented from growing from within 15 feet of the floodwall. Growth of other (i.e. non-woody) vegetation would be prevented within 5 feet of the floodwall. The floodwalls and other structures would be visually inspected on a monthly basis and graffiti removed if necessary. Measures needed to maintain the floodwalls, UPRR culvert, and other project structures would be detailed in guidelines prepared for the maintenance and operation of the newly constructed channel. These additional maintenance and operation activities would result in little or no disturbance of soils or biological resources, and are not likely to have a significant effect on other resources. Therefore, the assessment of impacts from operations and maintenance assumes that such impacts would be reduced from those occurring under current conditions, unless otherwise indicated in the analysis.

3.2. AESTHETICS

This section describes the visual resources and aesthetic condition of the project area and surrounding lands. Aesthetic conditions along Upper Berryessa Creek are evaluated using the visual assessment methodology developed by the Federal Highway Administration (FHWA 1988), which includes five distinct steps: (1) identify the viewshed, (2) inventory landscape units, (3) evaluate landscape units for visual quality, (4) evaluate potential impacts to those visual resources, and (5) identify what measures will reduce impacts to visual quality. Steps 1 through 3 are completed in the existing conditions section below. Step 4 is completed in the impacts section below, and Step 5 in the mitigation section.

3.2.1. Environmental Setting

Upper Berryessa Creek lies mostly within the City of Milpitas, with a small portion of Reach 4 in the City of San Jose, and passes through urbanized communities. Commercial and industrial land uses comprise most of the project area, and two small residential communities are adjacent to the project area. The creek flows under a pedestrian bridge, five roadway overpasses, two UPRR overpasses, and several utility lines. The creek channel is artificial and composed of long, nearly straight stretches separated by roadway overpasses and two unnaturally acute channel bends. The channel cross-section is a nearly uniform trapezoid with over-steepened banks and sparse vegetation. Collectively, the creek's artificial form and sparse vegetation reduce its aesthetic appeal. Aesthetic conditions in the project area are

characterized by urbanization, high traffic areas, industrial land uses, business parks, gravel and dirt access roads, lack of native vegetation, incision of the channel, trash, graffiti, and erosion.

3.2.2. Existing Conditions

3.2.2.1. *Viewer Groups*

The viewshed that is identified in Step 1 of the FHWA methodology is the area that can be seen from the project footprint, as well as the areas from which the project can be viewed. Determining the viewshed requires an understanding of the existing viewer groups. Along Upper Berryessa Creek, viewer groups include motorists, pedestrians, bicyclists, business park employees, industrial employees, railroad users, and local residents.

MOTORISTS. Motorists would only briefly view the project area when traversing overpasses on Montague Expressway, Ames Avenue, Yosemite Drive, Los Coches Street and Calaveras Boulevard. Due to the oblique angle of viewing from the road overpasses, most motorists would see very little of the project area, and for only brief moments. Milpitas Boulevard parallels the creek for about 1,500 feet and views from that road are more extensive. However, the creek reach adjacent to Milpitas Boulevard is aesthetically unattractive due to the straight ditch-like form, lack of substantial vegetation, adjacent railroad tracks, number of billboards, and industrial uses in the area.

PEDESTRIANS AND CYCLISTS. Similarly, pedestrians and cyclists on overpasses would have only short-term views, though they would likely be able to see more details of the creek itself than would motorists. Though signs indicate that trespassing is prohibited, pedestrians and cyclists occasionally use access roads along both sides of the creek. Gates restrict automobile access to most of the access roads. A small pocket park with exercise equipment and about 460 linear feet of paved trail is present on the east bank of the creek a short distance upstream of Los Coches Street, which provides a creek view to its users.

LOCAL EMPLOYEES. Employees of local businesses also have the opportunity to experience the visual quality of Upper Berryessa Creek. Many of the businesses have little or no exposure to the creek alignment due to closed warehouses with few windows, fencing, and to a lesser degree, natural vegetation screening. However, several buildings have windows and/or outdoor sitting/picnicking areas facing the creek or parking lots without fencing or other barriers to the creek, and employees are exposed to the creek's visual resources on a daily and long-term basis.

UPRR EMPLOYEES. Employees of UPRR may also experience Upper Berryessa Creek's visual surroundings on a daily or long-term basis. The UPRR track runs along the east bank from just upstream of Ames Avenue to just downstream of Montague Expressway, with a spur line running to Los Coches Street on the west bank. In some locations, multiple tracks are present, or pass over the creek itself.

RESIDENTS. Residents with homes that back up to the creek are the most constant viewer group. Two small residential areas are adjacent to the creek, including homes just upstream of Los Coches Street on the east bank, and an apartment complex and neighborhood on the west bank that extends from I-680 downstream to the westernmost bend in the project area.

3.2.2.2. *Step 1 - Identify the Viewshed*

The viewshed for Upper Berryessa Creek is restricted by development on both banks. Viewers within the project footprint would be able to see several hundred or thousand feet when looking upstream or downstream, but only very short distances looking perpendicular to the flow of water. Distant glimpses are possible of the Los Buellis Hills, which are designated a visually significant hillside in the Milpitas General Plan, and which rise above residential and commercial buildings.

Each of the viewer groups would experience different visual resources; motorists and others using overpasses would have only brief views of the area, while local residents and employees may have long-term, daily exposure to the area. Local workers and residents would therefore be more sensitive to visual conditions of the project area.

3.2.2.3. *Step 2 - Inventory Landscape Units*

Step 2 of the FHWA methodology is to inventory the landscape for "units" of visual condition. In contrast to FHWA highway construction projects, this project area does not extend great distances through a variety of ecotones. It is a short stretch of highly altered and urbanized creek with little visual variation. Four reaches have been defined through the project area, separated by hydrologic and vegetative similarities, and will serve as suitable landscape units for the purposes of this evaluation. Please note that these reaches differ from the rest of the document, where Reaches 1–3 are evaluated as a whole, and Reach 4 is evaluated alone.

1. *Reach 1*: This reach extends from Calaveras Boulevard to Los Coches Street.
2. *Reach 2*: Los Coches Street to the confluence of Piedmont and Upper Berryessa Creeks.
3. *Reach 3*: Piedmont Creek confluence upstream to Montague Expressway.
4. *Reach 4*: Montague Expressway upstream through two 90-degree bends and ending at the I-680 overpass.

3.2.2.4. *Step 3 - Evaluate Units for Visual Quality*

This step requires evaluation of the reaches and description of any visually sensitive landscape resources. Step 3 yields a score for the existing conditions of the project area, based on vividness, intactness, and unity (FHWA 1988). Scoring has been determined utilizing FHWA guidance and best professional judgment during field investigations conducted in August 2014.

The FHWA system scores the visual quality of a landscape based on its deviation from natural conditions, or quality of aesthetics given the changes that have been made. High scores are given to landscapes that most closely resemble their natural, unaltered state. Low scores are given where the land has been altered, degraded, or severely encroached upon. However, not all altered landscapes are low-scoring. Scenic overlooks, historic districts, and heritage landscapes may all achieve high scores. Scoring should consider those visually sensitive landscapes identified by law at the Federal, State, or local level, or which have been designated by local ordinance.

When characterizing visual quality, it is beneficial to reduce subjectivity through the use of established characteristics. The FHWA method characterizes visual quality using the terms vividness, intactness, and unity. Vividness is scored from low to high based on the visual power of the area; is it striking or does it have a distinctive quality? Intactness refers to the integrity of the aesthetics; is the area free from encroachment? Unity can be described by the coherent nature of the landscape; has it maintained a

harmonious pattern? For each of the landscape units described (reaches), each of these characteristics is given a score of low (1), moderately low (2), moderate (3), moderately high (4), or high (5).

Visual resources along Upper Berryessa Creek do not vary dramatically and are typically all characterized as being poor or low quality.

REACH 1. For this reach, each of the FHWA characteristics is given low scores (1). Reach 1's visual condition was driven by three distinct characteristics; the extensive surrounding urbanization; the very limited native vegetation and natural habitats; and the linear uniform cross-section of the creek channel.

Vegetation in the area is primarily non-native. The creek channel is highly altered with unnaturally steep banks, and the gravel access roads are the dominant feature. Furthermore, trash and debris are present beneath both Calaveras Boulevard and Los Coches Street overpasses, along with graffiti. The creek and access roads are linear with no meandering. Access roads are maintained to be cleared of vegetation. Creek banks are chemically treated and mowed to reduce vegetation. Rock revetment, trash, and debris are present intermittently through this stretch. Retail outlets back up to the access road on the west bank, though no windows offer views to the creek. Non-native trees, primarily palm trees, provide a visual screen of development on the east bank.

Throughout this reach typical flows are less than 1 foot deep. Water is generally clear, though trash and algae are present. Unpleasant odors were not noted to originate from the creek when soil sample pits were excavated for the wetland delineation performed in August 2014 (Tetra Tech 2015b).

REACH 2. Visual quality is low (1) for all characteristics in this reach. From Los Coches Street to Piedmont Creek there is little variation in visual condition of the creek and access roads. It has minimal riparian vegetation along the bottom of the channel, which is incised and straight, and flanked by two maintained gravel roads. Incision increases in the upstream portion of this reach. Again, banks are sprayed and/or mowed and have little vegetation. Stream flow was less than 1 foot deep. Distinct reach features include the confluences of Los Coches and Piedmont Creeks with Upper Berryessa Creek, as well as a residential pocket park where permanent outdoor exercise equipment is present.

At the confluence with Los Coches Creek, incision, erosion, debris, rock revetment, and trash all compromise visual quality. Los Coches Creek is highly incised with extremely steep slopes. Concrete bank and bed lining and sacked concrete slopes, much of which is failing due to undercutting, reduce the visual quality of the creek.

East of Upper Berryessa Creek and south of Los Coches Creek, a number of residences back up to the project area. Behind these homes, a pedestrian pathway follows the backyard alignment of the homes and a set of publicly owned and available outdoor fitness equipment has been erected. Landscaping, trees, and recreational facilities occur at the immediate top of bank at this location.

Commercial and retail businesses often have unobstructed access to the access roads on the west bank. In these areas, boulders have been placed to prevent motor access. This allows for some unity of visual resources, where trees and large boulders mark the right-of-way boundary, but this occurs in only a very limited area.

UPRR tracks are present along the east side of the creek for most of this reach. Piedmont Creek enters the project area from the east, passing beneath the UPRR trestle prior to joining Upper Berryessa Creek. Piedmont Creek water flow is typically less than 1 foot deep.

REACH 3. The downstream limit of Reach 3 begins near the confluence with Piedmont Creek. Upstream of Piedmont Creek, Upper Berryessa Creek has little or no water outside of precipitation events. Standing water is present in some lower elevation areas.

Visual quality is low (1) for all characteristics in this reach. There is little vegetation and abundant urbanization, with no integration of urban and creek landscapes. The landscape is not memorable or dynamic, is not intact due to erosion and incision, and has no unity due to harsh creek edges, linear alignments, and access roads.

All bridge crossings in the project area have been tagged by graffiti and often have a collection of spent paint cans littering the area. Trash bags, tires, eroding rock revetment, mattresses, and shopping carts were also observed under bridges and in the right-of-way.

REACH 4. Low (1) scores are given for unity and intactness in Reach 4. The dominant qualities of the area are extensive urbanization, lack of integration of urban areas and creek, linear nature of the channel with two artificial nearly right-angle bends lined with concrete, incision of the channel, and erosion. A small stand of trees occurs at the easternmost bend in the creek, allowing for a moderately low (2) score for vividness overall. This stand of trees is composed of coast live oaks, cottonwoods, and ornamental trees. These trees are not part of the City of San Jose's heritage tree program (Resolution No. 75974 2011).

At both bends in the creek, as well as some length downstream of I-680, the streambed and banks are lined with concrete, further reducing visual quality of the area. This is in contrast to the rest of the project area downstream, where bank hardening occurs only where bridges and outfalls are present.

The largest area of residential development occurs in this reach, stretching from I-680 to the downstream bend on the west side of the creek. In this same stretch, there is no access road between the creek and residential area; instead, fences back up to the immediate top of bank. Several trees occur along the backyard fences, both within backyards and within the right-of-way.

Visual features discussed above are illustrated in Figures 3.1 through 3.4.

***Top**: Looking downstream toward Calaveras Blvd. **Bottom**: Looking downstream toward Calaveras Blvd.*

Figure 3.1 Typical Conditions, Reach 1

***Top**: Looking upstream through representative Reach 2 stretch. **Middle**: Residential area with pocket park. **Bottom Left**: Erosion undercutting bank hardening. **Bottom Right**: Example of trees forming visual screen between urban and creek landscapes.*

Figure 3.2 Typical Conditions, Reach 2

***Top**: Typical Reach 3 stretch. **Bottom Left**: Erosion under Yosemite Drive Bridge pier. **Bottom Right**: Looking downstream toward Yosemite Drive.*

Figure 3.3 Typical Conditions, Reach 3

***Top**: Pedestrian overpass at I-680. **Bottom Left:** Residential development upstream of westernmost bend. **Bottom Right**: Riparian trees at upstream most bend.*

Figure 3.4 Typical Conditions, Reach 4

3.2.2.5. *Scores Summary*

Scores for FHWA characteristics, as shown in Table 3.1, are low for all reaches, except for the vividness score in Reach 4. For most of the channel, the original landscape is no longer evident. The constructed creek is straight and channelized, with no natural creek or floodplain features. Cross-sections vary from a trapezoidal shape, with slopes of varying degrees, to U-shape, where stream banks are steep and eroding. Most plants are weedy non-natives. Urbanization and channelization of the creek have been approached in disparate methods, resulting in little integration of the two features. As a result, visual elements in the area are not dynamic or harmonious, and no opportunities have been taken to improve upon visual conditions. Reach 4 receives a slightly higher overall score of 1.3, which results from the presence of the upland stand of trees at the upstream bend near I-680. Mature oaks and other species form a gallery forest that increases the vividness score to moderately low (2).

Table 3.1 Visual Assessment Scores (Existing Conditions)

Characteristic	Reach 1	Reach 2	Reach 3	Reach 4
Vividness	1 (ML)	1 (L)	1 (L)	2 (ML)
Intactness	1 (L)	1 (L)	1 (L)	1 (L)
Unity	1 (L)	1 (L)	1 (L)	1 (L)
Average Score	**1 (L)**	**1 (L)**	**1 (L)**	**1.3 (L)**

L: Low, ML: Moderately Low (FHWA 1988)

3.2.3. **Regulatory Setting**

3.2.3.1. *Federal Regulations*

There are no federal statutes or regulations directly relevant to the proposed project's aesthetic impacts.

3.2.3.2. *State Regulations*

The California Scenic Highway Program, governed by the Streets and Highways Code, §260 et seq., is intended to preserve and protect highway corridors in areas of outstanding natural beauty from changes that would diminish the aesthetic value of the adjacent lands. There are no Caltrans-designated scenic highways in the project area or vicinity (Caltrans 2009). Construction and operation of the project would not be subject to the requirements of the Scenic Highway Program.

3.2.3.3. *Local Plans and Policies*

CITY OF MILPITAS GENERAL PLAN. With the exception of stretches of approximately 2,000 feet of the left bank and 1,600 feet of the right bank in Reach 4, which are located in San Jose, the project area is found within the City of Milpitas (Figure 3.14). The Guiding Principles listed in the Scenic Resources and Routes section of the City of Milpitas General Plan, Open Space and Environmental Conservation Element emphasize the preservation and enhancement of visual resources and encourage activities that facilitate viewing access of these resources. The Implementing Policies that support the Guiding Principles generally focus on imposing restrictions to new development projects, guiding landscaping activities and signage along scenic corridors and routes, and other site-specific policies. Scenic Routes

are present within the project area and several guiding principles apply to these areas (City of Milpitas 2002):

- 4.g-I-7. Ensure that all landscaping within and adjoining a Scenic Corridor or Scenic Connector enhances the City's scenic resources by utilizing an appropriate scale of planting, framing views where appropriate, and not forming a visual barrier to views; and relates to the natural environment of the Scenic Route; and provides erosion control.
- 4.g-I-8. Undertake a program in cooperation with PG&E to underground, relocate or screen utility lines and transmission towers within or easily visible from Scenic Routes.
- 4.g-I-11. Undertake an evaluation of and implement any necessary steps to ensure that the design and location of signs within and adjoining Scenic Routes do not lead to unsightly and obtrusive conglomerations of advertising.
- 4.g-I-12. Undertake a program to place appropriate and consistent Scenic Route identification signs periodically along all Scenic Routes. Also provide instructional signs and displays, where appropriate, along Scenic Routes and at roadside facilities, indicating major visual features of the area.

The General Plan also designated the future Berryessa Creek Trail, which runs along the study area from Montague Expressway to just upstream of Los Coches Street, plus three other arterials that branch off this trail, as Scenic Routes. Calaveras Boulevard within the project area is designated as a Scenic Connector. Scenic corridors and connectors are streets or other routes that pass through an area of scenic value, provide efficient connections between such areas, or provide distant views of scenic resources. In addition, the Population and Growth Chapter of the Milpitas General Plan provides this guidance:

- 2.a-I-17. Foster community pride and growth through beautification of existing and future development.

ENVISION SAN JOSE 2040 GENERAL PLAN. Approximately 2,000 feet of the left bank and 1,600 feet of the right bank in Reach 4 are located in the City of San Jose (Figure 3.14). The City of San Jose's General Plan (2011) provides the following guidance for aesthetic conditions, including tree protection:

- MS-21.4 Encourage the maintenance of mature trees, especially natives, on public and private property as an integral part of the community forest. Prior to allowing the removal of any tree, pursue all reasonable measures to preserve it.
- CD-1.23 Further the Community Forest Goals and Policies in this plan by requiring new development to plant and maintain trees at appropriate locations on private property and along public street frontages. Use trees to help soften the appearance of the built environment, help provide transitions between land uses, and shade pedestrian and bicycle areas.
- CD-1.25 Apply Riparian Corridor Goals and Policies of this plan when reviewing development adjacent to creeks.
- Development adjacent to creekside areas should incorporate compatible design and landscaping, including appropriate setbacks and plant species that are native to the area or are compatible with native species.
- Development should maximize visual and physical access to creeks from the public right-of-way while protecting the natural ecosystem. Consider whether designs could incorporate linear parks along creeks or accommodate them in the future.

San Jose's General Plan also provides guidelines for protecting transportation routes that are categorized as Rural Scenic Corridors or Gateways. However, transportation corridors within the project

area are not categorized as such. I-680 is considered an Urban Throughway, but does not have visual guidelines specific to that category.

3.2.4. Significance Criteria

The proposed project would result in a significant impact on visual resources if the project would:

AES-1 Have a substantial adverse effect on a scenic vista;

AES-2 Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway;

AES-3 Significantly degrade the existing visual character or quality of the site and its surroundings; or

AES-4 Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

3.2.5. Potential Impacts

3.2.5.1. *Significance Criteria with No Impacts*

Certain criteria are not discussed further in this EIR because the proposed project would not result in impacts related to these criteria. For aesthetics, the significance criteria not discussed further are:

AES-1 **Have a substantial adverse effect on a scenic vista.** No scenic vistas are present in the project vicinity.

AES-2 **Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway.** No State scenic highways are present at the project area or vicinity and no effects to the visual resources associated with scenic highways would result.

AES-4 **Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area or substantially affect people or properties.** No structures with glare-creating properties that would substantially affect daytime or nighttime views or substantially affect people or properties would be constructed as part of the project.

3.2.5.2. *Significance Criteria with Potential Impacts*

AES-3 SIGNIFICANTLY DEGRADE THE EXISTING VISUAL CHARACTER OR QUALITY OF THE SITE AND ITS SURROUNDINGS

Less than significant for construction; less than significant for operation

The impacts assessment is done in Step 4 of the FHWA visual assessment process (1988). In the following sections, the effects of construction and operations are described to determine significance. In addition, the anticipated future score of visual conditions is assessed using the FHWA methodology used for existing conditions. Future with-project aesthetic scores are shown in Table 3.2, below.

CONSTRUCTION (REACHES 1–3). Construction activities would have temporary or permanent effects on scenic resources in Reaches 1–3, particularly resulting from temporary removal of vegetation within the project area, earthwork, and general reduction in scenic quality resulting from the presence of construction equipment.

The presence of construction equipment, workers, and activities would temporarily obscure views of the creek and change the visual character of the area. A 2-year construction period, during which construction activities would be limited to the dry season between May and October, would result in a total of 12 months of construction (6 dry months over 2 years). During that time, the presence of trucks and other construction equipment, such as temporary fencing, would degrade the visual landscape. However, because of industrial use of the area, which results in an already compromised visual quality, the presence of construction trucks and crew would not substantially reduce aesthetic quality in the project area. Furthermore, the presence of trucks and crew would be temporary and would not result in a permanent impact on visual quality or reduction in viewer group response. Though there would be an impact to visual condition, the temporary nature of the impact and the only incremental degradation in an already industrial area would result in a less than significant adverse effect.

A total of 74,500 cubic yards of material would be excavated and 19 acres of vegetation would be cleared from Reaches 1 to 3. The presence of open earth cuts, along with the removal of grasses and other vegetation necessary to excavate the trapezoidal channels, would temporarily reduce aesthetic attractiveness of the area. Disturbed areas would be hydroseeded as part of construction completion, and would reestablish vegetative cover comparable to before-project conditions.

The project areas scenic resources include trees that have either been planted or become voluntarily established within the channel right-of-way. Construction of the proposed project requires the removal of ~~44~~ 45 native trees and shrubs and additional non-native landscape trees/shrubs from Reaches 1 to 3 to increase the channel size and construct top of bank access roads (see Appendix F).

Trees/shrubs to be removed include non-natives such as Australian willows, eucalyptus, citrus, and pine and native trees/shrubs, including California nutmeg, coast live oak, coyote brush, elderberry, Fremont cottonwood, redwood, toyon, valley oak, and white alder (see Appendix F). Trees and shrubs along the channel provide a visual screen to the channel, generally improving the aesthetic quality of the area. Trees also provide shade to pedestrians. In most cases, trees that are providing visual improvements to the channel would not be removed. Trees that provide screening and shade are typically beyond the area needed to be cleared. Trees that will be removed are sparsely located throughout the channel or right-of-way, and as a result do not form a natural condition. When removed, these sparsely located trees would not leave a visual gap. Other trees surrounding the area would remain, and viewer groups are unlikely to notice a significant reduction in vegetation after the completion of the project. Therefore, this impact would be less than significant.

In Reach 2 upstream of Los Coches Street, the small pocket park with exercise equipment and adjoining recreational trail would be removed during construction. Along with the park, an area of landscaping containing native toyons, coyote brush, and Fremont cottonwoods would be removed. The removal of this feature would constitute a change to the visual character of the area, but because it is a small area, the permanent visual impact would be less than significant.

Project compliance with the City of Milpitas Tree Maintenance and Protection Ordinance and City of San Jose Tree Protection Ordinance is analyzed under Significance Criterion BIO-5 in Section 3.5.5.

FHWA Visual Assessment Scores for Reaches 1 to 3

In most cases, overall visual scores are anticipated to improve slightly when compared to the existing condition. This is due to increased intactness scores, resulting from the benefits of repairing eroding banks, sloping banks back to allow for improved vegetation growth, and increased flood conveyance.

In Reach 1, intactness scores increase, resulting in a slight improvement in aesthetic assessment scoring for Reach 1 (Table 3.2). Reaches 2 and 3 receive slightly higher overall scores as a result of improvements to intactness. Although scores would be expected to decrease for unity under all alternatives as a result of floodwall construction, the existing conditions scores were already at the lowest scoring point. Slight improvements are seen in the scores for each alternative as a result in the improved intactness of the area. However, scores still fall within the low category for Reaches 1, 2, and 3. Reach 4 receives a moderately low score. Overall, there will be only incremental increases in visual quality according to application of the FHWA methodology for each reach.

Table 3.2 Visual Assessment Scores (Proposed Conditions)

	Reach 1	Reach 2	Reach 3	Reach 4
Vividness	1 (L)	1 (L)	1 (L)	2 (ML)
Intactness	2 (ML)	2 (ML)	2 (ML)	2 (ML)
Unity	1 (L)	1 (L)	1 (L)	1 (L)
Average Score	**1.3 (L)**	**1.3 (L)**	**1.3 (L)**	**1.7 (L-ML)**
L: Low, ML: Moderately Low (FHWA 1988)				

CONSTRUCTION (REACH 4). The types of impacts occurring in Reach 4 would generally be the same as those occurring in Reaches 1–3, including temporary removal of vegetation within the project area, earthwork, and general reduction in scenic quality resulting from presence of construction equipment. However, in this reach a total of 15,500 cubic yards (cy) of material would be excavated, and only minimal amounts of vegetation, consisting mostly of grasses and forbs, would be removed. Eight native trees/shrubs, consisting of an arroyo willow, 4 coast live oaks, and 3 Fremont cottonwoods would likely be removed in Reach 4 (see Appendix F). The creek banks would be hydroseeded to re-establish low vegetation. Visual impacts of vegetation removal would be temporary and would occur within an already industrialized area, resulting in a less than significant impact.

The proposed project would result in the removal a small number of trees in Reach 4. The number of trees to be removed is small and would not result in a visual gap. Furthermore, the mixed stand of native and non-native riparian trees at the easternmost bend in Reach 4, which contains 27 mostly native trees, would be mostly protected during construction. Although a majority of trees in this area would not be removed, 4 coast live oaks and 3 Fremont cottonwoods growing low on the bank would likely be removed during sediment removal in this area. This stand of trees is the only area where trees are standing together and not sparsely located, which creates an increased sense of it being a more natural area. Leaving most of these trees would ensure that the proposed project's tree removal would not result in a significant visual impact.

FHWA Visual Assessment Scores for Reach 4

In general, the visual assessment results are similar to those in Reaches 1–3. As shown in Table 3.2, Reach 4 receives a slightly higher score in comparison to existing conditions as a result of the replacement of concrete channel with earthen side slopes, but it still receives a moderately low score.

OPERATIONS AND MAINTENANCE (ALL REACHES). Visual quality would be improved overall following completion of the proposed project, due to the expansion of the channels, sloping and stabilization of the banks, replacement of the UPRR trestle, reestablishment of native vegetation along bank channels, and addition of transition structures between bridges and channel. Trash and graffiti would continue to accumulate, but would be removed through ongoing SMP2 maintenance activities.

A newly constructed free-standing concrete floodwall with a length of about 2,200 ft and a maximum height of 2 feet between Los Coches and Yosemite Drive would constitute a new visual feature in the project area. However, due to the already industrialized and altered character of the project area, the floodwall would not substantially reduce aesthetic quality of the area. Although another floodwall would be constructed in Reach 4, it would be buried and would have no impact on visual resources.

Maintenance schedules and activities would not be substantially different from the before-project condition. Future operations and maintenance of the proposed project would not result in increased presence of trucks or crews and would result in a less than significant impact to aesthetics.

Proposed Project Photo-simulations

Photo-simulations of three selected locations show the existing conditions of the channel the visual appearance of the creek after construction of the proposed project (Figures 3.5 to 3.7) and demonstrate impacts to the visual character of the site and its surroundings. These are conceptual images that simulate the general configuration of the channel, side slopes, access roads, and other features. The photo-simulations are designed to give the appearance of the channel after all construction is complete and once vegetation has become fully reestablished, approximately 1 to 3 years after construction.

Figure 3.5 shows the projected appearance of the channel looking upstream from Calaveras Boulevard. Features in this reach include sloping of creek banks, creation of a wetland mitigation terrace on the left (west) bank, engineering of the confluence of Piedmont Creek and Berryessa Creek using rock revetment (seen in the distance on both banks), and placement of a maximum 3-foot concrete floodwall between the access road and channel. Toe-down rock revetment installed to stabilize channel slopes would become overgrown once vegetation is reestablished. TRMs would be installed on the upper banks to anchor vegetation, but would be largely unseen after vegetation becomes reestablished. Figure 3.6 shows a conceptual diagram of the railroad trestle replacement with box culvert and sloping of banks. This photo-simulation is looking upstream at the existing UPRR railroad trestle. Figure 3.7 shows a section of the channel where the existing concrete bed and bank lining would be removed at a sharp bend in the channel, and replaced with buried rock revetment and side slopes vegetated with native grasses and forbs. This photo-simulation looks upstream at the first bend upstream of Montague Expressway. The existing concrete lining at the second bend upstream of Montague Expressway and trees growing on the east bank would remain in place. The visual appearance of the channel at this second bend would be mostly unchanged from its current appearance. Overall visual impacts in Reach 4 would be less than significant.

Figure 3.5 Photo-simulation A (Completed Project): Terraced Wetland, Floodwall, and confluence with Piedmont Creek

Figure 3.6 Photo-simulation B (Completed Project): UPRR Trestle Replacement with Box Culvert

Figure 3.7 Photo-simulation C (Completed Project): Concrete Removal Upstream of Montague Expressway

Based on the above analysis, impacts of proposed project construction and operation on the visual character of the project site and surroundings would be less than significant.

MITIGATION (ALL REACHES) (NOT REQUIRED). Although Impact AES-2 would be less than significant, Mitigation Measure BIO-B, which addresses replacement of native trees and shrubs removed during construction, would also reduce visual impacts. This mitigation measure is more fully described in Section 3.5.6.

3.2.6. Statement of Impact

Table 3.3 summarizes the level of potential impacts to visual resources.

Table 3.3 Statement of Impacts, Aesthetics

Impact	Before Mitigation	Applicable Mitigation Measures	Residual Impact After Mitigation
AES-1. Have a substantial adverse effect on a scenic vista	NI	None	NI
AES-2. Substantially degrade scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway	NI	None	NI
AES-3. Substantially degrade the existing visual character or quality of the site and its surroundings	LS	BIO-B	LS
AES-4. Create a new source of substantial light or glare that would adversely affect daytime or nighttime views or affect people or properties	NI	None	NI

NI–No Impact, LS–Less than Significant, LM–Less than Significant with Mitigation, S–Significant, SU–Significant and Unavoidable

3.3. AIR QUALITY

This section describes the ambient air quality of the project area, discusses the applicable air quality regulations, and analyzes the potential effects of the proposed project on air quality in the region. This section also presents the results of air quality modeling that was performed for the proposed project, and describes mitigation measures that would be implemented.

3.3.1. Environmental Setting

Air quality is affected by the rate, amount, and location of pollutant emissions and the associated meteorological conditions that influence pollutant movement and dispersal. Atmospheric conditions (wind speed, wind direction, and air temperature) in combination with local surface topography (geographic features such as mountains and valleys) determine how air pollutant emissions affect local air quality.

Air pollution potential in the Santa Clara Valley is high. High summer temperatures, stable air, and mountains surrounding the valley, which prevent dispersion of pollutants, combine to promote ozone formation. In addition to the many local sources of pollution, ozone precursors from San Francisco, San Mateo, and Alameda Counties are carried by prevailing winds to the Santa Clara Valley. The shape of the

valley tends to channel pollutants to the southeast. In addition, on summer days with low level temperature inversions, ozone can be recirculated by southerly drainage flows in the late evening and early morning and by the prevailing northwesterly winds in the afternoon. A similar recirculation pattern occurs in the winter, affecting levels of carbon monoxide (CO) and particulate matter. This movement of the air up and down the valley increases the impact of the pollutants substantially.

3.3.2. Existing Conditions

The Bay Area Air Quality Management District (BAAQMD) has jurisdiction over air quality conditions in Santa Clara County, as well as eight other counties in the surrounding area. The area regulated by the BAAQMD is in non-attainment status for ozone under both the California Air Quality Standards (CAAQS) and National Air Quality Standards (NAAQS), and also is in non-attainment under the California standards for particulate matter (PM_{10} and $PM_{2.5}$). The BAAQMD area is in attainment for all other listed air pollutants under both the California and Federal standards (BAAQMD 2013). Standards are summarized in Table 3.4.

The BAAQMD operates a regional monitoring network that measures ambient concentrations of criteria pollutants. The nearest monitoring station to the project area is the San Jose Central Monitoring Station. Table 3.5 presents monitoring data for the most recent 5 years for which data are available at this station. The table shows the number of times each year that each station records pollutant concentrations in excess of the Federal or California air quality standards. The table also lists the highest annual reading for each pollutant at the station.

Table 3.4 State and Federal Air Quality Standards

Pollutant	Averaging Time	State Standard	Federal Standard
Ozone (O_3)	1 Hour 8 Hour	0.09 ppm 0.070 ppm	- 0.075 ppm
Carbon Monoxide (CO)	1 Hour 8 Hour	20 ppm 9.0 ppm	35 ppm 9 ppm
Nitrogen Dioxide (NO_2)	1 Hour Annual	0.18 ppm 0.030 ppm	0.100 ppm 0.053 ppm
Sulfur Dioxide (SO_2)	1 Hour 3 Hour 24 Hour Annual	0.25ppm - 0.04 ppm -	- 0.5 ppm 0.14 ppm 0.03 ppm
Respirable Particulate Matter (PM_{10})	24 Hour Annual	50 µg/m^3 20 µg/m^3	150 µg/m^3 -
Fine Particulate Matter ($PM_{2.5}$)	24 Hour Annual	- 12 µg/m^3	35 µg/m^3 15.0 µg/m^3
Lead	Monthly Quarterly	1.5 µg/m^3 -	- 1.5 µg/m^3

Notes: ppm = parts per million, µg/m^2 = micrograms per cubic meter

Table 3.5 San Jose Central Monitoring Station Air Quality Data Summary						
Pollutant	**Standard[a]**	**Monitoring Data by Year**				
		2009	**2010**	**2011**	**2012**	**2013**
Ozone						
Highest 1 hour average, ppm	0.090 ppm	.088	.0126	.098	.0101	.0093
Days over state standard		0	5	1	1	0
Highest 8 hour average, ppm	0.070 ppm	.068	.086	.067	.062	.079
Days over state standard	(state)	0	3	0	0	1
Days over national standard	0.075 ppm (national)	0	3	0	0	1
Nitrogen Dioxide (NO_2)						
Highest 1 hour average, ppm	0.25 ppm	.0069	.0064	.0061	.0067	.0059
Days over state standard		0	0	0	0	0
Annual Average, national	0.053 ppm	.0148	.014	.015	.013	.015
Carbon Monoxide (CO)						
Highest 8 hour average, ppm	9.0 (state &	2.5	2.2	2.5	2.6	3.1
Days over state/national standard	national)	0	0	0	0	0
PM_{10}						
Highest 24 hour average, state/national, µg/^{3}	50 (state) 150 (national)	43.0	47.0	44.0	60.0	58.0
Estimated days over state/national standard[b]	State Stds:	0	0	0	1	5
	National Stds:	0	0	0	0	0
$PM_{2.5}$						
Highest 24 hour average, µg/m^3	35 (national)	35.0	41.5	50.5	38.4	57.7
Estimated days over national standard[b]		0	3	3	2	6

Notes: ppm=parts per million; µg/m^3 = micrograms per cubic meter; **Bold** values are in excess of applicable standards.

[a] Generally, State standards are not to be exceeded and Federal standards are not to be exceeded more than once per year. Standard listed here is the 2013 standard; previous year standards may differ slightly.

[b] Measurements are collected every 3 days at San Jose. "Estimated days" represents an estimated number of days that the standard would have been exceeded if levels were sampled every day of the year.

3.3.2.1. *Sensitive Receptors*

Air quality does not affect every individual in the population in the same way, and some groups are more sensitive to adverse health effects than other groups. Population subgroups sensitive to the health effects of air pollutants include the elderly and the young, those with higher rates of respiratory disease such as asthma and chronic obstructive pulmonary disease, and subgroups with other environmental or occupational health exposures (e.g., indoor air quality) that affect cardiovascular or respiratory diseases. Land uses such as schools, children's day care centers, hospitals, and nursing and convalescent homes are the most sensitive to poor air quality because the population groups associated with these uses have higher susceptibility to respiratory distress. Parks and playgrounds are considered moderately sensitive to poor air quality because persons engaged in strenuous work or exercise also have increased sensitivity to poor air quality. However, exposure times are generally far shorter in parks and playgrounds than in residential locations and schools, which typically result in lower levels of pollutant exposure. Residential areas are more sensitive to air quality conditions compared to commercial and industrial areas because people generally spend more time at their residences, with greater associated exposure to ambient air quality conditions.

REACHES 1–3. The project area is highly developed. The area is generally commercial/industrial with limited residential uses. Receptors include the employees of the businesses and residents in the

neighborhoods located adjacent to the creek. The Western Learning Center, a childcare facility, is located approximately 800 feet from the project area (within the analytic zone of influence of the BAAQMD CEQA Guidelines), but not adjacent to where work would occur. There are no schools, hospitals or convalescent homes in the project vicinity, although a small pocket park is found in Reach 2 on the east side of the creek. Figure 3.8 shows the sensitive air quality receptors in the project area.

REACH 4. As with Reaches 1–3, the project area is in a highly developed area. Downstream of I-680 is a mostly commercial/industrial area with some residential uses, in which receptors include the employees of local businesses, residents of the neighborhoods located adjacent to the creek and Northwood Elementary School, located approximately 700 feet from the creek.

3.3.3. Regulatory Setting

3.3.3.1. *Federal Regulations*

CLEAN AIR ACT (CAA). The Federal Clean Air Act (42 USC 7401, et seq.) delegates primary enforcement of air quality standards to the states, with direct oversight by the U.S. Environmental Protection Agency (EPA). The CAA, which was last amended in 1990, requires EPA to set National Ambient Air Quality Standards (NAAQS) (40 CFR part 50) for pollutants considered harmful to public health and the environment. The CAA established two types of standards. Primary standards were established to promote human health with an adequate margin of safety to protect those most vulnerable such as asthmatics, infants, and elderly persons. Secondary standards were established to promote human welfare to prevent impaired visibility, building and crop damage, and other non-health related values.

The CAA established NAAQS for several air pollutants. The six pollutants that are analyzed when examining air quality include ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), inhalable particulate matter (PM_{10} and $PM_{2.5}$ – particulates 10 microns or less in diameter and 2.5 microns or less in diameter, respectively), and lead.

Construction activity would occur with the proposed project, and fuel-fired construction equipment is a mobile source of air pollution. Mobile sources can trigger the need for a General Conformity Determination (40 CFR Part 93, Subpart B) if they are emitting sufficiently large quantities of an air pollutant in an area designated “non-attainment” with respect to a current NAAQS, or which was previously designated “non-attainment” with respect to a current NAAQS (and is therefore a “maintenance” area). In such areas, a Federal agency must make a determination that permitting or approving an activity would conform to the State Implementation Plan (SIP) when the total of direct and indirect emissions (of the non-attainment/maintenance pollutant, or its precursors) in that area would equal or exceed *de minimis* levels identified in 40 CFR Part 93 Subpart B, which vary depending on the pollutant and attainment status but are no higher than 100 tons per year.

AMBIENT AIR QUALITY STANDARDS. Areas are classified as either attaining (attainment) or not attaining (non-attainment) State and Federal ambient air quality standards. These classifications are made by comparing actual monitored air pollutant concentrations to State and Federal standards. If a pollutant concentration is lower than the State or Federal standard, the area is considered to be in attainment of the standard for that pollutant. If pollutant levels exceed a standard, the area is considered a non-attainment area. If data are insufficient to determine whether a pollutant is violating the standard, the area is designated unclassified.

To implement Section 176 of the CAA, the EPA issued the General Conformity Rule, which states that a Federal action must not cause or contribute to any violation of the NAAQS, or delay timely attainment of air quality standards. In order to meet this CAA requirement, a Federal agency such as USACE must demonstrate that every action that it undertakes, approves, permits or supports would conform to the appropriate SIP. A conformity determination is required for each pollutant where the total of direct and indirect emissions caused by a Federal action in a non-attainment (or maintenance) area exceeds *de minimis* rates listed in the rule (40 CFR 93.153). The *de minimis* rates are 50, 100, 50, 100, and 100 tons per year for NOx, CO, Volatile Organic Compounds (VOCs), PM_{10}, and $PM_{2.5}$, respectively.

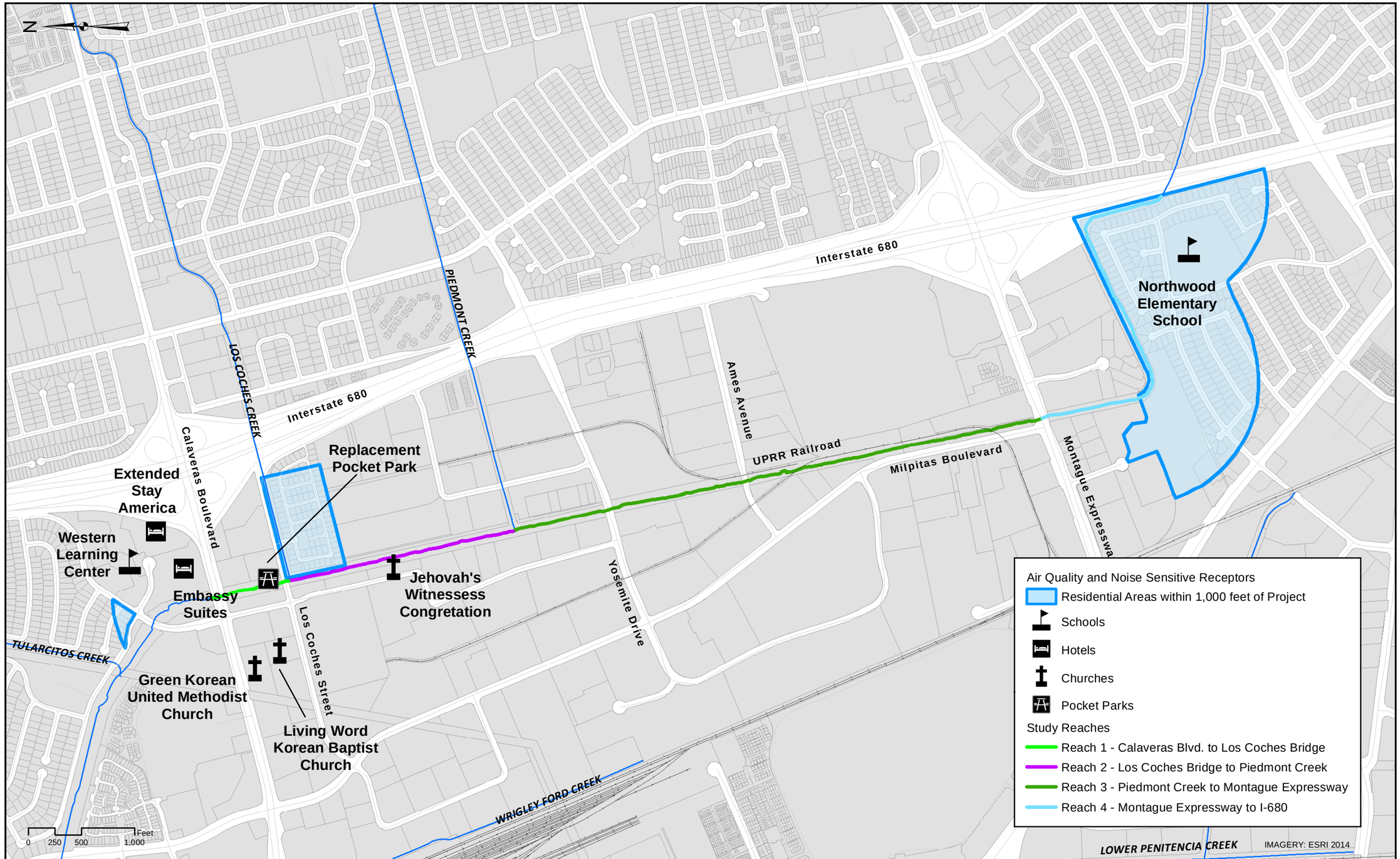

Figure 3.8 Sensitive Receptors in Project Area

Tetra Tech
17885 Von Karman Avenue, Suite 500
Irvine, CA 92614
Tel. (949) 809-5000 Fax. (949) 809-5003

Santa Clara Valley Water District

UPPER BERRYESSA CREEK
FLOOD RISK MANAGEMENT PROJECT
0614

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3.3.3.2. *State Regulations*

CALIFORNIA CLEAN AIR ACT. The California Air Resources Board (CARB) is the agency responsible for coordination and oversight of State and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA). The CCAA, which was adopted in 1988, required CARB to establish California ambient air quality standards (CAAQS). The standards for criteria pollutants established by CARB are generally more restrictive than the NAAQS. Differences in the standards are generally explained by the health effects studies considered during the standard-setting process and the interpretation of the studies. In addition, the CAAQS incorporate a margin of safety to protect sensitive individuals. The California and National Standards are summarized in Table 3.4 above.

CARB has also established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, and the criteria air pollutants described below. Sulfates are generally formed by the combustion of petroleum-derived fuels that contain sulfur and their subsequent conversion to sulfate compounds in the atmosphere. Hydrogen sulfide is primarily generated by the decomposition of sulfur-containing organic substances and vinyl chloride, a chlorinated hydrocarbon, and is typically detected near landfills, sewage plants, and hazardous waste sites due to microbial breakdown of chlorinated solvents. Emissions of these pollutants are not expected to result from implementation of the proposed project; therefore, they are not mentioned further in this document.

Ozone

Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and that can cause substantial damage to vegetation and other materials. Ozone is not emitted directly into the atmosphere, but is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and nitrogen oxides (NOx). ROG and NOx are known as precursor compounds for ozone. Significant ozone production generally requires ozone precursors to be present in a stable atmosphere with strong sunlight for approximately 3 hours.

Ozone is a regional air pollutant because it is not emitted directly, but is formed downwind of sources of ROG and NOx under the influence of wind and sunlight. Ozone concentrations tend to be higher in the late spring, summer, and fall, when the long sunny days combine with regional subsidence inversions to create conditions conducive to the formation and accumulation of secondary photochemical compounds such as ozone.

Carbon Monoxide

CO is a non-reactive pollutant that is a product of incomplete combustion and is mostly associated with motor vehicle traffic. High CO concentrations develop primarily during winter when periods of light winds combine with the formation of ground level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures. When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces the oxygen-carrying capacity of the blood. This results in reduced oxygen reaching the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia.

Particulate Matter

PM_{10} and $PM_{2.5}$ represent fractions of particulate matter that can be inhaled into air passages and the lungs and can cause adverse health effects. Particulate matter in the atmosphere results from many

kinds of dust and fume-producing industrial and agricultural operations, fuel combustion, and atmospheric photochemical reactions. Some sources of particulate matter, such as demolition and construction activities, are more local in nature, while others, such as vehicular traffic, have a more regional effect. Very small particles of certain substances (e.g., sulfates and nitrates) can cause lung damage directly or can contain adsorbed gases (e.g., chlorides or ammonium) that may be injurious to health. Particulates can also damage materials and reduce visibility.

Other Criteria Pollutants

SO_2 is a combustion product of sulfur or sulfur containing fuels such as coal. SO_2 is also a precursor to the formation of atmospheric sulfate and particulate matter (both PM_{10} and $PM_{2.5}$) and contributes to potential atmospheric sulfuric acid formation that could precipitate downwind as acid rain.

Lead has a range of adverse neurotoxin health effects, and was formerly released into the atmosphere primarily via leaded gasoline. The phase out of leaded gasoline in California resulted in decreasing levels of atmospheric lead.

The CCAA requires that all local air districts in the State endeavor to achieve and maintain the CAAQS by the earliest practical date. The act specifies that local air districts should focus particular attention on reducing the emissions from transportation and area wide emission sources, and provides districts with the authority to regulate indirect sources (i.e., sources that are not stationary or regulated as a stationary source, such as construction sources).

BAY AREA AIR QUALITY MANAGEMENT DISTRICT. The BAAQMD has local jurisdiction over the project area. BAAQMD is responsible for bringing and/or maintaining air quality in the basin within Federal and State air quality standards. Specifically, BAAQMD has the responsibility to monitor ambient air pollutant levels throughout the basin and to develop and implement strategies to attain the applicable Federal and State standards.

The CAA and the CCAA require State Implementation Plans to be developed for areas designated as non-attainment (with the exception of areas designated as non-attainment for the State PM_{10} standard). For State air quality planning purposes, the Bay Area is classified as a serious non-attainment area for the 1-hour ozone standard. The "serious" classification triggers various plan submittal requirements and transportation performance standards. One such requirement is that the BAAQMD update the Clean Air Plan (CAP) periodically to reflect progress in meeting the air quality standards and to incorporate new information regarding the feasibility of control measures and new emission inventory data. The most recent update is the Bay Area 2010 CAP, which:

- Updates the Bay Area 2005 Ozone Strategy in accordance with the requirements of the California Clean Air Act to implement "all feasible measures" to reduce ozone;
- Considers the impacts of ozone control measures on particulate matter, air toxics, and greenhouse gases in a single, integrated plan;
- Reviews progress in improving air quality in recent years; and
- Establishes emission control measures to be adopted or implemented in the 2010 to 2012 timeframe.

The BAAQMD is preparing an update to the 2010 CAP and expects to complete it by early 2016 (C. Riviere, personal communication, 2015).

3.3.3.3. *Local Plans and Policies*

CITY OF MILPITAS GENERAL PLAN. The Milpitas General Plan, most recently amended in 2002, addresses air quality primarily from the transportation perspective through its discussion of transportation demand management techniques to meet BAAQMD and State of California air quality standards. A Climate Action Plan was approved in 2013 and is discussed in Section 3.8, Greenhouse Gas Emissions.

ENVISION SAN JOSE 2040 MASTER PLAN. The City of San Jose's Master Plan addresses air quality by way of goals and policies. Specifically, Goal MS-10 seeks to minimize air pollutant emissions from new and existing development. Policies to achieve this goal include:

- MS-10.1 Assess projected air emissions from new development in conformance with the BAAQMD CEQA Guidelines and relative to State and Federal standards. Identify and implement feasible air emission reduction measures.
- MS-10.2 Consider the cumulative air quality impacts from proposed developments for proposed land use designation changes and new development, consistent with the region's Clean Air Plan and State law.

3.3.4. Significance Criteria

Impacts on air quality would be significant if the proposed project would:

AIR-1 Conflict with or obstruct implementation of the applicable air quality plan;

AIR-2 Violate any air quality standard or contribute substantially to an existing or projected air quality violation;

AIR-3 Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);

AIR-4 Expose sensitive receptors to substantial pollutant concentrations; or

AIR-5 Create objectionable odors affecting a substantial number of people.

In June 2010, the BAAQMD adopted CEQA thresholds of significance for agencies to use to assist with environmental review of projects. These thresholds were designed to establish the level at which BAAQMD believed air pollutant emissions would cause significant impacts under CEQA. For construction emissions, the BAAQMD recommended a threshold of 54 pounds per day for ROG, NOx, and $PM_{2.5}$ construction emissions and a threshold of 82 pounds per day for PM_{10}. For operational emissions, the BAAQMD recommended a threshold of 54 pounds per day or 10 tons per year for ROG, NOx, and $PM_{2.5}$ construction emissions and a threshold of 82 pounds per day or 15 tons per year for PM_{10}. The BAAQMD did not recommend quantitative thresholds for construction dust emissions; instead, impacts are considered less than significant if the BAAQMD-recommended Best Management Practices are employed to control dust during construction activities, including demolition and excavation. The 2010 BAAQMD CEQA Guidelines recommend analyzing localized CO concentrations for projects that would increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.

In developing thresholds of significance for air pollutants, BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the

identified significance thresholds, its emissions would be considered cumulatively considerable, and additional analysis to assess cumulative impacts would be unnecessary.

It should be noted that the BAAQMD's adoption of its guidelines in 2010 was challenged in court and in March 2012, the Alameda County Superior Court ruled that BAAQMD needed to comply with CEQA prior to adopting the guidelines. The Superior Court did not determine whether the thresholds were valid on the merits, but found that the adoption of the thresholds was a project under CEQA. On appeal, the First Appellate District Court of Appeal reversed the trial court's decision. The Court of Appeal's decision was appealed to the California Supreme Court, which granted limited review, and the matter is currently pending. In view of the trial court decision, which remains in place pending final resolution of the case, the BAAQMD is no longer recommending that its thresholds be used as a generally applicable measure of a project's significant air quality impacts. However, the BAAQMD noted that lead agencies may rely on its updated guidelines for assistance in calculating air emissions, obtaining information regarding health impacts of air pollutants, and identifying potential mitigation measures. Lead agencies need to determine appropriate air quality thresholds of significance based on substantial evidence in the record. The District has independently reviewed BAAQMD-recommended thresholds from June 2010 including BAAQMD's Justification Report which explains the agency's reasoning for adopting the thresholds, and determined that they are supported by substantial evidence and are appropriate for use to determine significance in the environmental review of this project. Specifically, the District has determined that the BAAQMD thresholds are well-founded and supported by air quality regulations, scientific evidence, and scientific reasoning concerning air quality and greenhouse gas emissions.

3.3.5. Potential Impacts

Air emissions from construction-related activities were calculated by inputting construction-related data into the Sacramento Metropolitan Air Quality Management District's Road Construction Emissions Model, Version 7.1.5.1 (2013). The model was run to generate separate emission values for construction activities in Reaches 1–3 and in Reach 4. This model is approved for use on linear construction projects such as this by the BAAQMD (Kirk, personal communication, 2015). Appendix B presents air quality model data sheets.

The modeling assumed that all construction activity would begin in 2017 and be completed in either one 1-year construction season or two 6-month construction seasons. The estimated equipment to be used, volume of material, and disturbance acreages were compiled to determine the data to input into the emissions model. The emission calculations are based on standard vehicle emissions rates built into the model.

The Road Construction Emissions Model provided emission estimates for ROG, NOx, CO, carbon dioxide (CO_2), PM_{10}, and $PM_{2.5}$. ROG and NOx are precursors to ozone formation. The emissions values for PM_{10} and $PM_{2.5}$ consist of a combination of exhaust particles, especially diesel exhaust and fugitive dust. Federal standards refer to VOCs instead of ROG, but both of these types of emissions are ozone precursors and function similarly in ozone formation.

3.3.5.1. *Significance Criteria with No Impacts*

There would be no impact related to the following significance criteria:

AIR-1 Conflict with or obstruct implementation of the applicable air quality plan(s). The BAAQMD develops Air Quality Management Plans (AQMPs) based on projected population growth and associated increases in emissions, and considers projects consistent with AQMPs as long as they would not induce population growth beyond that included in projections used to formulate the AQMP. Additionally, BAAQMD suggests that projects which increase vehicle-miles traveled at a greater rate than population growth be considered inconsistent with the AQMP. During the most intensive phase of the project (grading/excavation), the project actions in Reaches 1-3 would generate 800 vehicle-miles traveled, compared to Milpitas VMT of 446,980/day, or 2/100 of 1%. For work in Reach 4, 800 VMT would be generated, compared to San Jose VMT of 8,349,000, or 1/1000th of 1%. Given that the proposed project would not induce population growth or result in a substantial increase in vehicle-miles traveled, it is consistent with the applicable AQMP and no impact would occur.

3.3.5.2. *Significance Criteria with Potential Impacts*

AIR-2 VIOLATE ANY AIR QUALITY STANDARD OR CONTRIBUTE SUBSTANTIALLY TO AN EXISTING OR PROJECTED AIR QUALITY VIOLATION
Significant and unavoidable for construction; less than significant for operations

Project actions including channel excavation, construction of floodwalls, replacement of the UPRR trestles, and excavation of the channel would result in temporary and short-term generation of ROG, NOx, PM_{10}, $PM_{2.5}$, and CO emissions from excavation, vegetation clearing, grading, motor vehicle exhaust associated with construction equipment, ~~construction,~~ employee commute trips, material transport, operation of diesel power generators, material handling and other construction activities. Using the Road Construction Emissions Model software, which is a model approved by BAAQMD and CARB for CEQA use, annual emissions were calculated based on assumptions on the type of construction equipment required. Construction activities and associated assumptions associated with air quality are estimated based on the current level of design, and the activities and emissions may change based on the contractor's approach. The estimated annual emissions are identified in Tables 3.6 and 3.7.

CONSTRUCTION (REACHES 1–3). Based on the emission estimates presented in Table 3.6, the proposed project would generate emissions below the General Conformity Rule *de minimis* values for emissions of criteria pollutants during implementation of Federal projects. The estimated worst-case daily emissions generated from construction of the proposed project would exceed BAAQMD thresholds for construction-period NOx emissions. The proposed project would violate local air quality standards. This would be a significant impact because the BAAQMD threshold is based on the potential for a project to cause air quality standard violations.

The proposed project would result in minimal changes in traffic volumes during construction and would not increase the traffic volumes at any project area intersection from below 44,000 to above 44,000. The two busiest intersections in the project area are Calaveras Boulevard/ Hillview Drive and Montague Expressway/ South Milpitas Boulevard. During construction, the proposed project would add less than 1 percent to the traffic volumes using these intersections on a daily basis. The increases in traffic volumes due to project construction would be negligible. Therefore, project effects on CO levels at those intersections would be less than significant.

Table 3.6 Modeled Air Quality Emissions for the Proposed Project (Reaches 1-3)						
Criteria Pollutants	**ROG**	**CO**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**
Estimated Daily Emissions	8.9 lbs.*	48.1 lbs.*	99.2 lbs.*	24.5 lbs.*	8.2 lbs.*	12,526 lbs.*
Estimated Project Emissions	<1 ton	4.9 tons	9.1 tons	2.7 tons	<1 ton	1,110 tons
BAAQMD Project Construction Thresholds	54 lbs./day	N/A	54 lbs/day	72 lbs/day	54 lbs/day	N/A
Federal Conformity Rule Thresholds	50 tons/year**	100 tons/year**	50 tons/year**	100 tons/year**	N/A	N/A
Exceed Thresholds	No	No	Yes	No	No	No

ROG = reactive organic gases, NO_x = nitrogen oxides, CO = carbon monoxide, CO_2 = carbon dioxide, PM_{10} = particulate matter less than 10 microns $PM_{2.5}$ = particulate matter less than 2.5 microns, *Represents maximum pounds per day, usually during grading/excavation phase

** Per year or for construction period, whichever is shorter

Source: Appendix B

CONSTRUCTION (REACH 4). Based on the estimated emissions presented in Table 3.7, construction of the proposed project within Reach 4 would generate air emissions that are less than the General Conformity Rule *de minimis* values for criteria pollutants. Construction activities in Reach 4 would also not exceed BAAQMD significance thresholds for criteria pollutants with the exception of NOx. The emissions of NOx at levels exceeding BAAQMD significance thresholds would be a significant impact because the BAAQMD threshold is based on the potential for a project to cause air quality standard violations.

As stated in the analysis of Reaches 1-3, the proposed project would result in minimal changes in traffic volumes during construction and would not increase the traffic volumes at any project area intersection from below 44,000 to above 44,000, and the increases in traffic volumes due to project construction would be negligible. Therefore, project effects on CO levels would be less than significant.

Table 3.7 Modeled Air Quality Emissions for the Proposed Project (Reach 4)						
Criteria Pollutant	**ROG**	**CO**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**
Estimated Daily Emissions	8.2 lbs.*	44.3 lbs.*	88.2 lbs.*	24.2 lbs.*	8.0 lbs.*	9,815 lbs.*
Estimated Project Emissions	<1 ton	<1 ton	8.4 tons	2.7 tons	<1 ton	928 tons
BAAQMD Project Construction Thresholds	54 lbs./day	N/A	54 lbs./day	72 lbs./day	54 lbs./day	N/A
Federal Conformity Rule Thresholds	50 tons/year**	100 tons/year**	50 tons/year**	100 tons/year**	N/A	N/A
Exceed Thresholds	No	No	Yes	No	No	No

ROG = reactive organic gases, NO_x = nitrogen oxides, CO = carbon monoxide, CO_2 = carbon dioxide, PM_{10} = particulate matter less than 10 microns, $PM_{2.5}$ = particulate matter less than 2.5 microns.

* Represents maximum pounds per day, usually during grading/excavation phase.

** Per year or for construction period, whichever is shorter

OPERATIONS (ALL REACHES). In Reaches 1–3, inspection of floodwalls and the new culverts on the UPRR railroad tracks and crossing Los Coches Creek, would result in increased vehicular trips l, adding about one vehicle trip per month. Overall, emissions resulting from operations and maintenance would be reduced as the constructed project is expected to result in reduced needs for periodic sediment removal and erosion control. This would result in less use of trucks and excavation equipment, which are the primary sources of emissions associated with operations and maintenance, and less generation of fugitive dust. Impacts from operations and maintenance would be less than significant.

MITIGATION. To reduce the amount of NOx emissions during construction activities, Mitigation Measures AIR-A and AIR-B would be implemented. These mitigation measures are described in Section 3.3.4, and would reduce emissions by optimizing the efficiency of motors used in construction equipment, and using equipment most efficiently. Although particulate impacts are less than significant, Mitigation Measure AIR-A would further reduce particulate emissions.

SIGNIFICANCE AFTER MITIGATION. The proposed mitigation measures would reduce the emission level of NOx but would not be able to reduce the level to below the significance thresholds. After implementation of mitigation measures AIR-A and AIR-B, and assuming up to 20 percent reduction of NOx emissions through use of Best Available Technology in all vehicles, the proposed project would still result in significant and unavoidable emissions of NOx in Reaches 1–3 and Reach 4. No additional feasible measures have been identified that could further reduce this impact to a less than significant level. Dust control measures and other measures to reduce equipment exhaust emission would further ensure that impacts for all other criteria pollutants would be less than significant for all reaches.

AIR-3 CUMULATIVELY CONSIDERABLE NET INCREASE IN ANY CRITERIA POLLUTANT FOR WHICH THE AREA IS IN NON-ATTAINMENT

Significant and unavoidable for construction; less than significant for operations

CONSTRUCTION (REACHES 1–3). BAAQMD thresholds of significance identify emissions levels at which an individual project would have a cumulatively considerable impact on air quality. As discussed under Impact AIR-1, particulate emissions would be below local significance thresholds, but NOx emissions from construction would be above local significance thresholds. Therefore, based on the significance thresholds identified in the 2010 BAAQMD CEQA Guidelines, implementation of the proposed project would result in a cumulatively considerable increase in criteria pollutant emissions, resulting in a significant impact.

CONSTRUCTION (REACH 4). Impacts occurring in Reach 4 would be reduced compared to Reaches 1–3 since there would be less construction activity. Particulate emissions would be less than significant, but emissions of NOx would be above local significance thresholds, resulting in a significant impact.

OPERATIONS (ALL REACHES). The proposed project would increase maintenance and operations activities above the baseline by adding inspections and maintenance of floodwalls and the UPRR culvert. The expected increase in vehicle trips would be less than one per month, which would result in negligible and less than significant air quality impacts.

MITIGATION. To reduce the NOx impact from construction activities, Mitigation Measures AIR-A and AIR-B would be implemented during construction. These mitigation measures are described in Section 3.3.4, and would reduce NOx emissions by optimizing the efficiency of motors used in construction equipment and using equipment most efficiently. Although particulate impacts are less than significant, Mitigation Measure AIR-A would further reduce particulate emissions.

SIGNIFICANCE AFTER MITIGATION. The proposed mitigation measures would reduce construction-period emissions of NOx by up to 20 percent, but would not reduce NOx emissions to below the significance thresholds. As a result, this impact would be significant and unavoidable**.**

AIR-4 EXPOSE SENSITIVE RECEPTORS TO SUBSTANTIAL POLLUTANT CONCENTRATIONS

Less than significant for construction; less than significant for operations

CONSTRUCTION (ALL REACHES). The potential for significant impacts associated with exposure of sensitive receptors to substantial pollutant concentrations is generally highest for projects where construction activities that generate high levels of diesel particulate matter and $PM_{2.5}$ occur within close proximity to sensitive receptors such as nursing homes, hospitals, or schools, and where busy intersections are likely to cause haul trucks to be delayed and increase idling time extensively.

Modeled emission estimates shown in Table 3.7 for CO, PM_{10}, and $PM_{2.5}$ would remain well below local significance thresholds. Emissions associated with haul trucks and heavy equipment would be dispersed across different parts of the 2.5-mile construction since construction would likely occur at multiple locations at any given time, so $PM_{2.5}$ and toxic emissions would not be concentrated in any given location. Haul trucks would leave the construction area via arterials with good flow, and enter the freeway shortly thereafter. There are no sensitive receptors within close proximity to haul routes or

construction areas, as shown in Figure 3.8. Therefore, the proposed project is not likely to expose sensitive receptors to substantial pollutant concentrations, and this impact would be less than significant.

OPERATION (ALL REACHES). The proposed project would increase maintenance and operations activities above the baseline by adding inspections and maintenance of floodwalls and the UPRR culvert. The expected increase in vehicle trips would be less than one per month, which would result in negligible emissions of air pollutants. Operational impacts associated with releases of substantial pollutant concentrations would be less than significant.

MITIGATION (ALL REACHES) (NOT REQUIRED). As described above, the impact from construction and operation/maintenance activities would both be less than significant, and no mitigation measures are required. However, implementation of Mitigation Measures AIR-A and AIR-B to address Impacts AIR-2 and AIR-3 would also reduce Impact AIR-4.

AIR-5 CREATE OBJECTIONABLE ODORS AFFECTING A SUBSTANTIAL NUMBER OF PEOPLE

Less than significant for construction; less than significant for operations

CONSTRUCTION (REACHES 1–3). Construction activities would produce occasional odors from diesel equipment exhaust and possibly from exposure of organic materials in the excavation process. Odors resulting from use of diesel powered equipment are likely to disperse quickly and would likely only affect people in close proximity to the construction zone. The number of people in this area is not expected to be substantial; therefore, impacts from this source would be less than significant.

Objectionable odors may also be caused by excavation of anoxic wetland soils, particularly those with high concentrations of organic materials that convert to hydrogen sulfide in anoxic environments. Such soils are generally associated with marshes or other areas where soils are frequently saturated and where organic materials are allowed to decompose on site. Few such soils are likely to occur in the project area, and the project area is primarily industrial with few sensitive receptors. Therefore, this impact would be less than significant.

CONSTRUCTION (REACH 4). Construction activities would produce occasional odors from diesel equipment exhaust and possibly from exposure of organic materials in the excavation process. Odors resulting from use of diesel powered equipment are likely to disperse quickly and would likely only affect people in the direct vicinity of the construction zone. Saturated wetland soils would not likely be encountered in Reach 4, so impacts associated with odors would be less than significant.

OPERATIONS (REACHES 1–3). Saturated wetland soils found in Reaches 1–3 may be odiferous. However, soils excavated during sediment removal would be disposed of off-site immediately, and therefore impacts would be less than significant.

OPERATIONS (REACH 4). Saturated wetland soils are not expected to occur in Reach 4, so no impacts associated with odors are expected.

3.3.6. Mitigation Measures

AIR-A: REDUCE CONSTRUCTION-PERIOD DUST EMISSIONS

The District will work with the USACE to require the construction contractor to implement the following measures during construction to reduce particulate emissions. Many of these measures would also reduce NO_x emissions.

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- Water used to wash the various exposed surfaces (e.g., parking areas, staging areas, soil piles, and graded areas) would not be allowed to enter waterways.
- All vehicle speeds on unpaved roads shall be limited to 15 mph.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible.
- Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.
- The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time.
- All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
- Site accesses to a distance of 100 feet from the paved road shall be treated with a 6- to 12-inch compacted layer of wood chips, mulch, or gravel.
- Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations), and this requirement shall be clearly communicated to construction workers (such as verbiage in contracts and clear signage at all access points).
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications, and all equipment shall be checked by a certified visible emissions evaluator.
- Correct tire inflation shall be maintained in accordance with manufacturer's specifications on wheeled equipment and vehicles to prevent excessive rolling resistance.
- Post a publicly visible sign with a telephone number and contact person at the lead agency to address dust complaints; any complaints shall be responded to and corrective action shall be taken within 48 hours. In addition, a BAAQMD telephone number with any applicable regulations would be included.
- Install one or more of the following track-out prevention measures:
  - A gravel pad designed using good engineering practices to clean the tires of exiting vehicles,
  - A tire shaker,
  - A wheel wash system,

- Pavement extending for not less than 50 feet from the intersection with the paved public road,
- Suspend any excavation operations when wind speeds are high enough to result in dust emissions across the property line, despite the application of dust mitigation measures.
- Any other measure(s) as effective as the measures listed above.

AIR-B: REDUCE CONSTRUCTION EQUIPMENT EMISSIONS. The District will work with the USACE to require the construction contractor to implement the following measures during construction:

- Maintain all construction equipment in proper tune according to manufacturer's specifications.
- Fuel all off-road and portable diesel powered equipment with ARB certified motor vehicle diesel fuel (non-taxed version suitable for use off-road).
- Use diesel construction equipment meeting ARB's Tier 2 certified engines or cleaner off-road heavy-duty diesel engines, and comply with the State off-Road Regulation.
- Use on-road heavy-duty trucks that meet CARB's 2007 or cleaner certification standard for on-road heavy-duty diesel engines, and comply with the State On-Road Regulation.
- All on and off-road diesel equipment (except diesel generators) shall not idle for more than 5 minutes. Signs shall be posted in the designated queuing areas and or job sites to remind drivers and operators of the 5 minute idling limit.
- Diesel idling within 1,000 feet of sensitive receptors is not permitted.
- Staging and queuing areas shall not be located within 1,000 feet of sensitive receptors.
- Use electric equipment when feasible.
- Substitute gasoline-powered in place of diesel-powered equipment, where feasible.
- Use alternatively fueled construction equipment on-site where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane or biodiesel.
- All construction equipment, diesel trucks, and generators shall be equipped with Best Available Control Technology for reductions of NOx and PM emissions.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications, and all equipment shall be checked by a certified visible emissions evaluator.
- Correct tire inflation shall be maintained in accordance with manufacturer's specifications on wheeled equipment and vehicles to prevent excessive rolling resistance.

3.3.7. Statement of Impact

Table 3.8 summarizes potential impacts to air quality. Potential impacts to air quality associated with releases of criteria pollutants would be significant and unavoidable.

Table 3.8 Statement of Impacts , Air Quality

Impact	Prior to Mitigation	Mitigation Measures	After Mitigation
AIR-1. Conflict with or obstruct implementation of the applicable air quality plan(s)	NI	None	NI
AIR-2. Violate any air quality standard or contribute substantially to an existing or projected air quality violation	S	AIR-A AIR-B	SU

Impact	Prior to Mitigation	Mitigation Measures	After Mitigation
AIR-3. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)	S	AIR-A AIR-B	SU
AIR-4. Expose sensitive receptors to substantial pollutant concentrations	LS	AIR-A AIR-B	LS
AIR-5. Create objectionable odors affecting a substantial number of people	LS	None	LS
NI–No Impact, LS–Less than Significant, LM–Less than Significant with Mitigation, S–Significant, SU–Significant and Unavoidable			

3.4. AGRICULTURE AND FORESTRY

This section is intended to describe the existing extent of agriculture or forest lands within the project area, their condition, and required protections. Existing trees within the project area are not considered forest lands and have been addressed in the Aesthetics chapter above (Section 3.2).

3.4.1. Environmental Setting

The project area runs through a highly industrialized land use area. Though native forest lands are present to the east of the area within the Diablo Range, they do not extend to the project area. Remaining lands are unsuitable for agricultural use; all lands in the area are designated for other uses, such as industrial, commercial, or residential.

3.4.2. Existing Conditions

Historically, the Berryessa watershed alluvial fan supported agriculture, particularly where soils were suitable (U.S. Department of Agriculture 1958). Today, the combined industries of agriculture, forestry, fishing, hunting, and mining contribute only 0.1 percent to employment in Santa Clara County (U.S. Census Bureau 2010).

There are no prime or unique farmlands, nor any farmland of statewide or local importance mapped within the project area (California Department of Conservation 2011). A recent soil survey review identified soils in Santa Clara County that were candidates for listing for Prime Farmland and Farmland of Statewide Importance; no soils in the project area (Units 140, 145, 165, and 317) were included on the candidate list (Natural Resources Conservation Service [NRCS] 2010). Furthermore, there are no areas currently dedicated to farming in the project footprint or vicinity.

There are no forests or timberlands in the project footprint or the vicinity, and few trees are present along Upper Berryessa Creek. The California Department of Forestry (CDF) prepared a recent assessment of forest and rangeland throughout the State; mapping shows that there are no priority forests or rangelands in the project area or vicinity (CDF 2010).

3.4.3. Regulatory Setting

There are no agricultural or forested lands within the project footprint and, therefore, no regulatory guidance applies to the proposed project.

3.4.4. Significance Criteria

Impacts on agriculture and forestry would be significant if the proposed project would:

Ag/For-1 Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency to non-agricultural use;

Ag/For-2 Conflict with existing zoning for agricultural uses or a Williamson Act contract;

Ag/For-3 Result in the loss of forest land or conversion of forest land to non-forest use;

Ag/For-4 Conflict with existing zoning, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined in Public Resources Code Section 4526), or timberland zoned Timberland Protection (as defined by Government Code section 51104(g)); or

Ag/For-5 Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use.

3.4.5. Potential Impacts

There are no agricultural or forest lands within the project area or vicinity that are categorized such that Federal, State, or local protections would apply. Therefore, neither construction nor maintenance and operation of the proposed project would result in impacts to agriculture or forestry resources.

3.4.6. Mitigation Measures

No mitigation requirements apply to agriculture or forestry lands as the proposed project would not result in impacts to these resources.

3.4.7. Statement of Impact

Table 3.9 summarizes the level of potential impacts to agriculture and forestry.

Table 3.9 Statement of Impacts, Agriculture & Forestry

Impact	Before Mitigation	Applicable Mitigation Measures	Residual Impact After Mitigation
Ag/For-1 Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use	NI	None	NI

Impact	Before Mitigation	Applicable Mitigation Measures	Residual Impact After Mitigation
Ag/For-2 Conflict with existing zoning for agricultural uses or a Williamson Act contract	NI	None	NI
Ag/For-3 Result in the loss of forest land or conversion of forest land to non-forest use	NI	None	NI
Ag/For-4 Conflict with existing zoning, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Protection	NI	None	NI
Ag/For-5 Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use	NI	None	NI

3.5. BIOLOGICAL RESOURCES

Biological resources include the natural life systems existing throughout the project area. This section describes the existing vegetation, fish, and wildlife associated with Upper Berryessa Creek; the potential impacts to these biological resources; the regulations in place to protect these resources; thresholds for significance of impacts, potential impacts and mitigation measures designed to reduce impacts; and significance of impacts after application of feasible mitigation measures.

3.5.1. Environmental Setting

Upper Berryessa Creek is part of the larger Berryessa Creek system that begins in the hills of the Diablo Range within the Coyote Creek Watershed. As development grew within the creek's floodplain, the natural functions of the creek became compromised. Today, the creek is highly altered, channelized, disconnected from its floodplain, and subject to maintenance objectives for keeping the channel clear to improve flood conveyance. Habitat quality is low throughout the project area.

3.5.2. Existing Conditions

The proposed project is located in a region that has a Mediterranean climate with cool, wet winters and warm, dry summers, and receives an average of less than 15 inches of rainfall a year. The surrounding area is highly developed, and the stream channel has been modified for flow conveyance rather than optimization of ecological features.

Like many streams in coastal California, Upper Berryessa Creek is ephemeral under normal circumstances, meaning that it has flow during the wet months and is dry during the late spring, summer, and early fall. The exception to this is where runoff from urban irrigation provides artificial flows, which may allow for surface moisture throughout the year. Streamflows are composed of freshwater, as Upper Berryessa Creek is above the tidal zone.

The bottom width of the active stream channel is roughly 10 feet wide, while the distance from top of bank to top of bank ranges from 50 to 80 feet. The side slopes of the channel are almost vertical in parts of Reaches 2, 3, and 4, and bank angle in other areas typically ranges from 2:1 (2 feet horizontal to 1

foot vertical) to 4:1. A gravel access road is found along the top of the entire length of the west bank aside from a short length of Reach 4 near the stream's intersection with I-680, and another access road runs intermittently on the east bank. Parts of the bank area and the streambed in Reach 4 are covered with concrete. Concrete and other types of hardscape are found in the bed and banks intermittently in the other reaches.

3.5.2.1. *Vegetation*

The District actively maintains vegetation within the channel to enhance hydrologic conveyance. Maintenance practices include mechanical removal of vegetation and sediment from the bottom of the channel, and use of herbicides on stream banks. Regular spraying and/or mowing along stream banks prevents the establishment of woody riparian species as well as succession of vegetation communities. Flashy winter flows through the channelized system scour vegetation from the active stream channel. Trees are uncommon within the channel but are found in the vicinity in some of the upland urban environment.

A botanical survey was performed for approximately 8 miles of Upper Berryessa Creek, from Calaveras Boulevard to approximately 600 feet upstream of Old Piedmont Road. The survey report indicated that within the project area, the banks were composed mainly of non-native grassland (EDAW 2006). This survey found that species growing in or along the water's edge include knotgrass *(Paspalum distichium),* giant horsetail *(Equisetum telmateia),* and other common aquatic species (EDAW 2006). Vegetation communities were assessed during a reconnaissance-level survey performed on August 25 and 26, 2014, which assessed baseline biological conditions including vegetation, wetlands and other waters, and wildlife (Tetra Tech 2014). Vegetation in the proposed project area is highly disturbed due to frequent high-velocity flows, infestation of non-native plant species, and ongoing maintenance activities. Plant community composition varies from one reach to the next, but is relatively uniform within each reach. Vegetation patterns are distinct, correspond to topographic breaks, and are tied to hydrology. Four vegetation community types are present: (1) open water/aquatic, (2) transitional, (3) herb-dominated upland, and (4) developed (Figures 3.9 and 3.10). The altered, non-native state of each community type prevents them from being categorized into standard community descriptions such as those described in *A Manual of California Vegetation* (Sawyer et al. 2009). All plant communities are dominated by non-native species (see Table 3.10) and offer low quality habitat. The vegetation communities identified in the survey area are defined as follows:

OPEN WATER/AQUATIC VEGETATION. Aquatic vegetation is dominated by species adapted to standing water. This vegetation type occurs at the lowest elevations and only in and adjacent to the active channel. Dominant species include floating water primrose (*Ludwigia peploides*), watercress (*Rorippa nasturtium-aquaticum*), and Gila River water hyssop (*Bacopa eisenii*). The biological function of this vegetation type is limited and may include aquatic shading and nutrient removal. A total of 1.25 acres of this vegetation type was identified in the survey area, all falling within Reaches 1–3.

TRANSITIONAL VEGETATION. These are areas between aquatic areas and uplands, consisting of vegetation composed of a mix of species with life histories ranging from aquatic to drought-tolerant. Although transitional vegetation can be associated with wetland habitat, most patches function primarily as riverine due to their small size, sporadic distribution, and location below ordinary high water. Dominant species include tall flatsedge (*Cyperus eragrostis*), barnyard grass (*Echinochloa* sp.), American brooklime (*Veronica americana*), giant horsetail, and knotgrass. Biological function is limited

to slowing and diversifying flows, trapping sediment, and providing limited habitat to wildlife species adapted to aquatic habitats. A total of 3.27 acres of this vegetation type was identified in the survey area, all falling within Reaches 1–3.

HERB-DOMINATED UPLAND/GRASSLAND. These are areas with disturbed upland vegetation that is generally composed of weedy, invasive herbaceous and annual grass species. This includes ruderal land that receives regular disturbance from human activities including vegetation removal. Biological function of this vegetation type is limited to providing low-quality habitat to small vertebrates and invertebrates. A total of 8.00 acres of this vegetation type was identified in the survey area; 4.99 acres in Reaches 1–3 and 3.01 acres in Reach 4.

DEVELOPED. These areas generally contain non-native or ornamental species and cover is primarily roads, manmade structures, and landscaping. The area surrounding the creek, including virtually all of the overbank area, is composed of this cover type. Landscaped areas may provide foraging and roosting areas for birds, and are likely utilized by urban-adapted species such as squirrels and raccoons. A total of 15.47 acres of this habitat type occurs in the project area; 12.06 acres in Reaches 1–3, and 3.41 acres in Reach 4.

Vegetation density is highest downstream of Piedmont Creek in Reaches 1 and 2. Vegetation in each reach is described below and summarized in Table 3.10.

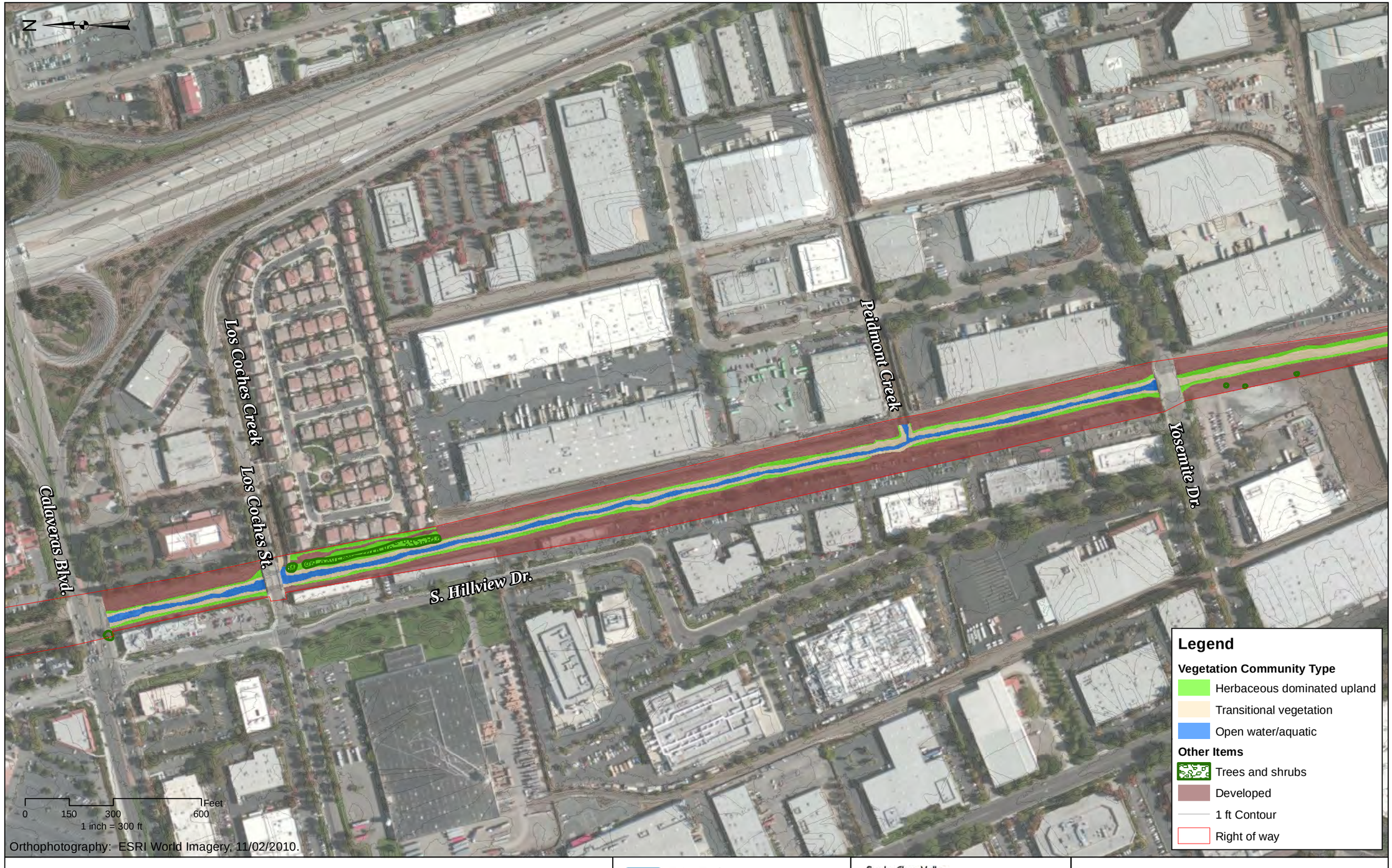

Figure 3.9 Vegetation Types, Reaches 1, 2, and downstream portion of Reach 3

Tetra Tech
17885 Von Karman Avenue, Suite 500
Irvine, CA 92614
Tel. (949) 809-5000 Fax. (949) 809-5003

Santa Clara Valley Water District

County of Santa Clara, California

UPPER BERRYESSA CREEK
FLOOD RISK MANAGEMENT PROJECT
0632

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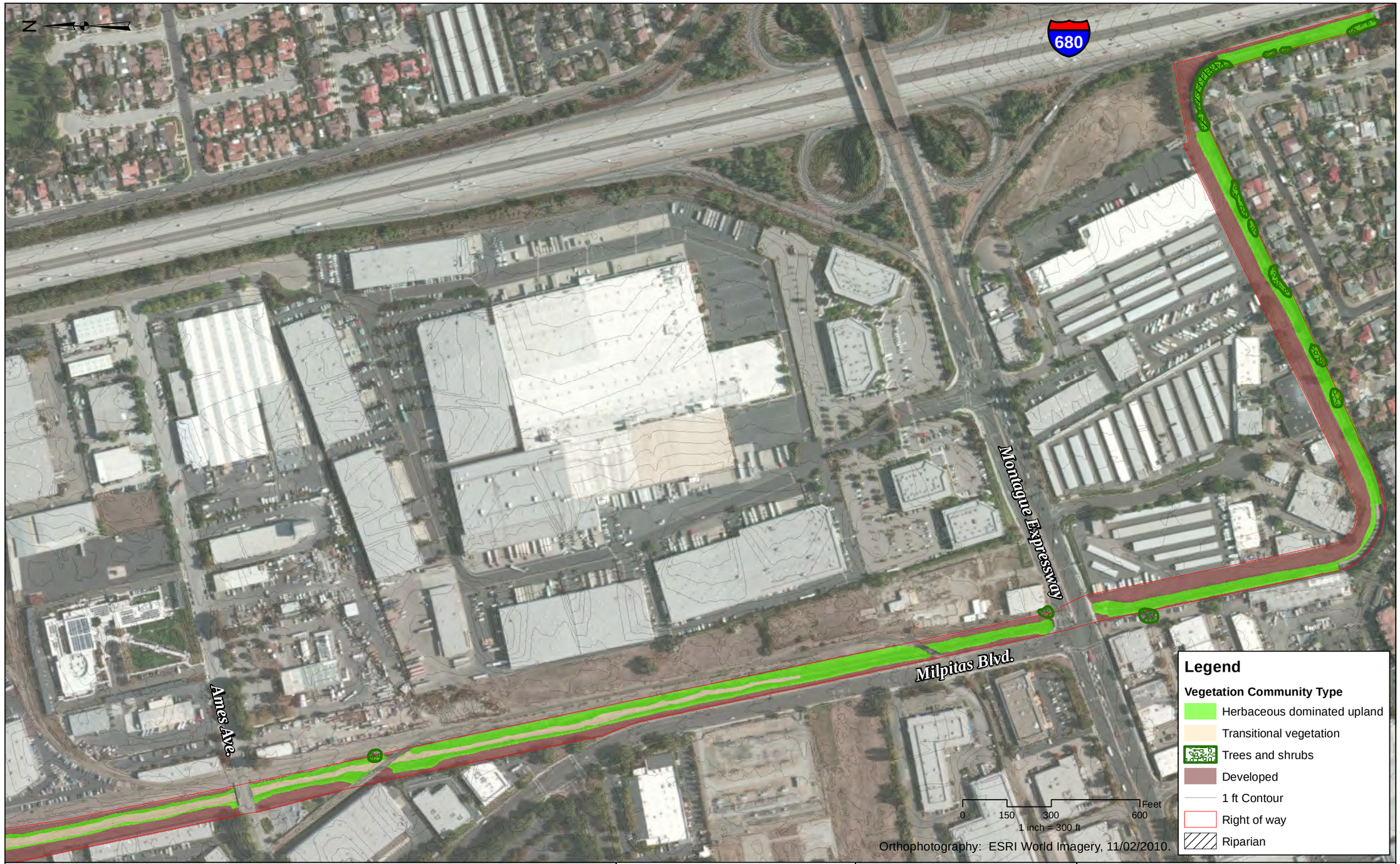

Figure 3.10 Vegetation Types, Upstream Portion of Reach 3 and Reach 4

Tetra Tech
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Santa Clara Valley Water District

County of Santa Clara, California

UPPER BERRYESSA CREEK FLOOD RISK MANAGEMENT PROJECT

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REACH 1. In-channel vegetation is dominated by non-woody wetland species including tall flatsedge, spotted lady's thumb (*Polygonum persicaria*), willow smartweed (*P. lapathifolium*), American brooklime, barnyard grass (*Echinochloa* sp.), and common cattail (*Typha latifolia*). Aquatic species include Gila River water hyssop (*Bacopa eisenii*) and watercress (*Rorippa nasturtium-aquaticum*). Upslope of the aquatic edge but below the Ordinary High Water Mark (OHWM), vegetation is primarily composed of wild radish (*Raphanus sativus*) and giant horsetail (*Equisetum telmateia*). The surrounding upland community is regularly maintained and dominated by weedy non-woody species such as black mustard (*Brassica nigra*), cheeseweed mallow (*Malva parviflora*), wild oat (*Avena fatua*), ripgut brome (*Bromus diandrus*), rescue grass (*Bromus catharticus*), and tumbleweed (*Amaranthus albus*). The overbank areas are composed of gravel access roads and landscaping or development. Washington fan palms (*Washingtonia robusta*) dominate the landscape areas and a few redwood (*Sequoia sempervirens*), red ironbark eucalyptus (*Eucalyptus sideroxylon*), Italian cypress (*Cupressus sempervirens*), and holly oak *(Quercus ilex)* are present (see Appendix F).

REACH 2. Vegetation in Reach 2 is very similar to Reach 1 except that it is confined to an even narrower channel with steeper stream banks, and has a thinner fringe of transitional vegetation along the creek channel. Although the species assemblage in the fringing wetland is similar to Reach 1, plant densities are lower. One patch of red willow (*Salix laevigata*) saplings is present. Aquatic floating water primrose (*Ludwigia peploides*) is present in a few high density patches near the downstream end of Reach 2. Algae are ubiquitous in areas of open water, likely due to high nutrient levels and temperatures and minimal flow through this reach. An area of planted native trees and shrubs is located on the east top of bank adjacent to the pocket park. The dominant species in this planted area is toyon (*Heteromeles arbutifolia*), with a few white alders (*Alnus rhombifolia*) and crape myrtle (*Lagerstroemia indica*), and Fremont cottonwoods (*Populus fremontii*) present. Patches of Himalayan blackberry (*Rubus armeniacus*) are present in the upland areas. A number of landscape trees/shrubs occur at the edge of the ROW and on adjacent commercial properties within 5 feet of the property line, mostly at the western ROW boundary. These mostly non-native trees/shrubs include blackwood acacia (*Acacia melanoxylon*), Aleppo pines (*Pinus halepensis*), silver dollar gum (*Eucalyptus polyanthemos*), and Chinese photinia (*Photinia sp.).* Four native California nutmeg (*Torreya californica*) and six white alders (*Alnus rhombifolia*) occur in this area (see Appendix F).

REACH 3. Reach 3 is located upstream of the confluence with Piedmont Creek, which supplies surface flow to Upper Berryessa Creek. With the exception of the downstream end of the survey area, and some isolated depressions, surface water was absent in Reach 3 during the survey. The limited moisture reduces the extent of aquatic and transitional vegetation. Where aquatic and transitional vegetation is present, the same species assemblage is present as in Reach 2. Upstream, the dry open channel is very narrow and predominantly unvegetated gravel and cobble are present with sporadically distributed, low-density transitional vegetation. Upland plants extend down the steep, highly incised channel slopes into the active stream channel in some areas. A number of landscape trees/shrubs occur at the edge of the ROW and on adjacent commercial properties within 5 feet of the property line, mostly at the western ROW boundary downstream of Yosemite Drive. Non-natives in this area include London plane trees (*Platanus hybrid*), Aleppo pines (*Pinus halepensis*), and pepper trees (*Schinus sp.*). Five native white alders (*Alnus rhombifolia*) occur in this area. In addition, a few widely scattered native trees are present within the ROW between Yosemite Drive and Montague Expressway. These include several coast live oak (*Quercus agrifolia*), two elderberry (*Sambucus nigra*) and two valley oaks (*Quercus lobata*) (see Appendix F).

Table 3.10 Summary of Vegetation in the Project Area		
Scientific Name	**Common Name**	**Distribution**
Vegetation Community Type: Open water/Aquatic		
Bacopa eisenii	Gila River water hyssop	Dispersed
Ludwigia peploides	Floating water primrose	High density patches
Rorippa nasturtium-aquaticum	Watercress	Dispersed
Transitional		
Conium maculatum	Poison hemlock	Patchy
Cyperus eragrostis	Tall flatsedge	Throughout
Echinochloa sp.	Barnyard grass	Throughout
Epilobium ciliatum	Fringed willowherb	Throughout
Equisetum telmateia	Giant horsetail	Throughout
Foeniculum vulgare	Sweet fennel	Patchy
Juncus xiphioides	Iris leaf rush	Patchy
Lepidium latifolium	Perennial pepperweed	Throughout
Lythrum hyssopifolia	Hyssop loosestrife	Patchy
Oenothera elata	Evening primrose	Patchy
Paspalum distichum	Knot grass	Throughout
Phalaris aquatica	Harding grass	Patchy
Polygonum lapathifolium	Willow smartweed	Throughout
Polygonum persicaria	Spotted lady's thumb	Throughout
Polypogon monspeliensis	Rabbit's foot grass	Throughout
Populus fremontii	Fremont cottonwood	Patchy
Quercus agrifolia	Coast live oak	Patchy
Raphanus sativus	Wild radish	Throughout
Ricinus communis	Castor bean	Patchy
Rubus armeniacus	Himalayan blackberry	Patchy
Rumex conglomeratus	Green dock	Patchy
Salix laevigata	Red willow	Patchy
Schinus molle	Peruvian peppertree	Patchy
Typha latifolia	Common cattail	Patchy
Ulmus sp.	Elm (exotic)	Patchy
Urtica dioica	Hoary nettle	Patchy
Veronica americana	American brooklime	Throughout
Veronica anagallis-aquatica	Water speedwell	Throughout
Xanthium strumarium	Rough cockleburr	Throughout
Herb-dominated Upland and Developed		
Amaranthus albus	Tumbleweed	Patchy
Avena fatua	Wild Oat	Throughout
Brassica nigra	Black mustard	Throughout
Bromus catharticus	Rescue grass	Throughout
Bromus diandrus	Ripgut brome	Throughout
Convolvulus arvense	Field bindweed	Patchy
Conyza canadensis	Horseweed	Patchy
Lactuca serriola	Prickly Wild Lettuce	Throughout
Leymus cinereus	Giant wild rye	Patchy
Lolium multiflorum	Italian rye grass	Throughout
Malva nicaeensis	Bull mallow	Throughout
Malva parviflora	Cheeseweed mallow	Throughout
Sonchus asper	Prickly sow thistle	Throughout
Tragopogon porrifolius	Purple salsify	Patchy

Scientific Name	Common Name	Distribution
Trees and Shrubs		
Pinus halepensis	Aleppo pine	Patchy
Malus sp.	Apple	Patchy
Salix lasiolepis	Arroyo willow	Patchy
Fraxinus sp.	Ash	Patchy
Jacaranda mimosifolia	Black poui	Patchy
Acacia melanoxylon	Blackwood acacia	Patchy
Torreya californica	California nutmeg	Patchy
Pinus canariensis	Canary Island pine	Patchy
Ceratonia siliqua	Carob tree	Patchy
Photinia sp.	Chinese photinia	Patchy
Pistacia chinensis	Chinese pistachio	Patchy
Quercus agrifolia	Coast live oak	Patchy
Baccharis pilularis	Coyote brush	Patchy
Lagerstroemia indica	Crapemyrtle	Patchy
Sambucus nigra	Elderberry	Patchy
Ulmus sp.	Elm	Patchy
Betula pendula	European white birch	Patchy
Populus fremontii	Fremont cottonwood	Patchy
Quercus ilex	Holly oak	Patchy
Casuarina equisetifolia	Horsetail tree	Patchy
Cupressus sempervirens	Italian cypress	Patchy
Myoporum laetum	Lollypop tree	Patchy
Platanus hybrida	London planetree	Patchy
Arctostaphylos sp.	Manzanita	Patchy
Pittosporum tobira	Mock orange	Patchy
Pinus radiata	Monterey pine	Patchy
Olea europaea	Olive	Patchy
Citrus sp.	Orange	Patchy
Prunus sp.	Ornamental plum	Patchy
Schinus sp.	Pepper tree	Patchy
Eucalyptus sideroxylon	Red ironbark	Patchy
Sequoia sempervirens	Redwood	Patchy
Albizia julibrissin	Silk tree	Patchy
Eucalyptus polyanthemos	Silver dollar gum	Patchy
Liquidambar styraciflua	Sweetgum	Patchy
Heteromeles arbutifolia	Toyon	Patchy
Liriodendron tulipifera	Tulip tree	Patchy
Unknown	Unknown dead tree	NA
Pinus sp.	Unknown pine	NA
Rosaceae	Unknown shrub	NA
Quercus lobata	Valley oak	Patchy
Washingtonia robusta	Washington fan palm	Patchy
Juniperus scopulorum	Weeping juniper	Patchy
Alnus rhombifolia	White alder	Patchy

REACH 4. Reach 4 is similar to the dry, upstream portion of Reach 3, and primarily hosts weedy upland species, very few transitional species, and no aquatic species. Trees are present on the edge of the channel in places and include coast live oak (*Quercus agrifolia*), holly oak (*Q. ilex*), Fremont cottonwood (*Populus fremontii*), and elm (*Ulmus* sp.). The majority of the plants present are the same non-woody, weedy upland species observed in all other reaches. No vegetation is present where the channel is

concrete-lined. Native and non-native trees and shrubs are widely scattered within the ROW in this reach, except on the sharp bend downstream of I-680 where a stand of mostly native trees occurs on the west bank. Isolated native arroyo willows (*Salix lasiolepis*), black elderberry (*Sambucus nigra*), coast live oak (*Quercus agrifolia*) and Fremont cottonwoods (*Populus fremontii*), are present north of the bend downstream of I-680. Isolated non-natives in this area are dominated by holly oaks (*Quercus ilex*), with a few Washington fan palms (*Washingtonia robusta*), Chinese photinia (*Photinia sp.)* and pines (*Pinus sp.).* The stand at the bend downstream of I-680 contains 27 trees, consisting of native coast live oaks, Fremont cottonwoods and non-native holly oaks. A line of 17 trees is found at the proposed staging area east of the bend below I-680, consisting of non-native horsetail trees (*Casuarina equisetifolia)* and weeping junipers (*Juniperus scopulorum*) (see Appendix F).

3.5.2.2. *Trees*

A botanical survey that included the project area found that the stream banks between Calaveras Boulevard and Montague Expressway were largely devoid of trees (EDAW 2006). Subsequent field investigations performed in August of 2014 (Tetra Tech 2014) and 2015 (HT Harvey, 2015) found similar conditions, although trees were identified in the overbank areas (beyond the access roads) in all reaches.

A 2008 tree inventory of the channel and overbank areas of Reaches 1–4 identified numerous trees, the largest of which was 30 inches in diameter at breast height (SCVWD 2008). Most trees were non-native or ornamental, although some native species including coastal live oaks and Fremont cottonwoods were identified. Approximately 120 trees were mapped in Reaches 1–3, and approximately 170 in Reach 4. A tree survey of the project area, including the proposed construction staging area and buffer areas within 5 ft of the ROW identified 432 trees and shrubs greater than 2 in diameter at breast height (DBH) within the survey area. Of those 432 trees and shrubs, 145 are native species (HT Harvey, 2015).

In general, trees are not dense enough and do not contain sufficient understory to provide riparian functions. In most cases, they are relatively small and set back well away from the banks; therefore, they do not provide significant shade or cooling effects to water in the stream. The exception to this is found at the upstream end of Reach 4, on the inside of the upstream 90+ degree bend (Figure 3.10). A stand of cottonwoods, coastal live oaks, and non-native holly oaks is present, and as they are found on a small bench below the top of the bank, this is considered riparian habitat and is under the jurisdiction of the California Department of Fish and Wildlife (CDFW) and SFBRWQCB. However, due to its limited area and location on a stretch of stream that is dry for much of the year, this riparian area does not provide cooling effects or other significant riparian functions.

One heritage tree, a valley oak *(Quercus lobata)*, is found within the current footprint of the proposed construction staging area at the UPRR yard, on the right bank downstream of Montague Expressway.

3.5.2.3. *Fish and Wildlife*

The project area provides discontinuous patches of highly disturbed wildlife habitat. The incised channel may provide a low quality corridor between the foothills and San Francisco Bay, as well as narrow refugia from the adjoining urban environment. Wildlife species present in the project area may include those well adapted to human disturbance and urbanized environments. Typical mammals include coyote (*Canis latrans*), raccoon (*Procyon lotor*), opossum (*Didelphia virginiana*), California ground squirrel (*Ostospermophilus beecheyi*), and various microtine rodents such as mice and pocket gophers

(*Thomomys* sp.). Exotic mammals include feral cats (*Felis domesticus*) and rats (*Ratus* sp.). Common bird species include great egret (*Ardea alba*), black-crowned night heron (*Nycticorax nycticorax*), killdeer (*Charadrius vociferus*), mallard duck (*Anas platyrhynchos*), mourning dove (*Zenaida macroura*), black phoebe (*Sayornis nigricans*), song sparrow (*Melospiza melodia*), house finch (*Carpodacus mexicanus*), and western scrub jay (*Aphelocoma californica*). Exotic bird species include house sparrow (*Passer domesticus*) and European starling (*Sturnus vulgaris*). One reptile species, the western fence lizard (*Sceloporus occidentalis*), would be considered common in the project area. Amphibians found in the area may include Pacific treefrog (*Hyla regilla*) and western toad (*Bufo boreas*).

Aquatic conditions within the project area are generally not supportive of fish. Due to high water temperatures, which reach as high as 84.7°F, migratory fish are not expected to occur in the project area, and suitable habitat is only found for mosquitofish *(Gambusia affinis)* and California roach *(Hesperoleucus symmetricus).*

3.5.2.4. *Special Status Species*

Special status species addressed in this section include plants and animals legally protected or otherwise considered sensitive by Federal, State, or local resource conservation agencies and organizations. The following list provides more specific descriptions of the categories for sensitive species and their habitats:

- Plant and wildlife species listed under the California Endangered Species Act (CESA) and/or the Federal Endangered Species Act (ESA) as threatened or endangered;
- Plant and wildlife species that are "candidates for listing" or "proposed for listing" under either the CESA or ESA;
- Species protected by the Federal Migratory Bird Treaty Act (MBTA) (16 USC 703-711), the Federal Bald and Golden Eagle Protection Act (16 USC 668), or California Fish and Game Code 3503.5;
- Wildlife species identified by CDFW as "California Species of Special Concern" because declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction; these species receive no formal protection under the California Fish and Wildlife Code; and
- Plants considered by the California Native Plant Society (CNPS) to be "rare," "threatened," or "endangered", all of which are listed under the California Rare Plant Rank of "1B", or Plants Rare, Threatened, or Endangered in California, and Elsewhere.

Searches of the California Natural Diversity Database (CNDDB) (CDFW 2014), CNPS database, and U.S. Fish and Wildlife Service (USFWS) database were conducted to identify all special status plant and wildlife species that may occur in the project vicinity. The likelihood of occurrence of each species in the proposed project area was determined by assessing historical and current distributions, supporting habitat availability and quality, and by performing field surveys.

3.5.2.5. *Special Status Plants*

Database searches from USFWS and CNDDB (which includes CNPS) identified 13 special status plant species that may occur in the proposed project area quadrangle (i.e., Milpitas [3712148]) (Table 3.11). Of these, three are federally endangered, all are ranked 1B by California Rare Plant Ranks, and none are listed under the CESA. None of these species are likely to occur in the proposed project area due to lack of supporting habitat features (CDFW 2014), and are absent from the Species Occurrence Data provided

by CNDDB for the proposed project area (CDFW 2014). Evidence of these species and their habitat features was not detected during a baseline biological survey that was performed throughout the project area in August 2014. Because the listed special status plant species identified in Table 3.11 are all unlikely to be present, no further analysis is provided.

Table 3.11 Special Status Plants Species Possibly Occurring in the Project Vicinity

Scientific Name	Common Name	Federal/ State/ CNPS	Habitat	Potential of Occurrence
Acanthominta duttonii	San Mateo thornmint	E/-/1B.1	Serpentine, chaparral	Unlikely; no suitable habitat
Astragalus tener var. *tener*	Alkali milk-vetch	-/-/1B.2	Playas, vernal-pools, in and out of wetlands	Unlikely; no suitable habitat
Atriplex depressa	Brittlescale	-/-/1B.2	Playas, in and out of quality wetlands	Unlikely; no suitable habitat
Atriplex joaquinana	San Joaquin spearscale	-/-/1B.2	Meadows, upland only	Unlikely; no suitable habitat
Atriplex minuscula	Lesser saltscale	-/-/1B.1	Non-wetland playas	Unlikely; no suitable habitat
Castilleja affinis ssp. neglecta	Tiburon paintbrush	E/-/1B.2	Serpentine grasslands	Unlikely; no suitable habitat
Ceanothus ferrisae	Coyote ceanothus	E/-/1B.1	Chaparral, coastal scrub	Unlikely; no suitable habitat
Centromadia parryi ssp. *congdonii*	Congdon's tarplant	-/-/1B.1	Valley and foothill grassland (alkaline)	Unlikely; no suitable habitat
Chloropyron maritimum ssp. *palustre*	Point Reyes salty bird's-beak	-/-/1B.2	Coastal salt marshes and swamps	Unlikely; no suitable habitat
Chorizanthe robusta var. *robusta*	Robust spineflower	E/-/1B.1	Sandy or gravelly chaparral (maritime), cismontane woodland (openings), coastal dunes, coastal scrub	Unlikely; no suitable habitat
Cirsium fontinale var. fontinale	Fountain thistle	E/-/1B.1	Serpentine grasslands	Unlikely; no suitable habitat
Dudleya setchellii	Santa Clara Valley dudleya	E/-/1B.1	Serpentine grasslands	Unlikely; no suitable habitat
Eryngium aristulatum var. *hooveri*	Hoover's button-celery	-/-/1B.1	Vernal pools	Unlikely; no suitable habitat
Eriophyllum latilobum	San Mateo woolly sunflower	E/-/1B.1	Serpentine woodlands	Unlikely; no suitable habitat
Hesperolinon congestum	Marin dwarf-flax	T/-/1B.1	Serpentine grasslands	Unlikely; no suitable habitat
Scientific Name	**Common Name**	**Federal/ State/ CNPS**	**Habitat**	**Potential of Occurrence**
Scientific Name	Common		Scientific Name	Common
Holocarpha macradenia	Santa Cruz tarplant	T/-/1B.1	Coastal prairie, coastal scrub	Unlikely; no suitable habitat
Lasthenia conjugens	Contra Costa goldfields	E/-/1B.1	Vernal pools, usually occurs in wetlands, but	Unlikely; no suitable habitat

			occasionally found in non-wetlands	
Malacothamnus hallii	Hall's bush-mallow	-/-/1B.2	Chaparral and coastal scrub	Unlikely; no suitable habitat
Navarretia prostrata	Prostrate vernal pool navarretia	-/-/1B.1	Mesic: coastal scrub, meadows and seeps, valley and foothill grassland (alkaline), vernal pools	Unlikely; no suitable habitat
Suaeda californica	California seablite	E/-/1B.1	Endemic to the coastal zone	Unlikely; no suitable habitat
Trifolium hydrophilum	Saline clover	-/-/1B.2	Marshes and swamps, valley and foothill grassland (mesic, alkaline), vernal pools	Unlikely; no suitable habitat
Sources: CDFW 2014, USFWS 2013 E= Endangered T= Threatened				

3.5.2.6. *Special Status Fish and Wildlife*

Database searches from USFWS and CNDDB (which include State and CDFW listings) identified 15 special status fish and wildlife species that may occur in the proposed project area quadrangle (i.e., Milpitas [3712148]) (Table 3.12). Of these, six are federally threatened or endangered, five are State threatened or endangered, and 14 are CDFW species of special concern or fully protected. In addition, the USFWS stated on December 31, 2014 that a petition from an external party received by USFWS contained substantial information indicating that listing of the Monarch butterfly may be warranted. USFWS is conducting a status review for the monarch butterfly.

Supporting habitat features for most of these species were not identified in the proposed project area, and the Coordination Act Report confirmed that they would not be affected by the proposed project (USFWS 2013). These species are absent from the Species Occurrence Data provided by CNDDB for the proposed project area (CDFW 2014), and evidence of their presence or necessary habitat features was not detected during a baseline biological survey conducted in August 2014 (Tetra Tech 2014). Although there is little potential of occurrence for these species, some may occasionally move through in search of higher quality habitat but would not likely remain for an extended period of time. Known occurrences and supporting habitat have been identified in the surrounding area (CDFW 2014), including downstream of I-880 and upstream of I-680, but not in the project area. Listed and special status fish and wildlife species that were identified as possibly occurring in the project area are identified in Table 3.12.

Table 3.12 Special Status Fish and Wildlife Species Possibly Occurring in the Project Vicinity				
Scientific Name	**Common Name**	**Federal ESA/State ESA/CDFW**	**Habitat**	**Potential of Occurrence**
Invertebrates				
Branchinecta conservatio	Conservancy fairy shrimp	E/-/-	Vernal pools	**Unlikely**; no suitable habitat
Branchinecta lynchi	Vernal pool fairy shrimp	T/-/-	Vernal pools	**Unlikely**; no suitable habitat
Desmocerus californicus dimorphus	Valley elderberry longhorn beetle	T/-/-	Elderberry thickets	**Unlikely**; no suitable habitat
Euphydryas editha bayensis	Bay checkerspot butterfly	T/-/-	Coastal scrub and grasslands	**Unlikely**; no suitable habitat
Lepidurus packardi	Vernal pool tadpole shrimp	E/-/-	Occur in vernal pools	**Unlikely**; no suitable habitat
Fish				
Acipenser medirostris	Green sturgeon	T/-/SC	Bays and estuaries	**Unlikely**; no suitable habitat
Eucyclogobius newberryi	Tidewater goby	E/-/SC	Tidal estuaries	**Unlikely**; no suitable habitat
Hypomesus transpacificus	Delta smelt	T/E/-	Low salinity, turbid, tidal environments	**Unlikely**; no suitable habitat
Oncorhynchus kisutch	Coho salmon - central CA coast	Endangered	Central California coastal rivers	**Unlikely**; no suitable habitat
Oncorhynchus mykiss	Central California Coastal steelhead	T/-/-	Drainages of San Francisco and San Pablo bays, central California coastal rivers	**Unlikely**; no suitable habitat
Oncorhynchus tshawytscha	Central Valley spring-run chinook salmon	T/T/-	Drainages of San Francisco and San Pablo bays, central California coastal rivers	**Unlikely**; no suitable habitat
Spirinchus thaleichthys	Longfin smelt	C/T/SC	Wide range of temperature and salinity conditions in coastal waters near shore, bays, estuaries, and rivers	**Unlikely**; no suitable habitat
Amphibians				
Ambystoma californiense	California tiger salamander	T/T/SC	Ponds, streams, drainages, and associated uplands	**Unlikely**; no suitable habitat
Rana draytonii	California red-legged frog	T/-/SC	Dense, shrubby, or emergent riparian vegetation and aquatic habitat	**Unlikely**; no suitable habitat
Reptile				
Emys marmorata	Western pond turtle	-/-/SC	Shallow, flowing streams, with some cobble-sized substrate	**Unlikely**; no suitable habitat
Gambelia (=Crotaphytus) si/a	Blunt-nosed leopard lizard	E/E/FP	Valley grasslands and alkali scrublands	**Unlikely**; no suitable habitat
Masticophis lateralis euryxanthus	Alameda whipsnake [=striped racer]	T/T/-	Coastal scrub and chaparral communities	**Unlikely**; no suitable habitat
Thamnophis gigas	Giant garter snake	T/T/-	Marshes, lake edges, flooded fields	**Unlikely**; no suitable habitat
Thamnophis sirtalis tetrataenia	San Francisco garter snake	E/E/FP	Coastal marsh habitats	**Unlikely**; no suitable habitat
Birds				
Brachyramphus marmoratus	Marbled murrelet	T/E/-	Offshore pelagic areas, old growth coniferous forest	**Unlikely**; no suitable habitat

Scientific Name	Common Name	Federal ESA/State ESA/CDFW	Habitat	Potential of Occurrence
Charadrius alexandrinus nivosus	Western snowy plover	T/-/SC	Nest near tidal waters, forages in sandy coastal beaches, salt ponds and gravel bars	**Unlikely**; no suitable habitat
Rallus longirostris obsoletus	Ridgway's clapper rail	E/E/FP	Requires saltwater marshes with tidal sloughs and forages in tidal mud flats. Usually associated with pickleweed	**Unlikely**; no suitable habitat
Agelaius tricolor	Tricolored blackbird	-/-/SC	Colonial nester in emergent freshwater marshes; heavy cattail, tule growth	**Unlikely**; no suitable habitat
Geothlypis trichas sinuosa	Saltmarsh common yellowthroat	-/-/SC	Salt marshes	**Unlikely;** no suitable habitat
Melospiza melodia pusillula	Alameda song sparrow	-/-/SC	Tidal marshes along the fringes of south San Francisco Bay	**Unlikely;** no suitable habitat
Athene cunicularia	Burrowing owl	-/-/SC	Open, dry annual or perennial grassland, deserts and scrublands characterized by low-growing vegetation, subterranean nester in small mammal burrows	**Possible but Unlikely;** very limited, poor quality habitat
Elanus leucurus	White-tailed kite	-/-/FP	Large areas of open grasslands, meadows, marshes, dense-topped trees for resting	**Unlikely;** no suitable habitat
Pelecanus occidentalis californicus	California brown pelican	D/D/FP	Marine environments, bays and estuaries	**Unlikely**; no suitable habitat
Sternula antillarum (=Sterna, =albifrons) browni	California least tern	E/E/FP	Open, gravelly fields near estuaries, lakes, or rivers	**Unlikely**; no suitable habitat
Vireo belii pusillus	Least Bell's vireo	E/E/FP	Riparian forest with dense understory	**Unlikely**; no suitable habitat
Mammals				
Corynorhinus townsendii	Townsend's big-eared bat	-/C/SC	Roosts in caves, old building, and occasionally under abandoned bridges; forages in edge habitats along streams and areas adjacent to and within a variety of woodland habitats	**Possible but Unlikely;** only very low quality habitat present and extensive human disturbance.
Reithrodontomys raviventris	Salt-marsh harvest mouse	E/E/FP	Breeds and forages primarily in pickleweed marshes; uses adjacent upland areas with tall vegetation for cover	**Unlikely**; no suitable habitat
Sorex vagrans halicoetes	Salt-marsh wandering shrew	-/-/SC	Inhabit a narrow band of pickleweed marsh that is tidally inundated daily	**Unlikely**; no suitable habitat
Vulpes macrotis mutica	San Joaquin kit fox	E/T/-	Oak savannah, open grasslands	**Unlikely**; no suitable habitat
Sources: CDFW 2014, USFWS 2013 E= Endangered, T=Threatened, D=Delisted, FP=Fully Protected, SC=Species of Special Concern				

Of the species identified in Table 3.12, possible habitat occurs only for the burrowing owl and Townsend's big-eared bat, as described below. Therefore, no further analysis is provided for the other species.

BURROWING OWL. The burrowing owl (*Athene cunicularia*) is primarily a grassland species, but it persists in some landscapes highly altered by human activity. The overriding characteristics of suitable habitat appear to be burrows for roosting and nesting and relatively short vegetation with only sparse shrubs and taller vegetation. In urban areas, burrowing owls persist in low numbers on highly developed parcels such as airfields, in busy urban parks, and adjacent to roads with heavy traffic. Nest and roost burrows of this species in California are most commonly dug by ground squirrels (*Spermophilus beecheyi*), but they may also use badger (*Taxidea taxus*), coyote (*Canis latrans*), and fox (*Vulpes* sp.) holes. Their diet includes a broad array of arthropods (centipedes, spiders, beetles, crickets, and grasshoppers), small rodents, birds, amphibians, reptiles, and carrion. Because of their need for open habitat with low vegetation, burrowing owls are unlikely to persist in urban environments with higher densities of development. Also, developed environments pose a substantial risk to burrowing owls primarily due to mortality from collisions with vehicles. Little habitat exists that would support burrowing owls in the study area and no sign of this species was observed during the wildlife field survey, making it unlikely that they are present.

TOWNSEND'S BIG-EARED BAT. The only special status mammal for which habitat occurs in the project area is the Townsend's big-eared bat *(Corynorhinus townsendii)*. This species may occur in old mines, abandoned buildings, or old bridges that contain crevices or other contours in which bats may roost. A bat survey performed in the project area in 2005 (HT Harvey 2005) found no bats or signs of bats, and also found that almost all bridges had flat bottoms, which provide no crevices for roosting habitat. The UPRR railroad trestle was found to offer day roosting habitat where spaces occurred between the timbers of the bridge, but no evidence of the presence of bats was detected. This species is very sensitive to human disruption and is considered unlikely to occur in the study area.

3.5.2.7. *Wetlands and Waters of the U.S.*

Waters of the U.S., as defined under the Federal Clean Water Act, are found in Upper Berryessa Creek within the project area (Tetra Tech 2015b). Formal Wetlands/Waters of the U.S. delineations were performed in 2005 and 2014 to locate and quantify these resources. Spatial dimensions of these features are presented in Table 3.13, below, and are presented on maps in Appendix C. The 2014 delineation did not map fringing wetlands separately from Other Waters of the U.S., due to their small size and patchy distribution, location below OHWM, lack of hydric soils, and minimal ecological influence on the primarily riverine system. is the 2014 delineation estimated that less than 0.5 acre of patchy fringe aquatic habitat is present within the area of Other Waters of the U.S., and is present mostly north of the confluence of Piedmont Creek and Upper Berryessa Creek (around the upstream extent of surface water). The wetland delineation prepared by USFWS in 2005 identified 0.39 acre of jurisdictional wetlands in this reach (USFWS 2005). The amount of wetland vegetation and its exact location within the creek channel varies from season to season and year to year depending on water conditions and the amount of bed and bank erosion. The 2014 survey did not include a detailed mapping of vegetated other waters of the U.S.; instead the 2014 survey estimated vegetated other waters of the U.S. (i.e. fringing wetlands) occurring in the project area at less than 0.5 acre. The 2014 estimate is reasonably consistent with the 0.39 acre of vegetated other waters of the U.S. found in the 2005 delineation. Differences between the 2005 and 2014 surveys are due to seasonal and year to year variations in the extent of vegetative growth.

Table 3.13 Summary of Waters of the U.S./State and Vegetated Other Waters of the U.S. and State within the Project Area*				
Waters or Wetland	**Location**	**Description**	**Acres, Reaches 1-3**	**Acres, Reach 4**
Waters of the U.S. /State	Berryessa Creek Upstream of Calaveras Blvd. and Los Coches and Piedmont Creeks near confluences with Berryessa Creek	Intermittent Stream	3.06 / 3.06	1.12/ 1.12
Vegetated other waters of the U.S. and other waters of the State (i.e. fringing wetlands)**	Lower Piedmont Creek, and Berryessa Creek north of Ames Avenue	Riverine: Occasionally Flooded, Floodplain, herb-dominated [1]	< 0.5	0
[1]Cowardin 1979 *Based on Tetra Tech 2015a. A previous wetland delineation prepared by the USFWS identified 0.39 acre of jurisdictional wetlands. **These other waters are also included in Waters of the U.S./State.				

According to the USACE manual and implementing guidance, there must be positive indicators of each parameter (hydrophytic vegetation, hydrology, and hydric soils) present to make a wetland determination. The less than 0.5 acre of fringing wetlands lack the hydric soils criteria and do not qualify as federal jurisdictional wetlands. They consist of wetland vegetation growing within other waters of the U.S. The fringing wetlands are located within waters of the State.

Functionally, the survey area exhibited distinct elements of a riverine system, and the fringing aquatic vegetation present was small, patchy, and located within the boundaries of the OHWM. Evidence suggests the system is highly dynamic due to the flashy flows it receives during the wet season, and because of maintenance activities, which combine to alter vegetation and soils (when maintenance requires erosion control or other earthwork) on a regular basis. The engineered structure of the channel further prevents the development of wetland features, due to the system being designed to efficiently move storm flows.

3.5.2.8. *Waters of the State of California*

Waters of the State as regulated by RWQCB generally correspond to Waters of the U.S. As described in Section 3.5.2.7, fringing wetlands were identified in Reaches 1–3, downstream of Ames Avenue. As reported above, because most areas lacked at least one of three wetland indicators but exhibited clear indicators of OHWM, the majority of Upper Berryessa Creek was delineated as Other Waters of the State (Tetra Tech 2015b). Waters of the State within the project area includes 4.18 acres that were also identified as Waters of the U.S.

3.5.2.9. *Sensitive Natural Communities*

CDFW and other agencies designate areas with important functions or values, those that are clearly declining in extent or distribution, or those that are threatened as sensitive natural communities. Sensitive natural communities include shaded riparian aquatic, oak woodlands, riparian areas, wetlands, or fescue (bunchgrass) grasslands. If present, these communities are reported by the CNDDB. The CNDDB does not list any sensitive natural communities in the area. Other than wetlands, which are covered in Section 3.5.2.7, the only other sensitive natural community is a small stand of riparian forest

located in the upstream part of Reach 4. This forest includes native and non-native trees, primarily Fremont cottonwood, coast live oak, and holly oak, and covers 0.18 acre.

3.5.3. Regulatory Setting

3.5.3.1. *Federal Regulations*

FEDERAL CLEAN WATER ACT (CWA)/CALIFORNIA PORTER-COLOGNE ACT. The CWA has provisions for protecting biological resources within the aquatic environment through identification of beneficial uses and regulation of discharges of dredge/fill material into waters of the U.S. Section 404 of the Clean Water Act requires the USACE regulatory section to issue Section 404 permits for discharges of dredged or fill material into waters of the U.S. Although the USACE does not process and issue Section 404 permits for its own activities (such as construction of the proposed project), it authorizes its own discharges by applying all substantive legal requirements and by conducting a Section 404(b)(1) Guidelines analysis. 33 CFR 336.1(a). Under the Section 404(b)(1) Guidelines, a proposed discharge is not allowed if there is a less environmentally damaging practicable alternative that would have less effect on the aquatic ecosystem, and not have other significant adverse environmental impacts (40 CFR 230 et seq).

USACE regulations generally require USACE to seek Section 401 water quality certification for USACE projects involving a discharge into waters of the U.S. even though USACE does not issue itself a Section 404 permit. However, the proposed project, as a project authorized by Congress that has completed an EIS, qualifies for exemption under 33 U.S. Code 1344(r).

ENDANGERED SPECIES ACT. The USFWS and National Marine Fisheries Service (NMFS) have jurisdiction over species listed as threatened or endangered under the Federal Endangered Species Act of 1973, as amended and candidate species proposed for listing. The ESA protects listed species from harm, or "take," which is broadly defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." For any project with a Federal nexus that affects a listed species, the Federal agency must consult with the USFWS and/or NMFS Fisheries under Section 7 of the ESA. For projects without a Federal nexus, the lead agency must consult with USFWS and/or NMFS under Section 10 of the ESA. Under the ESA, critical habitat may be formally designated by the USFWS or NMFS for survival and recovery of listed species. Critical habitat designations are specific areas within a geographic region that are occupied by a species and determined to be critical to its survival in accordance with the ESA. The project area does not include designated critical habitat for any ESA-listed species.

FISH AND WILDLIFE COORDINATION ACT. The Fish and Wildlife Coordination Act (FWCA) of 1958, as amended ensures that fish and wildlife receive consideration equal to that of other project features for projects that are constructed, licensed, or permitted by Federal agencies. The FWCA requires that the views of USFWS, NMFS, and the applicable State fish and wildlife agency (in this case CDFW) be considered when impacts are evaluated and mitigation needs determined.

The USACE requested coordination with USFWS under the FWCA, and a Coordination Act Report was issued in April of 2014 (USFWS 2013). USFWS summarized the USACE's finding that: (1) the project area has poor to non-existent wildlife habitat due to channelization and vegetation removal; (2) the only fish species that may occur include mosquitofish and the California roach, both of which are adapted for life

in shallow, warm, stagnant water, and which are likely only to occur between Calaveras and Piedmont Creek where there are constant flows; and (3) that there is no habitat for State or Federal listed species.

The CAR recognized two fish and wildlife habitat types that may be affected by the proposed project, including emergent wetland and annual grassland. USFWS recommends that the project sponsors minimize loss of annual grassland habitat, which they ranked as "Resource Category 4" due to its low value, and ensure that the project results in no net loss of emergent wetlands, which they ranked as a "Resource Category 2" due to their relative scarcity. The USFWS also recommended that the USACE:

- Avoid impacts to native trees, shrubs, and aquatic vegetation within and adjacent to the site to the extent possible. If native trees or shrubs with a diameter at breast height (dbh) of 2 inches or greater is encountered and cannot be avoided, it should be replaced in-kind so that the combined diameter of the container plantings is equal to the combined diameter of the trees removed.
- Avoid impacts at the site by ensuring that any fill material used for construction is free of contaminants.
- Avoid impacts to migratory birds nesting in trees along the access routes and adjacent to the proposed sites by conducting preconstruction surveys for active nests along proposed haul roads, staging areas, and construction sites. This would be especially important if construction begins in spring. Work activity around active nests should be avoided until the young have fledged.
- Minimize impacts by reseeding all disturbed areas at the completion of construction with native forbs and grasses.
- Minimize impacts of removal and/or trimming any trees and shrubs by having these activities supervised or completed by a certified arborist.
- Implement as described all mitigation measures in Chapter 5 of the March 2013 Draft GRR/EIS.
- Continue to work with the Service and other resource agencies to quantify project effects and determine mitigation needs as modifications to the proposed project develop.

MIGRATORY BIRD TREATY ACT. The MBTA of 1918 implements a series of international treaties that provide for migratory bird protection. The MBTA authorizes the Secretary of the Interior to regulate the taking of migratory birds. The act provides that it shall be unlawful, except as permitted by regulations, "to pursue, take, or kill any migratory bird, or any part, nest or egg of any such bird…" (16 USC 703). This prohibition includes both direct and indirect acts, although harassment and habitat modification are not included unless they result in direct loss of birds, nests, or eggs. The current list of species protected by the MBTA includes several hundred species and essentially includes all native birds. Permits for take of non-game migratory birds can be issued only for specific activities, such as scientific collecting, rehabilitation, propagation, education, taxidermy, and protection of human health, safety, and personal property.

BALD AND GOLDEN EAGLE PROTECTION ACT. The Bald and Golden Eagle Protection Act (16 USC 668-668c) prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald or golden eagles, including their parts, nests, or eggs. The Act provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof." The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."

3.5.3.2. *State Regulations*

CALIFORNIA ENDANGERED SPECIES ACT. Pursuant to CESA, a permit from CDFW is required for projects that could result in the "take" of a plant or animal species that is State-listed as threatened or endangered. Under CESA, "take" is defined as an activity that would directly or indirectly kill an individual of a species. The CESA definition of take does not include "harming" or "harassing," as the Federal ESA definition does. Therefore, the threshold for take is higher under CESA than under ESA. A State or local public agency reviewing a proposed project within its jurisdiction must determine whether any State-listed endangered or threatened species may be present in the program area and determine whether the project would have a significant impact on such species. In addition, CDFW encourages informal consultation on any proposed project that could affect a candidate species. For the potential taking of individual animals listed under CESA, Fish and Game Code Sections 2080.1 and 2081 provide for issuance of an incidental take permit. CDFW will issue an incidental take permit only if: (1) the authorized take is incidental to an otherwise lawful activity; (2) the impacts of the authorized take are minimized and fully mitigated; and (3) adequate funding is provided to implement the minimization and mitigation measures.

PORTER-COLOGNE WATER QUALITY CONTROL ACT. Under the Porter-Cologne Water Quality Control Act, all waters of the U.S. that are within the borders of California are also waters of the state, which also include additional waters not regulated by the Clean Water Act. The SWRCB has jurisdiction to require Waste Discharge Requirements (WDRs) for discharges of dredged or fill material into waters of the state. It is currently developing a "Wetland Area Protection and Dredge and Fill Permitting Policy" to guide issuance of such WDRs (SWRCB 2015).

CALIFORNIA FISH AND GAME CODE SECTIONS 1600-1616. Under Sections 1600-1616, CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream or lake, which support fish or wildlife (i.e., bed to bank). The CDFW defines a "stream" (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." The CDFW has interpreted the term "streambed" to encompass all portions of the bed, banks, and channel of any stream, including intermittent and ephemeral streams, extending laterally to the upland edge of riparian vegetation.

CALIFORNIA FISH AND GAME CODE SECTIONS 3503 AND 3503.5 PROTECTION OF BIRD NESTS AND RAPTORS. Section 3503 of the California Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 specifically states that it is unlawful to take, possess, or destroy any raptors (i.e., species in the orders falconiformes and strigiformes), including their nests or eggs. Typical violations of these codes include destruction of active nests resulting from removal of vegetation in which the nests are located. Violation of Section 3503.5 could also include failure of active raptor nests resulting from disturbance of nesting pairs by nearby project construction. This statute does not provide for the issuance of any type of incidental take permit.

CALIFORNIA FISH AND GAME CODE FULLY PROTECTED SPECIES. Protection of fully protected species is described in Sections 3511, 4700, 5050, and 5515 of the California Fish and Wildlife Code. These statutes prohibit take or possession of fully protected species and do not provide for authorization of incidental take of fully protected species.

3.5.3.3. *Local Plans and Policies*

Natural resource conservation policies are provided under the Santa Clara County General Plan (Santa Clara County 1994), the City of San Jose General Plan (2011), and the City of Milpitas General Plan (City of Milpitas 2002). These policies contain measures to protect and restore habitat quality, biodiversity, watershed functions, water quality, heritage trees, soils, sensitive species, and open space. These measures provide guidance for planning land uses, recreation, water treatment, point and non-point source pollution control, and use of pesticides and herbicides, amongst other topics.

CITY OF MILPITAS CODE OF ORDINANCES. The Tree Maintenance and Protection Ordinance of the City of Milpitas regulates the removal of trees that contribute significantly to the value of land, preservation of resources, and quality of life in the City of Milpitas (City of Milpitas Municipal Code, Chapter 2, X-2-1.01 to X-2-13.02). The ordinance provides protection to trees that are 56-in diameter or more at breast height (dbh or 4.5 ft above ground level), trees in residential neighborhoods or trees that are 37-in or more dbh in commercial, industrial, or underdeveloped or vacant land. The City of Milpitas Tree Maintenance and Protection Ordinance requires a permit of anyone proposing to remove trees within the City limits that meet the following criteria:

- All trees (including non-natives) which have a 56-inch or greater circumference of any trunk measured 4.5 feet from the ground and located on developed residential property;
- All trees which have a 37-inch or greater circumference of any trunk measured 4.5 feet from the ground and located on developed commercial or industrial property;
- All trees which have a 37-inch or greater circumference of any trunk measured 4.5 feet from the ground, when removal relates to any transaction for which zoning approval or subdivision approval is required; also any tree existing at the time of a zoning or subdivision approval which was a specific subject of such approval or otherwise covered by previously mentioned provisions;
- All trees which have a 37-inch or greater circumference of any trunk measured 4.5 feet from the ground and located on a vacant, undeveloped or underdeveloped property; and
- All heritage trees or groves of trees.

Trees that fall under the protection of this ordinance require replacement or compensation under Section 9 of the code (X-2-9.01). A permit for removal must be obtained by the Public Works Department prior to removal (X-2-4.01). However, the City may remove any trees or other plantings that constitute a hazard or may endanger public health, safety or property, or which constitute an obstruction to the vision of traffic (X-2-5.01-1).

A tree or grove of trees may be designated as a heritage tree or heritage tree grove upon a finding that it is unique and of importance to the community due to any of the following factors: (1) it is an outstanding specimen or grove of a desirable species; (2) it is one of the largest or oldest trees or grove of trees in Milpitas; and/or (3) the tree or grove of trees possesses distinctive form, size, age, location, and/or historical significance.

For trees requiring a permit to remove, the City of Milpitas Public Works Department may require replacement by the permittee through the compensation methods described in the ordinance. These involve reimbursing the City for the costs of removing and replacing the trees or the value of the removed trees. However, USACE, the federal agency constructing the proposed project, is not subject to the procedural requirements of the Milpitas Tree Maintenance and Protection Ordinance.

ENVISION SAN JOSE 2040 GENERAL PLAN. The Community Forest Element contains goals to protect trees and the aesthetic, biological, and cultural functions they provide. Goal MS-21 specifies numerous measures and actions that outline San Jose's strategy to preserve trees, and to replace those that are affected during construction.

CITY OF SAN JOSE TREE ORDINANCE. City ordinance requires a permit to remove a tree greater than 56 inches in circumference (approximately equal to 18 inches in diameter) at two feet above ground level if it is located on private property or along a public street. The ordinance does not apply to trees located on public property. The City has also designated over 100 trees located throughout the City as heritage trees due to their size, history, unusual species, or unique qualities.

SANTA CLARA VALLEY HABITAT CONSERVATION PLAN. The proposed project is not subject to the Santa Clara Valley Habitat Conservation Plan (HCP) because the HCP exempts projects led by the USACE from the plan; however, information on the HCP is provided for informational purposes. The upstream portion of Reach 4 is within the City of San Jose and is within the plan area of the Santa Clara Valley HCP (Santa Clara Valley Habitat Agency, August 2012). The HCP is a 50-year conservation plan designed to protect and conserve habitat for a number of State and Federally-listed special status species. The plan has been approved by the USFWS in conformance with the ESA, the CDFW in conformance with the California ESA, and the USACE in conformance with the Clean Water Act. The HCP includes modeling of habitat for special status species, including plants, mammals, reptiles, amphibians, birds, and insects. The portion of the project area within the HCP area is not modeled as habitat for any of the special status species addressed by the plan. The project area is within the conservation zone for burrowing owl (*Athene cunicularia hypugaea*), but does not contain occupied or overwintering habitat for the burrowing owl. The burrowing owl is a protected species under the Federal Migratory Bird Treaty Act and a California Species of Special Concern.

3.5.4. Significance Criteria

The proposed project would result in a significant impact related to biological resources if it would:

- **BIO-1** Have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS;
- **BIO-2** Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW, SFBRWQCB, or USFWS, or on healthy stands of trees and/or shrubs;
- **BIO-3** Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, and coastal) through direct removal, filling, hydrological interruption, or other means;
- **BIO-4** Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- **BIO-5** Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- **BIO-6** Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State Habitat Conservation Plan.

3.5.5. Potential Impacts

3.5.5.1. *Significance Criteria with Potential Impacts*

BIO-1 HAVE A SUBSTANTIAL ADVERSE EFFECT, EITHER DIRECTLY OR THROUGH HABITAT MODIFICATION, ON ANY SPECIES IDENTIFIED AS CANDIDATE, SENSITIVE, OR SPECIAL STATUS SPECIES IN LOCAL OR REGIONAL PLANS, POLICIES, OR REGULATIONS, OR BY THE CDFW, OR USFWS

Less than significant for construction; less than significant for operations

CONSTRUCTION (REACHES 1–3). The project area is highly disturbed and habitat complexity is minimal. Ongoing disturbances in the form of noise, traffic, maintenance actions, and human presence diminish the potential that the project area would host special status species. As determined in the Coordination Act Report (USFWS 2013) prepared for the USACE during preparation of the GRR-EIS (USACE 2014), the project area offers little to no habitat for listed species.

Possible aquatic habitat for the western pond turtle *(Clemmys marmorata)* was identified below Los Coches Street during preparation of the Berryessa Creek Project GRR/EIS (USACE 2014). However, other habitat components including upland ovipositing sites and rocks and logs for basking and haul-out sites do not occur in the project area. The potential for occurrence of this species in the project area, as well as impacts to this species, is considered to be very low.

The Berryessa Creek Project GRR/EIS also identified possible impacts to western big-eared bats during modification of bridges and culverts. There will be no modification of bridges under the proposed project, and a survey of the project area found only marginal day roosting habitat at the UPRR rail bridge downstream of Montague Expressway (H.T. Harvey, 2005). The survey also concluded that bats are not expected to roost at this crossing due to its low height. Although bats may forage in the project area, they are considered unlikely to roost or breed in the project area, and the potential for impacts is less than significant.

Based on the above analysis, construction impacts to special status species in Reaches 1 to 3 would be less than significant.

CONSTRUCTION (REACH 4). Part of Reach 4 is within the Valley HCP conservation zone for burrowing owl, but does not contain occupied or overwintering habitat for the burrowing owl (Santa Clara Valley Habitat Agency, 2012). The burrowing owl is a protected species under the Federal Migratory Bird Treaty Act and a California Species of Special Concern. Since no habitat would be affected, no impacts to the burrowing owl would result.

Based on the above analysis, construction impacts to special status species in Reach 4 would be less than significant.

OPERATIONS (ALL REACHES). Most future maintenance activities at the project area would occur under the District's ongoing and permitted SMP2 program, and would not occur as a result of the proposed project. The only operation and maintenance activities that would result from the project are periodic inspections of floodwalls. No impacts to special status species would result.

BIO-2 HAVE A SUBSTANTIAL ADVERSE ~~AND UNMITIGATED~~ EFFECT ON ANY RIPARIAN HABITAT OR OTHER SENSITIVE NATURAL COMMUNITY IDENTIFIED IN LOCAL OR REGIONAL PLANS, POLICIES, REGULATIONS, OR BY THE CDFW, OR USFWS, OR ON HEALTHY STANDS OF TREES AND SHRUBS

Less than significant with mitigation for construction; less than significant for operations

And,

BIO-3 HAVE A SUBSTANTIAL ADVERSE ~~AND UNMITIGATED~~ EFFECT ON FEDERALLY-PROTECTED WETLANDS AS DEFINED BY SECTION 404 OF THE CWA (INCLUDING, BUT NOT LIMITED TO, MARSH, VERNAL POOL, COASTAL, ETC.) THROUGH DIRECT REMOVAL, FILLING, HYDROLOGICAL INTERRUPTION, OR OTHER MEANS

Less than significant for construction; less than significant for operations

CONSTRUCTION (REACHES 1–3)~~.~~

Other than areas of wetlands vegetation and riparian habitat, Reaches 1-3 do not contain any sensitive natural communities that would be affected by the proposed project. The proposed project would affect approximately 5 acres of annual grassland habitat and small areas of in-channel vegetation and top of banks trees and shrubs found in Reaches 1–3. This impact is less than significant because annual grassland and scattered trees and shrubs are not a sensitive natural community and provide minimal habitat value. Nonetheless, USFWS recommended that impacts to annual grassland habitat be minimized because it provides foraging habitat for raptors. USFWS also found that the project would result in no net loss of emergent wetlands vegetation (USFWS, 2013).

Under the proposed project, 3.06 acres of Waters of the U.S. / State would be temporarily removed during the construction period. This area includes less than 0.5 acre of fringing, non-jurisdictional wetlands vegetation found between Ames Avenue and Calaveras Boulevard. The entire area of Waters of the U.S. / State, including the fringing wetland vegetation, would be affected by excavation during construction, and wetland vegetation would be removed and either composted or disposed of offsite. This type of effect was assessed in District studies that found that wetland vegetation quickly re-establishes following sediment removal projects. The "Instream Wetland Vegetation Regrowth Study" performed by Rankin and Hillman and described in SCVWD, 2001, found 65 percent and 98 percent average regrowth within one and two years, respectively, after 1997 sediment removal at six non-tidal freshwater study sites. The study also found that vegetation dominance and quality, as represented by vegetation type, total percent cover of vegetation, and relative percent cover of native and invasive species, were similar between pre-and post-project years. It is anticipated that wetland and transitional vegetation would respond similarly and regenerate naturally over the course of the first two growing seasons, and since the bottom width of the stream channel would be wider than under existing conditions, additional areas of wetland plant communities are likely to form. Additionally, the project sponsors would spread native wetlands seeds in the channel bed at the conclusion of construction to promote accelerated re-growth of native wetlands vegetation. Because wetland vegetation would regrow after construction is complete and the area of wetlands vegetation would increase when compared to the existing condition, this impact would be less than significant.

Concrete would be used to replace existing hardscape beneath and upstream of all bridges and culverts downstream of Montague Expressway, to replace the UPRR trestle, and to form floodwalls. Rock revetment would primarily be used around stormwater outfalls. In general, these materials would be used to replace similar materials that currently exist. Table 3.14 indicates the amount of concrete or exposed revetments that would occur in Reaches 1–3 under pre- and post-project conditions. As shown in Table 3.14, the proposed project would result in a net increase of 0.43 acre of hardscape (i.e. concrete

lining and rock revetment) below OHWM. This increased hardscape would be within waters of the U.S. and of the State. In addition, the proposed project would result in a decrease in hardscape of 0.15 acre above OHWM. The total increase in hardscape in Reaches 1 through 3 would be 0.28 acre. The proposed project would widen the channel, increasing the amount of area below OHWM (and thus waters of the U.S. and of the State) by 2.0 acres. The permanent impact on jurisdictional waters would be less than significant.

The proposed project would remove 45 native trees and shrubs with dbh of 2 inches or greater in Reaches 1 through 3. These trees include 1 redwood, 4 California nutmeg, 8 coast live oak, 2 Fremont cottonwood, 20 toyon, 6 white alders, 1 coyote brush, ~~1~~ 2 elderberry, and 1 valley oak. The trees/shrubs to be removed include 26 native trees/shrub in the vicinity of the exercise equipment and recreational trail located upstream on the east bank of Berryessa Creek upstream of the Los Coches Creek confluence. These trees/shrubs extend from the creek channel and provide connectivity between the channel and riparian habitat at the top of bank. Removal of this healthy stand of native trees/shrubs would be a significant impact.

Table 3.14 Amount of Exposed Hardscape Materials (Reaches 1–3) *

Type of Material	Pre-Construction (square feet/acres)	Post-Construction (square feet/acres)	Amount of Change (square feet/acres)
Concrete Below OHWM	9,837/0.23	26,242/0.60	+16,405/0.38
Concrete Above OHWM	18,092/0.42	9,118/0.21	-8,974/-0.20
Rock Revetment Below OHWM	3,168/0.07	5,416/0.12	+2,248/0.05
Rock Revetment Above OHWM	427/0.01	2,710/0.06	+2,283/0.05
Concrete Sandbag Below OHWM	144/0.003	0/0	-144/0.003
Concrete Sandbag Above OHWM	757/0.017	0/0	-757/-0.017

*Source: Tetra Tech 2015e.

CONSTRUCTION (REACH 4). Reach 4 contains 1.12 acres of Waters of the U.S. and 1.30 acres of Waters of the State (including 0.18 acre of riparian vegetation), and no jurisdictional wetlands or wetlands vegetation. Excavation would temporarily impact these waters by removing vegetation and altering topographic features, resulting in a less than significant impact.

As shown in Table 3.15, the proposed project would result in an increase of 0.58 acre of hardscape (i.e. concrete lining and rock revetment) below OHWM in Reach 4. This increased hardscape would be within waters of the U.S. and the State. In addition, the proposed project would result in an increase in hardscape of less than 0.001 acre above OHWM. The total increase in hardscape in Reach 4 would be 0.58 acre. The proposed project would widen the channel, increasing the amount of area below OHWM (and thus waters of the U.S. and of the State) by 1.18 acres. Therefore, the permanent impact on jurisdictional waters would be less than significant.

This reach includes a small stand of riparian vegetation which has formed below the top of bank at the upper end of Reach 4. This riparian area, which totals 0.18 acre, would not be excavated during construction. Although no direct removal of native trees would occur in Reach 4, ground excavation in the root zone may adversely affect these riparian trees. Seven native trees, consisting of four coast live oaks and three Fremont cottonwoods are located on the lower portion of the bank and would likely

suffer substantial root damage due to sediment removal. Those trees would likely have to be removed. In addition one native arroyo willow located on the east bank in the central portion of the reach would be removed during construction of the access road. The cumulative dbh of the trees to be removed would be 229 inches. Removal of these healthy trees would be a significant impact.

Table 3.15 Amount of Exposed Hardscape Materials (Reach 4)*

Type of Material	Pre-Construction (square feet/acres)	Post-Construction (square feet/acres)	Amount of Change (square feet/acres)
Concrete Below OHWM	5,987/0.14	26,242/0.60	+20,255/0.47
Type of Material	**Pre-Construction (square feet/acres)**	**Post-Construction (square feet/acres)**	**Amount of Change (square feet/acres)**
Concrete Above OHWM	1,790/0.04	1,813/0.04	+23/0.0005
Rock Revetment Below OHWM	548/0.01	5,416/0.12	+4,868/0.11
Rock Revetment Above OHWM	1,022/0.02	1,173/0.027	+151/0.003
Concrete Sandbag Below OHWM	83/0.002	0/0	-83/-0.002
Concrete Sandbag Above OHWM	350/-0.008	0/0	-350/-0.008

*Source: Tetra Tech 2015e.

OPERATIONS (ALL REACHES). The proposed project would increase maintenance and operations activities above the baseline by adding inspections and maintenance of floodwalls and the UPRR culvert. These activities would not adversely affect biological resources.

MITIGATION. Mitigation Measure BIO-B requires compensation for native trees and shrubs removed during construction. Measure BIO-D requires the establishment of a buffer zone around riparian trees during construction to prevent root damage. Although impacts to grasslands are less than significant, and mitigation is not required, Mitigation Measure BIO-C would further reduce this impact by requiring use of native grass and forbs seeds during hydroseeding of disturbed areas.

SIGNIFICANCE AFTER MITIGATION. Implementing Mitigation Measure BIO-B would reduce impacts to trees and shrubs to less than significant by requiring replacement of native trees and shrubs with dbh of 2 in or greater. Mitigation Measure BIO-D would further reduce impacts to riparian habitat in Reach 4 by providing buffers around riparian trees.

BIO-4 INTERFERE SUBSTANTIALLY WITH THE MOVEMENT OF ANY NATIVE RESIDENT OR MIGRATORY FISH OR WILDLIFE SPECIES, OR WITH ESTABLISHED NATIVE RESIDENT OR MIGRATORY WILDLIFE CORRIDORS, OR IMPEDE THE USE OF NATIVE WILDLIFE NURSERY SITES

Less than significant with mitigation for construction; less than significant for operations

CONSTRUCTION (REACHES 1–3). Forty-five native trees and shrubs would be removed in Reaches 1 to 3 during construction of the proposed project. Trees provide foraging, roosting, and nesting habitat for migratory birds, a category which includes most of the birds identified in the existing conditions section, as well as resident birds. Although there are numerous other trees in the area that can provide this function, destruction of migratory bird nests during construction would result in a significant impact.

Upper Berryessa Creek may serve as a dispersal corridor for terrestrial wildlife, so construction may temporarily impair their ability to move between the upper and lower parts of the watershed. However, as stated in the CAR (USFWS 2013), the proposed project areas does not support significant populations of wildlife, and its use as a dispersal corridor is likely of benefit primarily to such species as coyotes and feral cats. The only native fish species that may occur in the project area is the California roach, which may occur in Reaches 1 and 2 below the Piedmont Creek confluence. This fish is not dependent on the habitat in Reaches 1 and 2, and it is likely found in other parts of Berryessa Creek with perennial flow. Therefore, impacts to fish and wildlife movement, nursery sites, and dispersal corridors other than impacts on migratory birds would be less than significant.

The Monarch butterfly *(Danaus plexippus),* passes through the region during its migration but is not known to reside in the project area. Although this species was not observed during field visits, large trees that may offer roosting habitat for the butterfly are present in the overbank areas. Its primary forage host plant, milkweed *(Asclepias* sp.*),* was also not observed during field visits. Removal of vegetation could adversely affect habitat for this species. Based on the lack of known occurrence at the project area and the limited habitat value in the project area, impacts to the monarch butterfly would be less than significant.

CONSTRUCTION (REACH 4). Impacts to wildlife movement, dispersal and nursery sites would be the same as in Reaches 1–3, except that no fish would occur in this reach as it is dry most of the year. Impacts to migratory birds would be less than significant because only a small number of trees would be removed and many more trees would be retained. Impacts to fish and wildlife movement, nursery sites, and dispersal corridors would be less than significant.

OPERATIONS (ALL REACHES). Maintenance and operations activities resulting from the proposed project would not interfere with migration or dispersal of wildlife or the use of the project areas as a nursery site. Therefore, there would be no impacts from operations.

MITIGATION. Mitigation Measure BIO-A would require pre-construction nesting bird surveys and establishment of appropriate buffers, reducing impacts to nesting resident bird species.

SIGNIFICANCE AFTER MITIGATION. By establishing buffers during construction to prevent damage to active nests, Mitigation Measure BIO-A would reduce impacts to migratory birds to less than significant with mitigation.

BIO-5 CONFLICT WITH ANY LOCAL POLICIES OR ORDINANCES PROTECTING BIOLOGICAL RESOURCES, SUCH AS A TREE PRESERVATION POLICY OR ORDINANCE

Less than significant with mitigation for construction; no impact for operations

CONSTRUCTION (REACHES 1–3). Forty-five native trees and shrubs would be removed during construction of the enlarged channel and access road on the east bank of the channel in Reaches 1 through 3, including 4 California nutmeg, 8 coast live oak, 1 coyote brush, 2 elderberries, 2 Fremont cottonwoods, 1 redwood, 20 toyons, 1 valley oak, and 6 white alders. Additional non-native trees and shrubs would be removed. Although most of these trees are planted trees located at the edge of the ROW, they provide roosting, foraging, and possible nesting habitat for birds.

The project would remove two trees with DBH exceeding 37 inches in the City of Milpitas, consisting of one native elderberry and one non-native pine tree. Both trees are located in Reach 3. These trees are of sufficient size to be covered by the City of Milpitas Tree Ordinance, which protects trees with circumference of 37 inches or greater. Trees may also be harmed by damage to the roots during construction, either directly or by compaction of soils around the root zone. If roots are directly damaged by construction equipment, tree mortality would likely occur during the construction period; however, damage caused by soil compaction would be apparent over the longer term. USACE would be constructing the project and as a Federal agency would not be obtaining a tree removal or development permit from the City of Milpitas. The number of trees affected would be small; however, removal of trees covered by the City ordinance without City approval would be inconsistent with the ordinance's underlying tree protection policy, and therefore would be a significant impact.

A large valley oak, which is also a heritage tree, located at the edge of the staging area in the UPRR yard, could be affected if construction staging activities occur within the tree root zone. The project layout includes a setback of construction staging to avoid impacts to this heritage tree.

CONSTRUCTION (REACH 4). Project construction would remove eight native trees consisting of one arroyo willow, four coast live oaks, and three Fremont cottonwoods in the City of San Jose. Additionally, a handful of non-native trees/shrubs would be removed in the City of San Jose. Four of the native trees to be removed, one coast live oak and three Fremont cottonwoods, have diameters exceeding 18 inches (which is equivalent to a circumference of 56 inches). The City of San Jose Tree Ordinance applies to trees on private lands and street trees. The trees to be removed are located on public land owned by SCVWD and their removal would not conflict with the local tree ordinance. No heritage trees are located in the project area and none would be affected. This impact would be less than significant.

OPERATIONS (REACHES 1–3). In compliance with USACE Engineering Circular EC 1110-2-6067, Certifications of Levee Systems for the National Flood Insurance Program (USACE 2008), tree growth would be prevented within 15 feet of the proposed floodwall in Reaches 2 and 3. Ongoing and future vegetation management conducted under the District's SMP2 Program would include application of herbicides, mowing, and removal of trees up to 6 inches in diameter within the creek channel. These activities are permitted under SMP2 and would be extended to the floodwall vegetation-free zone as required by the USACE engineering circular. Trees would be removed before they grow large enough to develop features that provide habitat for birds or other species, and their removal would not conflict with the City of Milpitas Tree Ordinance, which only protects larger trees. Operations in Reaches 1–3 would not be in conflict with City of Milpitas Tree Maintenance and Protection Ordinance; therefore, there would be no impact.

OPERATIONS (REACH 4). In compliance with USACE Engineering Circular EC 1110-2-6067, Certifications of Levee Systems for the National Flood Insurance Program (USACE 2008), trees would not be planted or allowed to grow within 15 feet of the buried floodwall in Reach 4. This floodwall has a length of about 450 ft and is entirely within the City of Milpitas. The trees would be removed before they develop features that provide habitat for birds or other species, and while they are too small to be covered by the City of Milpitas Tree Maintenance and Protection Ordinance. The removal of trees in the floodwall vegetation-free zone and creek channel would not conflict with the City of Milpitas Tree Ordinance, which only protects larger trees. As part of SMP2 vegetation management activities, District staff would prevent tree growth in the creek channel or remove trees before they grow to 6 inches in diameter. This would occur within both Milpitas and San Jose. District vegetation management activities would not affect trees large enough to be covered by the City of Milpitas or City of San Jose tree ordinances.

Operations in Reach 4 would not be in conflict with local tree ordinances; therefore, there would be no impact.

MITIGATION. Mitigation Measure BIO-B requires that removed native trees and shrubs with dbh equal to or greater than 2 in dbh would be replaced ~~so that the dbh of the planted trees and shrubs is equal to the dbh of the removed trees~~. Mitigation Measure BIO-D requires the establishment of buffer zones around the base of riparian trees, in which excavation would not occur. Because BIO-B applies to trees that are smaller than those covered by the City of Milpitas tree ordinance, implementation of the measure would result in planting ~~in~~ a greater number of native trees than the trees removed by the project and covered by the City ordinance. Those trees would be planted at appropriate locations in the project area, mostly within the City of Milpitas. Planting of native trees and shrubs to replace those removed as required by Mitigation Measure BIO-B would further the tree protection policies underlying the City ordinance and reduce this impact to a less than significant level.

SIGNIFICANCE AFTER MITIGATION. Implementing Mitigation Measure BIO-B would reduce impacts on trees and shrubs protected by the Milpitas ordinance to less than significant by requiring replacement of removed native trees and shrubs of 2 in dbh or greater. Mitigation Measure BIO-D would further reduce impacts to riparian habitat by providing buffers around riparian trees in Reach 4.

BIO-6 CONFLICT WITH THE PROVISIONS OF AN ADOPTED HABITAT CONSERVATION PLAN, NATURAL COMMUNITY CONSERVATION PLAN, OR OTHER APPROVED LOCAL, REGIONAL, OR STATE HABITAT CONSERVATION PLAN

No impacts for construction; no impacts for operations

CONSTRUCTION (REACHES 1–3). There are no HCPs or Natural Community Conservation Plans (NCCPs) that apply to Reaches 1–3; therefore, there would be no conflict with the provisions of any HCPs or NCCPs, and there would be no impacts from construction.

CONSTRUCTION (REACH 4). The upstream portion of Reach 4 is within the Plan Area of the Santa Clara Valley HCP; however, because the proposed project is being led by the USACE, it is exempt from the HCP. Additionally, the portion of the project area within the HCP area is not modeled as habitat for any of the special status species addressed by the plan. No impacts to HCPs or NCCPs would result.

OPERATIONS (REACHES 1–3). There are no HCPs or NCCPs that apply to Reaches 1–3; therefore, there would be no conflict with the provisions of any HCPs or NCCPs, and there would be no impacts from operations.

OPERATIONS (REACH 4). A portion of Reach 4 is within the City of San Jose and this portion of the project area is within the geographic area covered by the Santa Clara Valley HCP. The Valley HCP exempts projects led by USACE. Because the proposed project would be constructed by USACE, it is exempt from the Valley HCP**.**

3.5.6. Mitigation Measures

The following measures would be implemented to mitigate impacts to biological resources.

BIO-A: PERFORM PRE-CONSTRUCTION NESTING BIRD SURVEYS AND ESTABLISH APPROPRIATE BUFFERS. The District will work with the USACE to require the construction contractor to implement the

following measures. Prior to construction and during the nesting season (generally mid-April to late July), a qualified biologist will perform nesting bird surveys following established protocols. If nests are detected at staging areas and construction sites during these surveys, a 50-foot no-construction buffer will be delineated around the nest until young have fledged (300-foot buffer for raptors). This measure is consistent with Recommendation 3 contained in the USFWS CAR (USFWS, 2013).

BIO-B: COMPENSATE FOR TREES AND SHRUBS REMOVED DURING CONSTRUCTION~~. USACE will implement the following measures. If a native tree or shrub with a diameter at breast height of 2 inches or greater is removed during project construction, USACE will replace it within the project vicinity , so that the combined diameter of the container plantings is equal to the combined diameter of the trees removed. This measure is consistent with Recommendation 1 contained in the USFWS CAR (USFWS, 2013).~~ The following measure to mitigate for removal of native trees and shrubs has been coordinated between USACE and USFWS. This measure represents a variation on the CAR native tree and shrub replacement formula, and was agreed to by the two agencies to move forward without formally revising the CAR:

1) Use seeds or cuttings collected at or near the project area, or higher in the watershed if on-site collection is not feasible, for replanting.
2) Replace the 53 affected native tree and shrubs at the following rates:
    - Native trees greater than 2 inches and up to 8 inches dbh: plant 1 native tree for each tree removed;
    - Native trees greater than 8 inches and up to 20 inches dbh: plant 2 native trees for each tree removed;
    - Native trees greater than 20 inches dbh: plant 3 native trees for each native tree removed;
    - Native shrubs: plant 2 native shrubs for each native shrub removed.

This would result in replanting about 60 native trees and 46 native shrubs.

BIO-C. USE NATIVE GRASS AND FORBS MIX TO HYDROSEED AREAS DISTURBED BY CONSTRUCTION ACTIVITIES. The District will work with the USACE to require the construction contractor to implement the following measure. Disturbed areas will be hydroseeded using a seed mix containing only native California grass and forbs seeds. This measure is consistent with Recommendation 4 contained in the USFWS CAR (USFWS, 2013).

BIO-D. PROVIDE BUFFER AROUND RIPARIAN TREES. The District will work with the USACE to require the construction contractor to implement the following measures. Tree protection will be included in the project construction plans and specifications and will specify a buffer area around the bases of riparian trees located on the southwest corner of the upstream bend in Reach 4. The buffer area will protect roots of the trees by establishing a zone from the base of the trees within which potentially damaging actions will not occur, including excavation, placement of rock revetment or other bank stabilizing features. In cases where there are multiple trees that would be protected in this way, a single buffer zone may be established to encompass all trees in that area.

3.5.7. Statement of Impact

A summary of potential impacts is given in Table 3.16. All significant impacts would be offset by implementation of mitigation measures, and would be reduced to less than significant.

Table 3.16 Statement of Impacts, Biological Resources			
Impact	**Prior to Mitigation**	**Mitigation Measures**	**After Mitigation**
CONSTRUCTION			
BIO-1. Have a substantial adverse effect, either directly or through habitat modification, on any species identified as candidate, sensitive, or specials status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.	LS	None	LS
BIO-2. Have a substantial adverse and unmitigated effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW, or USFWS or healthy stands of trees and shrubs.	S	BIO-B BIO-C BIO-D	LM
BIO-3. Have a substantial adverse and unmitigated effect on Federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, and coastal) through direct removal, filling, hydrological interruption, or other means.	LS	None	LS
BIO-4. Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	S	BIO-A	LM
BIO-5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	S	BIO-B BIO-D	LM
BIO-6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State Habitat Conservation Plan.	NI	None	NI
NI–No Impact, LS–Less than Significant, LM–Less than Significant with Mitigation, S–Significant, SU–Significant and Unavoidable			

3.6. CULTURAL RESOURCES

This section addresses the potential impacts to cultural resources associated with the construction and operation of the proposed project. Paleontological resources are also briefly discussed in this section, although soils conditions in the project area are such that significant paleontological resources are unlikely to occur.

3.6.1. Environmental Setting

Cultural resources are past and present expressions of human culture and history in the physical environment and include prehistoric and historic archaeological sites, structures, natural features, and biota that are considered important to a culture, subculture, or community. The term also includes aspects of the physical environment that are a part of traditional lifeways and practices and are associated with community values and institutions. Cultural resources are often divided into categories of prehistoric and historic. In northern California, cultural resources extend back in time for at least 9,000-11,500 years with Native American occupation and use of the Santa Clara Valley extending over 5,000-8,000 years and possibly longer. For the purposes of this EIR, the terms “prehistoric” or “pre-contact” are used to describe any material remains, structures, and items used or modified by people

before Euro-Americans established a presence in the region. The term "historic" is used to refer to material remains and the landscape alterations that have occurred since the arrival of Europeans.
Historical resources are a regulatory subset of cultural resources that meet specific eligibility criteria for listing on the California Register of Historical Resources (CRHR) (Public Resources Code [PRC] 5024.1; CCR Title 14, Section 4850.3; and CEQA Guidelines, Section 15064.5(a)). These include resources within California that are listed on the National Register of Historic Places (NRHP) ("historic properties"; 36 CFR 60.4), which are automatically listed on the CRHR. Unique archaeological resources are another subset of cultural resources that include prehistoric and historic archaeological resources that can contribute to current research questions, are considered unique or special in the field of archaeology, and are related to a specific event or person (PRC 21083.2(g)).

Paleontological resources are items that reveal evidence of the prehistoric past, and are generally in the form of fossilized plant or animal remains that are embedded in rock formations. Fossils are also occasionally found in deposits of eroded rock formations at the base of cliffs or in streams. Other forms of paleontological resources include plants or animals that are preserved in mediums including peat bogs, tar pits, or ice fields.

3.6.2. Existing Conditions

The composition of substrate in and around the Upper Berryessa Creek channel is indicative of historic floodplains or alluvial fans, placed artificial fill, and urbanized conditions. Floodplain or alluvial substrate is generally a mix of poorly sorted clays, silts, sand, and gravel of varying thicknesses, overlaying bedrock. It is in the bedrock that fossils would generally be found. Artificial fills may be comprised of soils from a wide variety of sources, and any paleontological resources which they may have originally contained would generally be destroyed during excavation and placement. Urban soils likewise have often been disturbed during previous development to allow for housing, commercial development, infrastructure placement, and transportation projects. These types of deposits are very unlikely to contain significant fossils or other types of paleontological resources. Furthermore, the proposed project would not disturb bedrock. Therefore, paleontological resources are unlikely to be present at the project area and are not discussed further in this document.

The settings described below are taken primarily from a 2010 cultural resources survey conducted for the project by Basin Research Associates, Inc. on behalf of the U.S. Army Corps of Engineers – Sacramento District (Basin Research Associates 2010).

3.6.2.1. *Prehistoric Context*

The project area is within an area that has been favored by Native Americans for occupation as well as hunting and collecting activities. The area would have provided a favorable environment during the prehistoric period with riparian and terrestrial resources readily available and the bayshore in relative close proximity. Native American occupation sites in the region appear to have been selected for accessibility, protection from seasonal flooding, and the availability of resources for both food and industrial use.

Archaeological information for the general Bay Area suggests a slow steady increase in the prehistoric population over time with an increasing focus on permanent settlements that could support large populations in later periods. This change from hunter-collectors to an increased sedentary lifestyle is due to more efficient resource procurement as well as a focus on staple food exploitation, the increased

ability to store food at village locations, and the development of increasing complex social and political systems including long-distance trade networks.
Prehistoric site types recorded in the Santa Clara Valley include habitation sites ranging from villages to temporary campsites, stone tool and other manufacturing areas, quarries for tool stone procurement, cemeteries usually associated with large villages, isolated burial sites, rock art locations, bedrock mortars or other milling feature sites, and trails (Elsasser 1986:32).

Archaeological research in the region has been interpreted using several chronological schemes based on stratigraphic differences and the presence or absence of various cultural traits. The Central California Taxonomic System was developed by archaeologists to explain local and regional cultural change from about 4,500 years ago to the time of European contact (Lillard et al. 1939; Beardsley 1948, 1954). The scheme includes three phases: Early, Transitional (also referred to as Middle), and Late Horizons, described below.

The Early Horizon (ca. 4,500 to 3,500/3,000 years ago) is the most poorly known of the periods. However, it is believed that Hokan-speaking peoples initially occupied the project area. Hunting and fishing were the basic source of subsistence goods. Other markers characteristic of Early Horizon archaeological deposits include milling stones (suggestive of processing vegetal foods) and atlatl tips and parts (i.e., a throwing board and spear). Early Horizon sites typically are absent of fire-altered rock, charcoal, ash, and greasy and organic midden soils (soils that have been culturally affected). Regional cultures during this time practiced elaborate burial rituals that included placing a wealth of goods in graves. Well-developed trade networks with other areas of the Pacific Coast and Sierra Nevada were also developed by this time.

Middle Horizon (ca. 3,500 to 1,500 years ago) sites are more common and relatively better known than Early Horizon sites. These sites usually have deeply stratified deposits with large quantities of ash and charcoal, fire-altered rock, and fish, bird, and mammal faunal remains. The presence of significant numbers of groundstone artifacts is suggestive of an increased reliance on gathered plant foods as opposed to hunted animal foods. The aboriginal populations were unchanged from Early Horizon peoples. Burial patterns do change from the Early Horizon however. Middle Horizon burials are typically found in a flexed position with only a few utilitarian grave goods. A relatively high number of embedded projectile points found in skeletal remains of this period along with other indicators suggest an increase in violence during the period.

The Late Horizon (ca. 1,500 to 250 years ago) emerges from the Middle Horizon with the continued use of many early traits and the introduction of several new traits. Late Horizon sites are the most numerous in the region. These deposits are composed of rich, greasy midden soils with bone and fire-altered rocks. Use of the bow and arrow, flexed interments, deliberately damaged or "killed" grave offerings, and occasional cremation of the dead are among the known traits of this horizon. Dietary emphasis on acorns and seeds is also evident through the inclusion of groundstone artifacts in site assemblages as well as through paleobotanical studies. Trade for various raw materials was well established with surrounding and other areas. Compared to earlier peoples, Late Horizon groups were short in stature with finer bone structure. This is considered evidence of population replacement of the original Hokan-speaking settlers by Penutian-speaking groups by ca. 1,500 years ago.

3.6.2.2. *Ethnographic Context*

The aboriginal inhabitants of the Santa Clara Valley belonged to a group known as the "Costanoan," derived from the Spanish word *Costanos* ("coast people" or "coastal dwellers") who occupied the central California coast as far east as the Diablo Range. The term refers to several different groups of people who shared similar cultural traits and belonged to the same linguistic family. Modern populations of these individuals generally prefer the term *Ohlone*.

In 1770 the Ohlone lived in approximately 50 separate and politically autonomous tribelets with each group having one or more permanent villages surrounded by a number of temporary camps. Physiographic features usually defined the territory of each group which generally supported a population of approximately 200 persons (Kroeber 1925:462; Levy 1978:485, 487; Hart 1987:112-113). Known tribelet boundaries and village locations are inexact due to incomplete historic records, and they remain a subject of anthropological contention and debate. The project may have been situated within the former territory of the Alson, "Santa Ysabel," and/or possibly Tamyen (Tamien) subgroups of the Ohlone Indians (Kroeber 1925; Levy 1978:485, Fig. 1; Milliken 1983:139, Map 4; Milliken 1995:229, Map 5, 235, 256; Hylkema 1995:35-36, Map 6; Hart 1987:324). The Alson territory encompassed the low marshlands in South San Francisco Bay, likely including the area around the mouth of the Coyote River where modern-day Newark, Milpitas, and Alviso exist. Mission Santa Clara records indicate the group was referred to as the “Santa Agueda” and the population had been “nearly depleted” by 1797. The Santa Ysabel territory encompassed the eastern part of Santa Clara Valley as well as the upper drainage of Calaveras Creek. The group was centered at present-day Alum Rock on Penitencia Creek. Mission Santa Clara registers refer to two Santa Ysabel villages: Ottasimin and Socotach (Milliken 1983:100-101; Milliken 1995:253; Milliken et al. 2007:100, Fig. 8.1).

Historic accounts of the distribution of tribelets and villages in the 1770s-1790s combined with the results of archaeological research in the area suggest that Native Americans may have had numerous temporary camps within the vicinity of the project throughout the prehistoric period and into the Hispanic Period. Unfortunately, extensive ethnographic data on the Ohlone are lacking and the aboriginal lifeway apparently disappeared by approximately 1810 due to introduced diseases, a declining birthrate, the cataclysmic impact of the mission system and the later secularization of the missions by the Mexican government (Kroeber 1925; King and Hickman 1973; Levy 1978).

3.6.2.3. *Historic Context*

The historic period (AD 1769 – present) of the project region can be divided into two periods or themes: the Hispanic Period and the American Period.

HISPANIC PERIOD. The Spanish philosophy of government in northwestern New Spain between 1769 and 1821 was directed at the founding of presidios, missions, and secular towns with the land held by the Crown. The later Mexican policy between 1822 and 1848 stressed individual ownership of the land. After the secularization of the missions was declared by Mexico in 1833, vast tracts of the mission lands were granted to individual citizens (Hart 1987).

Spanish explorers in the late 1760s and 1770s were the first Europeans to traverse the Santa Clara Valley. The first party, led by Gaspar de Portola and Father Juan Crespi, arrived in the Alviso area in the fall of 1769. Sergeant Jose Francisco Ortega of their party explored the eastern portion of San Francisco Bay and likely forded the mouths of the Guadalupe River and Coyote Creek (Beck and Haase 1974:#16-

17; James and McMurry 1933:8). The following year, 1770, Pedro Fages led another party through the Santa Clara Valley and in 1772 Fages returned with Crespi. A few years later, in 1776, Juan Bautista de Anza and Father Pedro Font traveled through the region and their favorable reports led to the establishment of both Mission Santa Clara and the Pueblo San Jose de Guadalupe in 1777.

As mapped by Beck and Haase (1974:#17), expeditions of Ortega, Fages, and Anza and Font between 1769 and 1776 would have crossed Upper Berryessa Creek just north of present-day State Highway 237/Calaveras Boulevard, downstream of the project area. The 1776 Juan Bautista de Anza route, a designated National Historic Trail as mapped by the National Park Service (1995), crosses the same area.

Mission Santa Clara de Asis, founded in 1777, was the eighth of 21 California missions established by the Spanish and the seventh established in Ohlone territory. Mission Santa Clara would have been the mission with the greatest impact on the aboriginal population living in the project vicinity. The nearby Pueblo of San Jose, also founded in 1777, was the first pueblo in Alta California. It was founded to administer and coordinate the missions and presidios in the province (Hall 1871:48; Hart 1987:446, 454).

RANCHOS, TRACTS, AND ROADS. The project area is located within the former Rancho Milpitas (Alviso) and far northwest portion of former Pueblo Lands of San Jose de Guadalupe. The area would have been suitable for grazing cattle, the major economic pursuit of the Santa Clara Valley and California during the Hispanic Period (Stratton 1862; Thompson 1866; Hendry and Bowman 1940; USGS 1980). Rancho Milpitas (Berryessa) was granted by Pedro Chaboya, Alcalde (municipal officer with administrative and judicial functions) of San Jose in May 1834 to Nicolas Berryessa, but was rejected.

Chaboya was Alcalde in 1836, at the same time Nicolas Berryessa (1761-1804) was a member of the Anza expedition (1776), a regidor (a member of the cabildo or "municipal corporation of town council charged with local municipal government") of the Pueblo of San Jose. He married Gracia Padilla (a member of the Peralta family) and had eleven children. As a result, the family had large landholdings in the present-day counties of Santa Clara, Napa, Alameda, and Sonoma. Berryessa's life was problematic - he was subject to the predations of John C. Fremont's battalion during the Bear Flag Rebellion who not only "plundered" his cattle, but also killed the son of his brother, Jose de los Reyes, near San Rafael in June 1846. In addition, he had problems with squatters and his claim for Rancho Milpitas was rejected. Berryessa died insane in 1863 (Hoover et al. 1966:443-444; Egan 1977:543, #33). However, his namesakes in the region remain, including Upper Berryessa Creek, the settlement of "Berryessa," a school, and a road in Santa Clara County, as well as a valley and artificial lake in Napa County (Hart 1987:46).

None of the known Hispanic-era dwellings or other cultural features indicated on historic maps are within or adjacent to the project area (Stratton 1862; Hendry and Bowman 1940:856-863; Hoover et al. 1966:444; Arbuckle and Rambo 1968:23-24; USGS 1980).

AMERICAN PERIOD. The population of the Santa Clara Valley expanded during the American Period as a result of the Gold Rush (1848), followed later by the construction of the railroad to San Francisco (1864) and the completion of the transcontinental railroad in 1869. Throughout the late nineteenth century in the Santa Clara Valley Hispanic Period rancho, pueblo, and mission lands were subdivided. Large cattle ranches were converted to farming varied crops, and this agricultural land-use pattern continued throughout the American Period.

During the early American Period (1847-1876) stock-raising predominated, but declined after the drought of 1863-1864. After this, wheat-growing became the primary agricultural activity (Bean 1978) along with dairy farms, and orchards in the 1860s-1870s. The arrival of the San Francisco and San Jose Railroad (1863-1864), followed by the development of the refrigerated railroad car (ca. 1880s) had major impacts on the general area. After 1875, the success of many agricultural experiments and expansion of markets via the railroad encouraged the development of horticulture in the Santa Clara Valley. As a result, during the later American Period and into the Contemporary Period (ca. 1876-1940s), horticulture/fruit production became a major industry. From 1875 onward, the need for an expanding market led to innovations in fruit preservation and shipping including drying fruit, canning fruit, and shipping fresh fruit in refrigerated cars (Findlay and Garaventa 1983). In turn, this created a wider economic boom which attracted new residents to the Santa Clara Valley (Broek 1932:76-83; Hart 1987).
The project is in the City of Milpitas, with the far southern, upstream extent of the project area within the northeastern part of the City of San Jose. Santa Clara County, named after Mission Santa Clara, was one of the original 27 counties of California. San Jose has been the County seat since the beginning and was not only the first pueblo in Alta California, but also the first capital of the State of California.

Within the Santa Clara Valley, the City of San Jose, founded in 1777 under Spanish authority, served as a County seat, a primary service as well as financial and social center. Most of the institutions for higher education and the citizen elite resided in San Jose or its twin, the City of Santa Clara (Broek 1932; Hendry and Bowman 1940:750; Hoover et al. 1966:425; Hart 1987:445-446; Patera 1991:188). San Jose has functioned as the "chief City" annexing former smaller rural settlements such as Berryessa. The Pueblo of San Jose, located in what is now downtown San Jose, later expanded to include the former settlement of Berryessa, initially about 4 miles northeast of San Jose.

The small village of Berryessa was situated in a noted "rich fruit region" complete with drying plants. It warranted a post office between May 1889 and October 1904 and included a school, church, store, and blacksmith shop as well as a number of residences by 1896. The post office was reestablished in June 1976 as a classified station of the City of San Jose (San Jose Mercury 1896:132; Broek 1932; Hendry and Bowman 1940: Map of Pueblo San Jose about 1803 to 1854; Patera 1991:18; USGS 1980).

Milpitas was located on the western boundary of the Pueblo of San Jose and named after the Rancho Milpitas. The town was initially known to the Spanish as "Penitencia," purportedly after the creek to the west named for "a house of penitence, a small adobe building where priests from the mission came at stated intervals to hear confessions" (Hoover et al. 1966:444). It was a "sporting center" for Mexicans living in the general area at least once a year with horse racing, dancing, bull fighting, and other Mexican sports. The historic center of Milpitas, about 0.75 miles west of the northern, most downstream portion of the project, was on the flatlands inland from Southern San Francisco Bay near the confluence of Arroyo de las Coches and Penitencia Creek. It was along the road east to Calaveras Valley and the north-south mission road, later known as the "road from Oakland to San Jose." It was initially settled by an Irishman, Michael Hughes, in 1852, followed by a store and school in 1855, a post office in May 1856, and hotel in 1857. The soils in the area were exceptionally fertile, particularly suited to strawberries, pears and asparagus. Further east, wheat and hay were profitably grown (Stratton 1862; Munro-Fraser 1881:305-306; San Jose Mercury 1896:104, 106; Sawyer 1922:296; Hoover et al. 1966:444; Loomis 1986:1; Patera 1991:136).
During the early American Period, the region was apparently sparsely settled, appropriate for cattle grazing, and later raising crops. As a result, both Milpitas and Berryessa were and still are stops on the rail routes through the area. Milpitas was a noted shipping depot (San Jose Mercury 1896:106).

3.6.2.4. *Archaeological Context*

As indicated in Basin Research Associates (2010), research conducted in the northern Santa Clara Valley since the early 1980s has underscored the high potential for buried prehistoric archaeological sites in the vicinity of the Guadalupe River and Coyote Creek as well as other drainages (e.g., see TCR 1980; Findlay and Garaventa 1983; Anastasio 1984; Ambro 1996; Basin Research Associates 1997; see Meyer 2000 for a summary).

The Guadalupe River and Coyote Creek were prime foci of prehistoric occupation in the Santa Clara Valley and Native American use of the project area continued into the Hispanic and American periods. Many of the prehistoric sites recorded in the general project area appear to be "midden" sites and include both former mound sites as well as sites now buried under sedimentary soils. A number of the recorded sites have yielded Native American skeletal remains ranging from isolated burials to several hundred individuals associated with prehistoric village locations. Chronologically, occupation in the area clearly ranges from the Middle Archaic Period (3000-500 BC) to the Late Emergent Period (AD 1800) with many of the sites having multiple, but non-continuous occupations through time.

The prevalence of buried archaeological sites in the general area is largely due to the repeated overbank flooding of the Guadalupe River and Coyote Creek which have resulted in the deposition of alluvium throughout the area especially in the vicinity of extant water courses (TCR 1980:24). Researchers have noted that there is usually no surface indication of buried prehistoric cultural materials and often the presence of large, complex sites is not clearly suggested by the occasional sparse surface indicators noted during a surface inventory.

Several researchers in the Santa Clara Valley have noted that the presence or absence of certain soil types may indicate some potential for buried cultural resources. Anastasio (1988) has observed that Upper Archaic Period sites in the Guadalupe River floodplain tend to be associated with basin soils, while the later Emergent Period sites tend to associated with alluvial soils.

3.6.2.5. *Records and Literature Search*

Basin Research Associates requested a prehistoric and historic site records search for the project area via the Northwest Information Center at California State University, Sonoma on behalf of the Army Corps of Engineers – Sacramento District in February 2009 (File No. 08-0825). In addition, reference material from the Bancroft Library, University of California, Berkeley, the Santa Clara County Surveyor's Office, and Basin Research Associates, San Leandro were consulted.

Thirty-one compliance reports on file with the Northwest Information Center include the project area. The records search also identified three prehistoric cultural resources and one reported cultural resource within or adjacent to the project area. These include CA-SCL-156/P-43-000168 (lithic scatter), CA-SCL-157/P-43-000169 (isolated artifact mistakenly recorded as a site), and CA-SCL-593/P-43-000588 (prehistoric deposit with human remains). The reported but unrecorded resource is C-167, a midden deposit that is possibly from or part of CA-SCL-593. One recorded Native American reburial location is mapped within 0.25 mile of the project. One of the recorded sites, CA-SCL-593 (P-43-000588), is bisected by the project area and is the only one of the previously recorded resources that is recommended as NRHP-eligible. CA-SCL-156/P-43-000168 (lithic scatter) and CA-SCL-157/P-43-000169 (isolated artifact mistakenly recorded as a site) are not of significance and are not discussed further below.

CA-SCL-593 (P-43-000588). Archaeological site CA-SCL-593 (P-43-000588), a prehistoric deposit with human remains, was observed in April 1986 eroding from the west bank of channelized Upper Berryessa Creek. The project area crosses through the mapped boundaries of the site. The USACE contacted Santa Clara Valley Water District about the find. Archeological Resource Management was engaged to investigate and excavate. The deposit was visible within the creek bank on both sides of Upper Berryessa Creek and observed to continue away from the creek.

Two burials were recovered from the site in 1986. The partially exposed Burial 1 was located in one bank between 130 and 150 cm below the ground surface and excavated. It consisted of a semi-flexed, partial skeleton of a young female (18 to 20 years of age). Burial 2 was found eroding from the opposite bank and at the bottom of the midden deposit. It consisted of the skeletal remains of a young child of undetermined sex. In addition midden was noted to a depth of approximately 160 cm. in a single excavated test unit placed away from the bank (Cartier and San Filippo 1987). Finds from CA-SCL-593 have been limited and consist of mostly fire cracked rock, with hearth features "suspected ... based on frequency of [fire-cracked rock]", but also includes vertebrate and invertebrate remains, bone tools, lithic debitage, groundstone, and a charmstone. The site was visited and tested again in 1993 and 1994. This work identified additional downstream trace materials that were attributed to CA-SCL-593 (Cartier 1993, 1994).

Combined with radiometric dates of 1320 +/ 70 years before present (BP) and 1660 +/ 80 BP, the assemblage suggest that CA-SCL-593 was a habitation site dating to between 1300 and 1700 BP during the Late Phase of the Middle Period. This relatively short occupation – approximately 340 years – is attributed to flooding that caused realignment of Upper Berryessa Creek and relocation of the settlement (Stradford and Cartier 1986, Beta Analytic 1986a and 1986b, Cartier et al. 1986, Cartier and San Filippo 1987, 1988).

A survey conducted in February 1992 by Cartier, et al. (1992:19) described CA-SCL-593 as impacted by Milpitas Boulevard, channelized Upper Berryessa Creek, and railroad tracks which "intersect the site." Historic maps indicate that CA-SCL-593 was located about 0.6-mile north of Upper Berryessa Creek on the eastern periphery of trees west of a marshy area (Day 1850-1851). Prior to the channelization of the project area between 1942 and 1961 (e.g., through CA-SCL-593), Upper Berryessa Creek flowed into Penitencia Creek at about Capitol Expressway (U.S. War Dept. 1943, USGS 1961).

CA-SCL-593 (P-43-000588) is not listed in California Office of Historic Preservation's Archeological Determinations of Eligibility list for Santa Clara County (2008). However, the site appears eligible for inclusion on the NRHP under Criterion D. The site is therefore considered eligible for listing on the CRHR as well.

C-167. Reported Site C-167 is a midden deposit that may be part of or redeposited from CA-SCL-593 (P-43-000588). The project area passes through the mapped area of the deposit that was observed in 1987 northwest of CA-SCL-593. Fire-cracked rock and shellfish remains were noted in a localized area. In contrast to CA-SCL-593, little difference was observed in soils color (Dietz and Wilson 1987a, 1987b). Evidence of C-167 was observed in the elevated access road along either side of Upper Berryessa Creek which appear to have been constructed with soils excavated to form the existing creek channel. A large portion of the deposit appeared to have been destroyed by the channelization of Upper Berryessa Creek.

Cartier, et al. (1992:19) revisited C-167 along Upper Berryessa Creek and notes that the site was covered by an industrial building and parking lot with poor visibility due to pavement and landscaping. No cultural material was observed at that time.

The reported site has not been formally recorded or evaluated for NRHP or CRHR eligibility. If the materials are redeposited from CA-SCL-593, the site would not be considered eligible for either register.

3.6.2.6. *Native American Consultation and Public Participation Regarding Cultural Resources*

Basin Research Associates contacted the California Native American Heritage Commission (NAHC) in 2009 for a search of the Sacred Lands Inventory (Busby 2009). The search did not identify any sacred sites within or adjacent to the project area. However, the names of nine Native American individuals/organizations who may have knowledge of cultural resources in the project area were provided (Pilas-Treadway 2009). These individuals were not contacted at that time. However, since that time, a Historic Property Management Plan (HPMP) has been prepared for the burials identified in CA-SCL-593 and was submitted by the landowner, UPRR, to the NAHC. The NAHC has identified and notified the Most Likely Descendant (MLD), who ~~is currently working~~ worked with the landowner to properly excavate and store the remains. This process is explained in greater detail in Section 3.6.2.8. No other local historical societies, planning departments, etc. were contacted regarding landmarks, potential historic sites or structures in or adjacent to the project.

3.6.2.7. *Cultural Resources Survey for the Project*

A systematic archaeological field survey of the project area was conducted by Basin Research Associates in January of 2009 (Basin Research Associates 2010). The pedestrian field survey included both sides of the creek bank and, when possible, the creek channel.

Recorded site CA-SCl-593 (P-43-000588) is within the project area and appears to be larger than as originally recorded. No evidence of reported cultural resource C-167 or any other prehistoric and/or historic era archaeological resources was observed during the survey. Although several bridges and culverts were observed within the project area, most lack identifying numbers and are not considered of historic importance.

3.6.2.8 *Memorandum of Agreement and Historic Property Management Plan for CA-SCL-593.*

In March 2014 a Memorandum of Agreement (MOA) was signed between the USACE and State Historic Preservation Office regarding resolution of adverse effects under the National Historic Preservation Act for the proposed Upper Berryessa Creek Flood Control project. The MOA defined an area of potential effect, dictated the development of a HPMP for data recovery of CA-SCL-593, described reporting requirements, dictated a requirement for construction monitoring and steps to take when addressing any unanticipated discoveries and effects during construction, as well as requirements for Native American consultation.

As the landowner of CA-SCL-593, UPRR notified the Santa Clara County Coroner on December 11, 2014 regarding the burials identified at the site. The Coroner confirmed the remains as Native American and has notified the NAHC to determine a MLD with whom to coordinate regarding the MOA and HPMP and

their implementation. The NAHC has identified and notified the MLD, who coordinated with stakeholders to ensure that the remains were excavated, transported, and stored properly.

A HPMP for treatment of CA-SCL-593 was drafted by USACE – San Francisco District in August 2013 (USACE 2013). The HPMP outlines a two-phased approach to treating the site. Phase 1 – Testing will investigate the nature and extent and condition of the archaeological deposit. Phase 1 of the HPMP field investigations was completed in Fall 2015. Archaeologists carefully excavated and removed the two Native American remains and burial-related artifacts found at the historic site. The human remains were turned over to the Native American MLD for proper reburial. In addition to salvage of the Native American remains and associated artifacts, the Phase 1 archaeological investigations also included the systematic inspection of the creek banks within the boundaries of the historic site, and excavation and examination of 11 trenches to define the boundaries of the historic site. The Phase 1 work appears to have adequately investigated the historic site for the presence or absence of subsurface cultural resources. Therefore additional Phase 2 investigations are not warranted (Basin research Associates, 2015). The data collected during Phase 1 investigations indicates that the boundary of the historic site should be redefined with the northern and southern boundaries moving 50 and 250 ft. north, respectively (Basin Associates, 2015). ~~Phase 2 – Data Recovery will remove the cultural materials and evidence of human funerary practices that are situated within the area of direct impacts that would result from channel excavations and other project features. Following Phase 2 – Data Recovery, T~~the HPMP also requires workforce training and archaeological monitoring of ground disturbing activities associated with the project.

~~As the landowner of CA-SCL-593, UPRR notified the Santa Clara County Coroner on December 11, 2014 regarding the burials identified at the site. The Coroner confirmed the remains as Native American and has notified the NAHC to determine a MLD with whom to coordinate regarding the MOA and HPMP and their implementation. The NAHC has identified and notified the MLD, who is coordinating with stakeholders to ensure that the remains are excavated, transported, and stored properly.~~

3.6.3. Regulatory Setting

3.6.3.1. *State Regulations*

CALIFORNIA ENVIRONMENTAL QUALITY ACT

CEQA applies to all discretionary projects undertaken or subject to approval by the state's public agencies (CEQA Guidelines Section 15002[i]). CEQA (Public Resources Code [PRC] Section 21001[b], [c]) states that it is the policy of the State of California to "take all action necessary to provide the people of this state with… historic environmental qualities…and preserve for future generations examples of the major periods of California history." CEQA Guidelines require that historical and unique archaeological resources be taken into account during the environmental review process. Section 15064.5 of the Guidelines states that "a project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment."

21083.2 ARCHAEOLOGICAL RESOURCES

If the cultural resource in question is an archaeological site, the CEQA Guidelines (Section 15064.5[c][1]) require that the lead agency first determine if the site is a historical resource as defined in Section 15064.5(a). If the site qualifies as a historical resource, potential adverse impacts must be considered in the same manner as a historical resource (CEQA Guidelines Section 15064.5[c][2]). If the archaeological

site does not qualify as a historical resource but does qualify as a unique archaeological resource, then the archaeological site is treated in accordance with CEQA PRC Section 21083.2 (CEQA Guidelines Section 15064.5[c][3]). In practice, most archaeological sites that meet the definition of a unique archaeological resource will also meet the definition of a historical resource.

CEQA (PRC Section 21083.2[g]) defines a "unique archaeological resource" as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it:

- Contains information needed to answer important scientific research questions, and there is public information in that information.
- Has a special and particular quality, such as being the oldest or best example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

21084.1 HISTORICAL RESOURCES

The CEQA Guidelines (Section 15064.5[a]) define a "historical resource" as including the following:

- A resource listed in, or eligible for listing in, the California Register of Historical Resources;
- A resource listed in a local register of historical resources (as defined at PRC Section 5020.1[k]);
- A resource identified as significant in a historical resources survey meeting the requirements of PRC Section 5024.1(g); or
- Any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California. (Generally, a resource is considered by the lead agency to be "historically significant" if the resource meets the criteria for listing in the CRHR. See further discussion of the CRHR below.)

A project that causes a "substantial adverse change" in the significance of a historical resource may have a significant effect on the environment (CEQA Guidelines Section 15064.5[b]). The CEQA Guidelines (Section 15064.5[b][1]) define "substantial adverse change" as "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired." Generally, the significance of a historical resource is "materially impaired" when a project demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its inclusion in or eligibility for the CRHR, or its inclusion in a local register of historical resources (CEQA Guidelines Section 15064.5[b][2]).

CALIFORNIA PUBLIC RESOURCE CODE. California PRC Section 5020-5029.5 establishes the criteria for the CRHR, creates the California Historic Landmarks Committee, and authorizes the Department of Parks and Recreation to designate Registered Historical Landmarks and Registered Points of Historical Interest. It also establishes criteria for the protection and preservation of historic resources. Several other sections of the California Public Resource Code also provide protection of cultural resources. Section 5097-5097.6 provides guidance for State agencies in the management of archaeological, paleontological, and historical sites affected by major public works project on State land. This section is not applicable to the project as there are no State lands involved. Subsections 5097.9-5097.991 establish regulations for the protection of Native American religious places and establish the NAHC. They also require that

California Native American remains and associated grave artifacts be repatriated and that notification of discovery of Native American human remains be made to a MLD.

ADMINISTRATIVE CODE, TITLE 14, SECTION 4307. Administrative Code, Title 14, Section 4307, prohibits individuals from removing, injuring, defacing, or destroying any object of paleontological, archaeological, or historical interest or value.

CALIFORNIA HEALTH AND SAFETY CODE. Several Sections of the California Health and Safety Code provide protection of human remains. Section 7050.5 requires construction or excavation to be stopped near human remains until a coroner determines whether the remains are Native American, and requires the coroner to contact the NAHC if the remains are Native American. Section 7051 establishes removal of human remains from interment, or from a place of storage while awaiting interment or cremation, with the intent to sell them or to dissect them with malice or wantonness as a public offense punishable by imprisonment in a State prison. Section 7052 states that willing mutilation of, disinterment of, removal from a place of disinterment of, and sexual penetration of or sexual contact with any remains known to be human are felony offenses.

CALIFORNIA CODE OF REGULATIONS, SECTION 1427. California Code of Regulations, Section 1427 recognizes that California's archaeological resources are endangered by urban development and that these resources need preserving. This section establishes as a misdemeanor the willful injury, disfigurement, defacement, or destruction of any object or thing of archaeological or historical interest or value by someone who is not the owner, whether situated on private lands or within any public park or place. It also states that it is a misdemeanor to alter any archaeological evidence found in any cave, or to remove any materials from a cave.

PENAL CODE, TITLE 14, SECTION 622.5. This code establishes as a misdemeanor offense for any person, other than the owner, who willfully damages or destroys archaeological or historic features on public or privately owned land.

3.6.4. Significance Criteria

Historical resources are those cultural resources that are considered eligible or listed on the CRHR. Criteria for CRHR listing and eligibility are defined in PRC 5024.1 and CCR Title 14, Section 4850.3. Specifically, a resource may be eligible for the CRHR if it:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- Is associated with the lives of persons important in our past;
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- Has yielded, or may be likely to yield, information important in prehistory or history.

If an archaeological resource does not fall within the definition of a historical resource, it may meet the definition of a "unique archaeological resource" (PRC 21083.2(g)). Unique archaeological resources include archaeological artifacts, objects, or sites that:

- Contain information needed to answer important scientific research questions and that there is a demonstrable public interest in that information;
- Have a special and particular quality such as being the oldest of its type or the best available example of its type; or

- Are directly associated with a scientifically recognized important prehistoric or historic event or person.

If an archaeological resource does not meet the definitions of a unique archaeological resource or of a historical resource, the effects of the project on those resources are not considered a significant effect on the environment (CEQA Guidelines (15064.5 (c)(4)).

Appendix C, Environmental Checklist Form, of CEQA addresses significance criteria with respect to cultural resources (PRC Sections 21000 et seq.). Under CEQA an impact on cultural resources would be considered significant if the proposed project would:

CUL-1 Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5;

CUL-2 Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5;

CUL-3 Directly or indirectly destroy a unique paleontological resource or unique geological feature; or

CUL-4 Disturb any human remains, including those interred outside of formal cemeteries.

3.6.5. Potential Impacts

3.6.5.1 Significance Criteria with No Impacts

CUL-3. Directly or indirectly destroy a unique paleontological resource or unique geological feature. No unique paleontological or geological resources are known to or expected to exist in the project area and no impacts to those resources would result.

3.6.5.2 Significance Criteria with Potential Impacts

CUL-1 CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF A HISTORICAL RESOURCE

Less than significant with mitigation for construction; no impact for operations

CUL-2 CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF AN ARCHAEOLOGICAL RESOURCE AS DEFINED IN SECTION 15064.5

Less than significant with mitigation for construction; no impact for operations.

CUL-4 DISTURB ANY HUMAN REMAINS, INCLUDING THOSE INTERRED OUTSIDE OF FORMAL CEMETERIES PURSUANT TO SECTION 15064.5

Less than significant with mitigation for construction; no impact for operations

Because the proposed project could encounter unidentified, subsurface archaeological/potential historical resources or human remains and known archaeological site CA-SCL-593 (P-43-000588) is considered both a unique– archeological resource and a historical resource that contains human remains, the applicable significance criteria (CUL-1, CUL-2, and CUL-4) have been evaluated together.

CONSTRUCTION (ALL REACHES). Disturbance of native soils may cause substantial adverse changes in the significance of archaeological resources, identified and unidentified. These significant impacts may occur as a result of installation of coffer dams for dewatering, clearing and grubbing, excavation of the

channel, construction of floodwalls, compaction of soils, demolition of structures, and grading of access roads. Mechanical planting of seed vegetation and installation of TRM~~,~~ are anticipated to result in very minor soil disturbances.

Archaeological and geoarchaeological data suggest a moderate to high potential for exposing subsurface archaeological materials within the project area. This conclusion is based on the distribution of archaeological sites in the surrounding region and depositional processes along waterways. Construction disturbance along Berryessa Creek may result in impacts on unidentified, subsurface archaeological and potential historical resources. These may include human remains. Further, disturbance is proposed at known archaeological site CA-SCL-593, a known historical resource and archaeological resource~~, which includes human remains~~. Investigations performed to date include removal of the Native American human remains and associated artifacts from the site. However, it is possible that additional undiscovered cultural materials may remain at the historic site. Proposed disturbances in this area include excavation of the channel, clearing and grubbing of vegetation, and construction of flood control features. If construction activities were to damage cultural materials at this historic site, this impact would be significant.~~These impacts would be significant.~~

OPERATIONS (ALL REACHES). Additional maintenance would be required to inspect and maintain the floodwalls and the UPRR and Los Coches Creek culverts, overall maintenance needs, including excavation of sediments, would be reduced compared to current conditions. Banks would be more stable, and the general level of disturbance would be reduced compared to current conditions. Therefore, no impacts to cultural or historic resources, including human remains, would result from project maintenance and operations.

MITIGATION. Mitigation Measures CUL-A and CUL-B would reduce the potential for significant impacts on cultural resources and human remains during project construction. Measure CUL-A would require implementation of the MOA and HPMP described above following ~~consultation with the MLD~~ in order to mitigate impacts on historical and archaeological resource CA-SCL-593~~, as well as the human remains that have been identified within the site~~. Measure CUL-B requires archaeological monitoring during the construction phase of the project. Monitoring would be conducted under an Archaeological Monitoring and Unanticipated Discovery Plan, which would give the monitor authority to stop construction in the event of discovery of previously unidentified archaeological or paleontological resources or human remains, as well as any additional significant deposits at CA-SCL-593 that may not be identified as a result of implementation of the HPMP. This would reduce the potential for inadvertent significant impacts on cultural resources.

SIGNIFICANCE AFTER MITIGATION. Impacts associated with adverse changes to historical and archaeological resources, and disturbance of human remains would be less than significant after implementation of Mitigation Measures CUL-A and CUL-B because the MOA and HPMP for CA-SCL-593 contain measures to prevent a substantial adverse change in the significance of this site, and because an archeological monitoring and unanticipated discovery plan would prevent substantial adverse changes to the significance of undiscovered resources.

3.6.6. Mitigation Measures

CUL-A. IMPLEMENT THE MOA AND CA-SCL-593 HPMP. The District will work with the USACE to implement the following measures contained in the MOA between the USACE and the California SHPO. In accordance with stipulation 2 of the MOA which requires development of an HPMP, USACE prepared

an HPMP. Prior to and during construction of the proposed project, the HPMP will be implemented. The CA-SCL-593 HPMP (Stradford 2013) requires workforce training and archaeological monitoring of ground disturbing activities associated with the project.~~Prior to construction and in consultation with the MLD, the HPMP will be implemented. The CA-SCL-593 HPMP (Stradford 2013) outlines a testing phase for the overall site and a data recovery phase for the direct impact area, followed by workforce training and archaeological monitoring of ground disturbing activities associated with the project.~~

CUL-B. PREPARE AND IMPLEMENT AN ARCHAEOLOGICAL MONITORING AND UNANTICIPATED DISCOVERY PLAN. The District will work with the USACE to implement the following measures. Construction activities that involve ground disturbance will be monitored by a professional archaeologist. Archaeological monitoring protocols and standards for the project, including "halt work" areas surrounding unanticipated discoveries, will be documented in an Archaeological Monitoring and Unanticipated Discovery Plan, to be approved by the District, USACE, and UPRR~~, and the MLD~~ prior to construction. At a minimum, the plan will include:

- A cultural and archaeological context for the project and any unanticipated discoveries;
- Definitions of areas and depths to be monitored;
- Identification of archaeological resources;
- Protocols to be completed in the event of an unanticipated discovery, including notifications and assessment of the find's significance; and
- Protocols for treatment of human remains.

3.6.7. Statement of Impact

Table 3.17 summarizes potential impacts associated with cultural resources. Significant impacts associated with historical and archaeological resources and human remains may occur, but are considered to be less than significant after implementation of mitigation measures specified in Section 3.6.6.

Table 3.17 Statement of Impacts, Cultural Resources

Impact	Prior to Mitigation	Applicable Mitigation	After Mitigation
CUL-1. Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5.	S	CUL-A CUL-B	LM
CUL-2. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5.	S	CUL-A CUL-B	LM
CUL-3. Directly or indirectly destroy a unique paleontological resource or unique geological feature.	NI	None	NI
CUL-4. Disturb any human remains, including those interred outside of formal cemeteries.	S	CUL-A CUL-B	LM

NI–No Impact, LS–Less than Significant, LM–Less than Significant with Mitigation, S–Significant, SU–Significant and Unavoidable

3.7. GEOLOGY, SOILS, AND MINERAL RESOURCES

This section provides an overview of the geologic resources in the project area, including topography, soils, seismicity, and seismic hazards, such as liquefaction, landslides, ground shaking, and surface fault ruptures. The project area does not contain significant mineral, oil, or gas resource-producing areas. The project area has been classified by the California Division of Mines and Geology under the Surface

Mining and Reclamation Act of 1975 as not containing mineral resources; therefore, there would be no impacts to such resources and they are not discussed further in this ~~D~~EIR.

Appendix D presents the proposed project Geotechnical Report, which was used as a major source of information for this section.

3.7.1. Environmental Setting

The project area lies within the Coast Range geomorphic province of California, in the northern portion of the Santa Clara Valley, approximately 5 miles south of San Francisco Bay. Geologic features include the Santa Cruz Mountains to the west and the East Bay Hills/Diablo Range to the east. Movement of the San Andreas Fault west of the project area and the Hayward Fault to the east has created the structural depression of the Santa Clara Valley. The Diablo Range was formed by uplifting along the fault zone, while the valley down-faulted (City of Milpitas 2002).

3.7.2. Existing Conditions

3.7.2.1. *Geology*

The project area overlies Quaternary-age alluvium that has accumulated over the last few hundred thousand years. Specifically, the project area mapping units are identified as coarser-grained Holocene alluvial fan deposits (Qhf) and artificial stream channel (ac) (CGS 2004). Alluvium is the gravel, sand, or silt that deposits out of a flowing body of water, when that water reaches less sloping land and starts to slow. The area covered by Upper Berryessa Creek is characterized as an artificial channel (CGS 2004). There are no modern stream channel deposits or bedrock units reported in the area. Alluvial deposits are reported to be up to 2,785 feet thick, while artificial stream components are only 1 foot thick.

3.7.2.2. *Topography*

The ground elevation within the project area ranges from approximately 25 feet above Mean Sea Level (MSL) just downstream of Calaveras Boulevard to approximately 80 feet MSL at the intersection with I-680. This results in a stream slope of approximately 0.5 percent. The channel fluctuates in depth, where the overbank access road lies anywhere from 6 to 15 feet above the channel bed. Very little topographic variation occurs over the length of the stream, both within the channel bed, or along the access roads. The stream channel has been designed for flow conveyance and both the stream channel and access roads were designed to have uniformly engineered elevations.

3.7.2.3. *Soils*

Soil surveys within the channel and immediate vicinity report the following soils: Urbanland-Flaskan complex (140), Urbanland-Hangerone complex (145), Urbanland-Campbell complex (165), and Urbanland-Cropley complex (317) (NRCS 2013). Each of these soils is derived from alluvial fans and underlie areas of 70 percent or more urban development. Soil characteristics are described in Table 3.18.

Table 3.18 Characteristics of Soils within the Project Right of Way and Immediate Vicinity

Map Unit Symbol	Soil Complex	Slopes	Typical Profile
140	Urbanland-Flaskan	0-2%	Ap - 0 to 2 inches: sandy loam ABt - 2 to 7 inches: sandy clay loam

			Bt1 - 7 to 17 inches: gravelly sandy clay loam Bt2 - 17 to 31 inches: gravelly sandy clay loam C - 31 to 59 inches: very gravelly sandy loam
145	Urbanland-Hangerone	0-2%	A1 - 0 to 9 inches: clay A2 - 9 to 17 inches: clay Bw - 17 to 27 inches: clay Bk - 27 to 35 inches: clay Ck - 35 to 45 inches: clay loam C - 45 to 72 inches: gravelly loam 2Ab - 72 to 89 inches: clay
Map Unit Symbol	**Soil Complex**	**Slopes**	**Typical Profile**
165	Urbanland-Campbell	0-2%	Ap - 0 to 10 inches: silt loam A1 - 10 to 24 inches: silt loam A2 - 24 to 31 inches: silty clay loam A3 - 31 to 38 inches: silty clay loam 2A - 38 to 51 inches: silty clay loam 2Bw1 - 51 to 71 inches: silty clay 2Bw2 - 71 to 79 inches: silty clay
317	Urbanland-Cropley	0-2%	A1 - 0 to 4 inches: clay A2 - 4 to 11 inches: clay Bss1 - 11 to 24 inches: clay Bss2 - 24 to 33 inches: clay Bss3 - 33 to 51 inches: clay BCk1 - 51 to 57 inches: sandy clay loam BCk2 - 57 to 63 inches: sandy clay loam
Source: NRCS 2013.			

A report prepared in 2004, based on borings and geologic mapping, showed that soils have been highly altered within the project footprint as a result of development (Parikh Consultants, Inc. 2004). Native soils have been removed, highly disturbed, or otherwise changed by the process of development. Furthermore, the composition and consistency of alluvial soils varies laterally and vertically over small distances and depths (City of Milpitas 2002).

3.7.2.4. *EROSION*

Soil types found within the project area are relatively easily erodible, and evidence of erosion is found throughout the project area (Figure 3.11). Development of the watershed and confinement of the stream channel have caused extreme incision of the stream channel. Incision, in turn, creates steeper banks, which are easily undermined during high flow events. Bank hardening or erosion control efforts have been undertaken, but in many cases are not effective in stabilizing soils. In several locations within the project area (e.g., the confluence of Los Coches and Berryessa Creeks and the confluence of Piedmont and Berryessa Creeks), hardened banks have been undermined by incised channel flow. Bridge pilings and piers also show signs of undermining. Along access roads, cracks and fissures indicate areas where channel walls have the potential to slump or fall into the creek.

***Left**: Crack or fissures that indicate potential slumps. Note erosion control matting to left of crack. **Top right**: bank hardening that has become undermined by a lowering channel invert and high flows. **Bottom right**: Erosion beneath bridge piers.*

Figure 3.11 Erosion, Reaches 1–3

3.7.2.5. *Seismicity*

Many earthquake faults exist in the San Francisco Bay area. Significant earthquakes that have occurred in this area are generally associated with crustal movements along well-defined active fault zones. Faults in the vicinity of the site with a moderate to high potential for surface rupture include the Hayward, Calaveras, San Andreas, Greenville, Silver Creek, and Concord-Green Valley Faults. Figure 3.12 presents the locations of the fault systems relative to the project area, and magnitudes of possible quakes are presented in Table 3.19.

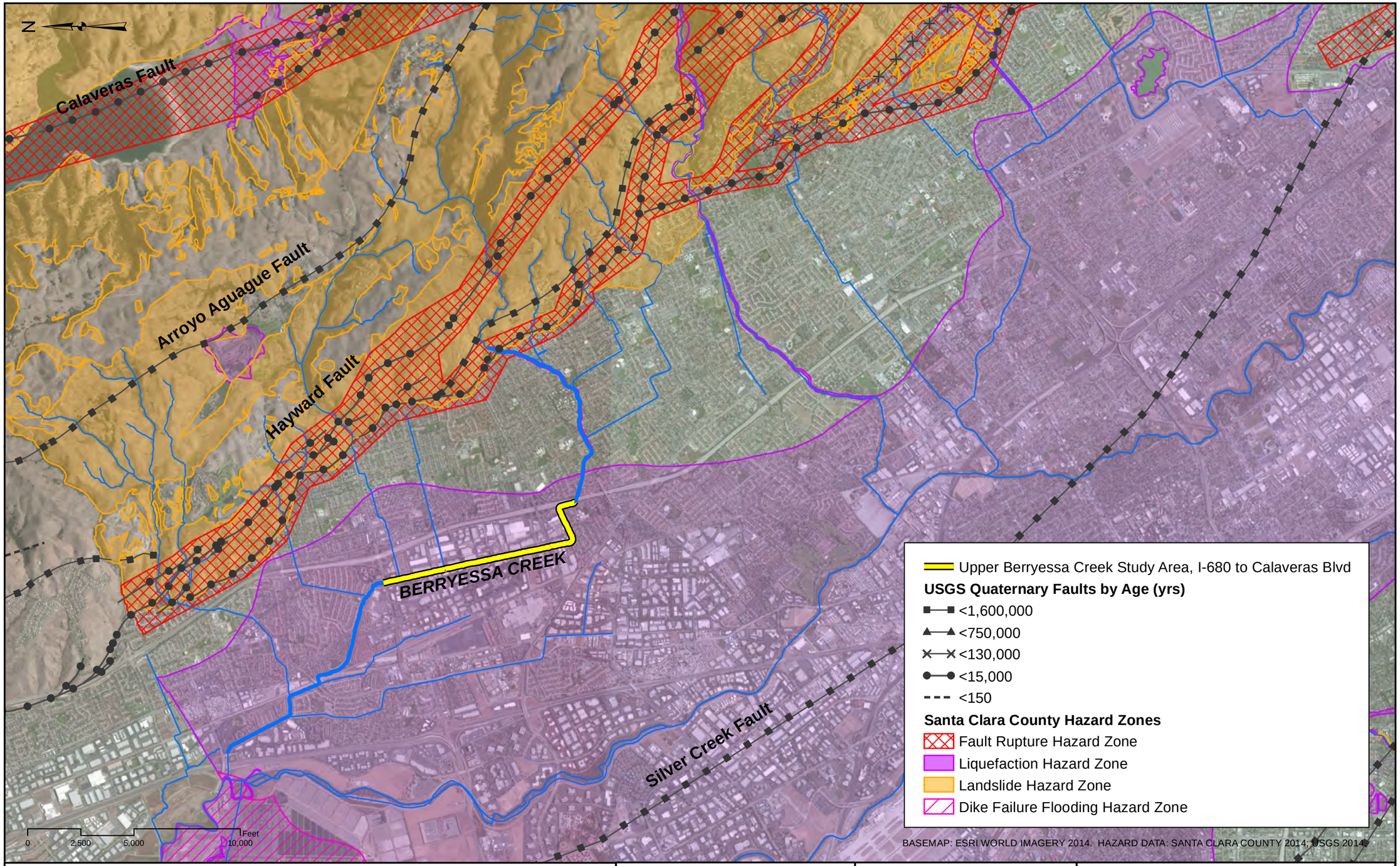

Figure 3.12 Seismic Hazard Zones

Tetra Tech
17885 Von Karman Avenue, Suite 500
Irvine, CA 92614
Tel. (949) 809-5000 Fax. (949) 809-5003

Santa Clara Valley Water District

UPPER BERRYESSA CREEK
FLOOD RISK MANAGEMENT PROJECT
0678

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Active faults are classified as A to C for use under the California Building Standards Code. Classifications are based on the magnitude of earthquake typically associated with the fault and the fault's slip rate. Type A faults cause the greatest potential destruction, while Type C cause the least. The nearest active fault is Hayward, which runs beneath the City of Milpitas, but not directly beneath the project area.

Table 3.19 Maximum Credible Earthquake Magnitudes

Fault (Strike-Slip)	Estimated Miles from Project Area	Maximum Credible Earthquake	Fault Class[1]	Slip Rate (mm/yr)
Hayward	1.2	7.1	A	9
Calaveras	4.7	6.8	B	6
Silver Creek[2]	3	-	-	<2
San Andreas	15.6	7.8	A	17
Greenville	17.6	6.9	B	2
Concord-Green Valley	33.8	6.8	B	4-5

[1] Faults with an "A" classification are capable of producing large magnitude (M) events (M greater than 7.0), have a high rate of seismic activity (e.g., slip rates greater than 5 millimeters per year), and have well-constrained paleoseismic data (e.g., evidence of displacement within the last 700,000 years). Class B faults are those that lack paleoseismic data necessary to constrain the recurrence intervals of large-scale events. Faults with a "B" classification are capable of producing an event of M 6.5 or greater.

[2] Silver Creek fault is a potentially active fault. No historic seismicity has been recorded, though annual slip rate is estimated to be <2 mm.

Sources: Cao et al. 2003; Jennings 1994; Petersen et al. 1996; data compiled by USACE in 2011.

The study area is not located within an Alquist-Priolo Earthquake Fault Zone; therefore, the Alquist-Priolo Earthquake Fault Zoning Act does not apply to this project (California Geological Survey 2007). Furthermore, the City of Milpitas reports that the project area is not within an area where geotechnical studies are required prior to project approval (City of Milpitas 2002).

3.7.2.6. *Seismic Hazards*

LIQUEFACTION. Water-saturated sediment may become liquefied during earthquakes, resulting in loss of strength and failure that can cause damage to buildings, bridges and other structures. According to the California Department of Conservation Division of Mines and Geology, the project area falls within areas where historical occurrence of liquefaction, or where local geological, geotechnical and ground-water conditions indicate a potential for permanent ground displacement such that mitigation as defined in PRC Section 2693(c) would be required (2004).

Field investigations showed that depths to groundwater in the Milpitas Quadrangle ranged from 2.5 to 45 feet, with the study area having groundwater within 5 to 10 feet below the surface. According to a U.S. Geological Survey (USGS) liquefaction probability map, the project area has a 0 to 5 percent chance of liquefaction during a magnitude 7.8 earthquake along the San Andreas Fault (Holzer et al. 2008). The California Geologic Survey (CGS) gives a high potential rating for liquefaction to areas where Qhf deposits overlie shallow groundwater (less than 10 feet below the surface), which can be found in portions of the project area. The City of Milpitas reports that the project area is "Liquefaction – Prone" as opposed to "Very Highly Prone" or "Highly Prone" (2002). Additionally, geotechnical investigations reported in the Geotechnical Report (Tetra Tech 2015c) (Appendix D) indicate that the potential for liquefaction due to seismic shaking in the project area is low.

LANDSLIDES. Landslides triggered by earthquakes have been a significant cause of earthquake damage (CGS 2004). Areas more susceptible to landslides include steep slopes in unstable formations, areas underlain by loose, weak soils, and areas on or adjacent to existing landslide deposits. Based on field investigations and data reconnaissance, the CGS reports that the potential for landslides within the study area is very low. Alluvium and artificial stream channels fall into Group 3 for shear-strength, which on percent slopes between 0 and 15 percent is very low. Furthermore, no landslides have been reported in the project vicinity (CGS 2004), and as reported in the Geotechnical Report (Appendix D) the City of Milpitas does not include the project area in a landslide hazard area (2004). Localized bank failures within the Upper Berryessa Creek channel are likely due to high bank angles, but such failures do not constitute landslide hazards.

GROUND SHAKING. Hazards produced by earthquake-induced ground shaking include damage to structures and secondary ground failures. Intensity of ground shaking and potential damage depend on earthquake magnitude, distance to fault, depth to bedrock, physical characteristics of underlying soil and bedrock, and local topography. Maximum bedrock accelerations for Milpitas are expected to exceed 0.5g, half the acceleration of gravity (City of Milpitas 2002). Ground shaking that accompanied the 1868 earthquake on the Hayward Fault and the 1906 San Andreas Fault earthquake caused ground failure along Coyote Creek in Milpitas, resulting from ground settlement, lateral spreading, and failures of stream banks (City of Milpitas 2002). Large earthquakes on the Hayward Fault could create ground shaking ranging from “very violent” to “very strong” (City of Milpitas 2002).

SURFACE FAULT RUPTURE. No surface traces of any active or potentially active faults are known to pass directly through or project towards the site. Neither field exploration nor literature review disclosed an active fault trace in the project area. Therefore, the potential for surface rupture due to faulting occurring beneath the site during the design life of the proposed development is considered low (Tetra Tech 2015c).

3.7.3. Regulatory Setting

3.7.3.1. *State Regulations*

ALQUIST-PRIOLO EARTHQUAKE FAULT ZONING ACT. The State of California’s Alquist-Priolo Earthquake Fault Zoning Act and California Building Code apply only to the construction of buildings designed for human occupancy, and therefore are not applicable to the proposed project.

SEISMIC HAZARDS MAPPING ACT. The Seismic Hazards Mapping Act of 1990 was developed to protect the public from the effects of strong ground-shaking, liquefaction, landslides, or other ground failure, and from other hazards caused by earthquakes. This act requires the State Geologist to delineate various seismic hazard zones and requires cities, counties, and other local permitting agencies to regulate certain development projects within these zones. The project area is located within a Seismic Hazard Zone for liquefaction, as designated by the CGS.

CALIFORNIA BUILDING CODE. The California Building Code (CBC), last updated in 2013, has been codified in the CCR as Title 24, Part 2. Title 24 is administered by the California Building Standards Commission, which by law is responsible for coordinating all building standards. Under California law, all building standards must be centralized in Title 24 or they are not enforceable. The purpose of the CBC is to establish minimum standards to safeguard the public health, safety, and general welfare through structural strength, means of egress from facilities, and general stability by regulating and controlling

the design, construction, quality of materials, use and occupancy, location, and maintenance of all building and structures within its jurisdiction. In addition, the CBC contains necessary California amendments based on the American Society of Civil Engineers' Minimum Design Standards 7-05, which provide requirements for general structural design and include means for determining earthquake loads as well as other loads (flood, snow, wind, etc.) for inclusion into building codes. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or structure, or any appurtenances connected or attached to such buildings or structures throughout California.

Design and construction of the Upper Berryessa Creek channel would occur in accordance with appropriate design manuals and established design criteria to ensure stability under seismic events.

- Caltrans Seismic Design Criteria (2006). Caltrans seismic design criteria guides the construction of roadway infrastructure to withstand seismic risks.
- UPRR Design Standards.

3.7.3.2. *Local Plans and Policies*

MILPITAS GENERAL PLAN. The Seismic and Safety Element of the City of Milpitas General Plan (City of Milpitas 2002) identifies the following implementing policies that are applicable to the proposed project:

- 5.a-I-3: Require projects to comply with the guidelines prescribed in the City's Geotechnical Hazards Evaluation manual.

ENVISION SAN JOSE 2040 GENERAL PLAN. Protection of geologic resources within the City of San Jose includes:

- EC-4.5 Ensure that any development activity that requires grading does not impact adjacent properties, local creeks, and storm drainage systems by designing and building the site to drain properly and minimize erosion. Erosion Control Plans are required by the City of San Jose for any grading occurring between October 15 and April 15.

3.7.4. Significance Criteria

Based on State and local regulatory guidance, the proposed project would be considered to have a significant impact on geology or soils if it were to:

GEO-1 Expose people or structures to potential substantial adverse effects, including risk of loss, injury, or death involving:

a) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault,
b) Strong seismic ground shaking,
c) Seismic related ground failure including liquefaction, or
d) Landslides.

GEO-2 Result in substantial soil erosion or the loss of topsoil;

GEO-3 Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse;

GEO-4 Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code, creating substantial risks to life or property; or

GEO-5 Have soils incapable of adequately supporting the use of septic tanks or alternative waste disposal systems where sewers are not available for the disposal of wastewater.

3.7.5. Potential Impacts

Analysis of potential impacts related to geology, soils, and seismic concerns is based on review of the Geotechnical Report (Tetra Tech 2015c) (Appendix D), USGS reports, and previous investigations that have been performed to characterize substrate conditions in the project area.

3.7.5.1. *Significance Criteria with No Impacts*

The following significance criterion is not discussed further in the EIR because the proposed project would not result in impacts related to this criterion:

GEO-5 Have soils incapable of adequately supporting the use of septic tanks or alternative waste disposal systems where sewers are not available for the disposal of wastewater. The proposed project would not involve wastewater disposal using septic tanks or alternative waste disposal systems where soil capability would be an issue. The proposed treatment system for VOC-contaminated groundwater (if encountered at the JCI off-site area) would not discharge to soil and its functioning would not depend on soil conditions or characteristics.

3.7.5.2. *Significance Criteria with Potential Impacts*

GEO-1 EXPOSE PEOPLE OR STRUCTURES TO POTENTIAL SUBSTANTIAL ADVERSE EFFECTS, INCLUDING RISK OF LOSS, INJURY, OR DEATH INVOLVING SEISMIC GROUND-SHAKING OR LIQUEFACTION

Less than significant with mitigation for construction; no impact for operations

CONSTRUCTION (REACHES 1–3). Seismicity would not be altered as a result of construction. Potential risks to people or property would occur if new structures in which people would work or live, or which house significant resources, were built and which may fail during a seismic event. New structures that would be built under this alternative would be a new concrete culvert to replace the existing UPRR trestle, concrete aprons and transition structures, and the floodwalls. Culverts would also be installed at the mouths of Piedmont and Los Coches Creeks, but would be constructed of high-density polyethylene or HDPE culvert material, which would be unlikely to fail during an earthquake.

If failure of the floodwall occurred, it is unlikely to result in injury or death, given that it does not support occupied structures and is not likely to topple during an earthquake. Failure of the culvert at the existing UPRR trestle site during a large seismic event could result in loss, injury, or death. Therefore, this impact would be significant.

As stated in the project Geotechnical Report (see Appendix D), the proposed project is not located within an Alquist-Priolo earthquake fault zone; therefore, the risk of impacts from fault rupture is considered low. Also, there are no components of the proposed project that would alter seismic conditions and exacerbate the potential for fault rupture or that would expose humans or structures to fault rupture. Therefore, the potential effects are less than significant.

There are no aspects of the project that would increase liquefaction risks on a large scale. Although soils in the project area are prone to liquefaction, liquefaction risks are primarily associated with areas with a

high water table or otherwise wet soils, and very often associated with seismic activity. According to the project schedule, most construction would occur during dry weather, and construction areas would be dewatered. If liquefaction occurs, it would occur only on a localized level, generally where heavy machinery is operating over a shallow water table, in which case the main effects would be that equipment would need to be removed from that area, and different construction methods would need to be utilized. Because the potential effects would occur on a very small scale and would primarily affect the construction process itself, the risk of damage to property or harm to public health and safety is minimal. Furthermore, the project Geotechnical Report (see Appendix D) finds that the potential for liquefaction is not a geotechnical concern at this location and potential dynamic settlement at the site would not adversely affect the proposed improvements. Therefore, impacts associated with liquefaction are less than significant.

CONSTRUCTION (REACH 4). Potential impacts from ground shaking, fault rupture, and liquefaction are similar to those occurring in Reaches 1–3, and there would be no construction of structures that would create significant risk in the event of failure; therefore, impacts are less than significant in this reach.

OPERATIONS (ALL REACHES). Project-related operations and maintenance would not include actions that would increase the risks to life and property from ground shaking, fault rupture, or liquefaction; therefore, no impacts would result.

MITIGATION. Mitigation Measure GEO-A would ensure that designs of all proposed structures, including the proposed concrete box culvert at the existing UPRR trestle site, are prepared in accordance with seismic safety standards established by the State of California. Likewise, any utilities that are moved would be replaced in accordance with applicable seismic standards. Incorporating seismic safety standards into the project design would ensure that the potential for damage or loss of life during an earthquake would not increase as a result of the proposed project.

SIGNIFICANCE AFTER MITIGATION. Impacts would be less than significant upon implementation of Mitigation Measure GEO-A.

GEO-2 RESULT IN SUBSTANTIAL SOIL EROSION OR THE LOSS OF TOPSOIL

Less than significant with mitigation for construction; less than significant for operations

CONSTRUCTION (REACHES 1–3). Ground-disturbing activities during construction could result in soil erosion or loss of top soil in areas both within the channel and in the overbank areas. Under the proposed project, ground-disturbing activities or those that could otherwise contribute to erosion risk include:

- Demolition and excavation of concrete and earthen materials;
- Demolition of concrete paved channel bed and side slope protection features;
- Widening of channel bed and top of banks via excavation and grading of earthen material;
- Excavation of channel bed and side slopes for placement of rock revetment;
- Use of heavy equipment for hauling away of concrete debris and excavated material;
- Stockpiling of excavated materials or soils to be used for backfill; and
- Excavation for reconstruction of access roads.

Soils in the area will be disturbed during construction as a result of material excavation along the creek bed and banks, and during construction and use of access roads. A total of 74,500 cy would be

excavated from Reaches 1–3. Approximately 2,000 cy of these soils would be reused on-site, with most of the balance recycled off-site. All other materials would be disposed of at a permitted disposal facility.

Erosion may occur at staging areas, where initial grading to flatten the site, and subsequent disturbance by construction equipment would destabilize soils, leaving them vulnerable to erosion. Soils stockpiled for reuse or before they are hauled off for disposal would be especially vulnerable to erosive effects of wind and rain. As soils in the project area are relatively easily erodible, even soils that are stockpiled properly may erode as a result of rain or high winds. Impacts associated with excessive erosion include degraded water quality, excessive sedimentation and corresponding reduction in flow capacity, and fugitive dust. Erosion would be limited by performing construction actions during the dry months.

The District as landowner would be responsible for obtaining project coverage under the General Permit for Discharges of Stormwater from Construction Sites issued by the California State Water Resources Control Board. The General Permit conditions require that the applicant prepare and submit to SWRCB a stormwater pollution prevention plan (SWPPP) covering project construction. The SWPPP would include detailed measures to control erosion, contain sediments, and prevent turbidity and other forms of pollution from contaminating stormwater and being washed into drainages during construction. The SWPPP would be prepared by the construction contractor, and submitted to the SWRCB to obtain coverage under the Construction General Permit. The construction contractor would be required to implement the SWPPP during construction and would comply with the plan throughout the construction process. Measures from the SWPPP would be incorporated into the contractor's work plan and would be implemented prior to groundbreaking activities. Implementation of the SWPPP would minimize the amount of soil erosion or loss of topsoil during dry-season construction. Because substantial soil erosion would not occur, this impact would be less than significant.

The potential or soil erosion would be much greater during periods of substantial rainfall when the amount of water flowing in the creek would increase greatly. This could result in substantial erosion of disturbed and denuded work areas which would be particularly vulnerable to erosion during high creek flows. This impact would be significant.

CONSTRUCTION (REACH 4). Types of impacts would be similar to those for Reaches 1–3, although less excavation (15,500 cy) would occur**.** Loss of topsoil from off-site disposal is likely to be less than significant, as explained for Reaches 1–3. Implementation of the SWPPP would prevent soil erosion resulting from construction during the dry season and this impact would be less than significant.

The potential for soil erosion would be much greater during periods of substantial rainfall when the amount of water flowing in the creek would increase greatly. This could result in substantial erosion of disturbed and denuded work areas which would be particularly vulnerable to erosion during high creek flows. This impact would be significant.

OPERATIONS (ALL REACHES). The proposed project would increase maintenance and operations activities above the baseline by adding inspections and maintenance of floodwalls and the UPRR culvert. These activities would not affect geological, soil, or mineral resources.

MITIGATION. Significant soil erosion or loss of topsoil would be mitigated by implementing Mitigation Measure WAQ-C (Prepare and Implement a Rain Event Action Plan (REAP)).

SIGNIFICANCE AFTER MITIGATION. Mitigation Measure WAQ-C would mitigate soil erosion and loss of topsoil during substantial rain events by prescribing measures to stabilize soil at disturbed areas and prevent the washing of stockpiled material into waterways, reducing this impact to a less than significant level.

GEO-3 BE LOCATED ON A GEOLOGIC UNIT OR SOIL THAT IS UNSTABLE, OR THAT WOULD BECOME UNSTABLE AS A RESULT OF THE PROJECT, AND POTENTIALLY RESULT IN ON- OR OFF-SITE LANDSLIDE, LATERAL SPREADING, SUBSIDENCE, LIQUEFACTION, OR COLLAPSE

Less than significant for construction; no impact for operations

CONSTRUCTION (ALL REACHES). Unstable geological units are those that are prone to landslide, sloughing, or other types of slope failure. The proposed project is located in an area that is very flat, with slopes limited to the banks of the channel. Although localized bank failures could occur during construction if banks were undermined or weakened by top pressure from heavy construction equipment, such failure would be unlikely to affect human safety or the safety of property. In areas where steeper slopes of 1.5H:1V may result from construction, rock revetment would be keyed into the bank and/or the toe of the slope for stability, as recommended in the project Geotechnical Report (see Appendix D). Furthermore, the Geotechnical Report indicates that no project features would promote lateral spreading or subsidence. The proposed project, therefore, does not increase the risk of on- or off-site landslide, lateral spreading, subsidence, or slope failure, and this impact would be less than significant.

OPERATIONS (ALL REACHES). Channel banks would be less steep after project construction than under current conditions; therefore, the risk of bank failure would be reduced. Operations and maintenance actions have no potential to increase the risk of lateral spreading, liquefaction, or subsidence. There would be no impacts from operations and maintenance.

GEO-4 BE LOCATED ON EXPANSIVE SOIL, AS DEFINED IN TABLE 18-1-B OF THE UNIFORM BUILDING CODE, CREATING SUBSTANTIAL RISKS TO LIFE OR PROPERTY

Less than significant for construction; no impact for operations

CONSTRUCTION (ALL REACHES). Although expansive soils, as defined in Table 18-1-B of the Uniform Building Code, may occur in the project area, the Geotechnical Report (Appendix D) includes a comprehensive and detailed analysis of soils in the project area. The Geotechnical Report indicates that the soils to be excavated during project construction are suitable for the types of construction that would occur under the proposed project (Appendix D). This impact is less than significant.

OPERATIONS (ALL REACHES). Proposed operations and maintenance requirements would not create risks to life or property associated with expansive soils; therefore, no impacts would result.

3.7.6. Mitigation Measures

GEO-A. IMPLEMENT GEOTECHNICAL RECOMMENDATIONS. The District will work with the USACE to incorporate into project design recommendations of the project Geotechnical Report to minimize geological hazards. Recommendations from this report will guide design of foundations, earthwork, and site preparation. The recommendations shall become part of the construction specifications and be

consistent with standard engineering practice within California and CBC and be consistent with any local policies. Specific recommendations from the project Geotechnical Report (see Appendix D):

Site Preparation and Fill Placement

- The surface will be cleared of any topsoil, pavement, structures, vegetation, trash, and debris prior to commencement of any earthwork or foundation construction.
- Where new engineered fill will be placed on an existing slope, the fill will be supported by a shear key constructed at the base of the toe of slope. The key will extend to a minimum depth of 3 feet below existing grade, have a minimum bottom width of 5 feet, and side slopes of 1H:1V.
- Existing slopes to receive fill will be benched with 2-foot-high vertical cuts prior to fill placement. In order to adequately compact the face of fill slopes, fill slopes will be overbuilt by a foot or so and trimmed back to the final configuration.
- Fill will be placed in horizontal lifts not more than 8 inches in loose, uncompacted thickness.
- Soils excavated from the project site that are reused as compacted fill will be free of organics, deleterious materials, debris and particles over 3 inches in largest dimension. Locally, particles up to 4 inches in largest dimension may be incorporated in the fill soils. Wet soils will be spread, disked, and dried before they are reused for fill.

Shoring

- Sides of temporary excavations greater than 4 feet in depth will be sloped back at an inclination of 1:1 or flatter. Where space for sloped sides is lacking, the side slopes will be shored with cantilevered or anchored steel sheet pile walls.
- Shoring for the UPRR culvert will be designed based on the appropriate requirements in the American Railway Engineering and Maintenance Association Manual for Railway Engineering, Chapter 8.

Excavation and Construction Slopes

- Temporary and short-term excavations shallower than 4 feet may be excavated with vertical sides. Sides of temporary excavation deeper than 4 feet will be sloped back at an inclination of 1H:1V or flatter. Where space for sloped sides is not available, the slopes will be shored.
- Stockpiled (excavated) materials will be placed no closer to the edge of a trench excavation than a distance defined by a line drawn upward from the bottom of the trench at an inclination of 1H:1V, but no closer than 4 feet.
- In areas where excavation occurs below the groundwater level, temporary control and diversion of both surface water and groundwater seepage will occur.

3.7.7. Statement of Impact

As shown in Table 3.20, significant impacts associated with geology and soils would occur during construction. Implementation of mitigation measures described in Section 3.7.6 would reduce these effects to less than significant.

Table 3.20 Statement of Impacts, Geology, Soils, and Mineral Resources			
Impact	**Before Mitigation**	**Mitigation Measures**	**After Mitigation**
GEO-1. Expose people or structures to potential substantial adverse effects, including risk of loss, injury, or death involving: • Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault zoning map issued by the State Geologist for the area or based on other substantial evidence of a known fault; • Strong seismic ground shaking; • Seismic related ground failure including liquefaction; or • Landslides.	S	GEO-A	LM
GEO-2. Result in substantial soil erosion or the loss of topsoil.	S	WAQ-C	LM
GEO-3. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.	LS	None	LS
GEO-4. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code, creating substantial risks to life or property.	LS	None	LS
Geo-5 Have soils incapable of adequately supporting the use of septic tanks or alternative waste disposal systems where sewers are not available for the disposal of wastewater.	NI	NI	NI
NI–No Impact, LS–Less than Significant, LM–Less than Significant with Mitigation, S–Significant, SU–Significant and Unavoidable			

3.8. GREENHOUSE GAS EMISSIONS AND ENERGY USE

This section reviews the definition and causes of climate change, and the potential for the alternatives to result in impacts to climate change. It identifies the stakeholders and regulatory agencies for regulating greenhouse gas (GHG) emissions in the project area, establishes thresholds for significant impacts, and evaluates those impacts for each alternative.

This section also assesses use of energy during construction and operations of the proposed project. Energy use is included in the GHG emissions section because wise and efficient use of energy is directly related to efforts to control GHG emissions and reduce the effects of climate change.

3.8.1. Environmental Setting

The rate of increase in global average surface temperature over the last hundred years has not been consistent; each of the last three decades has been successively warmer at the Earth's surface than any preceding decade since 1850 (IPCC 2013). The period from 1983 to 2012 was likely the warmest 30-year period of the last 1400 years in the Northern Hemisphere (IPCC 2013). During the same period over which this increased rate of global warming has occurred, additional changes have occurred in other natural systems: sea levels have risen on average 1.8 mm/yr; precipitation patterns throughout the world have shifted, with some areas becoming wetter and other drier; tropical cyclone activity in the North Atlantic has increased; peak runoff timing of many glacial and snow fed rivers has shifted earlier; as well as numerous other observed conditions. Though it is difficult to prove a definitive cause and effect relationship between global warming and other observed changes to natural systems, there is

high confidence in the scientific community that these changes are a direct result of increased global temperatures (IPCC 2013).

3.8.2. Existing Conditions

Maximum (daytime) and minimum (nighttime) temperatures are increasing almost everywhere in California but at different rates. The annual minimum temperature averaged over all of California has increased 0.33°F per decade during the period 1920 to 2003, while the average annual maximum temperature has increased 0.1°F per decade (Moser et al. 2009). With respect to California's water resources, the most significant impacts of global warming have been changes to the water cycle and sea level rise. Over the past century, the precipitation mix between snow and rain has shifted in favor of more rainfall and less snow (Mote et al. 2005; Knowles et al. 2006) and snowpack in the Sierra Nevada is melting earlier in the spring (Kapnick and Hall 2009). The average early spring snowpack in the Sierra Nevada has decreased by about 10 percent during the last century, a loss of 1.5 million acre-feet of snowpack storage (DWR 2008). These changes have significant implications for water supply, flooding, aquatic ecosystems, energy generation, and recreation throughout the State. During the same period, sea levels along California's coast rose 7 inches (DWR 2008).

Statewide GHG emissions in 2012 were approximately 4459 million metric tons of CO2e (carbon dioxide equivalent) (CARB 2014). Based on this estimate, statewide emissions would need to be reduced by approximately 32 million metric tons of CO2e by 2020 to meet the California Global Warming Solutions Act of 2006 (Assembly Bill 32, commonly referred to as AB 32) goal of achieving 1990 CO2e levels (427 million metric tons of CO2e) (CARB 2012a).

3.8.3. Regulatory Setting

3.8.3.1. *Federal Regulations*

Federal laws and regulations affecting GHG emissions include vehicle fuel economy standards under the Energy Policy and Conservation Act of 1975 (42 USC Section 62010 as well as EPA regulation of stationary source GHG emissions under the Clean Air Act (42 USC Section 7401 et seq.).

3.8.3.2. *State Regulations*

CALIFORNIA AIR RESOURCES BOARD. The CARB is responsible for the development, implementation, and enforcement of California's motor vehicle pollution control program, GHG statewide emission estimates and goals, and development and enforcement of GHG emission reduction rules. California is the second largest contributor of GHG in the U.S. and the sixteenth largest in the world (CEC 2006). During 1990 to 2003, California's gross state product grew 83 percent while GHG emissions grew 12 percent. While California has a high amount of GHG emissions, it has low emissions per capita. The major source of GHG in California is transportation, contributing 37 percent of the State's total GHG emissions (CEC 2006). The industrial sector accounted for approximately 22 percent of the total emissions. Electricity generation is the third largest generator, contributing 21 percent of the State's GHG emissions (CARB 2014).

California has taken proactive steps to address the issues associated with GHG emissions and climate change. A summary of the major California GHG regulations that would affect the project's GHG emissions is presented in Table 3.21.

Table 3.21 Summary of California Greenhouse Gas Regulations	
Bill, Year	**Description**
AB 1493, 2002	Requires CARB to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emissions standards apply to automobiles and light trucks beginning with the 2009 MY. Although litigation was filed challenging these regulations and EPA initially denied California's related request for a waiver, the waiver request has now been granted.
Executive Order (E.O) S-3-05, 2005	The goal of E.O. S-3-05 is to reduce California's GHG emissions to: (1) year 2000 levels by 2010, (2) 1990 levels by 2020, and (3) 80 percent below the 1990 levels by 2050.
Bill, Year	**Description**
AB 32, California Global Warming Solutions Act of 2006	Sets overall GHG emissions reduction goals and mandates that CARB create a plan that includes market mechanisms and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Requires statewide GHG emissions be reduced to 1990 levels by 2020. (The 1990 CO2e level is 427 million metric tons of CO2e (CARB 2012a). Directs CARB to develop and implement regulations to reduce statewide emissions from stationary sources. Specifies that regulations adopted in response to AB 1493 be used to address GHG emissions from vehicles. Requires CARB to adopt a quantified cap on GHG emissions representing 1990 emissions levels. Includes guidance to institute emissions reductions in an economically efficient manner and conditions to ensure that businesses and consumers are not unfairly affected by the reductions.
E.O. S-01-07, 2007	Requires the carbon intensity of California's transportation fuels to be reduced by at least 10 percent by 2020.
Senate Bill 97	This bill directed the Natural Resources Agency, in coordination with the Governor's Office of Planning Research, to address the issues through Amendments to the CEQA Guidelines. The revised Guidelines were adopted December 30, 2009 to provide direction to lead agencies about evaluating, quantifying, and mitigating a project's potential GHG emissions.
EO B-30-15, 2015	Establishes new interim state GHG reduction goal of 40 percent below 1990 levels by 2030.

3.8.3.3. *Bay Area Air Quality Management District*

The BAAQMD adopted thresholds and guidance in 2010 addressing the analysis of GHG emissions as well as other air pollutant emissions. The guidelines consist of two project-level thresholds for operational emissions, one for stationary sources (10,000 metric tons per year of CO2e) and one for projects with non-stationary sources (1,100 metric tons per year of CO2e; or 4.6 metric tons per service population per year of CO2e; or compliance with qualified GHG reduction strategies). Thresholds were not set for construction GHG emissions. As noted in the air quality regulatory setting, the BAAQMD CEQA thresholds are currently the subject of litigation before the Supreme Court, but the District has independently determined they are supported by substantial evidence.

3.8.3.4. *Sacramento Metropolitan Air Quality Management District (SMAQMD)*

Although the project is not located within SMAQMD boundaries, it has set a significance threshold for construction GHG emissions, and this threshold was used for this EIR. SMAQMD has established a threshold of 1,100 metric tons per yr (MT/yr) of CO_2 equivalent emissions for significant construction-phase GHG emissions, which is equal to 1,210 tons/yr.

3.8.3.5. *Local Plans and Policies*

CITY OF MILPITAS CLIMATE ACTION PLAN. The City of Milpitas adopted a Climate Action Plan in 2013. The plan objective is to streamline environmental review of future development projects consistent with CEQA and BAAQMD air quality guidelines. The plan includes a strategy, specific reduction measures, strategies for implementation, and a monitoring program to meet a 15 percent reduction from 2005 emissions of GHG by 2020 (one of three options outlined by BAAQMD). Goals are established in areas of energy, water, transportation, solid waste and off-road equipment. Goal 12 pertains directly to the proposed project:

- Goal 12: Support the expansion and use of clean technology off-road equipment.
- Measure 12.2: The City will encourage new development to comply with applicable BAAQMD best management practices that reduce GHGs, including use of alternative-fueled vehicles and equipment, use of local recycled materials, and recycling of construction or demolition materials. The City's goal is that 40 percent of construction equipment should comply with applicable best management practices.

CITY OF SAN JOSE GREENHOUSE GAS REDUCTION STRATEGY. Adopted in 2011, San Jose's Greenhouse Gas Reduction Strategy was developed in conjunction with Envision 2040, San Jose's Master Plan, and is designed to implement CEQA and BAAQMD air quality standards. Of three potential strategies outlined by BAAQMD, San Jose elected to establish a plan efficiency threshold of 6.6 metric tons of CO2 equivalent per service population (residents and workers) per year by 2020.

The strategy contains a number of implementation measures in such areas as the built environment, energy, land use, transportation, recycling, and waste reduction. While none of the specific measures specifically apply to the proposed project, waste reduction, recycling, and use of energy efficient construction equipment would generally apply.

SANTA CLARA COUNTY GENERAL PLAN. The Santa Clara County General Plan, Countywide Issues and Polices, include various policies to increase energy efficiency and resource conservation within Santa Clara County (Santa Clara County, 1994). The policies pertaining to energy efficiency and conservation can be summarized as follows:

- Energy efficiency and conservation efforts should occur across sectors/industries and be consistent with the state energy plan.
- Santa Clara County should reduce energy use and fossil fuel dependency in the transportation sector.
- Alternatives to nonrenewable energy sources should be integrated into building and structural design to the extent possible.

3.8.4. Significance Criteria

The proposed project would have a significant effect on GHG emissions and energy use if it would:

- **GHG-1** Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- **GHG-2** Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.
- **EN-1** Use energy in an inefficient, wasteful, or unnecessary manner.
- **EN-2** Result in an increased reliance on fossil fuels and decreased reliance on renewable energy sources.

3.8.5. Potential Impacts

GHG-1 GENERATE GHG EMISSIONS, EITHER DIRECTLY OR INDIRECTLY, THAT MAY HAVE A SIGNIFICANT IMPACT ON THE ENVIRONMENT

Significant and unavoidable for construction; less than significant for operations.

The project is primarily a construction project resulting in short-term, temporary GHG emissions from combustion associated with on- and off-road equipment. CO_2 is produced during the burning of fossil fuels and is the predominant GHG generated as a result of construction of the proposed project. Because no major sources exist for the other GHGs during the construction process, emissions of the other GHGs are not considered to be significant and no quantitative emission calculations were made for them. Project construction would result in a net increase of GHG emissions in the form of CO_2 over a finite period of one to two years.

CONSTRUCTION (ALL REACHES). CO_2 emissions from activities undertaken during construction were calculated by inputting construction-related data into the Sacramento Metropolitan Air Quality Management District's (SMAQMD) Road Construction Emissions Model, Version 7.1.5.1 (2013). Appendix B presents air quality model data sheets, which include CO_2 calculations.

CO_2 emissions from construction are estimated to be 1,110 tons in Reaches 1-3 and 928 tons in Reach 4 (Table 3.22). The BAAQMD does not have a threshold for GHG emissions during construction. The SMAQMD has established a threshold of 1,100 metric tons per yr (MT/yr) of CO_2 equivalent emissions for significant construction-phase GHG emissions, which is equal to 1,210 tons/yr. If project construction occurred over two years, the greatest amount of annual emissions would occur during the construction of improvements to Reaches 1 through 3. In that situation, the proposed project would generate CO_2 emissions of up to 1,110 tons/yr, which is below the SMAQMD significance threshold of 1,210 tons/yr. However, if the entire project (i.e. all four reaches) was constructed in one year, annual CO_2 emissions would be approximately 2,038 tons, exceeding the SMAQMD significance threshold, resulting in a significant impact.

Table 3.22 Project GHG Emissions					
Reaches Constructed During One Year	**Pollutant**	**Lbs. per day**	**Tons /Year**	**SMAQMD Project Construction Threshold (Tons/year)**	**Exceed Significance Threshold**
1 to 3	CO_2	12,526	1,110	1,210	No
4	CO_2	9,815	928	1,210	No
Reaches 1 to 4	CO_2	22,341	2,038	1,210	Yes

OPERATIONS (ALL REACHES). The proposed project would increase maintenance and operations activities above the baseline by adding inspections and maintenance of floodwalls and the UPRR culvert. The expected increase in vehicle trips would be less than one per month, which would result in far less emissions of greenhouse gases than the SMAQMD significance threshold of 1,210 tons/year. This impact would be less than significant.

MITIGATION. Implementation of Mitigation Measures AIR-A and AIR-B, which are intended to reduce NOx emissions (see Sections 3.3.5 and 3.3.6), would also reduce GHG emissions by up to 20 percent. These measures would reduce the amount of fossil fuels consumed in the construction phase by eliminating unnecessary idling of equipment and ensuring equipment is in good condition and properly maintained to manufacturers specifications.

SIGNIFCANCE AFTER MITIGATION. The proposed mitigation measures would reduce construction-period emissions of CO_2 by up to 20 percent but would not reduce CO_2 emissions below the significance threshold if construction is completed in one year. As a result, this impact would be significant and unavoidable.

GHG-2 CONFLICT WITH AN APPLICABLE PLAN, POLICY, OR REGULATION ADOPTED FOR THE PURPOSE OF REDUCING THE EMISSIONS OF GREENHOUSE GASES

Less than significant for construction; less than significant for operations

CONSTRUCTION (ALL REACHES). The proposed project is compliant with Goal 12 of City of Milpitas Climate Action Plan in that many of the construction or demolition materials would be recycled, and most materials are locally sourced. Although the City of San Jose's Greenhouse Gas Reduction Strategy does not apply specifically to this type of project, the proposed project is still consistent with its recommended measures to reduce wastes, recycle materials and use recycled materials, and energy efficient construction equipment. Therefore, the proposed project would not conflict with local GHG reduction policies.

The proposed project would not interfere with the State's ability to achieve the AB 32 Scoping Plan because construction GHGs would be negligible compared to statewide emissions. Thus the project would not substantially interfere with the State's ability to achieve the AB 32 GHG emissions reduction target of 1990 emissions by 2020. This impact would be less than significant.

OPERATIONS (ALL REACHES). The proposed project would increase maintenance and operations activities above the baseline by adding inspections and maintenance of floodwalls and the UPRR culverts. The expected increase in vehicle trips would be less than one per month, which would result in negligible emissions of GHGs. This impact would be less than significant.

EN-1 USE ENERGY IN AN INEFFICIENT, WASTEFUL, OR UNNECESSARY MANNER,

Less than significant for construction; less than significant for operations

And,

EN-2 RESULT IN AN INCREASED RELIANCE ON FOSSIL FUELS AND DECREASED RELIANCE ON RENEWABLE ENERGY SOURCES.

Less than significant for construction; less than significant for operations

CONSTRUCTION (ALL REACHES). Construction of the proposed project would result in the use of energy during construction. Fossil fuels would be used to power construction machinery, haul trucks, and machinery used in the disposal of construction debris. In general, the construction contractor would use efficient machinery and would maintain equipment to use the least amount of energy possible. Also, having multiple staging areas would reduce the length of vehicle trips to and from the active construction location. A local labor force would be employed to reduce the vehicle miles traveled to and from the construction area during the daily commute. Additionally, construction activities would not result in long-term consumption of petroleum-based energy resources and would not permanently increase reliance on petroleum based resources. Construction impacts on energy efficiency and use, in particular petroleum-based energy resources associated with transportation, would be less than significant.

Although electricity would be consumed for lighting, electric signs and safety equipment, and for use of power tools, the amount that would be used would be the minimum needed to power equipment, and would be relatively minimal. Electricity demand for construction would not permanently increase reliance on energy resources that are not renewable. Construction impacts on energy efficiency and use, in particular electricity resources, would be less than significant.

OPERATIONS (ALL REACHES). Although additional maintenance and operations activities may be needed to inspect and maintain the floodwalls and the UPRR culverts, excavation of sediments in the channel is likely to decrease as the reconstruction would be designed to pass sediments through more efficiently. Therefore, net use of energy during maintenance and operations is likely to decrease relative to baseline conditions.

MITIGATION (NOT REQUIRED). Although Impacts EN-1 and EN-2 would be less than significant, implementation of Mitigation Measures AIR-A and AIR-B would further ensure that fuel energy consumed in the construction phase would not be wasted through unnecessary idling or through the operation of poorly maintained equipment. These mitigation measures would also ensure that equipment is in good condition and maintained to manufacturers specifications to maintain fuel efficiency and ensure that equipment not being used would be shut off.

3.8.6. Statement of Impact

As shown in Table 3.23, impacts associated with greenhouse gas emissions would be significant and unavoidable, and impacts associated with energy use would be less than significant. Mitigation measures designed to reduce air quality impacts would increase efficient use of energy during construction.

Table 3.23 Statement of Impacts, Greenhouse Gases and Energy Use

Impact	Prior to Mitigation	Applicable Mitigation	After Mitigation
GHG-1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment	S	AIR-A AIR-B	SU
GHG-2. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases	LS	AIR-A AIR-B	LS
EN-1. Use energy in an inefficient, wasteful, or unnecessary manner.	LS	AIR-A AIR-B	LS
EN-2. Result in an increased reliance on fossil fuels and decreased reliance on renewable energy sources.	LS	None	LS
NI–No Impact, LS–Less than Significant, LM–Less than Significant with Mitigation, S–Significant, SU–Significant and Unavoidable			

3.9. HAZARDOUS MATERIALS

This section describes hazardous materials that are known to exist or which may exist within the study area, and provides an evaluation of possible adverse effects regarding hazardous materials associated with implementing the proposed Upper Berryessa Creek Flood Risk Management Project. Appendix E contains the proposed project's Hazardous, Toxic, and Radioactive Waste report, which was used as the primary source of information for this section.

3.9.1. Environmental Setting

The term "hazardous materials" in this analysis refers to both hazardous substances and hazardous wastes. Under Federal and State laws, any material, including wastes, may be considered hazardous if it is specifically listed by statute as such or if it is toxic (causes adverse human health effects), ignitable (has the ability to burn), corrosive (causes severe burns or damage to materials), or reactive (causes explosions or generates toxic gases). According to the California Health and Safety Code (sec. 25501 (o)), a hazardous material is defined as "any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment".

3.9.2. Existing Conditions

Beginning in the mid-twentieth century, the land uses along the 2.2-mile reach of Upper Berryessa Creek under study changed from mainly agricultural to light industrial and commercial. During the last 50 or more years, several incidents involving hazardous materials have occurred along this reach, including leaking underground and above-ground storage tanks, spills, and ineffective practices of using and

storing hazardous materials. However, it appears from available information reviewed for this EIR that most of these incidents have been remediated and are now considered by regulatory agencies to be "closed cases", with the exception of the following seven sites (all in Milpitas):

- The Former Great Western Chemical Company Site (Great Western Site), 945 Ames Avenue;
- The Former Jones Chemicals, Inc. Site (JCI Site), 985 Montague Expressway;
- Penske Truck Leasing, 1039 Montague Expressway;
- North American Transformer, 1200 Piper Drive;
- Linear Technology Corporation, 275 S. Hillview Drive;
- Lite-on, 720 S. Hillview Drive; and
- DISC Stampers, 1103 Montague Court.

The locations of these sites are shown in Figure 3.13. Based on a review of information pertaining to these sites, Great Western and Jones Chemical have had considerably greater number and level of hazardous materials incidents compared to the other five sites. Also, both of these sites are documented to be sources of prior volatile organic compound releases to soil and groundwater, and are located hydraulically upgradient from the project area. Groundwater beneath both sites flows westerly such that the respective groundwater plumes cross the project area as shown on Figure 3.13. Additional information about these sites is provided below.

3.9.2.1. *Great Western*

BACKGROUND. The Great Western Site was a chemical depot and distribution business in operation between the late 1950s and the mid-1980s. Past operations included chemical storage in four 6,000-gallon and other smaller above-ground storage tanks (ASTs), and eight 7,500-gallon underground storage tanks (USTs). Other components included a drum storage area, an acid-packaging area and sump, a vehicle fueling island with USTs containing diesel and gasoline, and an above-ground propane tank. The ASTs were removed in 1984 and 1985, and the USTs were removed in 1989. The sump was removed in 2001 (PEI 2012).

Initial investigations conducted in 1982 by the SFBRWQCB revealed, and additional investigations in subsequent years have confirmed, that VOCs, including trichloroethylene (TCE), 1, 1, 1-trichloroethane (TCA), and tetrachloroethylene (PCE), as well as aromatics and petroleum hydrocarbons, were released into the soil and groundwater underlying the Great Western Site during its operations. In a report on a Phase II investigation conducted for the District in 1996, Kennedy-Jenks (1996) included a figure that indicated a "plume" of VOC contamination emanating from the Great Western Site, which has been used for this FEIR analysis.

SITE HYDROGEOLOGY. Sediments underlying the Great Western Site (down to depths greater than 100 feet) are mainly composed of alluvial deposits of silts and clays with intermittent silty sand and gravel lenses (PEI 2013). These lenses, which may be expected to provide a flow pathway for groundwater, are only about 3 feet thick at most, and are not considered to be laterally continuous. The sediments underlying the site have been divided into three vertical zones: a shallow zone to less than 40 feet below ground surface (bgs), an intermediate zone between 40 and 65 feet bgs, and a deep zone with depths beyond 65 feet bgs. A dense contiguous clay layer appears at about 60 feet bgs, and this clay layer has been considered the lower boundary of groundwater flow underlying the Great Western Site.

Groundwater flow direction is generally west-northwest under a hydraulic gradient of approximately 0.0052 feet per feet (foot) in the shallow zone, and approximately 0.0071 foot in the intermediate zone. Also, in general, an upward vertical gradient has been observed between the intermediate and shallow zones (PEI 2013).

Figure 3.13 Hazardous Waste Sites

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Santa Clara Valley Water District

UPPER BERRYESSA CREEK
FLOOD RISK MANAGEMENT PROJECT
0698

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REMEDIATION HISTORY AND STATUS. Based on the sources and nature of contamination at the Great Western Site and the hydrogeological characteristics of the underlying strata revealed by investigations, the Great Western Site remediation activities have been conducted in two areas: an "On-Site Area," which comprises the source location, and an "Off-Site Area," which comprises a larger area made up of the plume downslope of the source location These two areas have been divided into four operable units based on somewhat distinct groundwater zones defined as follows:

- Operable Unit On-site Shallow Groundwater Zone (On-site SGZ), to a depth of 40 feet bgs;
- Operable Unit On-site Intermediate Groundwater Zone (On-site IGZ), at a depth between 40 and 70 feet bgs;
- Operable Unit Off-site SGZ, again to a depth of 40 feet bgs; and
- Operable Unit Off-site IGZ, again at a depth between 40-70 feet bgs.

As can be seen in Figure 3.13, Upper Berryessa Creek crosses the plume in the Off-Site Area of the Great Western Site.

Remediation investigations conducted in the On-Site and Off-Site Areas of the Great Western Site indicate that contamination found in the On-Site operable units is associated with source zones identified in the On-Site Area (e.g., former locations of USTs and ASTs). By comparison, the contamination found in the Off-Site Area is mainly associated with contaminants that have migrated as a plume from On-Site source zones (PEI 2012).

Based on this, the remediation actions conducted over the years in the four operable units have focused on improving groundwater quality and controlling and reducing off-site migration of impacted groundwater from the on-site source zones. Following removal of the primary on-site sources, the remedial actions have relied on the use of a groundwater extraction and treatment system (GWETS), which was in operation between 1986 and 2006. This system was replaced in 2007 by an enhanced reduction dechlorination (ERD) system, still operating at present (2014).

Associated with the operation of these treatment systems has been the installation and ongoing use of numerous extraction, injection, and monitoring wells in the On-Site and Off-Site Areas. Groundwater levels have also been periodically monitored in selected wells for both the On-Site and Off-Site Areas. Initial and ongoing investigations and monitoring have found that accidental releases and operational procedures during the life of the Great Western Facility have resulted in high concentrations of VOCs in a groundwater plume under both the On-Site Area and Off-Site Area. Twenty-four monitoring wells were accessed during these investigations. Average depth to groundwater was found to be 7.20 feet, with the shallowest depth found at 4.10 feet and the greatest depth at 11.35 feet.

The concentrations of VOCs in the groundwater have been greatly reduced over time as a result of the ongoing remediation efforts, although several monitoring wells are still measuring VOCs above Environmental Screening Levels (ESLs) set by the EPA.

Based on the positive results achieved by the ERD system in reducing VOC levels particularly in Operable Unit Off-site SGZ, a proposal was submitted to the SFBRWQCB in April 2012 by Pristine Earth, Inc. (PEI 2012) on behalf of the current landowner of the Great Western Site (McCall Oil and Chemical Corporation). The proposal was to close further remediation efforts in Operable Unit Off-site SGZ, and destroy the wells associated with the remediation and monitoring of that Operable Unit. The SFBRWQCB approved the proposal in October 2012 (SFBRWQCB 2012), and this closure was completed by the end of 2012. Although remedial efforts have ceased in Operable Unit Off-site SGZ, the other three

zones still have active VOC contamination remediation taking place, and there is migration potential between zones.

3.9.2.2. *Jones Chemical Incorporated Site*

BACKGROUND. The Jones Chemical Incorporated (JCI) site was also a chemical storage and distribution business, in operation between the early 1960s and the late 1990s. The JCI site routinely received and stored chlorine gas, sulfur dioxide, anhydrous ammonia, various acids and bases, as well as TCA. Upper Berryessa Creek is located about 50 feet down-gradient from the western JCI Site boundary (see Figure 3.13.)

In early February 1982, an above-ground storage tank on the JCI Site exploded and released up to 4,000 gallons of chlorinated solvents into the ground and to Upper Berryessa Creek via a storm drain. Initial cleanup of the spill involved pumping and disposing of liquid from the storm drain and creek, and removing about 280 cubic yards of sediment from the creek bed. The RWQCB commissioned initial investigations following the spill, and has since been overseeing additional investigations, as well as remediation actions and monitoring in order to clean up contaminated soils and groundwater originating from the JCI Site spill and operations. In a report on a Phase II investigation conducted for the District in 1996, Kennedy-Jenks (1996) included a figure that indicated a "plume" of VOC contamination emanating from the JCI site. This figure has been used for this analysis.

Subsurface investigations and ongoing remediation measures have taken place within an "On-Site Area" (the former JCI site), and within four down-gradient off-site areas to the west and northwest collectively referred to as the "Off-Site Area".

SITE HYDROGEOLOGY. Sediments underlying the On-Site Area and the Off-Site Area are mainly composed of inter-bedded alluvial deposits of silts, sands, gravels, and clays. The upper 10 feet of sediments are a mixture of sand, gravel, and gravelly clay deposits. These are underlain by another 10-foot layer of clay, with silty and sandy clays and small amounts of sand and gravel. Interspersed within this upper 20 feet of sediment, there are numerous small beds and lenses of sand, up to a foot thick. Ongoing monitoring, investigations, and remedial actions associated with the On-Site and Off-Site Areas have recognized two vertical permeable zones as transmitting pollutants: a shallow zone to 40 feet bgs and an intermediate zone between 40 and 70 feet bgs. Hydraulic conductivities in these permeable zones are high enough (up to $5x10^{-4}$ cm/sec) to transmit pollutants. Groundwater elevation measurements indicate a westward flow direction in the shallow and intermediate groundwater zones (RWQCB 1990; Arcadis 2014a).

REMEDIATION ACTIONS AND STATUS. From the initial and ongoing investigations and monitoring it has been determined that the groundwater in the permeable zones (shallow and intermediate) underlying the On-Site Area and the down-gradient Off-Site Area to the west and northwest have been polluted by a groundwater plume containing several chlorinated solvents (VOCs), with the major ones being TCE, TCA, PCE, dichloroethene (DCE), and dichloroethane (DCA). On this basis, ongoing remediation actions, monitoring, and investigations have been conducted in both the On-Site and Off-Site Areas, focused on improving groundwater quality and controlling and reducing the migration of affected groundwater. Associated with the remediation actions has been the installation and ongoing use of numerous extraction, injection, and monitoring wells in the On-Site and Off-Site Areas. Groundwater levels have also been periodically monitored in selected wells at both the On-Site and Off-Site Areas. The remediation actions are summarized below.

ON-SITE AREA. Following initial investigations and monitoring on-site between 1982 and 1984, a GWETS was established and operated between 1986 and 2002, when it became inoperable due to vandalism. The GWETS was replaced with a carbohydrate injection system, which was initially cheese whey and then replaced with emulsified soybean oil substrate. Based on the analytical results of groundwater samples collected as of June 2010, ongoing injection of the substrate in the On-Site Area was terminated in mid-2010 (Arcadis 2014a).

OFF-SITE AREA. Remedial investigations to assess the lateral and vertical distribution of contaminants in the groundwater in the Off-Site Area began in 1984, and characterization was completed in 1987. As a result the GWETS was expanded to the Off-Site Area to help control VOC migration off-site. By 2003, the GWETS off-site had been replaced with the cheese-whey injection system, with emulsified soybean oil substrate later replacing cheese-whey to accelerate the cleanup of VOCs. Based on the analytical results of groundwater samples collected as of June 2010, ongoing injection of substrate in the Off-Site Area was terminated in mid-2010 (Arcadis 2014a).

In 2009, at the request of the SFBRWQCB to further assess potential health risks in the Off-Site Area, several soil vapor sampling points were established in the Off-Site Area at depths of 5 feet and 10 feet bgs. In July 2009, samples were taken and analyzed for VOCs at these locations (LFR 2009). In March 2014, the SFBRWQCB requested another round of VOC soil vapor samples be taken at the Off-Site Area sampling points, with additional points established as necessary to replace missing or unavailable sampling points. This request was made to obtain updated data on concentrations of soil vapor in the Off-Site Area in order to assess mitigation measures being designed for planned residential development in a portion of the Off-Site Area west of the JCI Site (RWQCB 2014).

SAMPLING AND MONITORING RESULTS. As can be seen in Figure 3.13, Upper Berryessa Creek crosses the groundwater contamination plume between the On-Site and Off-Site portions of the JCI Site. Because excavation depths associated with the proposed project are likely not to exceed 15 feet bgs, and the construction zone is mainly 50 feet on each side of the creek, the assessment in this EIR of potential adverse effects from groundwater contamination associated with the JCI Site focuses primarily on data on groundwater quality and levels and VOC soil vapor data near the creek and within the shallow groundwater zone (less than 40 feet bgs).

Figures in the Geotechnical Report (Appendix D) show the locations of wells in the vicinity of Upper Berryessa Creek, with accompanying meta-data on VOC concentration levels sampled in 2009 and 2013. Twenty groundwater wells were accessed at this site, with the average depth to groundwater being 12.12 feet. The shallowest depth to groundwater was 9.31 feet, and the greatest depth to groundwater was 13.35 feet. The concentrations of VOCs in the groundwater have been greatly reduced over time as a result of the ongoing remediation efforts, although some monitoring wells are still measuring VOCs above ESLs.

To further characterize the extent of possible contamination in the JCI plume area, soil samples were obtained and sampled in December 2014 (Tetra Tech, 2015d). These investigations occurred in the vicinity of the plumes to determine whether any contamination exists in the underlying soils.

In-situ soil samples were taken along the Berryessa Creek access road in proximity to the JCI plume and the Great Western plume. The in-situ soil samples were obtained by advancing soil borings with a truck-mounted, direct push bore coring rig, resulting in 2-to-4-inch diameter soil samples.

A summary of the findings is as follows:

- The VOC concentrations detected in the upper 15 feet of soil are below risk-based screening criteria applied by the SFRWQCB and the EPA. The report concludes that the reuse of the soils would not present an unacceptable human health or environmental risk, and therefore would be appropriate.
- Soil transported off-site for disposal would be classified as non-hazardous.
- Dewatering, if necessary, would require treatment prior to discharge.

3.9.2.3. *Penske Truck Leasing Site*

The Penske Truck Leasing Site (Penske Site) was operated as a fleet rental, servicing, repair, and fueling operations facility until September 2003. Former features at the Penske Site included two 20,000-gallon diesel fuel USTs, one 500-gallon waste oil AST, one 1,500-gallon new oil AST, and four dispenser islands. All of these features were removed in 2003. Soil testing at the Penske Site taken at the time, and groundwater samples taken in 2004, indicated the presence of TPH-d and TPH-g in the soil and groundwater that were above ESLs. Upper Berryessa Creek is located approximately 500 feet west and down-gradient of the removed features (see Figure 3.13).

In June 2014, the Santa Clara Department of Environmental Health (DEH) determined that the RWQCB's Low Threat UST Case Closure Policy criteria had not been met (Arcadis 2014c). Reasons stated by the DEH include:

- Some sources of contamination remain unidentified;
- The extent of the TPH-d and TPH-g plume has not been defined;
- Soils in some areas on the site were not over-excavated and remain in place; and
- No soil-gas samples have been collected and an adequate bioattenuation zone has not been determined.

On this basis, the DEH requested that Penske prepare a Work Plan to prepare a Site Assessment Report that addresses the impediments to closure of the site under the Low Threat UST Case Closure Policy. In September 2014, the DEH accepted the proposed Work Plan, and requested that the Site Assessment Report be submitted by January 9, 2015. The site assessment report was submitted to SFBRWQCB in February 2015, and indicated that because only very localized, low concentrations of chlorinated organic compounds remained in the groundwater, no further action is recommended at the site (Arcadis 2015).

3.9.2.4. *North American Transformer Site*

This North American Transformer Site (NAT Site) was used as a manufacturing, testing, and repair facility for electrical transformers from about 1958 to 2002. The NAT Site is located about 1,200 feet west and down-gradient of Upper Berryessa Creek (see Figure 3.13). Several environmental investigations at the NAT Site since 1989 have shown that soil at the site was contaminated, primarily with transformer oil, chromium, PCBs, TCE, PCE, and TCA. Under the oversight of the RWQCB, hazardous substances in the soil at the site have been remediated to RWQCB standards. This included the removal and off-site disposal of more than 5,000 tons of impacted soil. However, in 2005, an environmental restriction was placed on the property title of the NAT Site because it was determined that the shallow groundwater under the site was contaminated with VOCs (Waukesha 2005). The groundwater contamination was attributed to the 1982 release of VOCs from the former JCI Site, located just east and up-gradient from

the NAT Site. Remediation efforts to bring VOCs in the groundwater under the NAT Site to within acceptable ESLs are ongoing, through the efforts of the JCI Site, and with the oversight of the RWQCB.

3.9.2.5. *Linear Technology Corporation Site*

Information on this site is marginal. The site is located about 500 feet west and down-gradient from Upper Berryessa Creek (see Figure 3.13). The RWQCB GeoTracker database does not have any data or information on the site. The ENVIROSTOR database of the California Department of Toxic Substances Control (DTSC) lists the cleanup status of the site as "Inactive – Needs Evaluation," and indicates that the site has a tiered NPDES Permit: N0. CAS 00001, with a Site Code: 71002830.

3.9.2.6. *Lite-On Inc. Site*

Information on this site is also marginal. The site is located about 100 feet west and adjacent to Upper Berryessa Creek (see Figure 3.13). The RWQCB GeoTracker database does not have any data or information on the site. The ENVIROSTOR database of the DTSC lists the cleanup status of the site as "Inactive – Needs Evaluation," with a Site Code: 71002704.

3.9.2.7. *DISC Stampers LLC Site*

Information on this site is also marginal. The site is located about 500 feet west and up-gradient from Upper Berryessa Creek, in the same vicinity as the Penske Site (see Figure 3.13). The RWQCB GeoTracker database does not have any data or information on the site. The ENVIROSTOR database of the DTSC lists the cleanup status of the site as "Inactive – Needs Evaluation, as of 9/16/2013," with a Site Code: 71004121.

3.9.2.8. *Airports and Sensitive Receptors*

AIRPORTS IN PROJECT VICINITY. The nearest public airport to the project area is the Norman Y. Mineta San José International Airport, located about 4 miles southwest of the project in the City of San José. The Moffett Federal Airfield is located approximately 8 miles west of the project area. The Reid-Hillview Santa Clara County Airport is located approximately 9 miles south-southeast of the project area. There are no private airfields in the project vicinity.

SENSITIVE RECEPTORS IN PROJECT VICINITY. The nearest school to the project area is Northwood Elementary School, located about 700 feet south of the project area. The Milpitas Christian Preschool is located approximately 0.6 mile northeast. Pinewood Park is located approximately 1 mile west of the project area. Residential developments are found at The Crossing at Montague Apartments, located about 800 feet south of the edge of the JCI plume, and adjacent to Los Coches Creek, located approximately 1,600 feet north of the edge of the Great Western plume.

3.9.3. **Regulatory Setting**

Hazardous materials and hazardous wastes are subject to numerous Federal, State and local laws and regulations intended to protect public health and safety and the environment. These laws and regulations require that proposed projects include detailed planning and management to ensure that hazardous materials are properly handled, used, stored, and disposed of and, in the event that such materials are accidentally released, to reduce risks to human health and the environment.

The EPA, CEPA, DTSC, SFBRWQCB, and BAAQMD are the major Federal, State, and regional agencies that enforce hazardous, toxic, and radioactive waste (HTRW) regulations.
The main focus of the Federal Occupational Safety and Health Administration (Fed-OSHA) and the California Occupational Safety and Health Administration (Cal-OSHA) is to prevent work-related injuries and illnesses, including from exposures to hazardous materials. CAL-FIRE is the State agency that implements fire safety regulations.

3.9.3.1. *Soil and Groundwater Contamination*

CA Government Code § 65962.5 (Cortese List)
Government Code § 65962.5 was originally enacted in 1985, and requires the California DTSC to compile, update, and submit to Cal EPA annually a list of the following:

- All hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code.
- All land designated as hazardous waste property or border zone property pursuant to Article 11 (commencing with Section 25220) of Chapter 6.5 of Division 20 of the Health and Safety Code.
- All information received by the DTSC pursuant to Section 25242 of the Health and Safety Code on hazardous waste disposals on public land.
- All sites listed pursuant to Section 25356 of the Health and Safety Code.
- All sites included in the Abandoned Site Assessment Program.

Santa Clara County
In Santa Clara County, remediation of contaminated sites is generally performed with the oversight of the Santa Clara County Hazardous Materials Compliance Division (a division of the Santa Clara County Department of Environmental Health), or in some instances, the SFBRWQCB and/or the DTSC. At sites where contamination is suspected or known to have occurred, the site owner is required to perform a site investigation and perform site remediation, if necessary. Site remediation or development may also be subject to regulation by other agencies. If the proposed project discharges wastewater to the sanitary sewer a permit for temporary discharge to the San Jose/Santa Clara Water Pollution Control Plant would be required.

3.9.3.2. *Worker Safety Requirements*

Fed-OSHA and Cal-OSHA are the agencies responsible for assuring worker safety in the handling and use of chemicals in the workplace. The Federal regulations pertaining to worker safety are contained in Title 29 of the Code of Federal Regulations (CFR), as authorized in the Occupational Safety and Health Act of 1970. They provide standards for safe workplaces and work practices, including standards relating to hazardous materials handling. In California, Cal-OSHA assumes primary responsibility for developing and enforcing workplace safety regulations.

At sites known or suspected to have soil or groundwater contamination, construction workers must receive training in hazardous materials operations and a site health and safety plan must be prepared. The health and safety plan establishes policies and procedures to protect workers and the public from exposure to potential hazards at the contaminated site. Additional safety and health regulations for construction are set forth in 29 CFR Subpart D, §1926. These regulations cover worker exposures to gases, vapors, fumes, and dust from construction operations.

3.9.3.3. *Wildland Fire*

The California PRC includes fire safety regulations that restrict the use of equipment that may produce a spark, flame, or fire; require the use of spark arrestors on construction equipment that use an internal combustion engine; specify requirements for the safe use of gasoline-powered tools in fire hazard areas; and specify fire suppression equipment that must be provided on-site for various types of work in fire-prone areas. In the City of Milpitas, fire response is under the jurisdiction of the Milpitas Fire Department. The southern portion of Reach 4 is under the jurisdiction of the San Jose Fire Department.

3.9.3.4. *Emergency Response*

California has developed an emergency response plan to coordinate emergency services provided by Federal, State, and local government and private agencies. Responding to hazardous materials incidents is one part of this plan. The plan is administered by the State Office of Emergency Services, which coordinates the responses of other agencies. The Milpitas Fire Department Office of Emergency Services coordinates response to fire, hazardous materials, and other emergencies within most of the project area, and the San Jose Fire Department Office of Emergency Services coordinates such response in the south end of Reach 4. The Fire Department members respond and work with the respective police departments, other local fire and police agencies, emergency medical providers, the California Highway Patrol (CHP), the CDFW, and Caltrans.

3.9.3.5. *Hazardous Materials Transportation*

The U.S. Department of Transportation (USDOT) regulates hazardous materials transportation on all interstate roads. Within California, the State agencies with primary responsibility for enforcing Federal and State regulations and for responding to transportation emergencies are the CHP and Caltrans. Together, Federal and State agencies determine driver-training requirements, load-labeling procedures, and container specifications. Although special requirements apply to transporting hazardous materials, requirements for transporting hazardous waste are more stringent, and hazardous waste haulers must be licensed to transport hazardous waste on public roads.

3.9.3.6. *U.S. Army Corps of Engineers Hazardous, Toxic, and Radioactive Waste (HTRW) Policy*

The policy of the USACE regarding HTRW sites is presented in Engineering Regulation 1165-2-132, developed in response to the Federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended. This policy stipulates that each civil works project must include a phased and documented review to provide early identification of known and potential HTRW sites that may be affected by a proposed Federal project. In addition, the non-Federal sponsor must ensure cleanup of any identified HTRW prior to initiation of a USACE civil works project. When HTRW sites are identified, response actions must be acceptable to the U.S. EPA and applicable State regulatory agencies.

3.9.4. **Significance Criteria**

Implementation of the proposed project would have significant adverse effect regarding hazardous materials if the project would:

HWM-1 Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;

HWM-2 Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;

HWM-3 Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within a quarter mile of an existing or proposed school;

HWM-4 Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would create a significant hazard to the public or the environment;

HWM-5 For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, result in a safety hazard for people residing or working in the project area;

HWM-6 For a project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area;

HWM-7 Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or

HWM-8 Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

3.9.5. Potential Impacts

3.9.5.1. *Significance Criteria with No Impacts*

The following significance criteria are not discussed further in the EIR because the proposed project would not result in impacts related to these criteria:

HWM-3 **Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within a quarter mile of an existing or proposed school**. There are no schools located within a quarter mile of the contaminated sites that occur within the proposed construction area. Northwoods Elementary School is located approximately 700 feet south of the creek in San Jose, but this is well over 0.5 mile from the nearest contaminated site.

HWM-4 **Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would create a significant hazard to the public or the environment.** There are no hazardous waste sites listed pursuant to California Government Code Section 65962.5 identified during searches of the EnviroStor database or other databases within the project area. The JCI Site may be listed under this code, but is located outside of the footprint of project construction, staging, and operations.

HWM-5 **Be located within an area covered by an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, and would result in a safety hazard for people residing or working in the project area**. The proposed construction area is not located in an area covered by an airport land use plan or within 2 miles of a public airport.

HWM-6 For a project within the vicinity of a private airstrip, would result in a safety hazard for people residing or working in the project area. There are no private airstrips in the vicinity of the proposed construction area.

HWM-8 Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands. There are no wildlands or wildland/urban interfaces in the vicinity of the proposed construction area.

3.9.5.2. *Significance Criteria with Potential Impacts*

HWM-1 CREATE A SIGNIFICANT HAZARD TO THE PUBLIC OR THE ENVIRONMENT THROUGH THE ROUTINE TRANSPORT, USE, OR DISPOSAL OF HAZARDOUS MATERIALS

Less than significant with mitigation for construction; less than significant for operations

HWM-2 CREATE A SIGNIFICANT HAZARD TO THE PUBLIC OR THE ENVIRONMENT THROUGH REASONABLY FORESEEABLE UPSET AND ACCIDENT CONDITIONS INVOLVING THE RELEASE OF HAZARDOUS MATERIALS INTO THE ENVIRONMENT

Less than significant with mitigation for construction; less than significant for operations

Generally, careless industrial or commercial activities and practices can result in spills or leaks of hazardous materials to the ground, resulting in soil, air, or groundwater contamination, which may create public health hazards. The four basic exposure pathways through which persons can be exposed to a chemical agent include: inhalation, ingestion, contact, and injection. Human exposure can come as a result of an accidental release during transportation, storage, or handling of hazardous materials. Also, the disturbance of subsurface soil during construction activities can lead to exposure of workers or the public to hazardous materials from excavation, stockpiling, handling, or transportation of soils and groundwater contaminated by hazardous materials from previous spills or leaks.

Potential adverse effects regarding hazardous materials and hazardous wastes associated with implementing the proposed project include: (1) accidental release to the environment of hazardous materials by construction and maintenance equipment and management practices, and (2) incidental exposure of project workers and the public to existing hazardous materials in the soil and groundwater inadvertently encountered during construction and operation of the proposed improvements. The potential for and levels of these two types of HTRW impacts anticipated for the alternatives are presented below.

CONSTRUCTION (ALL REACHES). Project-related construction and maintenance activities would involve the transport and use of potentially hazardous materials, such as fuels (gasoline and diesel), oils and lubricants, and cleaners (e.g., solvents, corrosives, soaps, detergents), which are commonly used in construction projects. The current regulatory environment provides a high level of protection from hazards and hazardous materials transported to and used in construction projects. Transportation of hazardous materials on area roadways is regulated by CHP and Caltrans, and use of these materials is regulated by the DTSC, as outlined in Title 22 of the California Code of Regulations. USDOT (through the Hazardous Materials Transportation Act), and other regulatory agencies provide standards designed to avoid releases including provisions regarding securing materials and container design. The construction contractor would comply with all applicable laws and regulations related to storage and transportation of hazardous materials. In addition, the construction contractor would comply with disclosure laws that

require users, producers, and transporters of hazardous materials and wastes to clearly identify the materials that they use or transport, and to notify the appropriate City, County, State, and Federal agencies in the event of noncompliance.

Despite adherence to regulations, accidental spills of hazardous or regulated materials could occur during construction, which would create a significant hazard to the public or environment. This hazard would be increased during periods of substantial rainfall which could result in increased flow of water within the creek channels. Hazardous materials being used or stockpiled during construction could be washed away by creek waters, resulting in downstream transport~~s~~ of those materials. This would be a significant impact.

As discussed in Section 3.9.1, seven properties in the vicinity of the proposed project were documented to have had releases of hazardous materials to soil and/or groundwater. These properties are all located within Reaches 1–3 (see Figure 3.13). Of these seven sites, only the Great Western Site and the JCI Site are considered to be potential HTRW concerns for the proposed project. The NAT, Lite-On, and Linear Technology sites are all located hydraulically down-gradient from Upper Berryessa Creek; therefore, any contamination originating at these properties would migrate away from the proposed project area. DISC Stampers and Penske Leasing – although located upgradient from Upper Berryessa Creek – are not considered to be HTRW concerns for the proposed project because: (1) their expected constituents pose a lower risk, and (2) any potential contamination from these sites would be adequately addressed by mitigation measures proposed for the JCI Site, which is in proximity to and down-gradient of these sites.

TCE and PCE groundwater plumes are known to exist at the Great Western Site and the JCI Site within Reaches 1–3. The Great Western location is in the vicinity of Yosemite Drive and originates from the former Great Western Chemical Company site at 945 Ames Avenue (see Figure 3-13). The second location is north of Montague Expressway and originates from the former Jones Chemicals site at 985 Montague Expressway. At both sites VOCs are found in soils and groundwater and vaporize when exposed to air, making them inhalable. While VOC levels in soils vapors and groundwater are potential environmental and health concerns at these two contaminated areas, contamination levels in soil are below ESLs and soil itself does not represent a potential environmental or health risk (see Appendix E).

The project area covers some of the off-site portion of the Great Western contamination site. Contamination levels in groundwater at the Great Western Off-Site Area have been measured and found to be below environmental screening levels (ESLs). Based on that information, the SFBRWQCB in October 2012 approved closure of remediation efforts in the shallow groundwater zone (0-40 feet bgs) of the Off-Site Area of the Great Western site. Because the project would include only excavations that are shallower than 40 bgs, the groundwater that would be encountered during project excavation in this area is not expected to be contaminated. Associated risks to workers and public (i.e., potential adverse impacts) would be less than significant at this location. Because groundwater is the source of any potential VOC contamination present in soils and soil vapor at the Great Western site, it is also likely that such contamination would be below approved ESLs, and the associated risks to workers and public (i.e., level of potential adverse impacts) would be less than significant.

At the JCI hazardous waste site (see Figure 3.13), remedial actions have greatly reduced the levels of VOCs contained in groundwater and as soil vapor. However, groundwater monitoring wells in this area near Upper Berryessa Creek sampled as recently as 2013 indicate that in eight of the 20 monitoring wells near the creek the VOC levels are still above RWQCB ESLs. If groundwater is encountered during project excavation in this area it is likely to be contaminated with VOCs, and at levels that may be above

RWQCB ESLs. Because workers or members of the public could be exposed to groundwater contaminated with VOCs above ESLs, this impact would be significant.

Soil vapor sampling in the JCI Off-Site Area near Upper Berryessa Creek as recently as 2014 reported that all sampling points had VOC levels above RWQCB ESLs (for Commercial-Industrial Land Use: 3,000 ug/m^3 for TCE, 2,100 ug/m^3 for PCE). Cal-OSHA has established Permissible Exposure Limits (PELs) and Short-term Exposure Limits (STELs), intended to protect worker exposures during the work day. These are time-weighted averaged (TWA) concentrations that are not to be exceeded during any 8-hour work-shift during a 40-hour week. The applicable PELs are 135 mg/m3 for TCE and 170 mg/m3 for PCE. The STEL is a 15-minute TWA exposure of 537 mg/m3 for TCE and 685 mg/m3 for PCE that should not be exceeded during a workday. USACE would require the construction contractor to prepare a Health and Safety Plan (HSP) that meets Occupational Health and Safety Administration regulations for work at construction sites. The HSP would include measures to detect hazardous soil vapors, if encountered during project excavation in the JCI off-site area, and to protect construction workers. Concentrations of VOCs in soil vapors would not be a hazard to persons outside the construction zone. Because implementation of the HSP would prevent hazardous exposure of construction workers and hazardous exposure of the public is not expected, impacts associated with exposure to soil vapors would be less than significant.

OPERATIONS (ALL REACHES). The proposed project would increase maintenance and operations activities above the baseline by adding inspections and maintenance of floodwalls and the UPRR and Los Coches Creek culverts. The expected increase in vehicle trips would be less than one per month, which would result in negligible and less than significant impacts with regards to hazardous materials.

MITIGATION. The District will work with USACE to implement Mitigation Measures HWM-A, HWM-B, and WAQ-C to reduce the risk and severity of accidental releases of hazardous materials during construction and operations. If ~~substantial amounts of~~ contaminated groundwater ~~were~~ is encountered at the JCI groundwater plume area during project construction, Mitigation Measure HWM-C would be implemented. This mitigation measure ~~would ensure~~ requires that potentially contaminated groundwater encountered during project excavation in the JCI ~~off-site~~groundwater plume area ~~would~~ be collected and treated to reduce levels of VOCs to levels complying with regulatory standards before discharge to the environment. WAQ-C would ensure that during construction hazardous materials and wastes are removed from the creek channel prior to substantial rain so that water flowing in the creek does not to entrain hazardous substances which would adversely affect water quality. These mitigation measures would reduce the level of impact to less than significant by ensuring that contaminated groundwater or surface water would not cause a significant hazard to the public or the environment.

SIGNIFICANCE AFTER MITIGATION. The mitigation measures specified above would reduce the impacts to a less than significant level.

HWM-7 IMPAIR IMPLEMENTATION OF OR PHYSICALLY INTERFERE WITH AN ADOPTED EMERGENCY RESPONSE PLAN OR EMERGENCY EVACUATION PLAN

Less than significant for construction; less than significant for operations.

CONSTRUCTION (ALL REACHES). In the event of large-scale emergencies such as floods or wildfires, the City of Milpitas' Emergency Operation Plan would be implemented by the Milpitas Fire Department Office of Emergency Services (Simonson 2015) and the City of San Jose's Emergency Operation Plan would be implemented by the San Jose Fire Department Office of Emergency Services, in coordination with local police, hospitals, and transportation departments. Traffic delays may occur when trucks

importing or removing materials are entering or leaving the roadways, and temporary lane closures would likely occur on Ames Avenue, Los Coches Street, and Yosemite Drive. However, the duration of lane closures at each location would be short and the roads would continue to remain open with reduced numbers of traffic lanes at all times. Emergency response vehicles would be given priority passage, reducing this impact to less than significant.

Due to the use of fuels, solvents, and other potentially hazardous materials during construction, the proposed project would slightly increase the possibility of a release of hazardous materials. The Emergency Operation Plans of both Milpitas and San Jose have contingencies to respond effectively to such releases, therefore this impact would be less than significant.

OPERATION (ALL REACHES). Operations would include inspections and maintenance of the floodwalls and the new UPRR and Los Coches Creek culverts. These activities would involve a negligible increase in vehicle or truck trips on existing roadways, and would not cause increased congestion or blockages of area roadways. Project operations would not affect emergency services and would not impair or interfere with implementation of an emergency response plan or evacuation plan. By reducing the potential for flooding that could necessitate an emergency response and hinder access by responders, impacts from operations would be beneficial.

MITIGATION (NOT REQUIRED). Although not required to mitigate less than significant impacts, the Mitigation Measures TRA-A (defined in Section 3.15.6) and HWM-B would be implemented. Under these mitigation measures, a traffic management plan as well as an emergency evacuation plan would be developed for the project which would ensure that emergency vehicles have priority access during construction, and would specify evacuation routes and the locations of the nearest emergency service providers.

3.9.6. Mitigation Measures

HWM-A. PREPARE AND IMPLEMENT A SPILL PREVENTION AND RESPONSE PLAN. To avoid and minimize potential accidental spills during construction, the District will work with the USACE to prepare a project-specific Spill Prevention and Response Plan (SPRP) that conforms to applicable local, State, and Federal requirements. The SPRP will be kept on-site during construction and distributed to all workers and managers prior to construction. The SPRP will include measures that ensure the safe handling, use, storage, transport, and disposal of hazardous materials used or encountered during construction. The construction contractors will be required to comply with the SPRP and applicable Federal, State, and local laws. The plan will outline measures for specific handling and reporting procedures for hazardous materials and disposal of hazardous materials removed from the site at an appropriate off-site disposal facility.

HWM-B. PREPARE AND IMPLEMENT EMERGENCY EVACUATION PLAN. Prior to construction, the District will work with the USACE to develop an emergency response plan in consultation with the Milpitas and San Jose emergency response agencies, including Fire and Police Departments. The emergency response plan will identify locations where traffic may be restricted due to project activities, and will include but not be limited to the following: mapping of emergency exits, evacuation routes for vehicles and pedestrians, location of nearest hospitals, and fire departments. The plan will also include provisions for expediting emergency vehicles through construction zones, particularly during periods when partial lane closures are scheduled.

HWM-C. TREAT VOC-CONTAMINATED GROUNDWATER ENCOUNTERED AT JCI OFF-SITE AREA. USACE will implement the project Groundwater Management Plan during project construction. If groundwater ~~containing VOCs above ESLs are~~is encountered at the JCI groundwater plume area during project construction, USACE will collect and containerize groundwater encountered in the JCI VOC plume area. USACE will treat that groundwater to remove contamination before discharge to the creek channel. The treated groundwater will meet discharge standards specified in SFBRWQCB Order No. R2-2012-0012 National Pollutant Discharge Elimination System No. CAG912002. The treatment method will consist of pre-filtration to remove solids from the extracted groundwater, followed by sand and carbon adsorption. Sand and carbon adsorption can be implemented by use of mobile equipment, and has been approved for use by the SFBRWQCB (Tetra Tech, 2015h).

3.9.7. Statement of Impact

As shown in Table 3.24, significant impacts associated with hazardous materials may occur under the proposed project, but would be reduced to less than significant by applying the mitigation measures recommended in Section 3.9.6.

Table 3.24 Statement of Impacts, Hazardous Materials

Impact	Before Mitigation	Mitigation Measures	After Mitigation
HWM-1. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or hazardous wastes.	S	HWM-A HWM-B ~~HWM-C~~ WAQ-C	LM
HWM-2. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	S	HWM-A HWM-B HWM-C WAQ-C	LM
HWM-3. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.	NI	None	NI
HWM-4. Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would create a significant hazard to the public or the environment.	NI	None	NI
HWM-5. For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, result in a safety hazard for people residing or working in the project area.	NI	None	NI
HWM-6: For a project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area.	NI	None	NI
HWM-7. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	LS	HWM-B TRA-A	LS
HWM-8. Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.	NI	None	NI

NI–No Impact, LS–Less than Significant, LM–Less than Significant With Mitigation, S–Significant, SU–Significant and Unavoidable

3.10. LAND USE AND PLANNING

This section describes current land uses and land use characteristics of the project vicinity, outlines policies and regulations guiding development in the project area, and evaluates the proposed project for consistency with land use regulations.

3.10.1. Environmental Setting

The project area falls within the planning areas of Milpitas and San Jose. The majority of the project area is within Milpitas City limits, and falls within its "Valley Floor Area" for planning purposes. The areas of both cities adjacent to and surrounding the project area are extremely urbanized. A variety of land uses comprise the area along Upper Berryessa Creek as it passes through urbanized Milpitas and San Jose. Figure 3.14 shows that the project area includes or borders six zoning classifications, including single family residential, multi-family residential, industrial, mixed-use, open space, and town center. Table 3.25 shows the land use types by reach.

Table 3.25 Land Use Categories by Reach

Land Use Types	Reach 1	Reach 2	Reach 3	Reach 4
Single Family Residential		X		X
Multi-Family Residential			X	X
Industrial		X	X	X
Mixed Use			X	
Open Space	X	X	X	
Town Center	X			

3.10.2. Existing Conditions

Starting on the upstream (southern) end, the creek within the project boundaries begins at I-680, and runs to Montague Expressway in Reach 4. The south side of this section is within the City limits of San Jose, and is zoned as a single family residential area. The north and east sides of Reach 4 are within the City limits of Milpitas, and are zoned for industrial uses. The west side of Reach 4 is also within Milpitas, and is zoned for multi-family residences. North of Montague Expressway, in Reaches 1–3 and totally within the limits of the City of Milpitas, the creek passes through an industrial area and multi-family residential area, with relatively small amounts of single family residential and parks/open space in the vicinity of Los Coches Street. An area zoned as "Town Center" is found between Los Coches Street and Calaveras Boulevard. Additionally, all channel areas within the City limits of Milpitas are zoned as Park/Open Space. The Union Pacific Railroad tracks run parallel and adjacent to the stream on the east bank, from just downstream of Ames Avenue to just downstream of Montague Expressway (Figure 3.14).

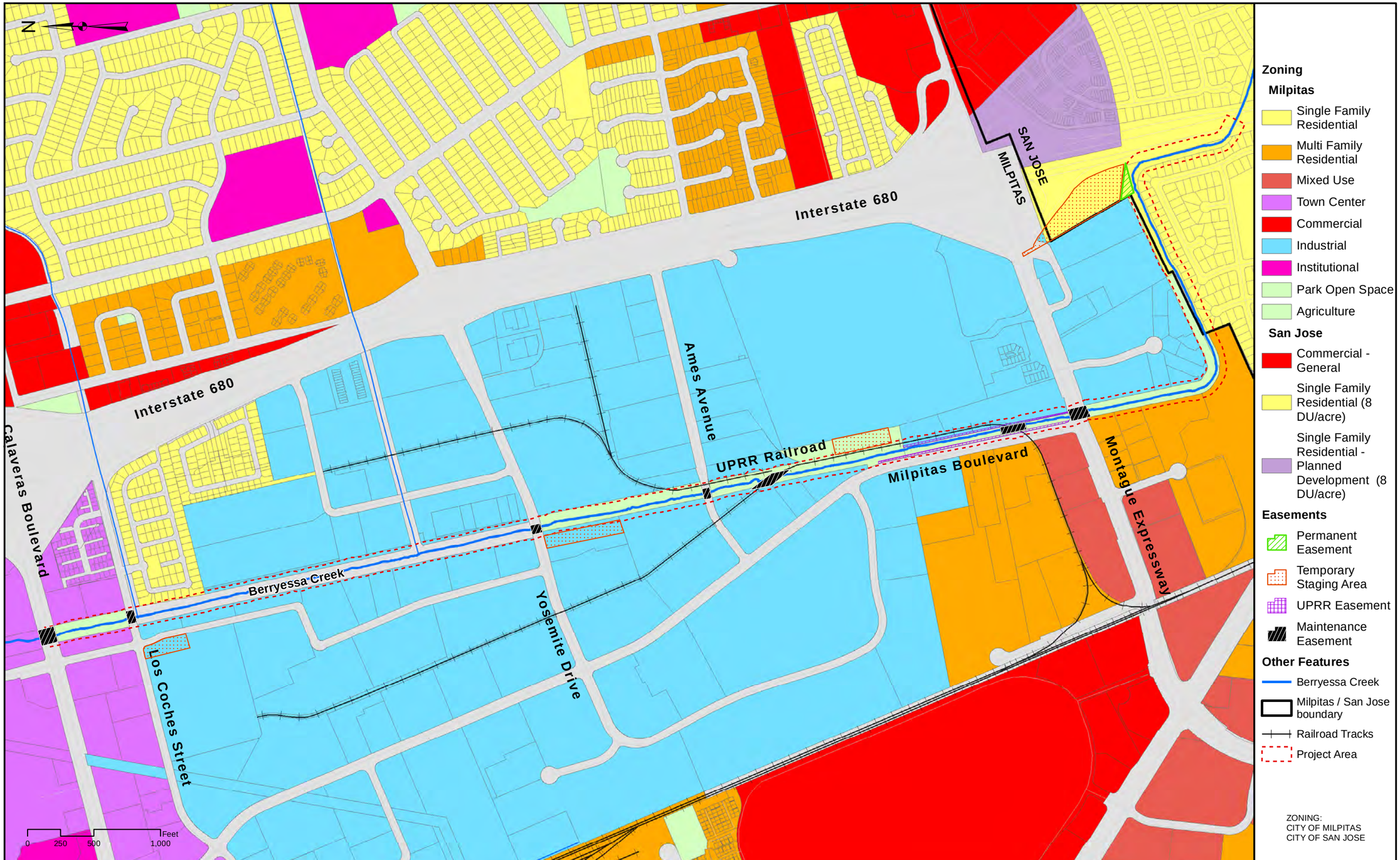

Figure 3.14 Zoning in Project Area

Tetra Tech
17885 Von Karman Avenue, Suite 500
Irvine, CA 92614
Tel. (949) 809-5000 Fax. (949) 809-5003

Santa Clara Valley Water District

UPPER BERRYESSA CREEK
FLOOD RISK MANAGEMENT PROJECT
0714

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3.10.3. Regulatory Setting

3.10.3.1. *State Regulations*

CALTRANS ENCROACHMENT PERMIT. Under Section 660 of the California Streets and Highways Code, an encroachment permit must be obtained for all proposed activities for placement of encroachments within, under, or over the State highway right-of-way. Encroachments include utilities, excavations, and vegetation planting or trimming, among others. Permits are issued by Caltrans or specifically authorized local jurisdictions.

3.10.3.2. *Local Plans and Policies*

CITY OF MILPITAS GENERAL PLAN. The vast majority of the project area lies within the City of Milpitas and is governed by the City of Milpitas Master Plan. Adopted in 1994, the plan has been subsequently amended through the 2002, 2008, and 2010 Plan Updates. The plan establishes land use policies for the City in such areas as land use, circulation, open space, and environmental conservation. Policies include the importance of recreational and aesthetic values along the creek. Projections for future development in the Upper Berryessa Creek study area include light manufacturing/industrial park and retail development. In particular, the General Plan's Land Use Element provides the framework for development within the City. This framework is reflected in the zoning classifications shown in Figure 3.14. Two policies and actions within the Master Plan address Berryessa Creek in particular:

> 4.d-A-8 - Coordinate with the Santa Clara Valley Water District to plan and implement multi-objective projects to reduce flood hazards, restore stream functions, and provide recreational resources along Berryessa Creek and other Milpitas creeks.
> 4.g-I-13 - Develop the section of Berryessa Creek which runs through the Town Center into a scenic as well as a recreational resource for the Town Center. Town Center is found on both sides of the creek along the Calaveras Boulevard corridor, and includes approximately 800 feet of the channel area in Reach 1.

ENVISION SAN JOSE 2040 MASTER PLAN. A small portion of the project at the southern end of Reach 4 is within the City of San Jose. The Envision San Jose 2040 General Plan was adopted in 2011 in compliance with the State law requiring each City and County prepare and adopt a comprehensive and long-range general plan for its physical development. It encourages the use of flood protection guidelines in development, such as those recommended by the District, FEMA, and Department of Water Resources (DWR). This plan provides the policy framework for the development of San Jose, including the character and quality of future development. The General Plan, developed with community participation, lays out the amount, type, and phasing of development needed to achieve the City's social, economic, and environmental goals. One element of the plan addresses flood hazards, a perennial problem in San Jose. Information on areas that are subject to flood hazards in the City is based on several sources including the Flood Insurance Rate Maps, the Federal Flood Insurance Program, the Federal Emergency Management Agency, the California Department of Water Resources, and the California Emergency Management Agency (the latter related to potential dam failures). The plan calls upon the City of San Jose to cooperate with the District to develop and maintain additional flood protection and retention facilities in areas where they are needed or where the design capacity of existing retention facilities cannot be restored (Goal EC5.8). In addition, the plan calls for developing flood control facilities in cooperation with the District to protect areas from the occurrence of the "1 percent" or "100-year" flood or less frequent flood events when required by the State (Goal EC5.4).

MILPITAS TRAILS MASTER PLAN. The City of Milpitas Trails Master Plan includes the development of 37 acres of trails and plans to interconnect trails with on-street connectors (City of Milpitas, 1997). The Trails Master Plan envisions an off-street trail following Berryessa Creek for the length of the proposed project. The trail would be both a transportation and recreational amenity constructed and maintained by the City. The Plan does not provide a detailed alignment for the planned trail. The majority of the trails identified in the plan follow creeks, rail corridors, and utility ROWs that traverse the City. The plan identifies goals and objectives and priorities for trail development. The Trails Master Plan fulfills the City Council's direction to develop a comprehensive plan for city-wide bicycle trails (City of Milpitas, 1997).

3.10.4. Significance Criteria

The proposed project would have a significant effect on land use if the project would:

LND-1 Physically divide an established community;

LND-2 Conflict with any applicable land use plan, policy, or regulations of an agency with jurisdiction over the project (including but not limited to the general plan, specific plan, local coastal program or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; or

LND-3 Conflict with any applicable habitat conservation plan or natural community conservation plan.

3.10.5. Potential Impacts

3.10.5.1. *Significance Criteria with No Impacts*

LND-1 PHYSICALLY DIVIDE AN ESTABLISHED COMMUNITY

No impact for construction; no impact for operations

CONSTRUCTION (ALL REACHES). The proposed project would not introduce new land uses or result in any permanent land use changes. Because the proposed project would continue to occupy the same area as under existing conditions and all existing road and railroad crossings of the creek would remain, the proposed project would not physically divide any established communities and no impact would result.

OPERATIONS (ALL REACHES). Operations and maintenance would not introduce any measures that would physically divide the established community; therefore, there would be no impact.

3.10.5.2. *Significance Criteria with Potential Impacts*

LND-2 CONFLICT WITH ANY APPLICABLE LAND USE PLAN, POLICY, OR REGULATIONS OF AN AGENCY WITH JURISDICTION OVER THE PROJECT

Less than significant for construction; Less than significant with mitigation for operations

CONSTRUCTION (REACHES 1–3). The proposed project would not require zoning changes or result in any permanent changes to land uses. The proposed project would be consistent with current land use elements in the Milpitas General Plan and would reduce flood damages to existing residences, businesses, and other land uses. There would be temporary changes in land use due to the use of several parcels as construction staging areas (Figure 3.14). The southernmost staging site in Reaches 1–3 is located on the east side of the creek between Ames Avenue and Montague Expressway. The site is

undeveloped and located between a warehouse structure and a railroad track. The second staging area is west of the creek and just south of Yosemite Drive. The northern portion of the site has been cleared and graded and used as overflow parking for an adjacent manufacturing and distribution business. The remainder of the site is undeveloped. The third staging area, located at the southwest corner of Los Coches Street and S. Hillview Drive, is undeveloped. The District would attain construction easements with land owners for all proposed construction staging sites. Staging areas would be restored to pre-existing conditions as construction is completed. Land use impacts from construction in Reaches 1-3, including construction staging, would be temporary and would last only for the period of construction. Construction of the he proposed project would not conflict with any applicable land use plan, policy, or regulations of an agency with jurisdiction over the project in Reaches 1–3; therefore, this impact is less than significant.

CONSTRUCTION (REACH 4). The proposed project would not require zoning changes or result in any permanent changes to land uses. The proposed project would be consistent with current land use elements in the Milpitas General Plan (City of Milpitas, 2002) and the San Jose General Plan (Envision San Jose 2040) (City of San Jose 2011) and would reduce flood damages to existing residences, businesses and other land uses. There would be temporary changes in land use due to the use of one site as a construction staging area. The staging area in this reach, located at the southwest corner of Montague Expressway and I-680, is undeveloped and portions appear to have served as a storage facility for construction materials in the past. The District would attain a construction easement for access to and use of this staging area and the area would be restored to pre-existing conditions as construction is completed. The District would attain a permanent easement that would allow access to the upper end of Reach 4 at this location (see Figure 3.14), although having this easement in place would not change the use of the lands within the easement area. Land use impacts from construction in Reach 4 would be less than significant.

OPERATIONS (ALL REACHES).

The proposed project design includes a channel access road on the east bank of the channel extending from Calaveras Boulevard to Ames Avenue in Reaches 1 and 2 and a portion of Reach 3. This access road would be continuous from Calaveras Boulevard to Ames Avenue with gates at the entrances to the access road at the paved streets (i.e. Calaveras Boulevard, Los Coches Street, Yosemite Drive, and Ames Avenue). In addition, the project would include an east/north bank channel access road extending from Montague Expressway to I-680 in Reach 4 with a gate at the Montague Expressway entrance. The creek access roads in these reaches would be surfaced with decomposed granite, which could be paved with asphalt to provide an all-weather surface. However, in the portion of Reach 3 between Ames Avenue and Montague Expressway, the creek access road would not be continuous due to the presence of UPRR tracks on either side of the creek channel. The access road would not cross these tracks due to safety concerns, but would consist of discrete segments that would not connect to one another. Thus, if the trail followed the access roads, it would have to divert to Milpitas Boulevard at Ames Avenue and continue along Milpitas Boulevard upstream to Montague Expressway. The proposed access roads in Reaches 1 through 3 could physically accommodate the planned trail for most of the length included in the City of Milpitas' Trails Master Plan. However, the proposed project would include fencing and locked gates at the entrances to the creek access road from the paved streets (i.e. Calaveras Boulevard, Los Coches Street, Yosemite Drive, and Ames Avenue) which would prevent public access to the creek right of way in the event that a trail is built in the future. The proposed project would conflict with the Milpitas Trails Master plan, which would be a significant impact.

MITIGATION. (REACHES 1-3). If the City of Milpitas proceeds with planning and construction of the Berryessa Creek recreational and transportation trail, the District will implement Mitigation Measure LND-A (Allow public access to creek right of way) to address the conflict with the Milpitas Trails Master Plan. Mitigation Measure LND-A requires that the District work with the City of Milpitas to execute a joint use agreement (JUA) which would allow public access to a trail on the creek right of way.

SIGNIFICANCE AFTER MITIGATION. Implementation of Mitigation Measure LND-A (Allow public access to creek right of way) would provide the City of Milpitas with access to the creek ROW to develop a recreational and transportation trail consistent with the City of Milpitas Master Plan, removing the conflict with the plan and reducing this impact to less than significant with mitigation.

LND-3 CONFLICT WITH ANY APPLICABLE HABITAT CONSERVATION PLAN OR NATURAL COMMUNITY CONSERVATION PLAN

Less than significant for construction; less than significant for operations

CONSTRUCTION (REACHES 1–3). Reaches 1–3 are not located within an area covered by an HCP or NCCP so there would be no conflict with any applicable plans in these reaches during construction or operations; therefore, there would be no impacts.

CONSTRUCTION (REACH 4). The upstream portion of Reach 4 is within the City of San Jose and is within the plan area of the Santa Clara Valley Habitat Conservation Plan/Natural Community Conservation Plan (Santa Clara Valley Habitat Agency 2012). USACE-led projects are exempt from the plan. Because the proposed project would be led by USACE, the HCP is not applicable to the proposed project and impacts would be less than significant.

OPERATIONS (ALL REACHES). Project operations would continue to occur within the same footprint as they currently do, and would be similar to those occurring under current conditions. There would be no impacts associated with HCPs or NCCPs from operations.

3.10.6. Mitigation Measures

LND-A ALLOW PUBLIC ACCESS TO CREEK RIGHT OF WAY. The District will work with the City of Milpitas to execute a JUA to allow public access to a trail on the creek right of way.

3.10.7. Statement of Impact

Table 3.26 summarizes the significance of effects on land use from implementing the proposed project. The proposed project would result in a significant impact due to a conflict with the Milpitas Trails Master Plan, but this impact would be reduced to less than significant by implementing Mitigation Measure LND-A.

Table 3.26 Statement of Impacts, Land Use and Planning			
Impact	**Prior to Mitigation**	**Mitigation Measures**	**After Mitigation**
LND-1. Physically divide an established community.	NI	None	NI
LND-2. Conflict with any applicable land use plan, policy, or regulations of an agency with jurisdiction over the project (including but not limited to the General Plan, Specific Plan, local coastal plan, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.	S	LND-A	LM
LND-3. Conflict with any applicable habitat conservation plan or natural community conservation plan.	LS	None	LS
NI–No Impact, LS–Less than Significant, LM–Less than Significant with Mitigation, S–Significant, SU–Significant and Unavoidable			

3.11. NOISE

This section presents information on existing noise conditions in the study area, identifies the noise sensitive receptors that are present, and evaluates the potential impacts from construction, operations, and maintenance activities on noise levels and sensitive receptors. If project-related impacts are found to exceed thresholds of significance, mitigation measures are identified.

3.11.1. Environmental Setting

Noise is generally defined as sound that is loud, disagreeable, or unexpected. Sound is mechanical energy transmitted in the form of a wave caused by a disturbance or vibration. The human ear has the ability to detect a wide range of sound pressure fluctuations. Sound pressure levels are expressed in logarithmic units called decibels (dB).

Noise levels in the project area are typical of urban residential and industrial areas. Five roadways, two railways, and one pedestrian bridge cross the creek within the project area. Vehicular traffic along the major arterials (especially the Montague Expressway and E. Calaveras Boulevard) and the I-680 freeway are the primary noise sources in the study area. Noise and vibration also occur as a result of train activity on the UPRR lines, which run along the east side of the project area and cross the stream at two locations between Ames Avenue and Montague Expressway.

3.11.2. Existing Conditions

Noise is measured in decibels (dB) and then frequencies are weighted based on the human response to sound, denoted as A-weighted decibels (dBA). In general, a difference of more than 3 dBA is a perceptible change in environmental noise, while a 5 dBA difference typically causes a change in community reaction. An increase of 10 dBA is perceived by people as a doubling of loudness (EPA 1974).

The ambient acoustic environment within 500 feet of the study area represents the limits of this noise analysis and encompasses a variety of noise sources. The assumed existing primary source of noise is from high traffic arterials, which generate consistent noise patterns in the study area. Other major noise sources include railways, industrial yards, and surface street use.

Noise sensitive receptors within 1,000 feet of the study area have been identified and are shown in Figure 3.8. Generally, noise sensitive receptors are locations where people sleep or where noise can affect the function of the receptor. Examples of noise sensitive receptors include, but are not limited to, residential areas, schools, parks, community centers, public facilities, hotels, hospitals, and places of worship. Noise sensitive receptors within the vicinity of the project area are identified below.

Ambient noise conditions are documented in this report primarily through qualitative assessment of potential noise sources in the study area. Noise monitoring was not conducted as a part of this EIR.

Noise levels from vehicular traffic in the study area range from 60 to 80 Ldn (day-night average sound level expressed in decibels), based on information contained in the Midtown Milpitas Specific Plan and the Capital Corridor Light Rail Project EIR, according to the USACE GRR-EIS (USACE 2014). The upper end of this range may be expected during peak hours adjacent to I-680, while the lower values would be expected near arterials. The rail line within the project area does not pass sensitive receptors; a spur track terminates south of a housing subdivision between Yosemite Drive and Los Coches Street. While noise levels due to freight operation adjacent to the track can be in excess of 70 Ldn, they decrease to 60 Ldn approximately 300 feet from the track.

The noise-sensitive land uses identified through land use maps, aerial photographs, and search of online directories in or near the study area within Reaches 1–3 include a residential subdivision just south of Los Coches Street in Milpitas, and the Western Learning Center, a child care facility, over 500 feet northeast of the project terminus in Milpitas. A single family residential area lies more than 500 feet northwest of the project terminus in Milpitas.

Noise-sensitive land uses in or near the project area in Reach 4 include residential areas within 50 feet of the creek at the southern end of the project area (eastern edge of The Crossing at Montague Expressway in Milpitas; Lakewood Drive and Muirwood Court in San Jose) and the Northwoods Elementary School 700 feet west of the creek in San Jose.

3.11.3. Regulatory Setting

3.11.3.1. *Local Plans and Policies*

Federal and State governments provide guidelines for construction noise in regard to worker protection and, for this project, traffic noise. California cities are required to have noise elements in their general plans; the noise elements are planning guides to ensure that noise levels are compatible with adjacent land uses. Most jurisdictions also have noise ordinances, which serve as enforcement mechanisms for controlling noise. Noise elements from the general plans of Milpitas and San Jose are described below.

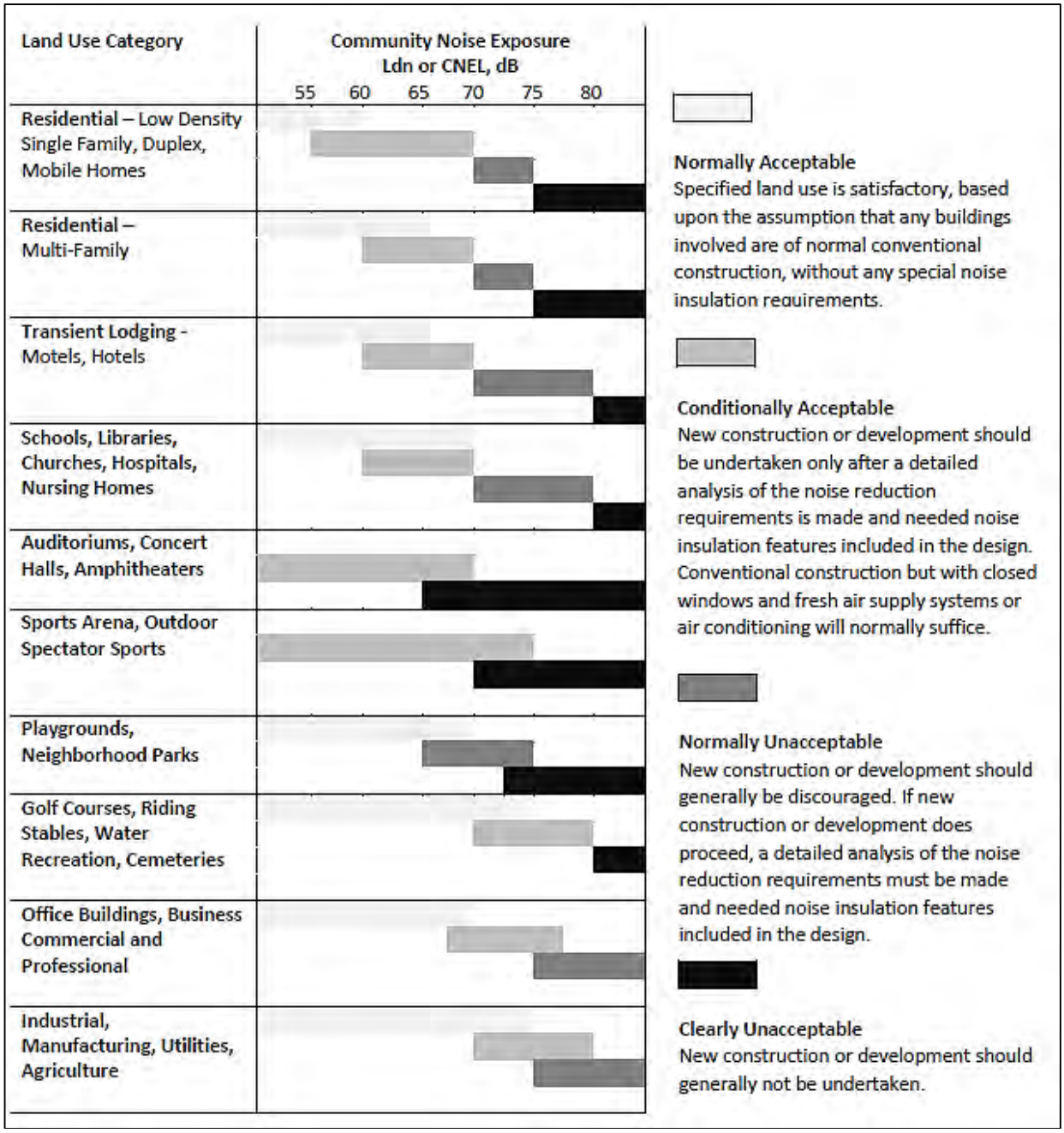


Figure 3.15 Community Noise Exposure Thresholds, City of Milpitas

CITY OF MILPITAS GENERAL PLAN. The City of Milpitas General Plan Noise Element establishes standards to "avoid residential...exposure increases of more than 3 dB or more than 65 dB at the property line, whichever is more restrictive" (City of Milpitas 1994). The noise exposure levels are determined using Day-Night Noise Levels (Ldn) or Community Noise Exposure Levels (CNEL) which are based on 24-hr average noise exposure. The Ldn measure adds a 10 dB (decibel) penalty to noise events occurring between 10:00 PM and 7:00 AM to reflect the increased sensitivity of receptors to nighttime noise. The CNEL noise exposure measure is a similar 24-hour noise measure, but adds an additional 5 dB

penalty for noise events occurring between 7:00 PM and 10:00 pm to reflect sensitivity to evening noise (Noisemeters, Inc. 2015).

The Noise Element of the Milpitas General Plan includes principles and policies designed to reduce or eliminate the effects of excessive noise in the neighborhoods. Specific applicable principles and policies include:

- 6-G-1: Maintain land use compatibility with noise levels similar to those set by State guidelines.
- 6-G-2: Minimize unnecessary, annoying, or injurious noise.
- 6-I-1: Use guidelines in the Noise and Land Use Compatibility Table (shown in Figure 3.15) as review criteria for development projects.
- 6-I-6: Assist in enforcing compliance with noise emissions standards for all types of vehicles.
- 6-I-7: Avoid residential DNL exposure increases of more than 3 dB or more than 65 dB at property line, whichever is more restrictive.
- 6-I-9: Enforce the provisions of the City of Milpitas Noise Ordinance and the use of established truck routes.
- 6-I-10: Reduce the noise impact in existing residential areas where feasible. Noise mitigation measures should be implemented with the cost shared by public and private agencies and individuals.
- 6-I-13: Restrict the hours of operation, technique, and equipment used in all public and private construction activities to minimize noise impact. Include noise specifications in requests for bids and equipment information.

CITY OF MILPITAS NOISE ABATEMENT ORDINANCE. Chapter 213 of the Milpitas Municipal Code contains regulations that apply to noise abatement. Section V-213-3 of the Code states that "it shall be unlawful for any person in any district zoned for residential use (under the provisions of Chapter 10, Title XI of the Milpitas Municipal Code) to make, continue or cause to be made or continued, any disturbing noise between the hours of 10 p.m. in the evening to 7 a.m. in the morning." Disturbing noise is defined as any sound or vibration caused by sound which occurs with such intensity, frequency or in such a manner as to disturb the peace and quiet of any person.

The section also includes specific regulations that apply to construction activities. It requires that all construction activities and construction-related operations, including delivery of construction materials, supplies, or improvements on or to a construction site, shall be restricted to the hours between 7:00 a.m. and 7 p.m. on weekdays and weekends. No construction work shall be conducted or performed on holidays (City of Milpitas 2008).

SAN JOSE ENVISION 2040 GENERAL PLAN. The City of San Jose's General Plan has established the objectives of 55 decibels Ldn (average day/night noise level) as the long-term exterior noise level and 60 dB as the short-term exterior noise level (City of San Jose 2011). These standards are applicable to stationary noise sources such as factories, and to construction projects lasting longer than 12 months.

San Jose's Municipal Code (20.100.450) does not allow any construction activity within 500 feet of a residential area before 7 a.m. or after 7 p.m. Monday through Friday, or anytime on weekends.

Goal EC-1.7 of San Jose's General Plan requires construction operations within San Jose to use best available noise suppression devices and techniques and limit construction hours near residential uses per the City's Municipal Code. The City considers significant construction noise impacts to occur if a

project located within 500 feet of residential uses or 200 feet of commercial or office uses would involve substantial noise generating activities (such as building demolition, grading, excavation, pile-driving, use of impact equipment, or building framing) continuously for more than 12 months.

3.11.4. Significance Criteria

The proposed project would cause significant noise impacts if it would result in:

NOI-1 Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standard of other agencies;

NOI-2 Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels;

NOI-3 A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;

NOI-4 A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;

NOI-5 For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, exposure of persons residing or working in the project area to excessive noise levels; or

NOI-6 For a project within the vicinity of a private airstrip, exposure of persons residing or working in the project area to excessive noise levels.

3.11.5. Potential Impacts

3.11.5.1. *Significance Criteria with No Impact*

The following significance criteria are not discussed further in the EIR because the proposed project would not result in impacts related to these criteria:

NOI-3 **Substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.** No project features would generate noise after completion of construction other than occasional and temporary maintenance actions.

NOI-5 **For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels.** The nearest public airport is Norman Y. Mineta San Jose International Airport, which is located over 3 miles away from the project area, and there are no private airstrips in the vicinity of the project area.

NOI-6 **For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.** There are no private airstrips in the vicinity of the project area.

3.11.5.2. *Significance Criteria with Potential Impacts*

NOI-1 EXPOSURE OF PERSONS TO OR GENERATION OF NOISE LEVELS IN EXCESS OF STANDARDS ESTABLISHED IN THE LOCAL GENERAL PLAN OR NOISE ORDINANCE, OR APPLICABLE STANDARD OF OTHER AGENCIES

Significant and unavoidable for construction; less than significant for operations

CONSTRUCTION (REACHES 1–3). Reaches 1 through 3 are within the City of Milpitas. Sensitive receptors in Reaches 1–3 that could be affected by construction noise include residents within 50 feet of the construction zone south of Los Coches Street, staff and guests at hotels located approximately 700 feet southeast of the southern end of the project area, workers in businesses within 50 feet of the construction zone, workers and residents along haul routes, and wildlife, which may appear anywhere within the channel.

The primary noise-generating activities related to construction of the project would be site preparation and earth-moving activities, hauling construction debris, concrete placement (constructing the floodwall, trapezoidal channel, channel transitions, and miscellaneous concrete improvements), and re-installing rail tracks at the UPRR trestle replacement site. Because this area is within the JCI plume area, groundwater encountered during earthwork would be collected and treated to remove VOCs before discharge to the creek. The groundwater, pumping, collection and treatment system would be powered by one to three diesel generators which would operate up to 24 hours per day for a period estimated at 2 to 3 weeks (Tetra Tech 2015h). The main noise sources associated with site preparation and earthmoving activities would be the operation of bulldozers, loaders, excavators, and backhoes that would remove material, as well as trucks hauling excavated materials from the project area. The main noise sources associated with site improvements would be the operation of trucks, augers, soil stabilizers, and cranes. The primary noise-generating equipment used in concrete removal and placement would be jackhammers, excavators, loaders, compactors, concrete mixers, cranes, and pumps.

Consistency with Ccity of Milpitas General Plan Noise Element Community Noise Exposure Policies

The Milpitas' General Plan Noise Element limits residential noise exposure to increases of no more than 3 dB or overall community noise exposure to no more than 65 dB Ldn at the property line, whichever is more restrictive (Impact NOI-1). Up to 50 truck trips per day may occur throughout Reaches 1-3. Construction-related material haul trips would raise noise levels along designated truck routes. Most haul trips would occur primarily on either Calaveras Boulevard or Montague Expressway, both of which are designated truck routes with high ambient traffic noise levels. Haul trucks would occasionally use side streets and feeder streets to reach Calaveras Boulevard and Montague Expressway, resulting in temporary increases in noise on these streets. Assuming that trucks pass by residences at an approximate distance of 50 feet, dump trucks may generate temporary noise levels of up to 77 dBA, and haul trucks up to 84 dBA (FTA 2006). Although the ambient noise levels on side streets is not high, each instance of increased noise from truck traffic would be limited to the time it takes for the truck to start out and to pass receptors, which is likely less than 10 seconds per instance. This impact would be temporary and the truck trips on any given day would be spread out on designated truck routes between Calaveras Boulevard and Montague Expressway. The noise generated by construction trucks would only occur for short intervals of time during normal business hours. Even if all 50 truck trips per day were to pass the same residential location, they would affect that residential receptor less than 1% of the 24-hr day, which would not result in an increase of 3 dB or more in Ldn or raise the ambient Ldn to greater than 65dB. Truck traffic would not generate noise exceeding the community noise exposure thresholds contained in the City of Milpitas General Plan.

Construction noise caused by equipment and activities at the construction site would be intermittent. Although short-term noise events could reach up to 90 ~~Db~~ dB at 50 feet (see Table 3.27 below), these levels would be short-lived and noise levels would dissipate quickly with distance from the source.

Because these noise events would occur over only a small portion of the 24-hour day, they would not increase 24-hour Ldn exposure level by more than 3 dB or raise ambient levels above 65 dB. These noise levels would not exceed conditionally acceptable noise levels for residential uses specified in the City of Milpitas General Plan. Thus, the noise levels generated by construction activities and truck traffic are not expected to exceed the acceptable noise levels for residential uses specified in the City of Milpitas General Plan. This impact would be less than significant.

Table 3.27 Construction Equipment Noise Levels

Equipment Type	Typical Noise Level (dB) at 50 Feet	Equipment Type	Typical Noise Level (dB) at 50 Feet
Air compressor	78	Generator	81
Asphalt paver	77	Grader	85
Backhoe/Loader	78	Hoe ram extension	90
Compactor	83	Jack hammer	89
Concrete breaker	82	Pneumatic tools	85
Concrete pump	81	Rock drill	81
Concrete saw	90	Scraper	84
Crane, mobile	81	Trucks	74-81
Dozer	82	Water pump	81

dBA = A-weighted decibels. All equipment fitted with properly maintained and operational noise control device, per manufacturer specifications. Noise levels listed are the actual measured noise levels for each piece of heavy construction equipment.
Sources: Bolt, Beranek, and Newman 1981:8-5; FTA 2006:12-6 to 12-7

Consistency with Milpitas Limitations in Construction Hours

As described in the project description, construction would generally occur during normal business hours. The UPRR trestle would be replaced with a double barrel concrete box culvert. The culvert would be a precast structure, and would be placed over the course of three days, during which time the UPRR rail line would be closed. The timing of the replacement would be coordinated with UPRR and may require continuous work over a 72-hour period to minimize line closure time and disruption of service. Additionally, because this area is within the JCI plume area, groundwater encountered during earthwork would be collected and treated to remove VOCs before discharge to the creek. The groundwater collection and treatment system would be powered by one or more diesel generators which would operate up to 24 hours per day for a period estimated at 2 to 3 weeks (Tetra Tech 2015h). Construction of the UPRR replacement culvert and groundwater collection and treatment (including operation of power generators) would occur outside the 7 AM to 7 PM window allowed by the City of Milpitas Noise Abatement Ordinance. ~~Construction of the UPRR replacement culvert would occur outside the 7 a.m. to 7 p.m. window allowed by the City of Milpitas Noise Abatement Ordinance.~~ The UPRR trestle is not located in an area that contains residences, although a church is located approximately 900 feet east of the construction area. Noise impacts associated with construction at this location would be significant when compared to the NOI-1 significance threshold because construction noise would occur outside of the allowable construction times of 7:00 am to 7:00 pm identified in the City of Milpitas Noise Abatement Ordinance.

CONSTRUCTION (REACH 4). Noise standards established by the cities of Milpitas and San Jose apply to construction in Reach 4 which covers portions of the two cities. These standards are described in Section 3.11.3, and establish allowable noise levels at the locations of sensitive receptors as well as time periods in which construction noise may occur. Sensitive receptors in Reach 4 that could be affected by construction noise include residents along Lakewood Dr., Muirwood Court and apartments at the

eastern edge of The Crossing at Montague Expressway, both within fifty feet of the creek; and Northwoods Elementary School (700 feet from the creek).

Consistency with Milpitas' and San Jose's Limitations in Construction Hours

All construction work in Reach 4 would occur within the allowable construction windows set by the cities of Milpitas and San Jose.

Consistency with Milpitas' General Plan Noise Element

Up to 50 truck trips per day may occur throughout Reaches 4. Construction-related material haul trips would raise noise levels along designated truck routes. Most haul trips would occur primarily on Montague Expressway, which is a designated truck route with high ambient traffic noise levels. Haul trucks would occasionally use creek access roads adjacent to the Reach 4 channel to travel to and from Montague Expressway. Assuming that trucks pass by residences at an approximate distance of 50 feet, dump trucks may generate temporary noise levels of up to 77 dBA, and haul trucks up to 84 dBA (FTA 2006). Although the ambient noise levels on side streets is not high, each instance of increased noise from truck traffic would be limited to the time it takes for the truck to start out and to pass receptors, which is likely less than 10 seconds per instance. The noise generated by construction trucks would only occur for short intervals of time during normal business hours. Even if all 50 truck trips per day were to pass the same residential location, they would affect that residential receptor less than 1% of the 24-hr day, which would not result in an increase of 3 dB or more in Ldn or raise the ambient Ldn to greater than 65dB. Truck traffic would not generate noise exceeding the community noise exposure thresholds contained in the City of Milpitas General Plan. As is the case for project construction activities in Reaches 1 to 3, construction noise would be sporadic and intermittent, and would not result in a 3 dB increase in the Ldn average noise level experienced by nearby residents or employees or increase ambient noise levels above 65 dB. Construction noise in Reach 4 would be compatible with community noise exposure policies contained in the City of Milpitas General Plan. The impact would be less than significant.

Consistency with City of San Jose Envision 2040 General Plan

San Jose's General Plan Goal EC-1.7 states that the City considers significant construction noise impacts to occur if a project located within 500 feet of residential uses or 200 feet of commercial uses would involve substantial noise generating activities continuously for more than 12 months. As described in the Project Description, construction would occur over 1 to 2 years and primarily during dry season from May to October. Construction noise would not occur continuously for more than 12 months. Thus, construction noise impacts would be consistent with City of San Jose Envision 2040 General Plan Noise Policy EC1.7 and this impact would be less than significant.

OPERATIONS (ALL REACHES). Operations and maintenance would occur only occasionally and would be temporary. Although the presence of floodwalls may necessitate additional maintenance for graffiti removal and inspection, these activities would not generate substantial noise levels. Noise impacts during operations and maintenance would be less than significant.

MITIGATION (ALL REACHES). The project sponsors would implement Mitigation Measures NOI-A and NOI-B, which are designed to reduce construction noise impacts and to comply with local noise standards.

SIGNIFICANCE AFTER MITIGATION.

Implementing Mitigation Measures NOI-A and NOI-B would reduce construction-related noise impacts. However, project construction would still result in a significant and unavoidable impact due to

generation of construction noise outside hours allowed by the City of Milpitas Noise Abatement Ordinance.

NOI-2 EXPOSURE OF PERSONS TO OR GENERATION OF EXCESSIVE GROUND-BORNE VIBRATION OR GROUND-BORNE NOISE LEVELS

Less than significant for construction; no impact for operations

CONSTRUCTION (ALL REACHES). Ground-based vibration levels can cause damage to structures and can be disruptive to sensitive receptors in the immediate area. Vibration levels differ by type of construction activity and type of equipment being used. Drill rigs and large bulldozers would be the typical equipment used on this project that would result in the highest levels of vibration, as shown in Table 3.28.

Table 3.28 Vibration from Drill Rigs and Large Bulldozers

Distance from Source	Peak Particle Velocity (inches per second)
25 feet	0.089
50 feet	0.031
75 feet	0.017
Source: FTA 2006	

Construction vibration would be considered significant if it would exceed the Caltrans standard of 0.2 inch per second for the protection of fragile buildings and interference or annoyance to human sensitive receptors. The nearest sensitive receptors consist of residential uses in Reaches 2 and 4 that would be within 25 feet of construction equipment. At 25 feet, construction equipment vibration levels range up to 0.089 in/sec, which would be less than the 0.20 in/sec standard (Caltrans 2002). Therefore, the impacts would be less than significant.

Noise generated by the type of construction activities that would occur as part of the project is more effectively transmitted through air than through ground. Sensitive noise receptors in the vicinity would not be significantly affected by ground-borne noise. This impact would be less than significant.

OPERATIONS (ALL REACHES). The proposed project would not generate substantial vibration or ground-borne noise during operation. Impacts would be less than significant.

NOI-4 SUBSTANTIAL TEMPORARY INCREASE IN AMBIENT NOISE LEVELS IN THE PROJECT VICINITY ABOVE LEVELS EXISTING WITHOUT THE PROJECT

Less than significant with mitigation for construction; less than significant for operations

CONSTRUCTION (ALL REACHES). While the noise levels generated by construction equipment and truck traffic would not exceed the numeric 24-hour averaged residential noise level threshold established in the Milpitas' General Plan Noise Element as discussed above under the analysis of Impact NOI-1, there would be a temporary increase of ambient noise as a result of the proposed project. As discussed above, the truck traffic may generate up to 77-84 dBA during construction, and construction equipment may generate up to 74-90 dB at 50 feet. Noise from traffic passing would be sporadic and spread out during the normal business hours, and noise from construction at any given location would likely last less than 2 months; however, based on the estimated current ambient noise (between 55 and 65 dBA) and given their distances from the project area, the temporary increase in ambient noise levels

experienced by residents and businesses in the project area could be substantial. This impact would be significant.

OPERATIONS (ALL REACHES). Operations and maintenance would occur only occasionally and would be temporary. Although the presence of floodwalls may necessitate additional maintenance for graffiti removal and inspection, these activities would not generate substantial noise levels. Temporary noise impacts during operations and maintenance would be less than significant.

MITIGATION (ALL REACHES). The project sponsors would implement measures NOI-A, NOI-B, and NOI-C, which are designed to reduce construction noise impacts and to help ensure compliance with local noise standards as specified in Section 3.11.6.

SIGNIFICANCE AFTER MITIGATION. Implementing Mitigation Measures NOI-A, NOI-B, and NOI-C would reduce temporary construction-related noise impacts to a less than significant level because these measures would prevent substantial noise impacts by using the best available noise suppression technology, locating noisy construction equipment as far as possible from sensitive receptors, provide a point of contact to foster resolution of noise complaints, and ensure compliance with local noise standards.

3.11.6. Mitigation Measures

NOI-A. ALERT NEIGHBORS. The District will notify residents in the vicinity of proposed project construction activities about the type and schedule of construction. Prior to construction, USACE will require the contractor to place signs throughout the proposed project area alerting neighbors to pending construction.

NOI-B. USE NOISE SUPPRESSION TECHNIQUES. The District will work with the USACE to assure the following mitigation measure is implemented. The construction contractor will use available noise suppression devices and techniques. Construction equipment noise will be minimized during project construction by muffling and shielding intakes and exhaust on construction equipment (per the manufacturer's specifications) and by shrouding or shielding impact tools. Noise-reduction measures specified in the City of San Jose's Noise Ordinance are described below, and will be implemented.

- Utilize 'quiet' models of air compressors and other stationary noise sources where technology exists;
- Equip all internal combustion engine-driven equipment with mufflers, which are in good condition and appropriate for the equipment;
- Locate all stationary noise-generating equipment, such as air compressors and portable power generators, as far away as possible from adjacent land uses;
- Locate staging areas and construction material areas as far away as possible from adjacent land uses;
- Prohibit all unnecessary idling of internal combustion engines;
- Designate a "disturbance coordinator" who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint and will require that reasonable measures warranted to correct the problem be implemented. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include it in the notice sent to neighbors regarding the construction schedule.

NOI-C. LIMIT CONSTRUCTION HOURS. The District will work with the USACE to assure the following mitigation measure is implemented whenever possible. Construction hours will be consistent with both the City of Milpitas Municipal Code and the San Jose Municipal Code to the maximum extent possible. Specifically, the Milpitas City Code Municipal Code, Section V-213-3 allows construction in residential areas to 7 a.m. and 7 p.m. on weekdays and weekends (Hom, 2015). Construction in residential areas is not permitted on holidays. The San Jose Municipal Code limits construction to between 7 a.m. and 7 p.m. Monday thru Saturday except within 500 feet of residential units, when construction is limited to Monday through Friday, 7 a.m. to 7 p.m. (Municipal Code 20.100.450).

3.11.7. Statement of Impact

As shown in Table 3.29, work occurring outside of the allowable construction times established by the City of Milpitas and temporary increases in ambient noise levels would constitute significant and unavoidable impacts. All other impacts would be reduced to less than significant with incorporation of mitigation measures.

Table 3.29 Statement of Impacts, Noise

Impact	Prior to Mitigation	Applicable Mitigation	After Mitigation
NOI-1. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standard of other agencies	S	NOI-A NOI-B	SU
NOI-2. Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels	LS	None	LS
NOI-3. Substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project	NI	None	NI
NOI-4. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project	S	NOI-A NOI-B NOI-C	LM
NOI-5. For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels	NI	None	NI
NOI-6. For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels	NI	None	NI
NI–No Impact, LS–Less than Significant, LM–Less than Significant with Mitigation, S–Significant, SU–Significant and Unavoidable			

3.12. POPULATION AND HOUSING

This section describes the existing population within the project area both from a regional and local standpoint, provides an assessment of housing availability and occupancy in the area, and surveys the industries that are dominant employers. Potential impacts to population growth and the availability of housing are evaluated in this section based on established significance criteria.

3.12.1. Environmental Setting

The vicinity of the project area is dominated by large streets or freeways, industrial uses, railroad tracks, and commercial areas. Housing developments and apartments border the project area in Reaches 1 and 4, but housing is not a dominant land use in the area. In general, population densities in Milpitas and San Jose are moderate to high relative to other communities in the surrounding area.

3.12.2. Existing Conditions

Population and socioeconomic data for the project area come from the U.S. Census Bureau (2010, 2013) unless otherwise noted. Data for the Cities of Milpitas and San Jose and two census tracts are provided in the tables and descriptions below. The vast majority of the project footprint is covered by Census Tract 5045.04, while Census Tract 5044.14 covers only the 50 feet downstream of Calaveras Boulevard.

There are approximately 1.8 million people living in Santa Clara County, with 945,942 (53 percent) of those residents living in San Jose and 66,790 (4 percent) living in Milpitas (Table 3.30). The population of San Jose is estimated to have increased by 1.7 percent in 2013 to over a million people, and it is the third largest city in California (City of San Jose 2015).

As shown in Table 3.30, population density in San Jose is 5,710 and in Milpitas is 4,914 people per square mile, a much denser population compared to the overall Santa Clara County density of only 1,381 (City Data 2014). The population of the immediate vicinity (Census Tract 5045.04) has around 10,000 people, with the largest number of individuals falling within the ages of 25 and 49.

Table 3.30 Project Area Population Data (2010)

	City of San Jose	City of Milpitas	Census Tract 5045.04	Census Tract 5044.14
Total Residents	945,942	66,790	9,882	5,092
Age 0-17	234,678	15,303	1,681	1,158
Age 18 and over	711,264	51,487	8,201	3,934
Age 20-24	64,386	4,187	855	309
Age 25-34	145,310	10,914	3,009	563
Age 35-49	221,011	16,172	2,639	1,196
Age 50-64	160,244	12,175	1,038	1,185
Age 65 and over	95,242	6,339	410	575
Population Density (people per square mile)	5,710	4,914	-	-

Overall, San Jose and Milpitas' populations are divided among two dominant ethnicities, White and Asian, with less than 5 percent of all other ethnicities present (Table 3.31). The City of Milpitas and both census tracts had a higher presence of Asian community members. Milpitas' Asian community comprises 62 percent of population.

Table 3.31 2010 Ethnicity in the Project Area1

	City of San Jose	City of Milpitas	Census Tract 5045.04	Census Tract 5044.14
White	404,437 (43%)	13,725 (21%)	1,757 (18%)	659 (13%)

Black or African American	30.242 (3%)	1,969 (3%)	553 (6%)	68 (1%)
American Indian or Alaskan Native	8,297 (1%)	309 (0.5%)	60 (0.6%)	3 (<0.1%)
Asian	303,138 (32%)	41,536 (62%)	5,743 (58%)	4,007 (79%)
	City of San Jose	**City of Milpitas**	**Census Tract 5045.04**	**Census Tract 5044.14**
Native Hawaiian and Other Pacific Islander	4,017 (0.4%)	346 (0.5%)	40 (0.4%)	28 (0.6%)
Two or More Races	47,062 (5%)	3,094 (4.6%)	399 (4%)	160 (3%)
[1]Totals not equal to 100% due to omitted categories. Source: U.S. Census Bureau 2010.				

Housing statistics show that the vacancy rate for San Jose is 4.7 percent, which falls below the "natural" or expected vacancy rate for the San Jose market of 5 percent (Table 3.32, City of San Jose 2013a). The median monthly owner cost for housing units with a mortgage in San Jose was $2,860 in 2013, with 78 percent of homeowners paying over $2,000 a month. That cost in in Milpitas was $2,750, and both cities' costs were higher than the national average of $1,559 per month. The vast majority of owner-occupied homes in San Jose and Milpitas were worth more than $500,000 in 2012.

The most recent data from the U.S. Census Bureau reports that the major industries in both San Jose and Milpitas include manufacturing, education services (along with health care and social assistance), and jobs in the professional, scientific, or management categories (see Table 3.33). Other industries of note in the area include retail trade and the arts (including entertainment, accommodation and food services). The California State unemployment rate in December of 2014 was 7.1 percent. In comparison, Milpitas' unemployment rate was only 4.6 percent and San Jose was at 5 percent unemployment (BLS 2015).

Median earnings for civilian employed population of 16 and over in San Jose was $42,978, which was less than the same Milpitas statistic of $49,385.

Table 3.32 Project Area Housing Statistics, 2010

	City of San Jose	City of Milpitas	Census Tract 5045.04	Census Tract 5044.14
Total Housing Units	314,038	19,806	2,749	1,509
Occupied Housing Units	301,366	19,184	2,637	1,451
Owner-Occupied Units	176,216	12,825	1,456	1,227
Renter-Occupied Units	125,150	6,359	1,181	224
Vacant Housing Units	12,672	622	112	58
Source: U.S. Census Bureau 2010.				

Table 3.33 Dominant Industries in the Project Vicinity

2008-2012 American Community Survey 5-Year Estimates	City of San Jose	City of Milpitas
Civilian Labor Force (16 and over)	458,131	31,622
Agriculture, forestry, fishing, hunting, mining	1,774	50
Construction	27,483	1,021

Manufacturing	86,549	8,824
Wholesale trade	10,302	604
Retail trade	49,965	2,786
Transportation, warehousing, utilities	15,049	900
Information	14,285	786
2008-2012 American Community Survey 5-Year Estimates	**City of San Jose**	**City of Milpitas**
Finance, insurance, real estate	22,743	1,344
Professional, scientific, management	74,306	5,285
Education services, health care, social assistance	83,592	5,558
Arts, entertainment, recreation, accommodation and food services	37,668	2,157
Public administration	11,905	909
Other services, except public administration	22,510	1,398
Source: U.S. Census Bureau 2010.		

3.12.3. Regulatory Setting

3.12.3.1. *Local Plans and Policies*

Limits on development intensity are required by State law. However, jurisdiction to establish limits is given to local municipalities. No other State laws regarding population or housing apply to the proposed project.

CITY OF MILPITAS GENERAL PLAN. The Milpitas General Plan provides guidance and implementing policies related to promoting economic growth and regulating development. Because the proposed project would not directly cause economic or development growth, these policies are not applicable to the proposed project.

SAN JOSE ENVISION 2040 GENERAL PLAN. The San Jose General Plan provides policies guiding future growth. Because the proposed project would not directly cause economic or development growth, these policies are not applicable to the proposed project.

3.12.4. Significance Criteria

The proposed project would have a significant adverse impact on population and housing if it were to:

POP-1 Induce population growth in the area, either directly (for example by proposing new homes or businesses) or indirectly (through extension of new roads or infrastructure);

POP-2 Displace substantial amounts of existing housing, necessitating the construction of replacement housing elsewhere; or

POP-3 Displace substantial amounts of people, necessitating the construction of replacement housing elsewhere.

3.12.5. Potential Impacts

3.12.5.1. *Significance Criteria with No Impact*

The following significance criteria are not discussed further in the EIR because the proposed project would not result in impacts related to these criteria:

POP-2 **Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.** No housing would be displaced as a result of construction or operation of the project; no access to homes would be temporarily or permanently blocked. The project would increase the area of the creek ROW though acquisition of small areas of land adjoining the existing creek ROW. The lands to be acquired are vacant and do not support residential uses. No removal of residential units would result.

POP-3 **Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.** Construction would not require residents or businesses to relocate out of the area. The project would increase the area of the creek ROW though acquisition of small areas of land adjoining the existing creek ROW. The lands to be acquired are vacant and do not support residential uses. No removal of residential units would result. No impacts would result and replacement housing would be unnecessary.

3.12.5.2. *Significance Criteria with Potential Impacts*

POP-1 ***INDUCE GROWTH IN THE AREA, EITHER DIRECTLY BY PROPOSING NEW HOMES AND BUSINESSES OR INDIRECTLY (THROUGH EXTENSION OF ROADS OR OTHER INFRASTRUCTURE)***

Less than significant for construction; no impact for operations

CONSTRUCTION (ALL REACHES). The proposed project would provide increased flood protection to the neighboring residents and businesses. For residents and businesses already located in the flood zone, the additional protection would provide reduced risks to health and safety, improved home valuation, and reduced costs for protection and mitigation of flood events. A potential indirect effect is that the reduced risk of flooding could induce growth and housing demand in the area, which could result in increased development. However, most areas immediately surrounding the channel are zoned for industrial or commercial uses and would not be available for residential development. Land uses would continue to be governed by the City of Milpitas and City of San Jose General Plans, which determine zoning and development patterns. Construction of the proposed project may result in a minor and temporary increase in the population if construction workers move to the area, and could increase the numbers of students attending schools in the area. However, under the proposed project, less than 40 workers would be used at any given time, and it is assumed that most of them would commute from nearby communities and would not move their families to the area. Therefore, the proposed project would not indirectly induce growth by providing increased levels of flood protection, and this impact would be less than significant.

The proposed project is anticipated to cost approximately $33 million to design and build. Although the construction contractor would not be required to be from the immediate area, a portion of construction expenditures would be captured by the local and regional economy. The extent to which the regional economy would capture expenditures is a function of the local and regional availability of construction goods and services necessary for this project. Any expenditures not captured regionally may still be captured by other more distant businesses. The local and regional increase in demand for construction goods and services would provide a temporary revenue stream for a variety of businesses, particularly

businesses such as fuel delivery, portable sanitation systems, concrete mixing and installation, and quarries. Expenditures at other types of businesses may increase due to purchases secondary to the construction process, such as purchases of food, fuel, and lodging for construction crews. While local or regional construction expenditures may result in growth of business revenue during the construction period, this impact would be temporary and minor compared to the size of the local and regional economies. Therefore, this impact would be less than significant.

Construction of the proposed project would not result in temporary increases in population in the project vicinity due to relocated construction workers. Less than 40 workers would be used at any given time, and given this small number, they likely would come from the local labor pool and would commute from nearby communities.

OPERATIONS (ALL REACHES). Operations and maintenance of the completed project would not change in ways that could affect population and housing conditions. Therefore, there would be no impact.

3.12.6. Mitigation Measures

There are no measures necessary for reducing impacts to population and housing.

3.12.7. Statement of Impact

Table 3.34 below summarizes the assessment of potential impacts to each of the significance criteria identified above. Impacts would be less than significant, and no mitigation is needed or proposed to offset impacts.

Table 3.34 Statement of Impacts, Population and Housing

Impact	Prior to Mitigation	Applicable Mitigation	After Mitigation
POP-1. Induce substantial population growth or concentration of population in an area, either directly (for example, by proposing new housing and/or businesses), or indirectly (for example, through extension of roads or other infrastructure).	LS	None	LS
POP-2. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.	NI	None	NI
POP-3. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.	NI	None	NI
NI–No Impact, LS–Less Than Significant, LM–Less Than Significant With Mitigation, S–Significant, SU–Significant and Unavoidable			

3.13. PUBLIC SERVICES

This section identifies public services in the project area and describes potential effects of implementing the proposed project.

3.13.1. Environmental Setting

Residents of Milpitas and San Jose receive the benefits of public and emergency services such as fire departments, police, hospitals, schools, emergency medical responders, parks, libraries, and social service providers. These services are provided by public, private, and non-profit agencies, and are found

in various locations in the surrounding area. The majority of the project area would be served by the City of Milpitas services, while only a small portion of Reach 4 is within the City of San Jose.

3.13.2. Existing Conditions

The project area is in a highly urbanized area within the Cities of Milpitas and San Jose. There are no public service facilities within the project footprint. The public services provided in the vicinity of the project area include:

- City of Milpitas Police Department, 1275 North Milpitas Boulevard, Milpitas, CA 95035
- Milpitas Fire Department, 777 South Main Street, Milpitas, CA 95035
- Milpitas Public Library, 160 North Main Street,, Milpitas, CA 95035
- Emergency Room Services, Regional Medical Center of San Jose, 225 North Jackson Avenue, San Jose, CA 95116
- San Jose Police Department, 201 West Mission Street, San Jose, Ca
- San Jose Fire Department, 1771 Via Cinco De Mayo, San Jose, CA 95132.

There are a number of schools in the vicinity of the proposed project. The two nearest schools (within 0.5 mile) are:

- Northwood Elementary School, 2760 Trimble Road, San Jose, CA 95132
- Calaveras Hills High School, 1331 E. Calaveras Boulevard, Milpitas, CA 95035

Parks and other recreational facilities found in the project vicinity include the Milpitas Community Center and the Teen Center, located on Calaveras Boulevard approximately 0.4 mile west of the project area. Gill Memorial Park is located approximately 0.25 mile south of the project area, and Selwyn Park is located on the other side of I-680 from Upper Berryessa Creek, approximately 0.5 mile from the project area.

3.13.3. Regulatory Setting

3.13.3.1. *Local Plans and Policies*

There are no Federal or State regulations for public services.

CITY OF MILPITAS GENERAL PLAN. The City of Milpitas General Plan provides the following applicable guidance for fire safety:

- 5.c-I-1. Maintain a response time of 4 minutes or less for all urban service areas.

ENVISION SAN JOSE 2040 GENERAL PLAN. The City of San Jose General Plan provides the following applicable guidance:

- ES-3.1 Provide rapid and timely level of service response time to all emergencies.

3.13.4. Significance Criteria

Significant impacts to public services would occur if the proposed project:

PBS-1: Would result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, or the need for new or physically altered government facilities, the construction of which could cause significant environmental

impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:

- Fire protection
- Police protection
- Schools
- Parks
- Other public facilities.

3.13.5. Potential Impacts

3.13.5.1. *Significance Criteria with Potential Impacts*

PBS-1 WOULD RESULT IN SUBSTANTIAL ADVERSE PHYSICAL IMPACTS ASSOCIATED WITH THE PROVISION OF NEW OR PHYSICALLY ALTERED GOVERNMENT FACILITIES.

Less than significant for construction: less than significant for operations.

CONSTRUCTION (ALL REACHES). Although project construction would temporarily increase the needs for emergency services (police, fire, and medical), these temporary increases would be minor and not require the provision of new or physically altered government facilities. Therefore, this impact would be less than significant. Construction of the proposed project would not increase the local population. Less than 40 construction workers would be employed at any one time. Given the small numbers of workers, most of whom would be from the local labor pool, the proposed project would not require additional schools to be constructed in the area, and this impact would be less than significant.

OPERATIONS AND MAINTENANCE (ALL REACHES). Completion of the proposed project would result in improvements to safety throughout the project area. Reductions in flood damages would result in less need for public services. Overbank channel roads would be widened and compacted, allowing easier access to emergency vehicles. Steep banks, which are sheer drops to the creek bottom in some locations, would be sloped back to more gentle angles. Aging infrastructure and culverts that inhibit flow capacity would be configured to provide optimum flood conveyance. Ongoing operation and maintenance activities would continue to be guided by District safety regulations and would not result in increased need for emergency services. As described above for Population and Housing (Section 3.12), improved flood protection is not anticipated to induce growth in the area. Therefore, operation of the proposed project would not require the provision of new or physically altered government facilities, and this impact would be less than significant.

MITIGATION. None required. Although not required, Mitigation Measure TRA-A would further ensure that impacts to fire protection, police protection, and emergency medical services would be less than significant.

3.13.6. Statement of Impact

Impacts to public services would be less than significant during construction and operations. A summary of the potential effects is given in Table 3.35.

Table 3.35 Statement of Impacts, Public Services			
Impact	**Prior to Mitigation**	**Applicable Mitigation**	**After Mitigation**
PBS-1. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, or the need for new or physically altered government facilities the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:	--	--	--
Fire Protection	LS	TRA-A	LS
Police Protection	LS	TRA-A	LS
Schools	NI	None	NI
Parks	LS	None	LS
Other Public Facilities (Emergency Medical Services)	LS	TRA-A	LS
NI–No Impact, LS–Less Than Significant, LM–Less Than Significant With Mitigation, S–Significant, SU–Significant			

3.14. RECREATION

This section provides a review of the existing recreational facilities within the project area and larger surrounding cities. Recreational amenities are not part of the proposed project.

3.14.1. Environmental Setting

Few recreational opportunities exist within the project area. The project area may occasionally be used by pedestrians or bicyclists, but its location in an industrial area surrounded by busy streets makes it a less than desirable recreation destination.

3.14.2. Existing Conditions

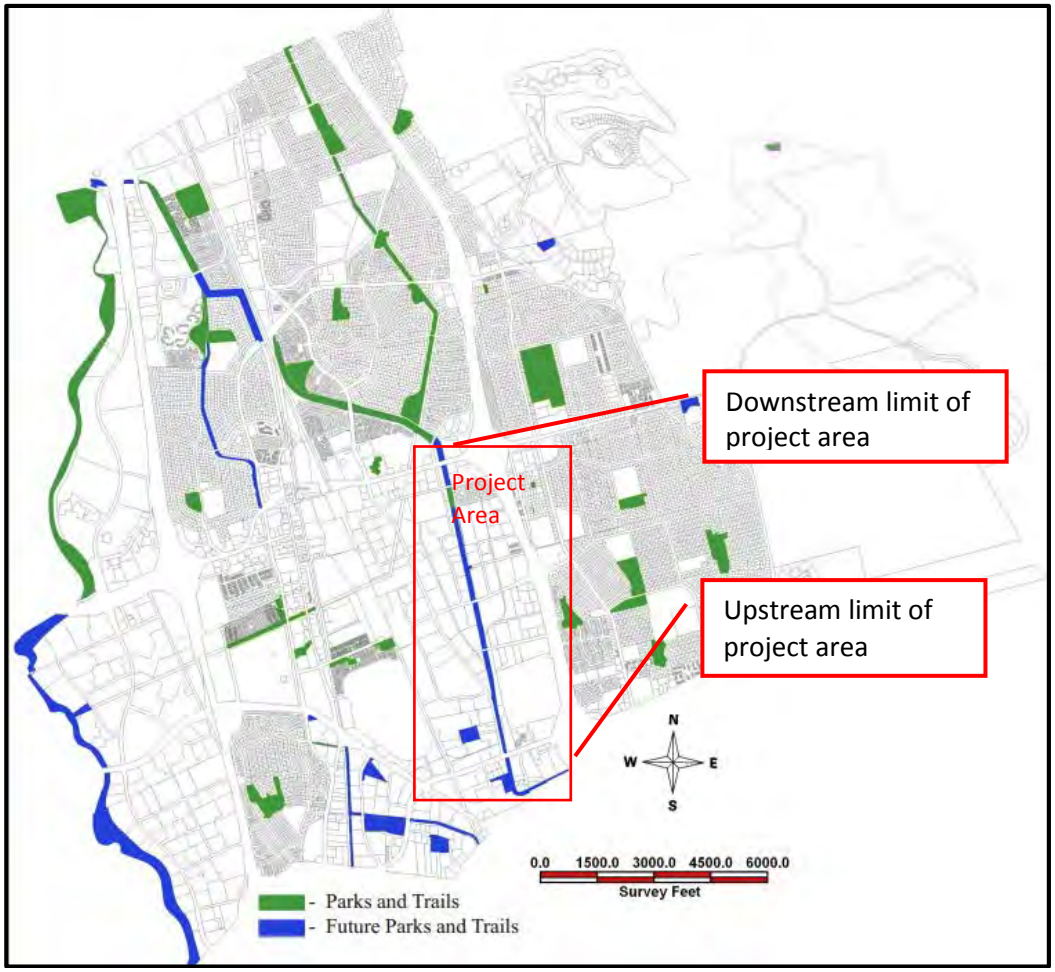
A small local park is present within Reach 2 of the project area adjacent to a residential development on the east bank upstream of Los Coches Street. It has a paved walkway and outdoor fitness equipment located between the immediate top of bank and residential development (Figure 3.16). The existing trail supports noncontact water recreation (REC2), which is designated as a beneficial use of the creek in the San Francisco Basin Plan (SFRWQCB, 2013). Due to the limited amount of water in the creek and the short duration of high flows, boating in the creek is impractical. The lack of fish species that are of interest to anglers discourages fishing. Thus, there are no existing water contact recreational (REC1) uses of the creek within the project area.

City recreational facilities and parks are available throughout the City of Milpitas (1997, 2002, 2010) and City of San Jose (City of San Jose 2007). The Recreation Master Plan for the City of Milpitas indicates that a small portion of the existing creek channel is a recreational park, but that the entire length of the creek is proposed for inclusion in the City park system in the future (Figure 3.17). Land use mapping in Section 3.10 (Figure 3.14) shows that much of the area is zoned for open space, though it is currently not developed for park or recreational use. There are no parks or recreational facilities within the portion of Reach 4 which lies within the City of San Jose.

Figure 3.16 Looking Downstream toward Los Coches Street and Pocket Park

The entire length of the project area from I-680 to Calaveras Boulevard is designated to become part of the existing Berryessa Creek City Trail in the future (City of Milpitas 1997, 2010). The Berryessa Creek City Trail does not currently pass through the project area. It extends 4.5 miles from Penitencia Creek to I-680, upstream of the project area, and picks up again downstream of Calaveras Boulevard and extends north to Abel Street downstream of the project area. The Berryessa Creek City Trail connects numerous residential areas to schools, shopping, and employment centers. The Trail follows the top of access roads that are present on one or both sides of Upper Berryessa Creek, which were included as part of the original Authorized Project for the primary purposes of operation and maintenance of Upper Berryessa Creek channel. According to the Milpitas Trails Master Plan (1997), City trails are intended to provide opportunities for multiple use and should be developed to meet Caltrans standards for Class I bikeways, with a minimum trail width of 10 feet. Currently, the project area is closed to recreational use via locked gates at most overpasses and no trespassing signs are posted. However, commercial and business parks with adjacent properties are not always fenced or gated and limited pedestrian and bicycle use was observed within the project right-of-way during field visits.

At the time of preparation of the Recreation and Parks Master Plan in 2010, and based on household population, the City of Milpitas was achieving the standard set by the City of Milpitas General Plan (2002) of 3 acres of public parkland for every 1,000 residents. The City of Milpitas contains approximately 185 acres of developed City parkland and other recreational facilities, which include 33 parks, several miles of trails, five community service buildings, a dog park, and a sports complex with swimming pools and gymnasium (City of Milpitas 2010). Additional recreation opportunities are provided by the Milpitas Unified School District, which allows mutual use of ball fields, pools, and other sports fields. The nearest city park to the project area is Creighton Park, east of I-680 and nearly 1 mile away by foot.



Source: City of Milpitas 2010

Figure 3.17 City of Milpitas Existing and Future Recreational Features

3.14.3. Regulatory Setting

3.14.3.1. *Local Plans and Policies*

There are no State or Federal parks or other State or Federally managed recreational facilities in or near the project area. Therefore, no State or Federal laws, regulations, or codes regarding recreational resources apply to the project.

CITY OF MILPITAS GENERAL PLAN. The City of Milpitas General Plan includes principles and policies regarding the protection and development of parks and recreational facilities (City of Milpitas 2002), including the following:

- 4.a-I-1. Provide 5 acres of neighborhood and community parks for every 1,000 residents outside of the Midtown Specific Plan Area, and 3.5 acres of special use parks for every 1,000 residents within the Midtown Specific Plan Area.

MILPITAS TRAILS MASTER PLAN AND BIKEWAY MASTER PLAN AND UPDATE. The City of Milpitas Trails Master Plan includes the development of 37 acres of trails and plans to interconnect trails with on-street connectors (City of Milpitas 1997). The plan identifies trail types and specific corridors including regional

trails, City trails, neighborhood trails, and on-street connectors (City of Milpitas 2010), and describes goals, objectives, and development priorities for bicycle transportation and recreation. Included in the plan are goals and objectives to increase bicycle use within the City both for recreation and as transportation. Goals include increasing accessibility to schools, parks, and community amenities. The goals and objectives in the plan are consistent with the City of Milpitas General Plan's guiding principle of providing a comprehensive system of sidewalks, bicycle lanes and routes, and off-street trails that connects all parts of the City (City of Milpitas 2010). Both plans call for the future utilization of the Upper Berryessa Creek access roads to become part of the City's Class I Bikeway.

ENVISION SAN JOSE 2040 GENERAL PLAN. The plan includes the following guidelines:

- PR-7.1 Encourage non-vehicular transportation to and from parks, trails, and open spaces by developing trail and other pleasant walking and bicycle connections to existing and planned urban and suburban parks facilities.
- CD-3.2 Prioritize pedestrian and bicycle connections to transit, community facilities (including schools), commercial areas, and other areas serving daily needs. Ensure that the design of new facilities can accommodate significant anticipated future increases in bicycle and pedestrian activity.

3.14.4. Significance Criteria

A significant impact would occur to recreation if the proposed project would:

REC-1 Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or would be accelerated; or,

REC-2 Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.

3.14.5. Potential Impacts

3.14.5.1. *Significance Criteria with No Impact*

The following significance criteria are not discussed further in the EIR because the proposed project would not result in impacts related to these criteria:

REC-2 **Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment** - The proposed project does not include recreational facilities, and would not induce growth that would require the construction or expansion of recreational facilities.

3.14.5.2. *Significance Criteria with Potential Impacts*

REC-1 INCREASE THE USE OF EXISTING PARKS OR OTHER RECREATIONAL FACILITIES SUCH THAT SUBSTANTIAL PHYSICAL DETERIORATION OF THE FACILITY WOULD OCCUR OR BE ACCELERATED

Less than significant for construction; less than significant for operations

CONSTRUCTION (REACHES 1–3). The existing channel access roads receive unauthorized use by small numbers of pedestrians and bicyclists. A small neighborhood pocket park just upstream of Los Coches Street on the right (east) bank and about 460 linear feet of adjoining paved recreational trail would be

removed in order to construct the proposed widened trapezoidal channel and access roads. The District consulted with the City of Milpitas about relocation of the exercise equipment at the pocket park, but no areas suitable for relocation are present in the vicinity; therefore the equipment would not be relocated or replaced. This impact would be less than significant because the equipment receives minimal use and the section of trail to be removed is relatively short and receives minimal use. ~~Increased use on other recreational facilities would be minimal and less than significant.~~

Construction activities would also prevent access to the creek for non-contact recreational uses (Beneficial Use REC2) and generate noise and visual impacts that would potentially degrade the recreational experience. However, only portions of the creek would be under construction at any one time, and such recreational use of the creek would continue in the areas not under active construction. The temporary disruption of non-contact recreational use of the creek at a particular location would last for less than two years and would be a less than significant impact.

As described in Section 3.14.2, there is no existing water contact recreational use (Beneficial Use REC1) uses of the creek within the Reaches 1 through 3 due to the limited amount of water in the creek and the lack of fish species that are of interest to anglers. The propose project would not adversely affect existing or ongoing REC1 beneficial uses. This impact would be less than significant.

CONSTRUCTION (REACH 4). There are no parks or other recreational facilities in the construction footprint in Reach 4, nor would construction restrict accessibility of any parks; therefore, there is no impact in Reach 4. There are no existing water contact recreational (REC1) beneficial uses of the creek within Reach 4. The proposed project would not adversely affect existing REC1 or REC2 beneficial uses in Reach 4. This impact would be less than significant.

OPERATIONS (ALL REACHES). After construction is complete, the project would permanently remove the existing pocket and short section of trail upstream of Los Coches Creek, which provide REC2 opportunities. However, these amenities receive minimal use and impacts would be less than significant.

MITIGATION (NOT REQUIRED). Although mitigation is not required because Impact REC-1 is less than significant, implementation of Mitigation Measures REC-A and LND-A (Allow public access to the creek ROW) would further reduce the expected less than significant impacts to recreation features.

3.14.6. Mitigation Measure

REC-A: PREPARE AND PROVIDE DETOUR SIGNAGE FOR PEDESTRIANS AND CYCLISTS. Although mitigation measures are not required, the District, working with the USACE, will require the construction contractor to implement the following measures. In order to mitigate the effects of displacing the unauthorized use of the access roads by pedestrians and cyclists, signs would be placed identifying the duration of construction and potential detour routes.

SIGNIFICANCE AFTER MITIGATION. Potential impacts with mitigation would remain less than significant.

3.14.7. Statement of Impact

Table 3.36 summarizes the level of potential impacts associated with recreational features of the project area. Impacts would be less than significant.

Table 3.36 Statement of Impacts, Recreation			
Impact	**Prior to Mitigation**	**Applicable Mitigation**	**After Mitigation**
REC-1. Increase the use of existing parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.	LS	REC-A	LS
REC-2. Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.	NI	None	NI
NI–No Impact, LS–Less Than Significant, LM–Less Than Significant With Mitigation, S–Significant, SU–Significant and Unavoidable			

3.15. TRAFFIC AND TRANSPORTATION

This section describes transportation facilities in the vicinity of Upper Berryessa Creek, including roadways, transit service, and pedestrian and bicycle routes. This section also provides results of a traffic study that was prepared for this project, which describes existing traffic conditions and those predicted to occur during the construction period (Kittelson 2012). Section 3.15.6 addresses potential effects from construction and operations, including potential impacts on transportation facilities that are adjacent to or within the construction area and which could be affected by construction, as well as roads and streets that construction workers, materials delivery, and haul trucks could use to access and exit construction areas. If project-related impacts are found to exceed thresholds of significance, mitigation measures are identified.

3.15.1. Environmental Setting

The project area is located within the city limits of Milpitas and San Jose. Surrounding roadways include Calaveras Boulevard at the northern project boundary, Milpitas Boulevard to the west and I-880 further west, and I-680 at the southern project boundary. Surface streets serving residential and industrial areas are found to the east of the project area. UPRR tracks run parallel to the stream on the east bank in Reach 3, and a spur line crosses the creek and runs for a short distance on the west side of the creek in Reach 2. The roadway network that would be used for access for construction workers and construction vehicles consists of regional highways and local roadways. Figure 3.18 shows the roadways in the project vicinity.

3.15.2. Existing Conditions

Traffic conditions, including traffic counts on Calaveras Boulevard, Los Coches Street, Yosemite Drive, Ames Avenue, and Montague Expressway, were summarized in an Existing Conditions Report for Traffic Analysis (Dowling 2008). Traffic conditions were analyzed in a Traffic Analysis Report prepared for Alternative 2A (Kittelson 2012). Much of the data from that report is relevant to this alternative, although Alternative 2A contains substantial measures including bridge replacements, full closure of Los Coches Street, and lane closures on Calaveras Boulevard and Montague Expressway that would not occur under the proposed project. Data from the Existing Conditions Report and the Traffic Analysis Report and other sources are summarized below.

3.15.2.1. *Roadways*

Roadways in Santa Clara County are classified based on their function and linkages, reflecting their importance to land use patterns, travelers, and general welfare. The system also recognizes differences between urban, suburban, and rural areas.

FREEWAYS. Operated and maintained by Caltrans, these facilities are designed as high volume, high-speed facilities for intercity and regional traffic. Access to these facilities is limited, and in some cases on- and off-ramps are metered during peak-hour periods to reduce congestion caused by merging cars and trucks. Three freeways or connectors serve the project area. All three may also serve as truck routes during construction of the proposed project.

- I-880 is a six-to-eight-lane, north-south freeway 1.5 miles west of the Upper Berryessa Creek project area. It connects the Cities of Milpitas and San Jose with regional destinations such as Oakland and Fremont on the north and Campbell on the south. The average daily traffic on I-880 in the vicinity of SR 237 is 133,000 to 174,000 vehicles per day (Kittelson 2012). I-880 has interchanges with Calaveras Boulevard (SR 237), Montague Expressway, and Great Mall Parkway near the project area.
- I-680 is an eight-lane, north-south freeway that runs parallel to I-880. I-680 connects the Cities of Milpitas and San Jose on the south to regional destinations such as Fremont on the north and the Pleasanton-Livermore Tri-Valley area to the northeast. In the vicinity of the Upper Berryessa Creek study area, I-680 has interchanges with SR 237 and the Montague Expressway. The average daily traffic on I-680 near SR 237 is 147,000 to 152,000 vehicles per day (Kittelson 2012). Upper Berryessa Creek passes beneath I-680 in a culvert at the upstream (southern) boundary of the project area. At the northern end of the project area, I-680 is approximately 1,000 feet east of the creek.
- Calaveras Boulevard or SR 237 is a major east-west State highway and signalized arterial roadway in the City of Milpitas, east of I-880. It runs for approximately 1.5 miles from I-880 on the west to I-680 on the east and serves as a regional freeway-to-freeway connector. It is a four-to-six-lane road fronted mostly by retail and commercial uses. It continues east of I-680 to join Piedmont Road. The average daily traffic on SR 237 is 126,000 to 131,000 vehicles per day near its interchange with I-680 (Kittelson 2012). Upper Berryessa Creek passes beneath Calaveras Boulevard at the downstream (northern) boundary of the project area.

ARTERIALS. Major Arterials (four to eight lanes) and Minor Arterials (four lanes) are the principal network for through-traffic within a community and often between communities.

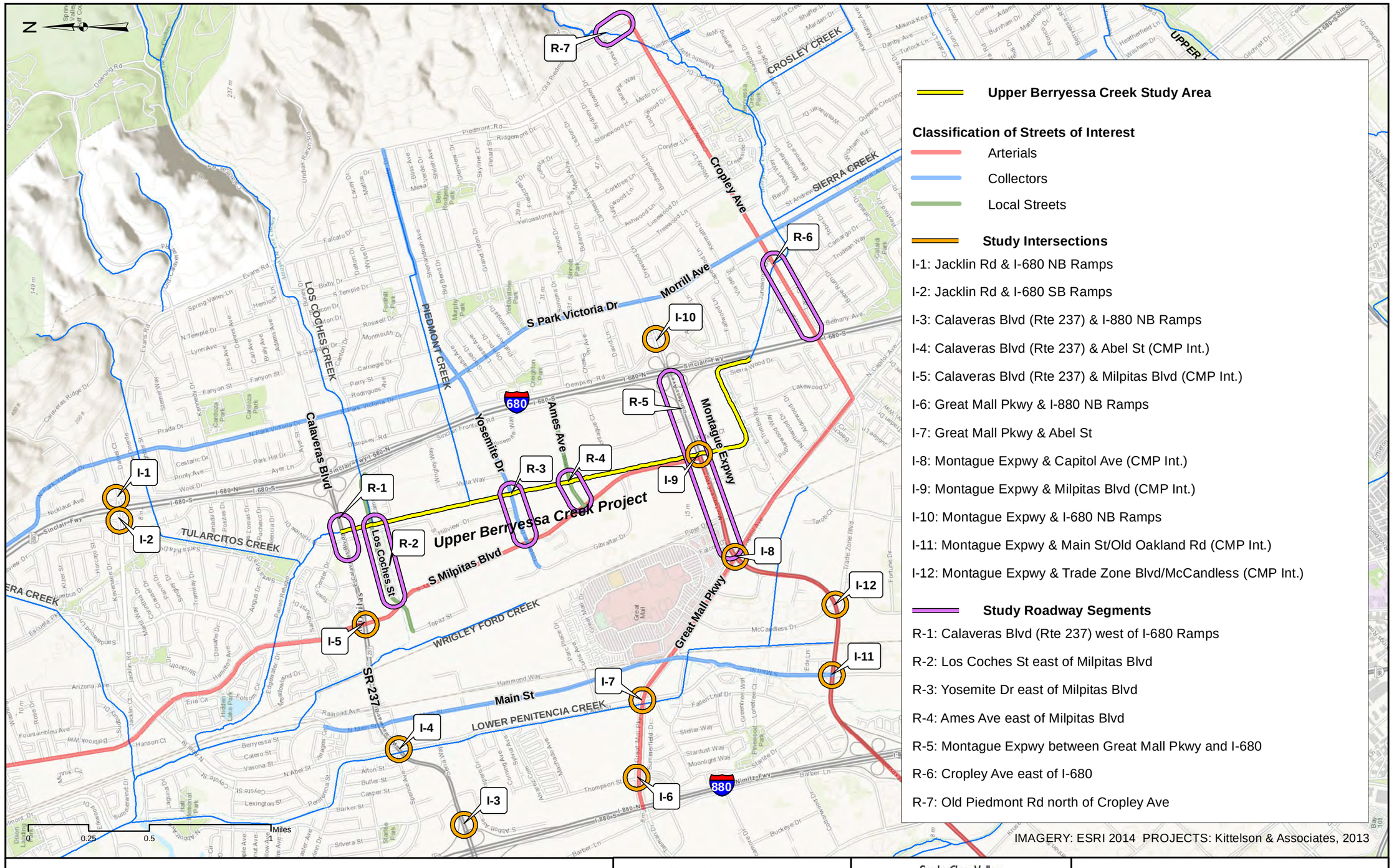
- Montague Expressway is a six-to-eight-lane, east-west arterial in the Cities of Milpitas and San Jose. It runs for approximately 1.6 miles between I-880 and I-680, and intersects the project area between Reaches 3 and 4. Montague Expressway has signalized intersections at South Main Street/Oakland Road, McCandless Drive/Trade Zone Boulevard, Great Mall Parkway/East Capitol Avenue and South Milpitas Boulevard. During the morning peak period (AM Peak Period) from 6 a.m. to 9 a.m., one westbound through lane is restricted for high-occupancy vehicle (HOV) use; during the afternoon peak period (PM Peak Period) from 3 p.m. to 7 p.m., one eastbound lane is restricted for HOV use. The HOV lanes are located east of the I-880 interchange and continue until just west of the I-680 interchange. The HOV lanes are currently in a 3-to-5-year trial period, but it is assumed they will still be in operation in 2017 when the Upper Berryessa Creek modifications take place.
- Santa Clara County Roads and Airports Department, Santa Clara Valley Transportation Authority, and Santa Clara Valley Water District have completed plans to widen Montague Expressway

near the new Bay Area Rapid Transit (BART) station, which is under construction at the corner of Montague and Great Mall Boulevard/Capitol Avenue. The county project would widen Montague Expressway from six to eight lanes and replace the bridge over Upper Berryessa Creek. Work would begin with utility relocations in the spring or summer of 2016.

- Great Mall Parkway is a major six-lane, east-west arterial roadway in the City of Milpitas. It provides access to the Great Mall and the Great Mall Transit Center, located west of the project area. It forms a signalized intersection with Montague Expressway. Milpitas Boulevard is a four-lane north south minor arterial roadway that joins Dixon Landing Road on the north and ends at Montague Expressway on the south. As part of the BART Silicon Valley Extension project, Milpitas Boulevard would be extended south of Montague Expressway to connect to Great Mall Boulevard.
- Cropley Avenue is a two-to-four-lane, east-west minor arterial roadway in the City of San Jose, located about a quarter mile south of the project area. Cropley Avenue primarily serves residential areas. It forms a four-lane overpass over I-680 and a signalized intersection with Morrill Avenue.
- Jacklin Road is an east-west minor arterial 1 mile north of the project area. It has four lanes and functions as a continuation of Abel Road from Milpitas Boulevard to an interchange at I-680. It continues east until it turns into Evans Road.
- Abel Road is a four-lane, north-south minor arterial in the City of Milpitas, 1 mile west of the project area. It links up with Main Street in the south and becomes Jacklin Road at Milpitas Boulevard in the north. Major signalized intersections include Milpitas Boulevard, Calaveras Boulevard, and Great Mall Parkway.
- Trade Zone Boulevard is a four-lane, east-west connector linking Montague Expressway with N. Capital Avenue. It becomes Cropley Avenue east of N. Capital Avenue. Its closest proximity to the project area is about 0.5 mile to the south.

COLLECTORS. These two-lane facilities function as the main interior streets within neighborhoods and business areas. Collectors serve to connect these areas with higher classification roads (i.e., arterials, expressways, and freeways).

- Main Street is a two-to-four-lane collector roadway that links Abel Street to the north and Oakland Road to the south between Great Mall Parkway and Montague Expressway. It is located over 1 mile west of the project corridor and would not be affected by the proposed project.
- Morrill Avenue/S Park Victoria Drive is a two-lane major collector roadway with a center two-way left turn lane. It is fronted primarily by residential uses on both sides and is located east of I-680. This segment would not be affected by the proposed project.
- Yosemite Drive is a four-lane minor collector roadway that joins Piedmont Road on the east and curves into Gibraltar Drive on the west. It provides access to residential areas in east Milpitas and offices west of I-680. It intersects the stream channel in Reach 2, and carries up to 598 peak hour vehicles as of 2008 (Dowling 2008).



Upper Berryessa Creek Study Area

Classification of Streets of Interest

- Arterials
- Collectors
- Local Streets

Study Intersections

I-1: Jacklin Rd & I-680 NB Ramps

I-2: Jacklin Rd & I-680 SB Ramps

I-3: Calaveras Blvd (Rte 237) & I-880 NB Ramps

I-4: Calaveras Blvd (Rte 237) & Abel St (CMP Int.)

I-5: Calaveras Blvd (Rte 237) & Milpitas Blvd (CMP Int.)

I-6: Great Mall Pkwy & I-880 NB Ramps

I-7: Great Mall Pkwy & Abel St

I-8: Montague Expwy & Capitol Ave (CMP Int.)

I-9: Montague Expwy & Milpitas Blvd (CMP Int.)

I-10: Montague Expwy & I-680 NB Ramps

I-11: Montague Expwy & Main St/Old Oakland Rd (CMP Int.)

I-12: Montague Expwy & Trade Zone Blvd/McCandless (CMP Int.)

Study Roadway Segments

R-1: Calaveras Blvd (Rte 237) west of I-680 Ramps

R-2: Los Coches St east of Milpitas Blvd

R-3: Yosemite Dr east of Milpitas Blvd

R-4: Ames Ave east of Milpitas Blvd

R-5: Montague Expwy between Great Mall Pkwy and I-680

R-6: Cropley Ave east of I-680

R-7: Old Piedmont Rd north of Cropley Ave

IMAGERY: ESRI 2014 PROJECTS: Kittelson & Associates, 2013

Figure 3.18 Study Intersections and Roadway Segments

Tetra Tech
17885 Von Karman Avenue, Suite 500
Irvine, CA 92614
Tel. (949) 809-5000 Fax. (949) 809-5003

Santa Clara Valley Water District

UPPER BERRYESSA CREEK
FLOOD RISK MANAGEMENT PROJECT
0746

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LOCAL STREETS. These facilities are two-lane streets that provide local access and service. They include residential, commercial, industrial, and rural roads.

- Los Coches Street is a two-lane local street that joins Milpitas Boulevard to the west of the project area and curves to become Sinclair Frontage Road east of the project area. It intersects the stream channel in Reach 1.
- Ames Avenue is a two-lane local street that provides access to the Ames Industrial Park including technology companies. It joins Sinclair Frontage Road east of the project area and Milpitas Boulevard west of the project area. It intersects the stream channel in Reach 2.

3.15.2.2. *Roadway Level of Service*

Level of Service (LOS) calculations are the standard method used by transportation engineers and government agencies to compare traffic volumes with a given roadway's design capacity. LOS reflects speed and travel time, freedom to maneuver, traffic interruptions, comfort, and convenience. There are six LOS categories as shown in Table 3.37.

Table 3.37 Descriptions of Levels of Service

Level of Service	Description of Traffic Conditions
A	Conditions of free flow; speed is controlled by drivers' desires, speed limits, or roadway conditions.
B	Conditions of stable flow; operating speeds beginning to be restricted; little or no restrictions on maneuverability from other vehicles.
C	Conditions of stable flow; speeds and maneuverability more closely restricted; occasional backups behind left-turning vehicles at intersections.
D	Conditions approach unstable flow; tolerable speeds can be maintained but temporary restrictions may cause extensive delays; little freedom to maneuver; comfort and convenience low; at intersections, some motorists, especially those making left turns, may wait through more than one or more signal changes.
E	Conditions approach capacity; unstable flow with stoppages of momentary duration; maneuverability severely limited.
F	Forced flow conditions; stoppages for long periods; low operating speeds.

Source: Highway Capacity Manual. Transportation Research Board, Washington, D.C. 2000

LOS standards differ by jurisdiction. Caltrans aims for a LOS of C or D but acknowledges that this may not always be attainable. In such cases, the aim is to not worsen the existing condition (Kittelson, 2012). In the City of Milpitas, projects affecting roadways east of I-880 with an existing LOS of F must provide mitigation if they increase traffic volumes by more than 1 percent (City of Milpitas, 2002). The City of San Jose aims for an overall LOS of D during peak periods (City of San Jose, 2011).

As part of the USACE GRR-EIS completed for this project (USACE 2014), a number of intersections in and near the project area were analyzed to determine LOS under normal conditions. The intersections studied and the resultant LOSs are shown in Table 3.38.

Table 3.38 Existing Intersection Level of Service and Average Delay, AM and PM Peak Periods*				
Intersection	AM Peak		PM Peak	
	LOS	Delay (seconds per vehicle)	LOS	Delay (seconds per vehicle)
Jacklin Rd. & I-680 Northbound Ramps	N/A		B	16.2
Jacklin Rd. & I-680 Southbound Ramps	N/A		B+	11.5
Calaveras Blvd. & I-880 Northbound Ramps	B	12.6	B	16.8
Calaveras Blvd. & Abel St.	D+	38.1	D	44.1
Calaveras Blvd. & Milpitas Blvd.	D	40.2	D	44.1
Great Mall Pkwy. & I-880 Northbound Ramps	C	27.1	C+	20.3
Great Mall Pkwy. & Abel St.	D	40.7	D+	36.7
Montague Exp. & Capitol Ave.	D	49.7	E+	56.6
Montague Exp. & Milpitas Blvd.	D	39.6	D+	35.1
Montague Exp. & I-680 Northbound Ramps	D	40.5	D	46.2
Montague Exp. & Main St./Old Oakland	E	68.1	D-	54.8
Montague Exp. & Trade Zone Blvd.	F	94.8	F	81.4
*Source: Kittelson 2012.				

3.15.2.3. *Transit Service*

Santa Clara Valley Transportation Authority (VTA) operates local and regional transit services in the study area. Figure 3.19 shows transit routes in the immediate project area.

- Route 46 operates between the Great Mall transit center and the Milpitas High School. The route uses Montague Expressway, Calaveras Boulevard (east of the project), and Jacklin Road. On weekdays, it operates from 6 a.m. to 7 p.m. at frequencies of 30 (peak) to 60 (midday) minutes. On Saturdays, it operates from 9 a.m. to 6 p.m. at frequencies of 60 minutes. There is no service on Sundays. It crosses Upper Berryessa Creek at Montague Expressway east of Milpitas Boulevard.
- Route 47 operates between the Great Mall transit center and the McCarthy Ranch Shopping Center via Montague Expressway, Park Victoria, and Calaveras Boulevard. On weekdays, it operates from 6 a.m. to 10 p.m. at frequencies of 30 minutes. On Saturdays, it operates from 8 a.m. to 8 p.m. at frequencies of 30 minutes. On Sundays, it operates from 9 a.m. to 7 p.m. at frequencies of 45 minutes. It crosses Upper Berryessa Creek at Calaveras Boulevard west of I-680 and Montague Expressway east of Milpitas Boulevard.
- Route 70 operates between the Great Mall transit center near Great Mall Parkway in Milpitas and the Capitol light-rail transit station near Capitol Expressway in San Jose. On weekdays, it operates from 5 a.m. to 11 p.m. at frequencies of 15 minutes (less frequent in evenings). On weekends, it operates from 6 a.m. to 10 p.m. at frequencies of 20 minutes. It crosses Upper Berryessa Creek at Montague Expressway just east of Milpitas Boulevard and Morrill Avenue south of Cropley Avenue.
- Route 71 operates between the Great Mall transit center near Great Mall Parkway in Milpitas and the Eastridge Transit Center near Capitol Expressway in San Jose. On weekdays, it operates from 5 a.m. to 10 p.m. at frequencies of 15 (peak) to 30 (midday, evening) minutes. On Saturdays, it operates from 7 a.m. to 9 p.m. at frequencies of 30 minutes. The Sunday schedule shows it operating every 45 minutes from 7 a.m. to 9 p.m. The route crosses Upper Berryessa Creek at Montague Expressway east of Milpitas Boulevard and Piedmont Road south of Cropley Avenue.

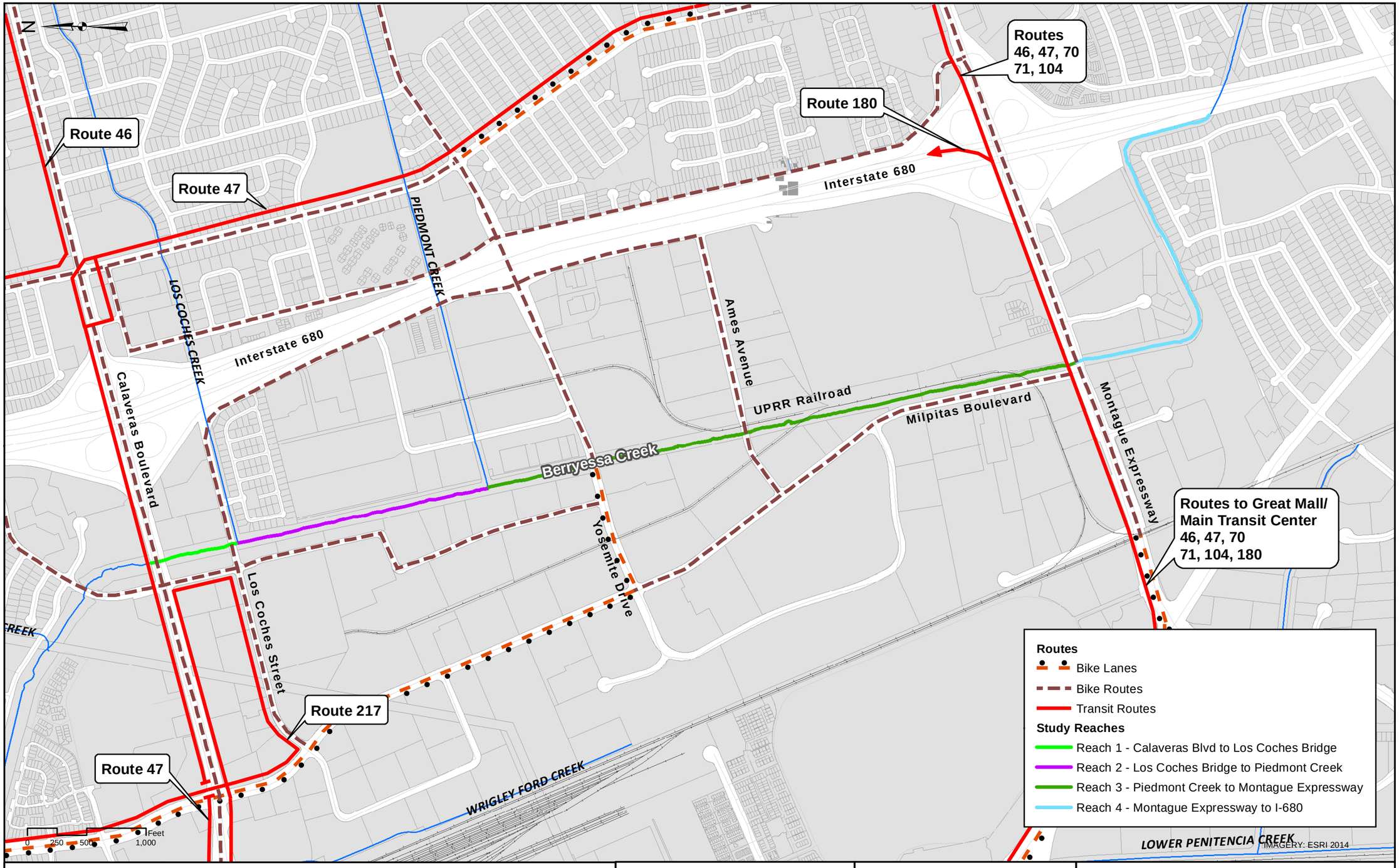

Figure 3.19 Transit and Bike Routes

Tetra Tech
17885 Von Karman Avenue, Suite 500
Irvine, CA 92614
Tel. (949) 809-5000 Fax. (949) 809-5003

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- Route 104 - Express operates between Deer Creek Road in Palo Alto and the Penitencia Creek Transit Center south of Berryessa Road in San Jose. On weekdays, two trips provide westbound service—from Penitencia Creek to Deer Creek—during the AM Peak, from 6 a.m. to 8 a.m. Two eastbound trips are offered in the PM Peak between 4 p.m. and 6 p.m. The route crosses over Upper Berryessa Creek at Montague Expressway and Milpitas Boulevard.
- Route 180 - Express operates between the Fremont BART station and the Great Mall Transit Center (several peak hours trips continue to the Eastridge Transit Center and San Jose). On weekdays, it operates from 6 a.m. to 10 p.m. at frequencies of 30 minutes. No weekend service is operated on this route. Route 180 crosses over Upper Berryessa Creek at Montague Expressway east of Milpitas Boulevard.
- AC Transit Route 217 connects the Fremont BART with the Great Mall Transit Center. On weekdays, it operates from 5 a.m. to 11 p.m. at frequencies of 30 minutes. On weekends, it operates from 7 a.m. to 8 p.m. at 40 minute headways. In the general project area, the route is closest to Upper Berryessa Creek at Calaveras Boulevard and S. Hillview Drive.

Regional and local light rail transit (LRT) service is also provided by VTA through the Alum Rock LRT line with the nearest station at Montague Expressway and N. Capital Boulevard. The proposed VTA Bus Rapid Transit (i.e., Valley Rapid) would not serve the study area. A BART station at Montague Expressway and Capitol Avenue is under construction and should be completed by 2018, providing service on two lines along the East Bay, with one line to Richmond and the other into San Francisco and Daly City. Depending on the exact construction schedule, the modifications at Upper Berryessa Creek may coincide with BART's construction efforts.

3.15.2.4. *Railroads*

A UPRR trestle passes over Upper Berryessa Creek just north of Montague Expressway. The track then serves several properties to the east of the creek, linking them with the rest of the UPRR system to the west. The UPRR also crosses Upper Berryessa Creek on a box culvert south of Ames Avenue. That crossing serves an industrial lead track that terminates south of Los Coches Street.

3.15.2.5. *Non-Motorized Facilities*

Informal pedestrian and bicycle paths and trails are located along the creek within the project area, and formal paths are found in the immediate vicinity along much of the alignment. The access roads are often used by area residents for walking, jogging, and running, though access is restricted in some locations. A number of streets in both cities have designated bike routes and most of the major streets have sidewalks on one or both sides of the street. Figure 3.19 shows designated bike lanes and bike routes in the immediate project area.

3.15.3. **Regulatory Setting**

3.15.3.1. *Federal Regulations*

TITLE 23 OF THE U.S. CODE. Federal statutes specify the procedures that the U.S. Department of Transportation must follow in setting policy regarding the placement of utility facilities within the rights-of-way of roadways that receive Federal funding. These roadways include expressways, most State highways, and certain local roads. In addition, 23 USC 116 requires State highway agencies to ensure proper maintenance of highway facilities, which implies adequate control over non-highway facilities,

such as utility facilities. Finally, 23 USC 123 specifies when Federal funds can be used to pay for the costs of relocating utility facilities in connection with highway construction projects.

TITLE 23 OF THE CODE OF FEDERAL REGULATIONS. Federal Highway Administration (FHWA) regulations require that each State develop its own policy regarding the accommodation of utility facilities within the rights-of-way of such roads. After FHWA has approved a State's policy, the State can approve any proposed utility installation without referral to FHWA, unless utility installation does not conform to the policy. Federal regulations do not dictate specific levels of operation or minimum delays, however, which are primarily established by local jurisdiction.

3.15.3.2. *State Regulations*

CALIFORNIA STREETS AND HIGHWAYS CODE. The California Streets and Highways Code authorizes Caltrans to control encroachment within State highway rights-of-way. Encroachments allow temporary or permanent use of a highway right-of-way by a utility, a public entity, or a private party. Caltrans controls encroachment by requiring an encroachment review and permit for any project that may affect a State roadway.

Caltrans's Right of Way and Asset Management Program is primarily responsible for acquisition and management of property required for State transportation purposes. Transportation purposes may include highways, mass transit guideways and related facilities, material sites, and any other purpose that may be necessary for Caltrans operations. The responsibilities of the Right of Way and Asset Management Program include managing Caltrans' real property for transportation purposes, reducing the costs of operations, disposing of property no longer needed, and monitoring right-of-way activities on Federally-assisted local facilities.

Caltrans' target level of service is at the transition between LOS C and LOS D on State highways (Caltrans 2010). They acknowledge that this target may not always be possible and recommend that lead agencies consult with them concerning the appropriate LOS target. Projects should not worsen existing LOS levels if already below the target.

3.15.3.3. *Local Plans and Policies*

SANTA CLARA VALLEY TRANSPORTATION AGENCY CONGESTION MANAGEMENT PLAN. The Santa Clara Valley Transportation Agency (VTA) is designated as Santa Clara Valley's Congestion Management Agency (VTA 2014). The Congestion Management Program (CMP) statute requires that uniform methods be used for evaluating transportation impacts of land use decisions on the CMP system, and establishes guidelines for preparing Transportation Impact Analysis (TIA) and to assist in identifying improvements to minimize a development project's impacts. VTA's Transportation Impact Analysis Guidelines (VTA 2014) require that agencies:

1. Use the VTA *TIA Guidelines* to evaluate the transportation impacts of all land use decisions within the agency's jurisdiction that are projected to generate 100 or net new weekday (AM or PM peak hour) or weekend peak hour trips, including both inbound and outbound trips.
2. Submit a copy of the TIA Report to VTA at least 20 calendar days before the development decision or recommendation is scheduled by the agency.

The LOS standard for designated roadways and intersections in the Santa Clara County Congestion Management Plan (CMP) network is LOS E, except for facilities grandfathered in at LOS F (VTA 2013). CMP-designated roadways in the program vicinity include I-680, I-880, SR 237, and Montague Expressway (Kittelson 2012). CMP-designated intersections include Calaveras Boulevard (SR 237) / Abel Street, Calaveras Boulevard (SR 237) / Milpitas Boulevard, Montague Expressway / Milpitas Boulevard, Montague Expressway / Capitol Avenue, Montague Expressway / Main Street, and Montague Expressway / Trade Zone Boulevard (Kittelson 2012).

CITY OF MILPITAS MASTER PLAN. The Milpitas Master Plan, citing the Santa Clara County Congestion Management Plan (CMP), established that the basic traffic LOS goal is E. For locations with a baseline LOS F, the LOS goal remains F.

The Circulation Elements of the Master Plan designates "the general location and extent of existing and proposed major thoroughfares, transportation routes and other local public facilities." Since the original issuance of the Master Plan in 1994, the City of Milpitas has issued several specific plans, especially addressing transportation issues. These plans include the Streetscape Master Plan (2000), Bikeway Master Plan (2009), and the Trails Master Plan (1997). These plans emphasize the importance of non-motorized transportation with the City and provide supportive policies and actions.

The City of Milpitas *Municipal Code* enforces rules, regulations, and requirements pertaining to operations and maintenance of the transportation network within its respective jurisdiction. According to the *Code*, designated truck routes are to be utilized for any goods movement, and any vehicle exceeding a maximum gross weight limit of three tons, the Chief Police Officer is authorized to designate such street or streets by appropriate signs as "Truck Traffic Routes" for the movement of vehicles exceeding a maximum gross weight limit of three tons.

For any work within a City-owned right-of-way (ROW), an encroachment permit must be filed with the Milpitas Department of Engineering. General provisions of the encroachment permit require the permittee to repair or replace existing roadways, to notify the Public Works Inspector at least 48 hours prior to any work, and to abide by the California Department of Transportation Manual of Traffic Controls for Construction and Maintenance Work. Encroachment permits may be required from the VTA as well.

SAN JOSE ENVISION 2040 GENERAL PLAN. The transportation policies contained in Envision San Jose 2040 include a "set of balanced, long-range, multimodal transportation goals and policies that provide for a transportation network that is safe, efficient, and sustainable…" The policies and actions outlined in the plan aim to:

- Establish circulation policies that increase bicycle, pedestrian, and transit travel, while reducing motor vehicle trips, to increase the City's share of travel by alternative transportation modes; and
- Promote San Jose as a walking- and bicycling-first City by providing and prioritizing funding for projects that enhance and improve bicycle and pedestrian facilities.

Policy TR-5.3 in Envision San Jose 2040 states that the "minimum overall roadway performance during peak travel periods should be level of service 'D' except for designated areas."

3.15.4. Significance Criteria

Impacts related to transportation and circulation would be significant if the project would:

TRA-1 Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to streets, highways and freeways, pedestrian and bicycle paths, and mass transit;

TRA-2 Conflict with an applicable congestion management program, including but not limited to, level of service standards and travel demand measures, or other standards established by the County congestion management agency for designated roads or highways;

TRA-3 Result in change in air traffic patterns including either an increase in traffic levels or a change in location that results in substantial safety risks;

TRA-4 Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or construction traffic;

TRA-5 Result in inadequate emergency access; or

TRA-6 Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

3.15.5. Potential Impacts

3.15.5.1. *Significance Criteria with Potential Impacts*

TRA-1 CONFLICT WITH AN APPLICABLE PLAN, ORDINANCE, OR POLICY ESTABLISHING MEASURES OF EFFECTIVENESS FOR THE PERFORMANCE OF THE CIRCULATION SYSTEM

Less than significant with mitigation for construction; less than significant for operations

CONSTRUCTION (REACHES 1–3). During project construction, trucks importing building materials or exporting excavated materials would access temporary construction staging areas and access roads on both sides of the channel. These areas would primarily be used for material storage and vehicle parking when work is occurring in the immediate area. Starting at the upstream end of the project, the first proposed staging site in Reaches 1–3 is located on the east side of the creek 800 feet downstream of Montague Expressway. Access to this staging area and egress from it would be via Ames Avenue and the maintenance road on the east side of the creek. The next staging area is west of the creek and on the south side of Yosemite Drive. Access and egress would be from Yosemite Drive. The northernmost site is located on the west side of the creek and just south of Los Coches Street. Access would be from Los Coches Street or from upstream areas via the access road. Trucks may exit the staging areas and access roads via Calaveras Boulevard, Los Coches Street, Yosemite Drive, or Ames Avenue.

Up to 74,500 cy of materials would be excavated in Reaches 1–3. If all of this material were disposed of off-site, this would result in approximately 4,781 truckloads of material, or approximately 40 trips (20 round trips) per day. There would be an additional six to eight daily truck trips for importing materials including concrete, steel reinforcing bar, and topsoil, as well as construction equipment. Assuming 10-hour work days, approximately 5 trucks per hour would either enter or exit the access roads and staging areas. These trucks would enter or exit at multiple points, so the effects would be spread throughout Reaches 1–3. If concentrated at one location, these additional truck trips would constitute only 2/10 of 1 percent of peak hour traffic on Calaveras Boulevard or Montague Expressway. Due to the low numbers of trucks entering the roadway per hour, LOS on local and regional roadways and at intersections is not likely to be affected. Additional temporary and intermittent delays to the smooth flow of traffic may occur when slow-moving construction trucks impede faster-moving passenger vehicles. Because this type of impedance to traffic flow during the weekday peak traffic hours is less predictable than

temporary lane closures on side streets, and would occur over the course of the construction period, it would be a short-term significant impact.

No lane closures would occur on Calaveras Boulevard. Due to trucks entering or exiting the access roads, temporary lane closures lasting for up to 10 days would occur on Los Coches Street, Ames Avenue, and Yosemite Drive. These lane closures would not be concurrent. These closures would result in traffic delays during peak times. Partial closures of Los Coches Street and Yosemite Avenue would not require diversion of traffic to other streets, but even if diversion of a significant portion of traffic on these streets occurred, Los Coches Street would be at worst LOS D, and Yosemite Drive would be at worst LOS E (Dowling, 2008), which is consistent with the City of Milpitas basic traffic LOS goal of E. Partial closure of Ames Avenue would narrow the street to only one lane, and would delay traffic, some of which would likely divert to other streets such as Yosemite Drive. Ames Avenue carries 238 AM peak hour trips and 278 PM peak hour trips, so traffic diverted to Yosemite Drive would still be well within the carrying capacity of Yosemite Avenue (Kittelson 2012), and volumes on Yosemite Avenue would still meet the City of Milpitas basic traffic LOS goal. Impacts to LOS would be less than significant.

The UPRR trestle would be replaced with a double barrel concrete box culvert. The culvert would be a precast structure, and would be placed over the course of three days, during which time the UPRR rail line would be closed. Because rail traffic can be rerouted or rescheduled during this short timeframe, the impact on rail traffic would be less than significant.

CONSTRUCTION (REACH 4). The southernmost staging site is in Reach 4, at the southwest corner of the Montague Expressway and I-680. This site would be accessed from the Montague Expressway, which is a designated truck route. Trucks would enter and exit access roads along the channel at the Montague Expressway Bridge, which is found where Montague Expressway crosses Upper Berryessa Creek. Truck traffic would haul materials to and from the staging areas and access roads, leading to possible delays to traffic when trucks enter or exit Montague Expressway. A total of 15,500 cubic yards of material would be excavated in Reach 4. If all of the material were hauled off-site and disposed of, approximately four daily round trip truck trips (eight total trips) would occur. An additional three to four round-trip truck trips (six to eight total trips) for importing materials or equipment would occur per day. Assuming 10-hour work days, an average of 1.5 truck trips per hour would occur on Montague Expressway, representing less than 1/10 of 1 percent of peak hour traffic volumes. Due to the low numbers of trucks entering the roadway per hour, LOS on roadways and at intersections is not likely to be affected. Delays to allow trucks to enter or exit the work area, or due to the presence of slow-moving truck traffic, would occur up to 15 times daily. As discussed under Reaches 1–3, the primary impact from construction truck traffic would be a temporary and intermittent reduction of roadway capacities due to the slower movements of trucks compared to passenger vehicles. Drivers could experience delays if they were traveling behind a construction truck. Impedance to traffic flow during the weekday peak traffic hours would be a short-term significant impact.

OPERATIONS (ALL REACHES). Although some additional maintenance trips would be required to inspect and maintain floodwalls, extended access roads, and other features, the overall level of maintenance would be reduced due to a better channel design that moves sediment through the system more efficiently. Therefore, less excavation would be required, reducing truck trips for off-site disposal, thereby reducing traffic volumes. Impacts from operations and maintenance would be less than significant.

MITIGATION. Transportation management plans and/or traffic control plans would be prepared and implemented during construction to meet Caltrans and local agency needs. These plans are described as Mitigation Measure TRA-A, discussed in Section 3.15.6 below.

SIGNIFICANCE AFTER MITIGATION. Traffic delay impacts would be less than significant after implementation of Mitigation Measure TRA-A. Implementation of these mitigation measures would reduce transportation impacts to a less than significant level during construction by scheduling truck trips outside of peak morning and evening commute hours as needed to avoid adverse impacts on traffic flow, ensuring that flaggers are on-site to direct traffic and minimize delays, minimizing disruption to local bus routes by coordinating with all local traffic agencies, VTA, and AC Transit prior to construction, identifying haul routes and detour routes, and establishing adequate measures to reduce traffic hazards. The plans would also be prepared in coordination with emergency service providers including fire and police departments, ambulance companies, and other responders to ensure that: (1) flaggers prioritize access for emergency vehicles; (2) service providers are notified of planned construction actions that may delay traffic; (3) emergency service providers are consulted when designing haul routes or other project features that could affect emergency access; and (4) alternate forms of transit are accounted for during construction and operations.

TRA-2 CONFLICT WITH AN APPLICABLE CONGESTION MANAGEMENT PROGRAM, INCLUDING BUT NOT LIMITED TO, LEVEL OF SERVICE STANDARDS AND TRAVEL DEMAND MEASURES, OR OTHER STANDARDS ESTABLISHED BY THE COUNTY CONGESTION MANAGEMENT AGENCY FOR DESIGNATED ROADS OR HIGHWAYS

Less than significant for construction; less than significant for operations

CONSTRUCTION (REACHES 1–3). Up to 40 workers would access the construction zone on a daily basis. Most workers would likely enter the construction zone before 7 a.m. and leave between 4 and 5 p.m., resulting in minor traffic increases at these times. Construction trucks would access the staging and construction areas off of adjacent streets. Up to 50 truck trips per day (approximately five per hour) are expected during construction in these reaches, spread between multiple ingress/egress points. While the presence of these vehicles would add a small increment to area traffic, the increases are within the carrying capacity of Calaveras Boulevard, Los Coches Street, Ames Avenue, and Yosemite Drive; therefore, impacts on traffic load and road capacity would be less than significant (Kittelson 2012). In particular, construction traffic or construction-related traffic delays would not reduce LOS below the LOS standard for roadways and intersections within the Santa Clara County CMP network. This impact would be less than significant.

CONSTRUCTION (REACH 4). There would be no substantive changes in traffic volumes during construction in this reach. Worker vehicles would access the staging area off of Montague Expressway, but most workers would reach the site before the morning peak commute, so would avoid affecting traffic in the morning. Assuming that workers leave the construction area during the evening peak commute, the number of workers leaving from construction areas in Reach 4 would be less than 40, a total that is well within the carrying capacity of Montague Expressway and surrounding streets. Additionally, an average of 15 truck trips per day would be needed to haul materials to and from the site, but this amount of traffic is also within the carrying capacity of Montague Expressway and surrounding streets, and would not affect Santa Clara County's CMP standard. This impact would be less than significant.

OPERATIONS AND MAINTENANCE (ALL REACHES). During operations, overall traffic is expected to decrease due to the lower need to excavate sediment and repair eroded banks. Therefore, impacts related to the County CMP from operations and maintenance would be less than significant.

MITIGATION (NOT REQUIRED). Although not required to mitigate project impacts to congestion management plans, Mitigation Measure TRA-A, discussed in Section 3.15.6 below, would further reduce the project's less than significant impacts on congestion management

SIGNIFICANCE AFTER MITIGATION. Impacts would remain less than significant after implementation of Mitigation Measure TRA-A.

TRA-3. RESULT IN CHANGE IN AIR TRAFFIC PATTERNS INCLUDING EITHER AN INCREASE IN TRAFFIC LEVELS OR A CHANGE IN LOCATION THAT RESULTS IN SUBSTANTIAL SAFETY RISKS

No impact for construction; no impacts for operations

The nearest airport is the San Jose International Airport, which is located approximately 4 miles southwest of the project area. There are no private airstrips within the vicinity of the project. According to the Santa Clara County Land Use Plan for the Norman Y. Mineta San Jose International Airport (2011), the project area is not within or near any of the safety zones associated with the airport nor within the airport influence area. Given the project's distance from an airport, and that the project would not involve the installation of structures that could interfere with air space, there would be no impacts to air traffic patterns or safety risks associated with airport operations.

TRA-4. SUBSTANTIALLY INCREASE HAZARDS DUE TO A DESIGN FEATURE

Less than significant with mitigation for construction; less than significant for operations

CONSTRUCTION (REACHES 1–3). Trucks hauling materials to and from the project area would share the local and regional roadways with other vehicles. These large and generally slower-moving vehicles could result in safety hazards, especially near residences and schools. The excavation and other activities in the work zone could also create safety hazards for pedestrians and bicyclists if the construction area is not appropriately fenced off from adjacent properties and roadways/sidewalks. Access to sidewalks at Calaveras Boulevard and Los Coches Street may be affected when trucks are entering Calaveras Boulevard, Yosemite Drive, or Ames Avenue from the access road or entering the access road from Los Coches Street or Ames Avenue. In general, these effects would be temporary; however, lengthier delays may occur at some points when particularly large vehicles or equipment may need to enter or exit at these locations. During partial road and sidewalk closures, pedestrians may need to cross the street to access the nearest sidewalk, creating a hazard to pedestrians. Increased hazard may also result from wear and tear on surface streets caused by heavy construction vehicles, causing dangerous conditions for bicyclists and motorcyclists. These effects would be significant.

Construction vehicles on the access roads would cross active railroad tracks that are not equipped with warning devices, creating a significant impact by exposing truck and train operators to a potentially harmful situation. This impact would be significant.

CONSTRUCTION (REACH 4). Impacts would generally be the same as in Reaches 1–3. Delays in crossing sidewalks over the Montague Expressway Bridge may be lengthy and require pedestrians to walk several blocks to find suitable crosswalks, or risk an illegal crossing. Creation of potholes and other signs of wear

and tear on surface streets may occur on surface streets, creating a potential hazard to bicyclists and motorcyclists. These impacts would be significant.

OPERATIONS AND MAINTENANCE (ALL REACHES). Operations and maintenance needs would be reduced relative to current conditions. Impacts associated with public safety hazards would be less than significant.

MITIGATION. Transportation management plans and/or traffic control plans would be prepared and implemented during construction to meet Caltrans and local agency needs. These plans are described as Mitigation Measure TRA-A, discussed in Section 3.15.6 below. The plans would contain measures to ensure safe passage at crosswalks and sidewalks and measures to ensure that safety hazards are addressed prior to and during construction. All vehicles would be required to comply with standards for vehicular safety, including showing adequate maintenance and workability of safety features including brakes, horns, flashers, back-up beepers, and mirrors, and would be required to comply with all speed regulations.

SIGNIFICANCE AFTER MITIGATION. The transportation management plans and traffic control plans under Mitigation Measure TRA-A would contain measures to ensure safe passage at crosswalks and sidewalks and measures to ensure that safety hazards are addressed prior to and during construction. All vehicles would be required to comply with standards for vehicular safety, including showing adequate maintenance and workability of safety features including brakes, horns, flashers, back-up beepers, and mirrors, and would be required to comply with all speed regulations. These measures would ensure that increases in safety hazards would not be substantial. Implementation of Mitigation Measure TRA-A would ensure that impacts are less than significant.

TRA-5 RESULT IN INADEQUATE EMERGENCY ACCESS

Less than significant with mitigation for construction; less than significant for operations

CONSTRUCTION (REACHES 1-3). Construction would primarily occur within the established construction areas, including the existing access roads and the District's right-of-way. During design, the District would obtain easements from UPRR, the City of Milpitas, and private landowners, and would comply with all components of these easements. Due to trucks entering or exiting the access roads, temporary lane closures on Los Coches Street, Ames Avenue, and Yosemite Drive would have the potential to affect emergency access, resulting in a significant impact.

CONSTRUCTION (REACH 4). Construction in Reach 4 would primarily occur within the established construction areas, including the existing access roads and the District's right-of-way. During design, the District would obtain easements from the City of Milpitas and private landowners, and would comply with all components of these easements. Lane closures on Montague Expressway are not planned so trucks entering and exiting this multi-lane road would not impede emergency vehicles. This impact would be less than significant.

OPERATIONS (ALL REACHES). No aspect of operations would affect emergency access, and access to the project area would be enhanced due to culvert overcrossings at Los Coches Creek and Piedmont Creek, as well as by the new access road that would start at Los Coches Street and connect with the existing access road approximately 600 feet south. Therefore, impacts from operations would be less than significant.

MITIGATION. As described in Mitigation Measure TRA-A, transportation management plans and/or traffic control plans would be implemented during construction. These plans are described as Mitigation Measure TRA-A, discussed in Section 3.15.6 below. These plans would be prepared in coordination with the agencies mentioned above which may administer local or regional plans to manage traffic congestion, transit, non-motorized transit, traffic safety, emergency response, air quality, and other concerns. Also, Mitigation Measure HWM-B includes an emergency evacuation plan, which will detail measures to further facilitate emergency response.

SIGNIFICANCE AFTER MITIGATION. Implementing Mitigation Measures TRA-A and HWM-B would reduce impacts to emergency access to less than significant by ensuring adequate emergency access is maintained in the project vicinity during the construction period.

TRA-6 CONFLICT WITH ADOPTED POLICIES, PLANS, OR PROGRAMS REGARDING PUBLIC TRANSIT, BICYCLE, OR PEDESTRIAN FACILITIES, OR OTHERWISE DECREASE THE PERFORMANCE OR SAFETY OF SUCH FACILITIES

Less than significant with mitigation for construction; less than significant with mitigation for operations

CONSTRUCTION (REACHES 1–3). Transit service may be affected if traffic delays occur as a result of trucks entering or exiting the access roads or staging areas. Minor delays to buses may occur when trucks are entering or leaving Calaveras Boulevard, which may occur on average up to five times per hour. This impact is less than significant because the performance of transit systems would not be decreased.

Temporary lane closures on Los Coches Street and Yosemite Avenue for a period of up to 10 days would have a short-term impact on bicyclists, although the streets would remain open and no detours to other streets would be required. Sidewalks on one side of Los Coches Street, Yosemite Avenue, and Ames Avenue may also be closed for up to 10 days, although sidewalks on the other side of the street would remain open or other pedestrian routes provided that would not require detours to other streets. Entering and exiting construction vehicles would cross the bike route and sidewalks at these streets, potentially endangering pedestrians and bicyclists. Therefore, this impact would be significant because construction of the proposed project would increase safety hazards for pedestrian and bicycle facilities.

CONSTRUCTION (REACH 4). Transit service would not be substantially affected by the project since the work is not primarily occurring on or immediately adjacent to area roadways. The four transit routes using Montague Expressway would only be affected during construction in this reach by minor delays occurring when trucks enter or exit the work area, or by slow-moving construction vehicles. These delays would likely be less than 30 seconds and less than significant because the performance of transit systems would not be decreased.

No sidewalk or bike route closures are proposed for Montague Expressway. Entering and exiting construction vehicles would cross the bike route and sidewalk, potentially endangering pedestrians and bicyclists, which would be a significant impact because construction of the proposed project would increase safety hazards for pedestrian and bicycle facilities.

OPERATIONS (ALL REACHES). Although some additional maintenance would be required to inspect and maintain floodwalls, extended access roads, and other features, the overall level of maintenance would be reduced due to a better channel design that moves sediment through the system more efficiently.

Therefore, less excavation would be required, reducing truck trips for off-site disposal, thereby reducing traffic volumes and causing reduced impacts to transit vehicles.

MITIGATION. Under Mitigation Measure TRA-A, transportation management plans and/or traffic control plans would be prepared and implemented during construction to meet Caltrans and local agency needs. These plans are described as Mitigation Measure TRA-A, discussed in Section 3.15.6 below.

SIGNIFICANCE AFTER MITIGATION. Impacts to pedestrian and bicycle facilities would be less than significant after implementation of Mitigation Measure TRA-A. The transportation management plans and traffic control plans called for by this measure would ensure safe passage at crosswalks and sidewalks, and ensure that safety hazards to pedestrians and bicyclists are addressed prior to and during construction.

3.15.6. Mitigation Measures

TRA-A. PREPARE AND IMPLEMENT A TRANSPORTATION MANAGEMENT PLAN AND TRAFFIC CONTROL PLAN. The District will work with the USACE to implement the following mitigation measure. As required by Caltrans to mitigate impacts to SR-237 (Calaveras Boulevard), the construction contractor will develop a Transportation Management Plan in accordance with the Caltrans' Manual of Uniform Traffic Control Devices. The plan will conform to professional traffic engineering standards and will prescribe methods for maintaining traffic flows on roadways directly affected by construction. The plan will be submitted to Caltrans for approval before the start of construction. Mitigation measures, such as use of flaggers and timing of deliveries, will be incorporated into the construction plans in order to reduce effects to traffic.

The construction contractor will also be required to develop a Traffic Control Plan prior to construction, and coordinate all use of public roads with the Cities of Milpitas and or San Jose, local and regional planning agencies, emergency service providers, air quality management districts, or other responsible agencies. This plan will include the following measures:

- Construction vehicles will not be permitted to block any roadways or driveways.
- Truck trips will be scheduled outside of peak morning and evening commute hours, as well as during peak school circulation times, to the extent possible.
- Signs and flagmen will be used, as needed, to alert motorists, bicyclists, and pedestrians to the presence of haul trucks and construction vehicles at all access points.
- Vehicles will be required to obey all speed limits, traffic laws, and transportation regulations during construction. Vehicles will not exceed 15 miles per hour on unpaved roads.
- Construction workers will be encouraged to carpool and park in designated staging areas.
- Closure of roads, staging areas, and construction sites will be clearly fenced and delineated with appropriate closure signage.
- Any roads damaged by construction will be repaired.
- Circulation plans will be developed to minimize impacts on local street circulation. Flaggers and/or signage will be used to guide vehicles through and/or around the construction zone.
- The construction contractor will notify all emergency service providers in advance of construction to inform them of the construction activities. Traffic control staff will be trained in specific methods to prioritize and ensure access for emergency vehicles. Access will be provided for emergency vehicles at all times.

- Truck routes will be identified in the Traffic Control Plan. Haul routes will utilize City of Milpitas, City of San Jose, and Caltrans designated haul routes and minimize truck traffic on local roadways and residential streets to the extent possible.
- Sufficient staging areas will be provided for trucks accessing construction zones to minimize disruption of access to adjacent land uses.
- Access to driveways and private roads will be maintained. If access must be restricted for brief periods, property owners shall be notified in advance.
- The construction contractor will coordinate with UPRR for work within the right-of-way and avoid disruption to the rail corridor.
- Construction will be coordinated with local traffic agencies, VTA, and AC Transit to minimize disruption to service on local bus routes.
- Construction will coordinated with police and fire stations, transit stations, hospitals, and schools. Facility operators shall be notified in advance of the timing, location, and duration of construction activities.
- Pedestrian and bicycle access and circulation will be maintained during construction where safe to do so. If construction activities encroach on a bicycle lane, warning signs will be posted.
- Work site(s) will be appropriately fenced off from adjacent properties, roadways, and sidewalks to ensure safety of nearby residents and pedestrians.
- All construction equipment and materials will be stored in designated contractor staging areas on or adjacent to the worksite, in such a manner as to minimize obstruction of traffic.

3.15.7. Statement of Impact

Table 3.39 summarizes the significance of construction and operations impacts to traffic and transportation. Significant impacts associated with consistency with circulation and congestion management plans; hazardous design features; emergency access; transit and alternative transportation plans would occur, but would be reduced to less than significant with implementation of mitigation measures identified in Section 3.15.6.

Table 3.39 Statement of Impacts, Traffic and Transportation			
Impact	**Prior to Mitigation**	**Proposed Mitigation**	**After Mitigation**
TRA-1. Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to streets, highways and freeways, pedestrian and bicycle paths, and mass transit.	S	TRA-A	LM
TRA-2. Conflict with an applicable congestion management program, including but not limited to, level of service standards and travel demand measures, or other standards established by the County congestion management agency for designated roads or highways.	LS	TRA-A	LS
TRA-3. Result in change in air traffic patterns including either an increase in traffic levels or a change in location that results in substantial safety risks.	NI	None	NI
TRA-4. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or construction traffic.	S	TRA-A	LM
TRA-5. Result in inadequate emergency access	S	TRA-A HWM-B	LM
TRA-6. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.	S	TRA-A	LM
NI–No Impact, LS–Less than Significant, LM–Less than Significant with Mitigation, S–Significant, SU–Significant and Unavoidable			

3.16. UTILITIES AND SERVICE SYSTEMS

This section analyzes potential impacts on utilities and service systems in the vicinity of the proposed project. Utilities and service systems discussed in this section include natural gas, electricity, stormwater drainage, water supply distribution systems, wastewater collection and treatment systems, and solid waste disposal. This section also identifies mitigation measures that would reduce significant impacts to a less than significant level.

3.16.1. Environmental Setting

Utilities and service systems in the project area are typical of those normally found in a highly urbanized setting. The stream channel is underlain by underground gas and water lines, and overhead power lines run perpendicular and parallel to the stream channel. Stormwater outfalls are found in several locations along Upper Berryessa Creek, and the creek itself functions to move stormwater out of the immediate area.

3.16.2. Existing Conditions

Various public and private utilities serve the areas adjacent to Upper Berryessa Creek and may be subject to temporary or permanent relocations as a result of constructing the proposed project.

ELECTRICITY. Electrical service in San Jose and Milpitas is provided by Pacific Gas and Electric (PG&E). Overhead and underground power lines are located adjacent to or cross over the creek at a number of locations.

NATURAL GAS. PG&E provides natural gas services in San Jose and Milpitas. One gas line has been identified in the project area, and crosses the creek beneath the Montague Expressway Bridge.

SANITARY SEWER. The sanitary sewer systems are owned and operated by the Cities of San Jose and Milpitas. There are two components to the sewer system. The first component includes the sewer mains and pipes that collect effluent and transport it to the San Jose/Santa Clara Regional Wastewater Facility (co-owned by the Cities of San Jose and Santa Clara). The second is a series of mains and pipes that transport some of the treated wastewater for non-potable uses such as irrigation and dust suppression. A sanitary sewer line is found just east of and parallel to the creek in Reaches 1 and 2, within the project area.

SOLID WASTE. The collection, transport, and disposal of solid waste and recyclables within Milpitas are handled by Allied Waste Services under contract to the City. In the section of San Jose adjacent to the proposed project, Garden City Sanitation has the garbage collection contract, while California Waste Solutions handles recycling and Green Waste Recovery deals with yard trimmings.

Construction waste from the proposed project could be received by active landfills in either Santa Clara County or Alameda County. The facilities include: Guadalupe Sanitary Landfill, Kirby Canyon Recycling and Disposal Facility, Newby Island Landfill, Zanker Material Processing Facility, Zanker Road Resources Recovery Operations Landfill, Altamont Landfill and Resource Recovery, and Vasco Road Sanitary Landfill. Annual throughput at all of these facilities is below their annual total capacity. Of these facilities, Newby Island, Altamont, and Vasco Road accept contaminated soil (Cal Recycle 2015).

STORMWATER. The storm drain systems are owned and maintained by the Cities of San Jose and Milpitas. Fourteen stormwater outfalls have been mapped within the project area and are shown in Figures 3.20 and 3.21.

In Milpitas, the City owns and operates the majority of the stormwater drainage system that serves the project area. These facilities are maintained by the City's Engineering Department. The City's Storm Drain Master Plan, updated in 2013, states that stormwater runoff in Milpitas is collected in a system of underground pipes and a network of street gutters. Local runoff flows into creeks and channels that run through the City, ultimately discharging to San Francisco Bay.

In San Jose, all stormwater flows down the gutter, into the storm drain, and out to the nearest creek without treatment. Pollutants such as oil, soap, dirt, trash, dirty wash water, grease, and more can pollute the environment and may harm wildlife and water quality. The City's Stormwater NPDES requires that the City protects the storm drains, creeks, and the Bay from polluted discharges originating from industrial and commercial facilities. The Industrial/Commercial Facility stormwater inspection program serves the City of San Jose.

TELECOMMUNICATIONS. AT&T provides local telephone service within the Cities of Milpitas and San Jose, while Comcast Cable Communications provides cable television services. Verizon Wireless has cell towers and lines in the area. Phone lines are mapped crossing the project area at Yosemite Drive, Calaveras Boulevard, and in other parts of Reach 1 (Figure 3.20). Cable lines have been mapped crossing

the project area at Los Coches Street and parallel to the creek just downstream of I-680 in Reach 4 (Figure 3.21).

WATER SUPPLY – POTABLE. The City of Milpitas receives water from the District and the San Francisco Public Utilities Commission, with nearly two-thirds purchased from the District. The San Jose Water Company provides water in the portion of the City of San Jose adjacent to the project area, with approximately half of the supply purchased from the Santa Clara Valley Water District. Water lines are mapped crossing the project area in two locations just downstream of I-680 in Reach 4, at Ames Avenue in Reach 3, and at Calaveras Boulevard in Reach 1.

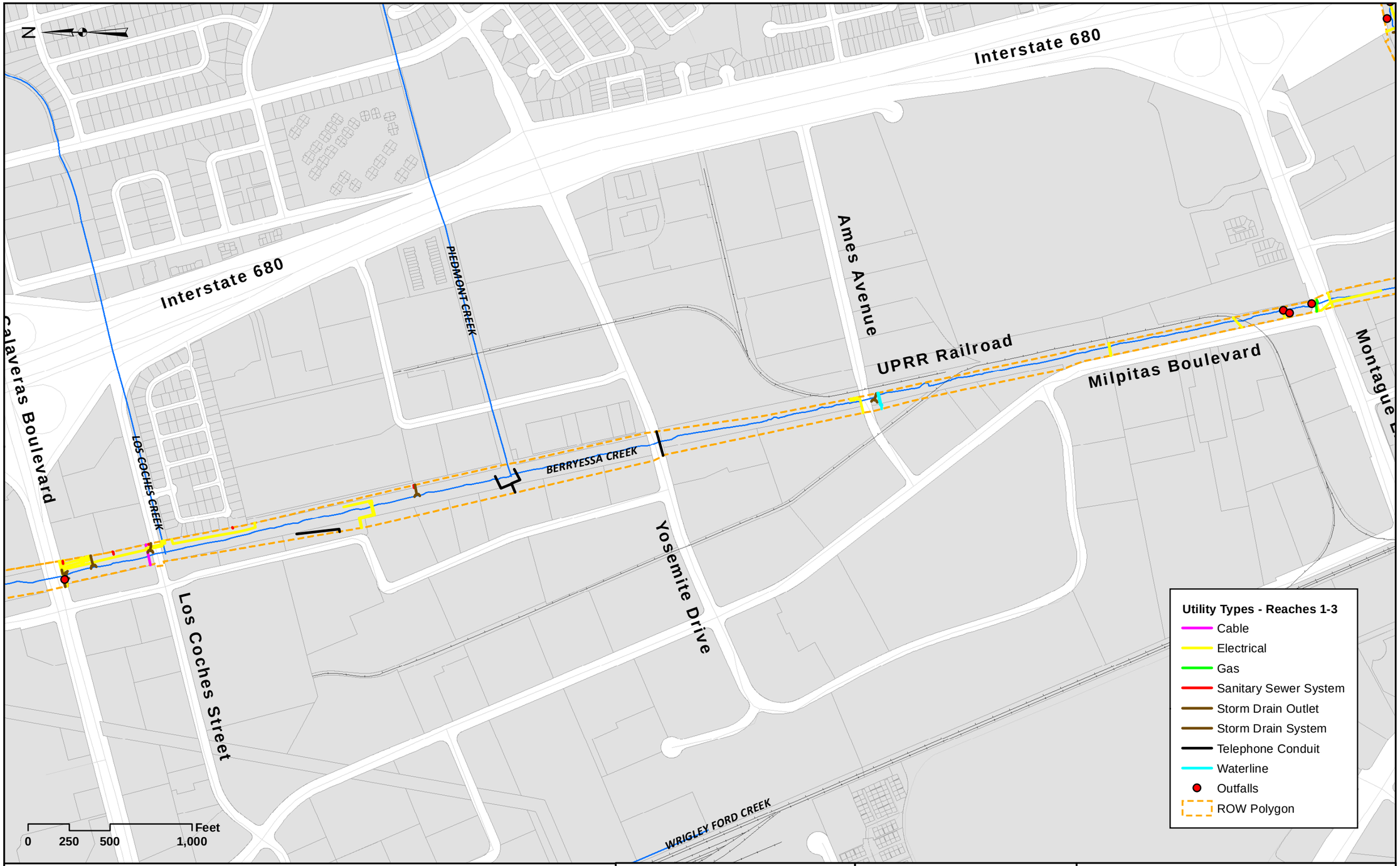

Figure 3.20 Utilities - Montague Expwy to Calaveras Blvd

Tetra Tech
17885 Von Karman Avenue, Suite 500
Irvine, CA 92614
Tel. (949) 809-5000 Fax. (949) 809-5003

Santa Clara Valley Water District

UPPER BERRYESSA CREEK
FLOOD RISK MANAGEMENT PROJECT
0766

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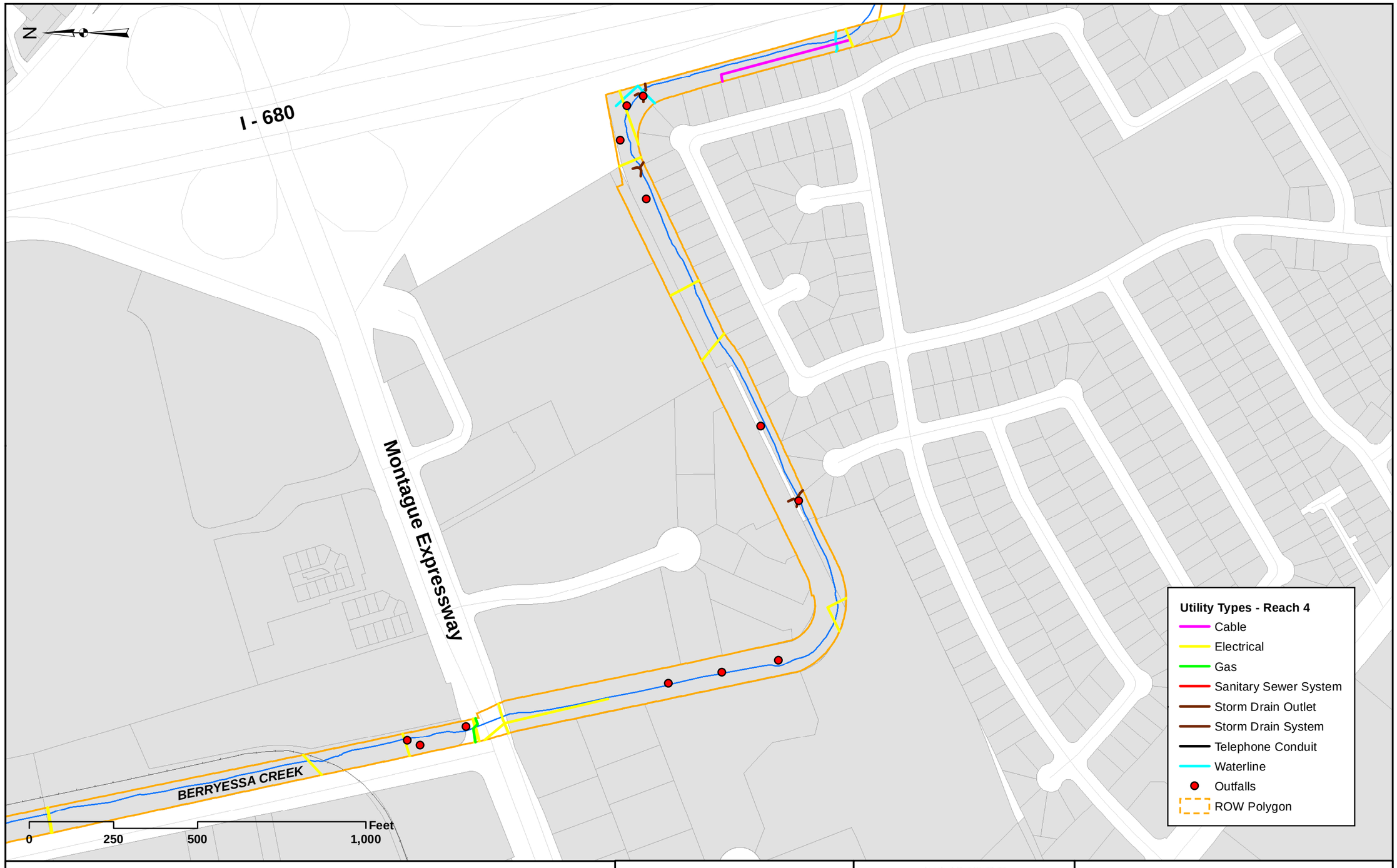

Figure 3.21 Utilities - I-680 to Montague Expwy

Tetra Tech
17885 Von Karman Avenue, Suite 500
Irvine, CA 92614
Tel. (949) 809-5000 Fax. (949) 809-5003

Santa Clara Valley Water District

UPPER BERRYESSA CREEK
FLOOD RISK MANAGEMENT PROJECT
0768

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WATER SUPPLY – RECYCLED. Both cities purchase recycled water from the South Bay Water Recycling Program for irrigation, industrial, and other purposes.

3.16.3. Regulatory Setting

3.16.3.1. *State Regulations*

CALIFORNIA INTEGRATED WASTE MANAGEMENT ACT OF 1989. The California Integrated Waste Management Act of 1989 (PRC, Division 30), enacted through Assembly Bill 939 and modified by subsequent legislation, requires all California cities and counties to implement programs to reduce, recycle, and compost at least 50 percent of wastes by the year 2000, and to divert at least 75 percent by 2010 (PRC §41780). The State determines compliance with this mandate to divert 50 percent of generated waste (which includes both disposed and diverted waste) through a complex formula. This formula requires cities and counties to conduct empirical studies to establish a "base year" waste generation rate against which future diversion is measured. The actual determination of the diversion rate in subsequent years is arrived at through deduction, not direct measurement; rather than counting the amount of material recycled and composted, the City or County tracks the amount of material disposed of at landfills, and then subtracts the disposed amount from the base-year amount (PRC §41780.2). As of 2006, the most recent year for which jurisdiction summary information is available, Milpitas' diversion rate was 60 percent; this rate is consistent with AB 939. The diversion rate for commercial solid wastes in the City of San Jose as of 2013 is 70 percent (City of San Jose 2013b).

TITLE 8, SECTION 1541 OF THE CALIFORNIA CODE OF REGULATIONS. This requires excavators to determine the approximate locations of subsurface installations such as sewer, telephone, fuel, electric, and water lines (or any other subsurface installations that may reasonably be encountered during excavation work) prior to excavation.

CALIFORNIA GOVERNMENT CODE §4216 ET SEQ. This law requires owners and operators of underground utilities to become members of and participate in a regional notification center, such as Underground Service Alert Northern California (USA North). USA North receives planned excavation reports from public and private excavators, and transmits that information to all participating members who may have underground facilities at the location of excavation. The USA North members mark or stake their facility, provide information, or give clearance to dig.

3.16.3.2. *Local Plans and Policies*

CITY OF MILPITAS SEWER MASTER PLAN. The 2009 Sewer Master Plan Update defines the sewer collection system improvements necessary to accommodate the City's future land use development plans to build-out, including assorted General Plan Amendments and the Milpitas Transit Area. The objectives of the 2009 Sewer Master Plan Update are to update land uses under three development scenarios; identify pipe and pumping deficiencies that may result from increased development; and recommend projects to relieve these deficiencies (RMC 2009a).

CITY OF MILPITAS WATER MASTER PLAN. This 2009 Water Master Plan Update is an update to the City's 2002 Water Master Plan, which defines the water system improvements necessary to meet the City's 2002 water demand and future demand associated with future development plans for 2008, 2018, and build-out year of 2021. The 2009 Water Master Plan Update is a reevaluation of the City's water system capacity based on updated land use information from several near- and long-term development

projects currently in the planning process. The objectives of this planning document are to update the land use information for three potential development scenarios; identify transmission and storage deficiencies caused by this change in water demand; and recommend projects to relieve these deficiencies. Each water supply area (i.e., San Francisco Public Utility District and the District supply zones) was evaluated independently (City of Milpitas 2009).

CITY OF MILPITAS GENERAL PLAN. The following policies from the City of Milpitas General Plan address utilities and waste management:

- 2.d-I-1. Coordinate capital improvement planning for all municipal service infrastructure with the location and timing of growth.
- 2.d-I-2. Periodically update the City's water and sewer master plans.
- 4.d-G-1. Assure reasonable protection of beneficial uses of creeks and South San Francisco Bay, and protect environmentally sensitive areas.
- 4.d-G-2. Comply with regulatory requirements pertaining to water quality.
- 4.d-G-3. Continuously improve implementation of stormwater pollution-prevention activities.
- 4.d-G-4. Mitigate the effects that land development can have on water quality.
- 4.d-G-5. Protect and enhance the quality of water resources in the planning area.
- 4.d-G-6. Promote conservation and efficiency in the use of water.
- 4.d-P-3. Work cooperatively with other cities, towns, and the District to comply with regulations, reduce pollutants in runoff, and protect and enhance water resources in the Santa Clara Basin.
- 4.d-P-12. Construction sites shall incorporate measures to control erosion, sedimentation, and the generation of runoff pollutants to the maximum extent practicable. The design, scope and location of grading and related activities shall be designed to cause minimum disturbance to terrain and natural features. (Title II, Chapter 13 of the Municipal Code includes requirements for control of erosion and sedimentation during grading and construction.)
- 4.d-A-7. Support and participate in the Santa Clara Valley Urban Runoff Pollution Prevention Program. Through this program, support regional organizations and efforts, including the Bay Area Stormwater Management Agencies Association, to monitor and protect water quality in San Francisco Bay and its tributaries.
- 4.d-A-8. Coordinate with the District to plan and implement multi-objective projects to reduce flood hazards, restore stream functions, and provide recreational resources along Berryessa Creek and other Milpitas creeks.
- 4.h-I-1. Implement measures specified in the City's Source Reduction and Recycling Element and the City's Household Hazardous Waste Element.

CITY OF SAN JOSE STORMWATER MANAGEMENT ANNUAL REPORT. San Jose issues an annual report (latest issued in September 2014 covering 2013-2014) concerning compliance with its NPDES permit in six areas:

- Ensuring City operations integrate water quality protection;
- Preventing pollutant discharges through effective enforcement;
- Guiding Development to Protect the Watershed;
- Developing and Implementing Strategies to Reduce Target Pollutants;
- Motivating Public Stewardship of the Watershed; and
- Collecting High Quality Monitoring Data.

The City emphasizes appropriate BMPs to control and reduce non-stormwater and polluted stormwater discharges to storm drains and waterways during operation, inspection, and routine repair, as well as maintenance of municipal facilities and infrastructure.

ENVISION SAN JOSE 2040 GENERAL PLAN. San Jose's General Plan includes specific policies addressing energy conservation, water conservation, waste diversion and waste reduction. Among the pertinent policies are:

- MS-2.4 - Promote energy efficient construction industry practices.
- MS-5.5 - Maximize recycling and composting from all residents, businesses, and institutions in the City.
- MS-5.8 - Revise landscaping specifications to align with State-recommended guidelines that incorporate Integrated Pest Management and to support use of mulch and compost.
- MS-6.5 - Reduce the amount of waste disposed in landfills through waste prevention, reuse, and recycling of materials at venues, facilities, and special events.

3.16.4. Significance Criteria

The proposed project would have significant impacts on utilities and service systems if the project would:

UTL-1 Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;

UTL-2 Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;

UTL-3 Require or result in the construction of new stormwater drainage facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects;

UTL-4 Have insufficient water supplies available to serve the project from existing entitlements and resources, or if new or expanded entitlements are required;

UTL-5 Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments;

UTL-6 Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs; or

UTL-7 Fail to comply with Federal, State, and local statutes and regulations related to solid waste.

3.16.5. Potential Impacts

3.16.5.1. *Significance Criteria with No Impacts*

The following significance criteria are not discussed further in the EIR because the proposed project would not result in impacts related to this criterion:

UTL-3 **Require or result in the construction of new stormwater drainage facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects.** Temporary stormwater management features would be implemented around staging and construction areas according to the SWPPP, which would be developed by the construction contractor. These features would include silt containment fences, straw bales, berms, or swales designed to prevent erosion during precipitation and consequent siltation

of stormwater. These features would be temporary. Permanent stormwater features such as outfalls that would be affected during construction would be replaced in-kind, and no new stormwater features are proposed or needed. The proposed project would not alter stormwater drainage patterns other than to enhance stormwater conveyance downstream.

3.16.5.2. *Significance Criteria with Potential Impacts*

UTL-1 EXCEED WASTEWATER TREATMENT REQUIREMENTS OF THE APPLICABLE REGIONAL WATER QUALITY CONTROL BOARD

Less than significant with mitigation for construction; no impacts for operations

CONSTRUCTION (REACHES 1–3). Wastewater may be generated during construction from two sources. The first source is through temporary and portable sanitary facilities that would be placed on-site to service construction crews. The volume of wastewater generated by temporary sanitary facilities would be minor, and disposal of this wastewater would be handled by a licensed disposal contractor who would operate in compliance with all regulations and permit conditions. Such wastes would be disposed of at approved wastewater facilities and volumes are not expected to be significant in comparison to the capacity of these facilities.

The second potential source of wastewater would be if groundwater from contaminated plumes identified in Reach 3 near the Jones Chemical site (see Section 3.9.2) were encountered during project excavation. Although extensive remediation efforts have reduced the level of contamination at these sites, it is assumed that VOC concentrations are still above levels that would meet RWQCB requirements for downstream discharge. Based on current design plans and studies showing depth to groundwater (Section 3.9.2), it is likely that groundwater would be encountered during construction, in which case it would need to be treated on site for eventual discharge to the creek (Tetra Tech 2015h). Downstream discharge of groundwater or other wastewater with pollutant levels higher than allowable thresholds established by the SFBRWQCB would be a significant impact.

CONSTRUCTION (REACH 4). Contaminated groundwater has not been identified in Reach 4; therefore, discharges to downstream areas would not violate regulations concerning discharge of contaminated groundwater. All other requirements set forth by the SFBRWCB for downstream discharge of water during dewatering to allow project construction, including testing for contaminants and ensuring that turbidity remains within allowable limits, would be met prior to discharge. Therefore, impacts in Reach 4 would be less than significant.

OPERATIONS (ALL REACHES). No aspect of operations and maintenance would generate wastewater other than minor incidental runoff that may occur during irrigation used to establish plant communities in the first 2 years after construction. Such discharge would be minimal and water used for irrigation would come from a clean source. Impacts to water quality from irrigation water runoff would be less than significant during operations.

MITIGATION. If contaminated groundwater is encountered at the JCI off-site area during construction, the District will work with USACE to ensure implementation of Mitigation Measure HWM-C.

SIGNIFICANCE AFTER MITIGATION. Implementation of Mitigation Measure HWM-C would ensure that groundwater encountered during construction meets RWQCB water quality standards prior to discharge. Therefore, impacts after mitigation would be less than significant.

UTL-2 REQUIRE OR RESULT IN THE CONSTRUCTION OF NEW WATER OR WASTEWATER TREATMENT FACILITIES OR EXPANSION OF EXISTING FACILITIES, THE CONSTRUCTION OF WHICH COULD CAUSE SIGNIFICANT ENVIRONMENTAL EFFECTS.

Less than significant for construction; Less than significant for operations

AND,

UTL-5 RESULT IN A DETERMINATION BY THE WASTEWATER TREATMENT PROVIDER THAT WOULD SERVE THE PROJECT THAT IT HAS INADEQUATE CAPACITY TO SERVE THE PROJECT'S PROJECTED DEMAND IN ADDITION TO THE PROVIDER'S EXISTING COMMITMENTS

Less than significant for construction; no impacts for operations

CONSTRUCTION AND OPERATION (ALL REACHES). As discussed above, construction of the proposed project would result in generation of only small amount of wastewater that would need to be treated by a wastewater treatment facility. In addition, there are sufficient water supplies available to serve the construction and operation of the project (see discussion on Impact UTL-4 below). Therefore, the project would not require or result in construction of new water or wastewater treatment facilities or expansion of existing facilities. The project would also not result in determination by the wastewater treatment provider that would serve the project that it has inadequate capacity to serve the project's projected demand. The impact would be less than significant.

UTL-4 BE LOCATED SUCH THAT THERE ARE INSUFFICIENT WATER SUPPLIES AVAILABLE TO SERVE THE PROJECT FROM EXISTING ENTITLEMENTS AND RESOURCES, OR REQUIRE NEW OR EXPANDED ENTITLEMENTS

Less than significant for construction; less than significant for operations

CONSTRUCTION (ALL REACHES). The proposed project is a non-consumptive flood improvement project and construction would not require new water supplies or entitlements. Water would be used during construction for control of fugitive dust, but since recycled water is readily available it would be used for this purpose; supplies of fresh water would not be affected. No new or expanded entitlements would be required. This impact would be less than significant.

OPERATION (ALL REACHES). During project operation, water may be needed during the first 2 years after construction to irrigate newly installed vegetation. It is anticipated that native shrubs planted as container stock would require a maximum of 5 gallons of water per week and larger trees would require up to 10 gallons of water per week during the 2-year establishment period. Assuming that up to 200 trees and 200 shrubs would be planted to replace removed native trees/shrubs (See Appendix F), up to 3,000 gallons of water would be needed per week during the dry period of May through October, or about 78,000 gallons each year during the establishment period. USACE would irrigate the newly planted trees and shrubs by use of a water truck and using recycled water, which is readily available. No new or expanded entitlements would be required. This impact would be less than significant.

UTL-6 BE SERVED BY A LANDFILL WITH INSUFFICIENT PERMITTED CAPACITY TO ACCOMMODATE THE PROJECT'S SOLID WASTE DISPOSAL NEEDS

Less than significant for construction; less than significant for operations

CONSTRUCTION (REACHES 1–3). Up to 74,500 cubic yards of solid wastes in the form of concrete, soil, vegetation, and reinforcing steel would be excavated and hauled to one or more disposal facilities that are licensed to accept such materials and which have sufficient capacity to accept them.

Table 3.40 shows the total capacity and remaining capacity at each of these landfills. The first choice for disposal facilities is the Newby Island Landfill, located in San Jose. The disposal quantities under the proposed project would amount to approximately 0.5 percent of remaining capacity at Newby Island, an amount that would not adversely affect this landfill's capacity. The excess soil generated during project construction would be re-used at other construction sites or hauled to a licensed landfill for disposal. Because the soil would be clean material suitable for construction re-use, the construction contractor would have economic motivation to sell the soil for reuse at other construction sites. If other construction projects cannot accept the excess soil, it would as a last report be hauled to a licensed landfill where it would be suitable for use as landfill cover material. If re-used at other construction sites or used as cover, the excess soil would not reduce the capacity of the landfill to dispose of other waste materials.

Similarly, there is sufficient capacity and sufficient annual throughput capacity at most other local landfills to handle the disposal quantities generated by the proposed project. However, the Zanker Material Processing Facility and the Zanker Road Resource Recovery Operations Landfill are smaller landfills with limited capacity, and disposal quantities at these facilities could reduce their overall capacity considerably. However, it is unlikely that the entire amount of disposed materials would go to either of these facilities, as they do not accept contaminated soils. Therefore, in the unlikely event that either of these facilities were used as the primary disposal location for uncontaminated soils, actual disposal amounts at these facilities would be much lower than shown in Table 3.40, and impacts from disposal of excavated materials would be less than significant.

Table 3.40 Capacity of Landfills in the Project Vicinity

Landfill	Total Capacity (Cubic Yards)	Remaining Capacity (Cubic Yards)	Percent Remaining Capacity Used (Proposed Project)
Guadalupe Sanitary Landfill	28,600,000	11,055,000	0.8
Kirby Canyon Recycling and Disposal Facility	57,271,507	36,400,000	0.2
Newby Island Landfill	50,800,000	18,274,953	0.5
Zanker Material Processing Facility	540,100	477,100	20
Zanker Rd. Resources Recovery Operations Landfill	1,300,000	700,000	13
Altamont Landfill and Resource Recovery	62,000,000	45,720,000	0.2
Vasco Rd. Sanitary Landfill	32,970,000	7,959,079	1.2

CONSTRUCTION (REACH 4). Up to 15,500 cubic yards of solid wastes in the form of concrete, soil, vegetation, and reinforcing steel would be excavated and hauled to one or more disposal facilities that are licensed to accept such materials and which have sufficient capacity to accept them. As discussed under Reaches 1–3, there is sufficient capacity and sufficient annual throughput capacity at local landfills; therefore, impacts would be less than significant.

OPERATIONS (ALL REACHES). The proposed project would not result in increased generation of solid waste during operations and maintenance; therefore, impacts would be less than significant.

UTL-7 FAIL TO COMPLY WITH FEDERAL, STATE, AND LOCAL STATUTES AND REGULATIONS RELATED TO SOLID WASTE

Less than significant for construction; less than significant for operations

CONSTRUCTION (REACHES 1–3). The project is being designed in compliance with all Federal, State, and local statutes regarding solid waste. Solid waste impacts would be less than significant.

CONSTRUCTION (REACH 4).
The proposed project would be implemented in compliance with all Federal, State, and local statutes and regulations regarding solid waste. Therefore, this impact would be less than significant.

OPERATIONS (ALL REACHES). As mentioned above, excavated sediment quantities would be reduced relative to current conditions. The proposed project would be implemented in compliance with all Federal, State, and local statutes and regulations regarding solid waste. Therefore, this impact would be less than significant.

3.16.6. Mitigation Measures

If needed to offset potential impacts associated with disposal of contaminated groundwater during construction, the project sponsors will implement Mitigation Measure HWM-C.

3.16.7. Statement of Impact

Potential impacts associated with utilities and service systems are summarized in Table 3.41.

Table 3.41 Statement of Impacts, Utilities and Service Systems			
Impact	**Before Mitigation**	**Mitigation Measures**	**After Mitigation**
UTL-1. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board	S	HWM-C	LM
UTL-2. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects	LS	None	LS
UTL-3. Require or result in the construction of new stormwater drainage facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects	NI	None	NI
UTL-4. Have insufficient water supplies available to serve the project from existing entitlements and resources, or if new or expanded entitlements are required	LS	None	LS
UTL-5. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments	LS	None	LS
UTL-6. Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs	LS	None	LS
UTL-7. Fail to comply with Federal, State, and local statutes and regulations related to solid waste	LS	None	LS
NI–No Impact, LS–Less than Significant, LM–Less than Significant with Mitigation, S–Significant, SU–Significant and Unavoidable			

3.17. HYDROLOGY AND WATER QUALITY

This section describes each of the environmental conditions associated with the presence of a seasonal water way, including the geomorphology of the creek bed, hydrology and hydraulics, and water quality.

3.17.1. Environmental Setting

Section 2.1 provides general information about the regional and local setting of the project and the engineering design. Numerous hydraulic studies were performed for this project by the District and the USACE, as described in Section 2.1. These studies characterized the Upper Berryessa Creek channel as unable to contain base flows, and identified areas where flooding was likely to occur. The following section provides a more detailed discussion of the existing hydrology and flooding, and characterizes water quality and groundwater in the project area.

3.17.2. Existing Conditions

3.17.2.1. *Geomorphology*

Prior to development of the Coyote Creek Watershed, Berryessa Creek was an ephemeral, braided stream that spread over an alluvial fan with little or no defined channel. Within the project area, Upper Berryessa Creek occupies a constructed channel that is heavily constrained by bridges, bank protection, channel lining, and other constructed features. Thus, channel dimensions are more a result of these influences as opposed to natural geomorphic processes. The project location is situated on an alluvial fan that comprises much of the Santa Clara Valley. Within the valley reach, which coincides with the

project area, the channel gradient averages less than 1 percent. By contrast, stream gradients in the creek upstream from the project area reach as high as 6 percent (USACE 2014). The channel leaves the uplands at a gradient of about 3 percent and gradually reduces to a slope on the order of 1 percent at I-680. However, below I-680, the gradient abruptly decreases by a factor of 3 to 0.35 percent between I-680 and Montague Expressway. Below Montague Expressway, the slope increases to approximately 0.5 percent. Channel gradients within the project reaches are as follows:

- I-680 to Montague Expressway (Reach 4): 0.0035
- Montague Expressway to Calaveras Boulevard (Reaches 1–3): 0.0049

There are numerous bed controls throughout the project reach. These are formed by bridges or box culverts with concrete bottoms, drop structures, and segments of channels lined with concrete. Bed controls in the form of concrete bottoms are found primarily in the upstream part of Reach 4, which is concrete-lined, and under the bridges at Montague Expressway, UPRR trestle, Los Coches Street, and Calaveras Boulevard.

3.17.2.2. *Hydrology and Flooding*

The Berryessa Creek watershed covers 22.4 square miles in northeastern Santa Clara County. Berryessa Creek flows westerly from its origin in Mt. Hamilton of the Diablo Range through the Cities of San Jose and Milpitas. It then turns north and channels into Lower Penitencia Creek, which is a tributary to Coyote Creek that flows into San Francisco Bay. The basin consists of a large proportion of flat valley and foothill areas that have been urbanized and a significant percentage of steep mountainous areas that are utilized primarily for agricultural and resource extraction purposes. Within the project area, two small channelized tributaries, Arroyo de los Coches and Piedmont Creek, flow to Berryessa Creek from the east at Los Coches Street and about 250 yards north of Yosemite Drive, respectively.

Previous flood control efforts and adjacent development have significantly altered Upper Berryessa Creek. Raised banks and concrete-lined portions of the stream channel have resulted in significant modification and channelization. The creek flows through numerous culverts at road crossings and the gradient is controlled by several engineered drop structures. Upper Berryessa Creek is identified as an intermittent blue-line water by the USGS National Hydrography Dataset (USGS 2014). Upper Berryessa Creek flows throughout its length during the rainy season, especially after heavy rainfalls. Portions of the creek may retain water throughout the year as a result of summer runoff from urban areas. Upper Berryessa Creek is not tidally influenced, nor does it generally contain common wetland characteristics.

When present, water generally moves down-gradient from the south to the north. The hydrologic regime has been highly altered from the surrounding hardscaped urban environment and alterations of the stream channel designed to efficiently convey flow. These conditions result in surface water existing only as punctuated flows during the wet season or as artificial inputs from the urban environment during the dry season. ~~Numerous~~ At least thirteen storm drains empty directly into ~~the system~~Upper Berryessa Creek and others empty into its tributary streams, which ~~is~~ are surrounded by impervious and compacted surfaces.

The ~~existing~~ Upper Berryessa Creek channel has insufficient capacity to convey all of the flow during large storm events. When flows greater than an approximately 5-year recurrence interval occur, flow overtops the banks and spills onto the floodplain at some locations. This allows significant attenuation of the flood hydrograph, reducing the peak flow downstream of breakout locations, but causes some

flooding of the adjacent properties. Stormwater flooding inundating streets and yards is estimated to occur in the Berryessa Creek watershed on an average of at least once every 4 years. Overflow channel flooding that causes damage to structures and infrastructure is estimated to occur on the average of once every 10 to 20 years (USACE 2014).

REACHES 1–3, CALAVERAS BOULEVARD TO MONTAGUE EXPRESSWAY (7,800 FEET). The existing channel through Reaches 1, 2, and 3 is a straight, excavated earthen channel through an industrial area of Milpitas. Although it was presumably excavated as a trapezoidal channel, in some areas erosion and incision have resulted in the formation of steep, near vertical banks. The channel averages on the order of 10 to 12 feet in depth. The top width varies from a narrow 35 feet near the railroad trestle to on the order of 50 feet in other locations. The channel conveyance capacity ranges from 1,300 to 2,500 cubic feet per second (cfs).

Reach 1 extends from Calaveras Boulevard to Los Coches Bridge (500 feet). The existing channel in Reach 1 is generally of a trapezoidal shape with bank erosion occurring in various areas. The inflow of Los Coches Creek adds to the limited capacity of the existing channel and the Calaveras Bridge capacity. However, overflows from the upstream reach below Piedmont Creek somewhat reduce the flood threat in the reach. Still, the Calaveras Boulevard Bridge could be overtopped from coincident Berryessa and Los Coches Creek flows. There is essentially no floodplain in this reach.

Reach 2 extends from Los Coches Bridge to Piedmont Creek (2,150 feet). The existing channel in Reach 2 is generally of a trapezoidal shape with bank erosion occurring in various areas. The inflow from Piedmont Creek and a low 1,500-foot segment along the left bank result in channel overflows from an estimated 5-year event. The overflows cause shallow flooding but significant damage to nearby commercial and industrial buildings and their contents. There is essentially no floodplain or riparian zone in this reach.

Reach 3 begins at Piedmont Creek and extends to Montague Expressway (5,150 feet). Reach 3 has an earthen, generally trapezoidal-shaped channel with bank erosion along parts of the stream. The channel is estimated to have the capacity to carry the 25-year event with reasonable certainty. Overflows occurring in Reach 4 upstream of Montague Expressway limit the channel flows through this reach. The Union Pacific Railroad trestle crossing the channel is in poor condition and restricts the top width of the channel to 35 feet, the narrowest point within the project channel. There is a breakout resulting from backwater at the trestle just downstream of Montague Expressway and another breakout near the Yosemite Drive Bridge. There is essentially no floodplain in this reach.

REACH 4 – MONTAGUE EXPRESSWAY TO 1-680 (3,450 FEET). The channel in Reach 4 is an earthen trapezoidal shape from under I-680 through the Montague Expressway Bridge. The two 90-degree bends are concrete-lined showing areas of bank erosion at the transitions. The channel through the 90-degree bends has the capacity to carry only a 20- to 25-year event with reasonable certainty. The channel is approximately 40 feet wide with a depth of 7 to 8 feet. The conveyance capacity ranges from 800 to 1,500 cfs. Flows breaking out of the main channel would flow to the areas of lowest elevation near Lower Penitencia Creek and continue north to its confluence with Berryessa Creek. These overflows would cause significant damage to commercial and industrial structures and contents. If no actions are taken, the future flood threat and bank erosion would continue.

3.17.2.3. *Water Quality*

The stream is intermittent, with intermittent flow in winter and low to no flow in summer above the Piedmont Creek confluence. Winter flows tend to be turbid due to sediment loading from the surrounding foothills and from bank erosion along the creek. Sources of summer flows include runoff from the watering of lawns, industrial discharges, and limited groundwater discharge. Low summer flows lead to stagnant water conditions, low dissolved oxygen content, and higher water temperatures. The creek is completely dry within the project reach during the summer and fall months. Existing environmental conditions affecting water quality of the creek include adjacent urban development and soil contamination; limited flows in long reaches of the channel; lack of riparian habitat or shading; and almost complete disconnection from the floodplain.

Water temperature measured in the creek ranged from 38.3 to 84.7°F, depending on the season and location (Tetra Tech 2003). Average temperatures from December through March were 55.1°F in the project reach. Average temperatures in the summer were 69.7°F, with the maximum water temperature reaching 84.7°F.

Berryessa Creek is not reported on the 303(d) list of impaired waters. Coyote Creek, to which Berryessa Creeks flows, is listed as impaired for Diazinon from urban runoff/storm sewers, and for trash from illegal dumping and urban runoff/storm sewers (SWRCB 2010).

3.17.2.4. *Groundwater*

The Santa Clara subbasin, which is part of the Santa Clara Valley basin, is the primary source of groundwater for the Santa Clara Valley and the project area. Generally, the Santa Clara subbasin is divided vertically into two major aquifers separated by an aquitard, or thick layer of clay or non-porous rock, which ranges in depth from approximately 75 feet bgs in the upper watershed to 160 feet bgs in the northern interior portion of the subbasin (Todd and KJC 2009). This layer of clay retards the movement of groundwater between the two aquifers. The upper aquifer is considered to be unconfined, whereas the lower aquifer is a confined or semi-confined aquifer. The lower aquifer provides much of the municipal and domestic groundwater supply and the upper, unconfined aquifer is currently not used for water supply.

Prior to 1965, the Santa Clara Valley subbasin experienced substantial land subsidence due to groundwater overdraft. In 1965, State water deliveries to the San Jose area began and reduced the rate of subsidence. Berryessa Creek and its tributaries are located in the outer margin of the zone affected by land subsidence and experienced from 0 to 4 feet of subsidence from 1900 to 1967 (Winzler and Kelly 2010).

The District, which is the water supply agency for the region and manages the groundwater basin, actively promotes aquifer recharge through its percolation ponds to avoid overdraft of the aquifer, as well as to minimize future subsidence and saltwater intrusion from San Francisco Bay. There are three ponds located within the Coyote Watershed, on Upper Penitencia Creek and Coyote Creek that ultimately provide groundwater recharge of the lower, confined aquifer. These ponds are generally located in natural recharge areas for the lower aquifer (i.e., in-stream and off-stream sand and gravel deposits that occur at the margins of the Santa Clara subbasin). None of these ponds are located in the project area. In both the foothill (margins) areas, as well as the Santa Clara valley floor, surface water generally infiltrates unlined streambeds and recharges the ground water supply during portions of the

year. In some parts of the flatlands, the groundwater table of the unconfined aquifer approaches the ground surface during the rainy season.

For more than 20 years, the District has monitored wells regularly throughout the Santa Clara Valley. In 2009, a relatively dry year, the station designated in Milpitas (State Well 06S01W24H015), which is west of the project area, had groundwater elevations at the surface in March and then at depths of approximately 9 feet and 11 feet in July and August, respectively (SCVWD 2010). The increased aquifer recharge and the decreased pumping of the aquifer, compared to levels in the 1980s, contribute to unconfined groundwater levels that are relatively high in the project area.

The project area is generally characterized by relatively shallow groundwater, with the unconfined aquifer extending to 40 feet bgs. There have been a number of historical incidents involving the release of hazardous chemicals into the soil and groundwater in the vicinity of the project (see Section 3.9 Hazardous Materials for additional information). Analysis of groundwater adjacent to the creek channel has confirmed the presence of VOCs, including TCE, TCA, and PCE, as well as aromatics and petroleum hydrocarbons in the groundwater.

3.17.3. Regulatory Setting

3.17.3.1. *Federal Regulations*

EXECUTIVE ORDER 11988. Under Executive Order 11988, FEMA is responsible for management of floodplain areas, defined as the lowland and relatively flat areas adjoining inland and coastal waters subject to a 1 percent or greater chance of flooding in any given year (the 100-year floodplain). FEMA requires that local governments covered by Federal flood insurance pass and enforce a floodplain management ordinance that specifies minimum requirements for any construction within the 100-year floodplain. Among the criteria for certification under the FEMA National Flood Insurance Program is that the conditional non-exceedance probability of all reaches of the levee system be greater than 90 percent from overtopping of the 1 percent chance exceedance flood event (100-year event). See Local Plans and Policies section below (i.e., Santa Clara County General Plan, Milpitas Municipal Code, and Milpitas General Plan) for details on 100-year floodplain construction requirements for the project area.

FEDERAL AND STATE WATER QUALITY STATUTES AND REGULATIONS. The statutes that govern the activities under the project that may affect water quality and wetlands are the Federal Clean Water Act of 1972, as amended (33 USC §1251, et. seq.), and the Porter-Cologne Water Quality Control Act (CWC §13000 et seq.). Provisions of the CWA provide for delegation by the EPA of many permitting, administrative, and enforcement aspects of the law to State governments. In California, the SWRCB and its associated nine regional water quality control boards implement various CWA programs, including the promulgation of Water Quality Control Plans (Basin Plans) containing California's water quality standards and implementation of the NPDES.

3.17.3.2. *State Regulations*

SAN FRANCISCO BAY WATER QUALITY CONTROL PLAN. The SFBRWQCB adopts and administers the Basin Plan for the San Francisco Bay estuarine system and freshwater tributaries and groundwater resources (SFBRWQCB 2013). In addition to establishing water quality standards, the basin plan contains

implementation programs and policies to achieve those objectives for all waters addressed through the plan (California Water Code, §13240-13247).

Pursuant to the CWA, water quality standards are composed of two parts: (1) the designated beneficial uses of water (Table 3.42) and (2) criteria or objectives to protect those uses from pollution and degradation. Beneficial uses are defined for surface waters, groundwater, and wetlands. Beneficial uses that apply to the project area are summarized in the following table, and definitions are contained in the Basin Plan (2013).

Table 3.42 Beneficial Uses

Beneficial Uses of Waters		Surface Water	Groundwater Basin	Wetland
ABBR.	Name	Berryessa Creek	Santa Clara Valley (Basin 2-9.02)	Undefined Riverine Wetland
REC1	Water Contact Recreation	**E**		**E**
REC2	Noncontact Water Recreation	E		E
WARM	Warm Freshwater Habitat	E		E
WILD	Wildlife Habitat	E		E
AGR	Agricultural Supply		E	E
IND	Industrial Service Supply		E	P
MUN	Municipal and Domestic Supply		**E**	
PROC	Industrial Process Supply		E	
GWR	Groundwater Recharge			E

E = Existing beneficial uses (Basin Plan 2013), P = Potential beneficial uses (Basin Plan 2013)

Water Quality Objectives (WQOs) to protect beneficial uses are both narrative and numerical. Narrative objectives are general descriptions of water quality that must be attained through pollutant control measures and watershed management. Numerical objectives typically describe pollutant concentrations, physical/chemical conditions of the water itself, and the toxicity of the water to aquatic organisms. These objectives represent the maximum amount of pollutants that can remain in the water column without causing any adverse effect on organisms using the aquatic system as habitat, on people consuming those organisms or water, and on other current or potential beneficial uses. Together, the narrative and numerical objectives define the level of water quality that shall be maintained within the region. Representative applicable WQOs for surface and ground waters in the project area are shown in Table 3.43.

Table 3.43 Water Quality Objectives

Factor	Objective	Applicability	Note
Dissolved Oxygen	5.0mg/l min	Warm water habitat	A general index of the state of the health of receiving waters
Floating Material	none	Surface waters	Includes solids, liquids, foams, scum, in concentrations that cause nuisance or adversely affect beneficial uses.
Oil and Grease	No visible film	Surface waters	No visible film on the surface or on objects in the water that cause nuisance or adversely affect beneficial uses.
Toxic Substances	Not lethal or significant	Surface waters	Free of toxic substances in concentrations that are lethal to or that produce significant alterations in population or community ecology or receiving water biota
pH	6.5 – 8.5	Surface waters	Controllable water quality factors shall not cause changes greater than 0.5 units in normal ambient pH levels.

Factor	Objective	Applicability	Note
Salinity	No increase	Surface waters	Controllable water quality factors shall not increase the total dissolved solids or salinity of waters of the state so as to adversely affect beneficial uses
Sediment	Not altered	Surface waters	The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses. Controllable water quality factors shall not cause a detrimental increase in the concentrations of toxic pollutants in sediments or aquatic life.
Settleable Material	No nuisance	Surface waters	No substances in concentrations that result in the deposition of material that cause nuisance or adversely affect beneficial uses.
Suspended Material	No nuisance	Surface waters	No suspended material in concentrations that cause nuisance or adversely affect beneficial uses.
Temperature	No increase greater than 5*F	Warm water habitat	The temperature of any […] warm freshwater habitat shall not be increased by more than 5°F (2.8°C) above natural receiving water temperature
Turbidity	No nuisance	Surface waters	Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses.
Trichloroethylene (TCE)	0.005 MG/L	Municipal supply	None
Tetrachloroethylene (PCE)	0.005 MG/L	Municipal supply	None
1,1-Dichloroethane (1,1-DCA)	0.005 MG/L	Municipal supply	None
1,1-Dichloroethylene (1,1-DCe)	0.006 MG/L	Municipal supply	None

GROUNDWATER. Groundwater quality is regulated by the SFBRWQCB (SFBRWQCB 2013). The primary water quality objective for groundwater is maintenance of the existing high quality of groundwater (i.e., "background"). In addition, at a minimum, groundwater shall not contain concentrations of bacteria, chemical constituents, radioactivity, or substances producing taste and odor in excess of the objectives described above unless naturally occurring background concentrations are greater. Under existing law, the Water Board regulates waste discharges to land that could affect water quality, including both groundwater and surface water quality. Waste discharges that reach groundwater are regulated to protect both groundwater and any surface water in continuity with groundwater. Waste discharges that affect groundwater that is in continuity with surface water cannot cause violations of any applicable surface water standards. The project is located within the Santa Clara Subbasin of the Santa Clara Valley Basin (Basin 2-9.02), which is protected as a municipal supply.

ANTIDEGRADATION POLICY. In instances where existing water quality is better than that prescribed by the objectives, the State Antidegradation Policy applies (State Board Resolution 68-16: Statement of Policy with Respect to Maintaining High Quality of Waters in California). The Antidegradation Policy states that "whenever the existing quality of water is better than the quality established in policies as of the date on which such policies become effective, such existing high quality would be maintained until it has been demonstrated to the State that any change would be consistent with maximum benefit to the people of the State, would not unreasonably affect present and anticipated beneficial use of such water, and would not result in water quality less than that prescribed in the policies." Any activity which

produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters would be required to meet waste discharge requirements which would result in the best practicable treatment or control of the discharge necessary to assure that a pollution or nuisance would not occur and the highest water quality consistent with maximum benefit to the people of the State would be maintained.

CONSTRUCTION GENERAL PERMIT. California regulations require that discharges of stormwater associated with construction activity disturbing more than one acre become permitted under the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order 2009-009-Division of Water Quality), known as a Construction General Permit. This permit requires the development and implementation of a SWPPP. The SWPPP must list BMPs that the contractor would use to control stormwater runoff and reduce erosion and sedimentation. A sediment monitoring plan is also required if the site discharges to a water body with impaired or limited water quality (State Water Resources Control Board 2005d). The San Francisco Bay Regional Water Quality Control Board may also issue site-specific waste discharge requirements (WDRs), or waivers to WDRs, for certain waste discharges to land or waters of the State.

Construction activities subject to the Construction General Permit include clearing, grading, stockpiling, and excavation. Dischargers are required to eliminate or reduce non-stormwater discharges to storm sewer systems and other waters. The permit also requires dischargers to consider the use of post-construction permanent BMPs that would remain in service to protect water quality throughout the life of the project. Types of BMPs include source controls, treatment controls, and site planning measures.

CWA SECTIONS 404 AND 401. Section 404 of the Clean Water Act requires the USACE regulatory section to issue Section 404 permits for discharges of dredged or fill material into waters of the U.S. Although the USACE does not process and issue Section 404 permits for its own activities (such as construction of the proposed project), it authorizes its own discharges by applying all substantive legal requirements and by conducting a Section 404(b)(1) Guidelines analysis. 33 CFR 336.1(a).Under the Section 404(b)(1) Guidelines, a proposed discharge is not allowed if there is a less environmentally damaging practicable alternative that would have less effect on the aquatic ecosystem, and not have other significant adverse environmental impacts (40 CFR 230 et seq).

USACE regulations generally require USACE to seek Section 401 water quality certification for USACE projects involving a discharge into waters of the U.S. even though USACE does not issue itself a Section 404 permit. However, the project, as a project authorized by Congress that has completed an EIS, qualifies for exemption under 33 U.S. Code 1344(r). USACE will either obtain a Section 401 water quality certification or claim exemption under 33 U.S. Code 1344(r) for the proposed project.

3.17.3.3. *Local Plans and Policies*

SANTA CLARA COUNTY GENERAL PLAN. The Santa Clara County General Plan (Santa Clara County 1994) identifies the following principles and policies that relate to the proposed project:

- *Policy C-RC 20*. Adequate safeguards for water resources and habitats should be developed and enforced to avoid or minimize water pollution of various kinds, including: a. erosion and sedimentation; b. organic matter and wastes; c. pesticides and herbicides; d. effluent from inadequately functioning septic systems; e. effluent from municipal wastewater treatment plants; f. chemicals used in industrial and commercial activities and processes; g. industrial wastewater discharges; h. hazardous wastes; and i. non- point source pollution.

- *Policy C-HS 34*. Flood control measures should be considered part of an overall community improvement program and advance the following goals, in addition to flood control: a. resource conservation; b. preservation of riparian vegetation and habitat; c. recreation; and d. scenic preservation of the County's streams and creeks.
- *Implementation Recommendations C-HS (i) 32*. Continue efforts by, and joint planning with, the District to design and construct flood control improvements that achieve a desirable balance of resource conservation, flood control, and recreational objectives.

CITY OF MILPITAS MUNICIPAL CODE. The City of Milpitas Municipal Code (2010), Section XI-15, identifies the following provisions for flood hazard reduction that relate to the project:

- *XI-15-5.1b Standards of Construction*: Construction Materials and Methods
    - (b1) With materials and utility equipment resistant to flood damage.
    - (b2) Using methods and practices that minimize flood damage.
- The other provisions for flood hazard reduction are not relevant to the project (i.e., construction of utilities, subdivisions, manufactured homes, and recreational vehicles).

CITY OF MILPITAS GENERAL PLAN. The City of Milpitas General Plan (2002) identifies the following principles and policies that relate to the proposed project:

- *5.b-G-1* Minimize threat to life and property from flooding and dam inundation.
- 5.b-I-1 Ensure that new construction or substantial improvements to any existing structure result in adequate protection from flood hazards.
- *5.b-I-3* Ensure that encroachment into designated floodways does not result in any increase in flooding hazards.
- *5.b-I-5* Seek construction of flood control channels to withstand 100-year floods along Coyote, Penitencia, Berryessa, Scott, Calera, and Los Coches Creeks.
- *4.d-G-1* Protect and enhance the quality of water resources in the Planning Area.
- *4.d-I-1* Continue implementing the National Pollutant Discharge Elimination System (NPDES) requirements of the Regional Water Quality Control Board. - *This is implemented through Chapter 16 of the City's Zoning Ordinance.*

CITY OF SAN JOSE GENERAL PLAN. The San Jose General Plan (2011) specifies that protection from a 0.01 exceedance probability flood 100-year flood should be achieved in accordance with the Federal Flood Insurance Program design standards.

3.17.4. Significance Criteria

Implementation of the proposed project would be considered to have significant adverse effects on water quality if it were to:

WAQ-1 Violate any water quality standard or waste-discharge requirement;

WAQ-2 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 wells would drop to a level that would not support existing land uses or planned use for which permits have been granted);

WAQ-3 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;

WAQ-4 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 amount or rate of surface runoff, in a manner that would result in flooding on- or off-site;

WAQ-5 Create or contribute runoff water, which would exceed the capacity of existing or planned storm water drainage systems, provide substantial additional sources of polluted runoff,

WAQ-6 Otherwise substantially degrade water quality;

WAQ-7 Place housing within a 100-year flood hazard area as mapped on Federal Flood Hazard Boundary or Flood Insurance Rate Maps or other flood hazard delineation maps;

WAQ-8 Place within a 100-year flood hazard area structures that would impede or redirect flood flows;

WAQ-9 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; or

WAQ-10 Expose people or structures to a significant risk of loss, injury, or death involving inundation by seiche, tsunami, or mudflow.

3.17.5. Potential Impacts

3.17.5.1. *Significance Criteria with No Impact*

The following significance criteria are not discussed further in the EIR because the proposed project would not result in impacts related to these criteria:

WAQ-7 **Place housing within a 100-year flood hazard area as mapped on Federal Flood Hazard Boundary or Flood Insurance Rate Maps or other flood hazard delineation**. The proposed project would not involve the construction of new housing and would decrease, not increase, the flood hazard area in the project vicinity. No existing housing would come within the flood hazard area as a result of the project.

WAQ-8 **Place within a 100-year flood hazard area structures that would impede or redirect flood flows.** The intent of the proposed project is to reduce flood potential by redesigning the channel and structures within the channel to pass flood flows more efficiently. Any new structures within the channel are replacing existing structures and are being designed in accordance with FEMA requirements for passage of flood flows and would exceed USACE requirements for passing flows occurring under the 100-year discharge.

WAQ-9 **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**. There are no levees or dams in the construction area and none are proposed other than small temporary cofferdams that would be constructed for dewatering purposes during construction. These dams would hold back only small amounts of water that would then be pumped around the construction area. Failure of these dams is not expected and the amount of water released in the event of cofferdam failure could be accommodated by the downstream creek channel, thus the project would not result in significant flood risk or potential for loss of property or life.

WAQ-10 **Expose people or structures to a significant risk of loss, injury, or death involving inundation by seiche, tsunami, or mudflow**. The construction area is not vulnerable to seiche or tsunami, and there are no project features that would increase exposure of people or structures to such occurrences. Mudflows are an extremely rare event in this

area. Any mudflows would originate in upstream areas and would be blocked by upstream features before making their way to the project area.

3.17.5.2. *Significance Criteria with Potential Impacts*

WAQ-1 VIOLATE ANY WATER QUALITY STANDARD OR WASTE-DISCHARGE REQUIREMENT

Less than significant with mitigation for construction; less than significant for operations

AND,

WAQ-6 OTHERWISE SUBSTANTIALLY DEGRADE WATER QUALITY

Less than significant with mitigation for construction; less than significant for operations

CONSTRUCTION (REACHES 1–3). Construction activities in Reaches 1–3 would entail the use of heavy equipment and associated hazardous materials, such as fuels (gasoline and diesel), oils and lubricants, and cleaners (e.g., solvents, corrosives, soaps, detergents), which are commonly used in construction projects. During construction, accidental spills could occur, potentially causing a discharge of hazardous materials to surface or groundwater and violating water quality standards. Preparation of the site prior to construction would require clearing and grubbing, which may require the use of herbicides which could be sprayed or spilled into surface waters.

Several components of the project would include construction with concrete within the channel. Uncured concrete is extremely alkaline, and if it were spilled or came into contact with creek water during the curing period, it would degrade water quality and could cause a violation of water quality standards.

Ground-disturbing activities during construction could result in soil erosion and input of sediment into water sources. Under the proposed project, ground-disturbing activities or those that could otherwise contribute to erosion risk include:

- Demolition and excavation of concrete and earthen materials;
- Demolition of concrete paved channel bed and side slope protection features;
- Widening of channel bed and top of banks via excavation and grading of earthen material;
- Excavation of channel bed and side slopes for placement of rock revetment;
- Use of heavy equipment for hauling away of concrete debris and excavated material;
- Stockpiling of excavated materials or soils to be used for backfill; and
- Excavation for reconstruction of access roads.

Soils in the area would be disturbed during construction as a result of material excavation along the creek bed and banks, and during construction and use of access roads. Erosion may also occur at staging areas, where initial grading to flatten the site, and subsequent disturbance by construction equipment would destabilize soils, leaving them vulnerable to erosion. Soils stockpiled for reuse or before they are hauled off for disposal would be especially vulnerable to erosive effects of wind and rain. As soils in the project area are relatively easily erodible, even soils that are stockpiled properly may erode as a result of rain or high winds. Impacts associated with excessive erosion include degraded water quality and excessive sedimentation. Erosion would be limited by performing construction actions during the dry months. The construction contractor would prepare and implement a SWPPP to reduce the potential for erosion of disturbed areas. However, given the size of the project footprint, the soil erosion could result in washing of large quantities of soil into the creek channel, substantially degrading downstream

water quality. This impact would be most likely during periods of substantial rainfall when the amount of water flowing in the creek would increase greatly. This could result in substantial erosion and inundation of equipment and materials working in the creek, causing downstream flow of entrained pollutants. This impact would be significant.

Dewatering of surface or groundwater that accumulates at excavated areas would likely be necessary to allow construction to occur in the dry, particularly in Reaches 1 and 2, where water flow is more persistent, and in Reach 3 where deeper excavations for the replacement of the UPPRR trestle are more likely to encounter groundwater (Tetra Tech 2015h). Extracted groundwater at the UPRR trestle area (i.e. in the JCI off-site area) may be contaminated with VOCs as described in Section 3.9.5. Construction also would entail excavating and moving channel sediment, which may be contaminated by VOCs, petroleum products, and other hazardous substances, within the channel, which could result in accidental discharge of hazardous substances to surface or groundwater. Impacts to surface and groundwater quality would be significant; see Section 3.9.

All groundwater, surface flows and runoff would be captured, diverted around the construction site and discharged downstream. Surface flows in the creek would be temporarily detained behind a cofferdam prior to being pumped around the construction site. Detention could result in changes to dissolved oxygen levels, turbidity, temperature, and pH that would adversely affect the quality of the downstream receiving waters. All dewatering activities would be temporary and confined to the smallest possible area. These diversions would remain in place throughout the in-stream construction period. All dewatering activities would discharge to the stream channel downstream of the construction site. This type of discharge may induce erosion and sedimentation in the stream channel, diminishing water quality at discharge locations and constituting a significant impact.

CONSTRUCTION (REACH 4). Construction activities in Reach 4 would entail most of the same types of impacts as in Reaches 1–3, including from construction of concrete structures within the channel. Groundwater occurs at greater depths than in downstream reaches and it is unlikely, but still possible, that groundwater would be encountered during excavations. No known areas of contaminated groundwater occur in this reach so the chances of encountering soils or groundwater contaminated with VOCs or petroleum products are low. Therefore, potential impacts from dewatering or groundwater extraction would be less than significant in this reach.

OPERATIONS (ALL REACHES). Operation of the proposed project is non-consumptive in terms of water needs, other than needs to irrigate vegetation during a 2-year establishment period. Ongoing maintenance and operations actions would continue after construction, but actions associated with sediment removal and erosion control would be reduced due to a more efficient channel design. Newly required maintenance actions including inspection of the floodwall, culverts, and access roads would not require excavation or dewatering, so operational impacts associated with dewatering or groundwater extraction would not occur under the proposed project.

MITIGATION (ALL REACHES). Significant water quality impacts of spills would be mitigated by Mitigation Measure HWM-A (Prepare spill prevention and response plan).

Significant water quality impacts from construction activities would be mitigated by implementing Mitigation Measures WAQ-A (Implement measures for protecting water quality), WAQ-B (Prepare and implement a dewatering plan, and WAQ-C (Prepare and implement a rain event action plan).

Significant water quality impacts from discharge of contaminated groundwater encountered during construction would be mitigated by implementing Mitigation Measure HWM-C (Treat VOC--contaminated groundwater encountered at JCI off-site area).

SIGNIFICANCE AFTER MITIGATION. With the implementation of Mitigation Measures WAQ-A, WAQ-B, WAQ-C, HWM-A, and HWM-C the project would be in compliance with water quality and waste discharge requirements, so impacts associated with violation of water quality standards or substantial degradation would be reduced to a less than significant level.

Significant water quality impacts from construction site runoff would be reduced to less than significant levels through implementation of Mitigation Measures WAQ-A (Implement Measures For Protecting Water Quality) and WAQ-C (Prepare and Implement a Rain Event Action Plan). WAQ-A requires isolation of concrete from runoff or creek water after pouring and maintaining a clean work site. WAQ-C requires measures to prevent washing of contaminants into the creek channel during substantial rain events.

Significant water quality impacts of dewatering activities would be mitigated to a less than significant level by implementing Mitigation Measure WAQ-B (Prepare and Implement a Dewatering Plan). The dewatering plan would include specific measures to prevent significant increases in water temperature, lower dissolved oxygen levels, and increased turbidity.

Significant water quality impacts of spills would be mitigated to a less than significant level by implementing Mitigation Measure HWM-A (Prepare and Implement a SPRP), because the spill prevention and response plan would reduce the likelihood of spills, and minimize water quality impacts if a spill were to occur.

Significant water quality impacts from discharge of contaminated groundwater if encountered would be mitigated to a less than significant level through treatment of the groundwater as required by Mitigation Measure HWM-C (Treat VOC-Contaminated Groundwater Encountered at JCI Off-Site Area). The treated groundwater would meet water quality standards before discharge to the creek.

WAQ-2 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

Less than significant for construction; no impact for operations

CONSTRUCTION (ALL REACHES). Construction activities may encounter shallow groundwater. Encountered groundwater would be collected and discharged to the creek downstream of the project area. –The maximum depth of excavation is seven feet, of which five feet would be backfilled after placement of materials to stabilize the toe of the embankment. The average depth of excavation is between 18 inches and 24 inches. The depth of excavation would temporarily affect only the uppermost several feet of groundwater within the shallow aquifer. Groundwater extraction would be limited to water that accumulates around the work area, which would be a minimal amount compared to the aquifer capacity, and which would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge. The water collected would be expected to infiltrate back into the shallow aquifer when discharged to the channel downstream of the construction area. The local shallow aquifer would be temporarily depressed during the construction period, but this impact would be minor and temporary. The proposed project would not decrease the area of groundwater recharge.

Conversely, by enlarging the channel, it would increase the amount of water from the creek infiltrating into the soil and recharging the groundwater aquifer. Considering the overall result of all these effects, this impact would be less than significant because the proposed project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge.

OPERATION (ALL REACHES). The proposed project would not adversely affect groundwater recharge or the aquifer volume capacity. Although the final invert elevation of the stream channel may be below the upper elevation of the ground water table under some circumstances, the invert elevation will still be within the historic range of invert elevations, which varies on a seasonal and yearly basis due to localized sediment deposition. If temporary or seasonal drainage of groundwater into the stream occurs, it will not draw the groundwater levels below the range of elevations at which the groundwater table is normally found. No impact on groundwater recharge would result.

WAQ-3 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

Less than significant for construction; less than significant for operations

CONSTRUCTION (ALL REACHES). Construction activities in and of themselves would not substantially alter drainage patterns. The location of the stream channel would not be altered, and drainage patterns during the construction period would be similar to those occurring under existing conditions. Dewatering would temporarily pass some flows through the system in a pipe rather than through the stream channel, but this would not alter drainage patterns in such a way as to cause substantial erosion or siltation. Therefore, erosion or siltation impacts associated with substantial or permanent alteration of drainage patterns would be less than significant.

The District as landowner will be responsible for obtaining project coverage under the General Permit for Discharges of Stormwater from Construction Sites issued by the California State Water Resources Control Board. The General permit conditions require that the applicant prepare and submit to SWRCB a stormwater pollution prevention plan (SWPPP) covering project construction. The SWPPP will include detailed measures to control erosion, contain sediments, and prevent turbidity and other forms of pollution from contaminating stormwater and being washed into drainages during construction. The SWPPP would ensure compliance with the plan throughout the construction process. Measures from the SWPPP would be incorporated into the contractor's work plan and would be implemented prior to groundbreaking activities. Implementation of the SWPPP would prevent soil erosion during construction and this impact would be less than significant.

OPERATIONS (ALL REACHES). During operations, the effects of enlarging the channel, installing the floodwall, and increasing the conveyance capacity at the bridges would include altered drainage patterns in the project area and downstream. Widening the channel would lead to a lower water surface elevation and reduced velocities during storm flows, which would reduce erosion and streambed incision, reducing sediment input into the system and allowing sediments to settle out more readily. At the same time, reducing flow impedance at the bridges and culverts would allow for more efficient movement of sediment through the system.

Due to the relatively flat stream profile through the project area, Reaches 1-4 would normally be considered a depositional reach (meaning sediment accumulates in the reach), and under low flows it

exhibits characteristics of a depositional reach. However, evidence of extensive erosion within these reaches is found beneath bridges, at oversteepened and failing banks, and in scoured areas downstream of hard structures. Some of these eroded materials likely show up as sediments in the channel bed within Upper Berryessa Creek, while the rest are likely moved downstream and out of the project area.

Although reduced velocities and lower water surface elevations may reduce the sediment transport capacity of the reach to a small degree, this effect is likely to be balanced by decreased erosion and diminished sediment input. According to the sediment transport studies prepared for this project (Tetra Tech 2015g), sediment aggradation would only occur at two locations, the UPRR trestle and UPRR culvert locations. The maximum increase in channel elevation is approximately one foot (for five 10-year events) and the deposition plume would extend approximately 600 feet upstream of the UPRR culvert for a 100-year flood event. According to the sediment transport study, the total depositional volume for the entire reach downstream of I-680 would be less than under current conditions. In addition, the District will continue to follow its Stream Maintenance Program Manual including implementing applicable BMPs during future sediment removal to ensure that effects on water quality or creek habitat, if any, would be less than significant.

Furthermore, any backwater effect that occurs where the downstream end of Reach 1 at Calaveras Boulevard transitions into the Lower Berryessa Creek channel would be eliminated when the Lower Berryessa Creek Program is constructed, further reducing sediment deposition in the lower end of Reach 1. ~~Therefore, while drainage patterns would change significantly as a result of the project, there is not likely to be a~~No significant change in the balance of sediment ~~movement~~ transport versus erosion would result, so this impact would be less than significant.

WAQ-4 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 FLOODING ON- OR OFF-SITE

Less than significant for construction; less than significant for operations

CONSTRUCTION (ALL REACHES). Construction of the proposed project would not substantially alter existing drainage patterns. See construction impact analysis for Impact WAQ-3. The proposed project is designed to pass flood flows more efficiently and to result in increased channel capacity.

OPERATIONS (ALL REACHES). During operations, the effect of enlarging the channel, installing the floodwall, and increasing the conveyance capacity at the bridges would pass flood flows through the Upper Berryessa Creek channel more efficiently (See operations impact analysis for Impact WAQ-3). Increased downstream flood risks associated with increased flood flows from Upper Berryessa Creek would not occur because construction of the proposed project would occur after completion of construction of the Lower Berryessa Creek and Lower Calera Creek Flood Protection Improvements Project, which is designed to provide 1% flow conveyance capacity in the stream reaches starting immediately below Calaveras Boulevard, which marks the downstream extent of the proposed project. Therefore, this impact would be less than significant.

Other operational measures, including vegetation management and inspection of structural features, would continue as needed, and would not alter the drainage patterns or increase flood potential on- or off-site. This impact would be less than significant.

WAQ-5 CREATE OR CONTRIBUTE RUN-OFF WATER, WHICH WOULD EXCEED THE CAPACITY OF EXISTING OR PLANNED STORM WATER DRAINAGE SYSTEMS, OR PROVIDE SUBSTANTIAL ADDITIONAL SOURCES OF POLLUTED RUN-OFF

Less than significant with mitigation for construction; less than significant for operations

CONSTRUCTION (ALL REACHES). Construction of the project in itself would not generate large volumes of stormwater that would exceed the capacity of existing or planned stormwater drainage systems. However, the use of construction equipment, vehicles, and materials in the creek channel would create the potential for substantial increases in polluted runoff during rain events. This impact would be significant.

OPERATIONS (ALL REACHES). The proposed project is intended to facilitate flow of stormwater through the Upper Berryessa Creek area. Therefore, it would reduce the burden on storm drainage systems and not adversely affect the capacity of existing or planned stormwater drainage system. Operations would not add sources of polluted runoff. This impact would be less than significant.

MITIGATION (ALL REACHES). Measures WAQ-A and WAQ-C would reduce the potential for creation of polluted runoff by specifying the removal of potential pollutants from the creek channel or securing them when substantial rain is forecast, thereby preventing storm runoff from entraining pollutants.

SIGNIFICANCE AFTER MITIGATION. Implementing Mitigation Measures WAQ-A and WAQ-C would reduce the potential for creation of polluted runoff and reduce this impact to less than significant.

3.17.6. Mitigation Measures

WAQ-A: IMPLEMENT MEASURES FOR PROTECTING WATER QUALITY The District, working with the USACE, will require the construction contractor to implement the following measures:

- **Limit impact of concrete near waterways.** Concrete will be poured only where it is separated from natural water flows during placement for a period of 30 days afterwards**.** Fresh concrete will be isolated until it no longer poses a threat to water quality using the following appropriate measures:
  1. Poured concrete will be excluded from the wetted channel for a period of four weeks after it is poured. During that time, the poured concrete will be kept moist, and runoff from the wet concrete will not be allowed to enter a live stream. Commercial sealants (e.g., Deep Seal, Elasto-Deck Reservoir Grade) may be applied to the poured concrete surface where difficulty in excluding water flow for a long period may occur. If a sealant is used, water will be excluded from the site until the sealant is dry.
  2. Dry sacked concrete will not be used in any channel.
  3. An area outside of the channel and floodplain will be designated to clean out concrete transit vehicles used in project construction.
- **Maintain clean conditions at work sites**. The work site, areas adjacent to the work site, and access roads will be maintained in an orderly condition, free and clear from debris and discarded materials on a daily basis. Personnel will not sweep, grade, or flush surplus materials, rubbish, debris, or dust into storm drains or waterways.

For activities that last more than one day, materials or equipment left on the site overnight will be stored as inconspicuously as possible, and will be neatly arranged. Any materials and equipment left on the site overnight will be stored to avoid erosion, leaks, or other potential impacts to water quality. Upon completion of work, all building materials, debris, unused materials, concrete forms, and other construction-related materials will be removed from the work site.

WAQ-B. PREPARE AND IMPLEMENT A DEWATERING PLAN. USACE will prepare a plan for dewatering the creek and the return of diverted water to the creek downstream of the construction area. The dewatering plan will specify the size and materials to be used in coffer dams, the size of the dewatering pipes, water sampling and testing protocols, energy dissipation methods to prevent bed scour, and water quality standards to be met before water can be reintroduced to the creek.

WAQ-C. PREPARE AND IMPLEMENT A RAIN EVENT ACTION PLAN.
The District, working with the USACE, will require the construction contractor to implement the following measures. In-channel construction activities will be suspended and a project-specific Rain Event Action Plan (REAP) will be implemented if substantial rainfall, defined as 0.5 inch or greater precipitation, is forecast by the National Weather Service in their 72-hour forecast for the project area. The REAP will be prepared by a qualified SWPPP practitioner and will comply with standards of the California Stormwater Quality Association Best Management Practices Handbook. The REAP will include measures to prevent adverse effects of water flows at construction areas, such as removal of equipment, vehicles, and materials from the channel; protection of exposed and disturbed areas; and isolation of uncured concrete from water flows. Additionally, start of construction phases taking more than 72 hours to complete will not occur if substantial rainfall is forecast.

In addition to measures listed in this section, a number of mitigation measures developed to reduce impacts for other resources will also be implemented to reduce impacts to water resources. They include:

- **HWM-A**: Prepare a Spill Prevention and Response Plan.
- **HWM-C:** Treat VOC-Contaminated Groundwater Encountered at JCI Off-Site Area.

3.17.7. Statement of Impact

A summary of potential impacts to water resources is given in Table 3.44. Significant impacts associated with violations of water quality standards and quality of runoff water were identified. However, by applying mitigation measures specified in Section 3.17.6, these impacts would be reduced to a less than significant level.

Table 3.44 Statement of Impacts, Water Resources			
Impact	**Prior to Mitigation**	**Applicable Mitigation**	**After Mitigation**
WAQ-1. Violate any water quality standard or waste-discharge requirement.	S	HWM-A HWM-C WAQ-A WAQ-B WAQ-C	LM
WAQ-2. 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 wells would drop to a level that would not support existing land uses or planned use for which permits have been granted).	LS	None	LS
WAQ-3. 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.	LS	None	LS
WAQ-4. 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 flooding on- or off-site.	LS	None	LS
WAQ-5. Create or contribute run-off water, which would exceed the capacity of existing or planned storm water drainage systems, provide substantial additional sources of polluted run-off, or otherwise substantially degrade water quality.	S	WAQ-A WAQ-C	LM
WAQ-6. Otherwise substantially degrade water quality.	S	HWM-A HWM-C WAQ-A WAQ-B WAQ-C	LM
WAQ-7. Place housing within a 100-year flood hazard area as mapped on Federal Flood Hazard Boundary or Flood Insurance Rate Maps or other flood hazard delineation maps.	NI	None	NI
WAQ-8. Place within a 100-year flood hazard area structures that would impede or redirect flood flows.	NI	None	NI
WAQ-9. 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.	NI	None	NI
WAQ-10. Expose people or structures to a significant risk of loss, injury, or death involving inundation by seiche, tsunami, or mudflow.	NI	None	NI
NI–No Impact, LS–Less than Significant, LM–Less than Significant with Mitigation, S–Significant, SU–Significant and Unavoidable			

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4. CUMULATIVE IMPACTS

4.1. CEQA ANALYSIS REQUIREMENTS

CEQA requires an analysis of cumulative effects which are defined in Section 15355 of the CEQA Guidelines as "' two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." Such impacts can be caused by two or more projects each with significant effects that are compounded when analyzed together, or can result from projects which are individually minor but are collectively significant.

The analysis of cumulative effects for this project is using the "List Approach (Guidelines Section 15130(b)(1)(A))" under CEQA. The list will identify relevant past, present, and probable future projects. The list may differ by environmental discipline. The analysis by discipline will define the geographic scope of the area, a summary of expected environmental effects, and a reasonable analysis of the cumulative impacts of the relevant projects (Guidelines Section 15130(b)(B)(5)).

The analysis of cumulative effects is based in part on the geographic proximity of the proposed project to other past, present, or reasonably foreseeable future activities. Proximity can differ based on the element of the environment under consideration. For instance, noise impacts are typically limited in geographic scope to locations and receptors that may be affected by construction noise. Effects related to aesthetics, geology, cultural, and hazardous materials would likewise have a fairly limited geographic scope. Air and GHG emissions, on the other hand, may have effects on a much larger area.

Generally, for this project, the cumulative effects study area is limited to the Upper Berryessa Creek corridor and immediately adjacent properties with the following exceptions:

- *Air Quality and Greenhouse Gases*. The greater Milpitas-San Jose airshed.
- *Biological Resources*. Berryessa Creek from the foothills to San Francisco Bay.
- *GHGs*: Global.
- *Traffic and Transportation*. An expanded study area west to east from I-880 to Park Victoria Dr., north to south from E Calaveras Boulevard to Trade Zone Boulevard.
- *Water Resources*. An area inclusive of existing flood-prone areas in the vicinity of the Upper Berryessa Creek project and Berryessa Creek channel downstream of the project area.

Since any adverse effect of the proposed project would be construction-related, the timing of other projects considered in this cumulative analysis is an important consideration. Overlapping construction schedules may result in cumulative adverse effects if the projects are in close proximity and are of such a scale as to cause greater impacts than if constructed sequentially or at very different times.

4.2. PROJECTS CONSIDERED IN CUMULATIVE ANALYSIS

The projects shown in Figure 4.1 and listed in Table 4.1 include past, present, and planned projects in or near Upper Berryessa Creek that have been considered in the cumulative effects analysis.

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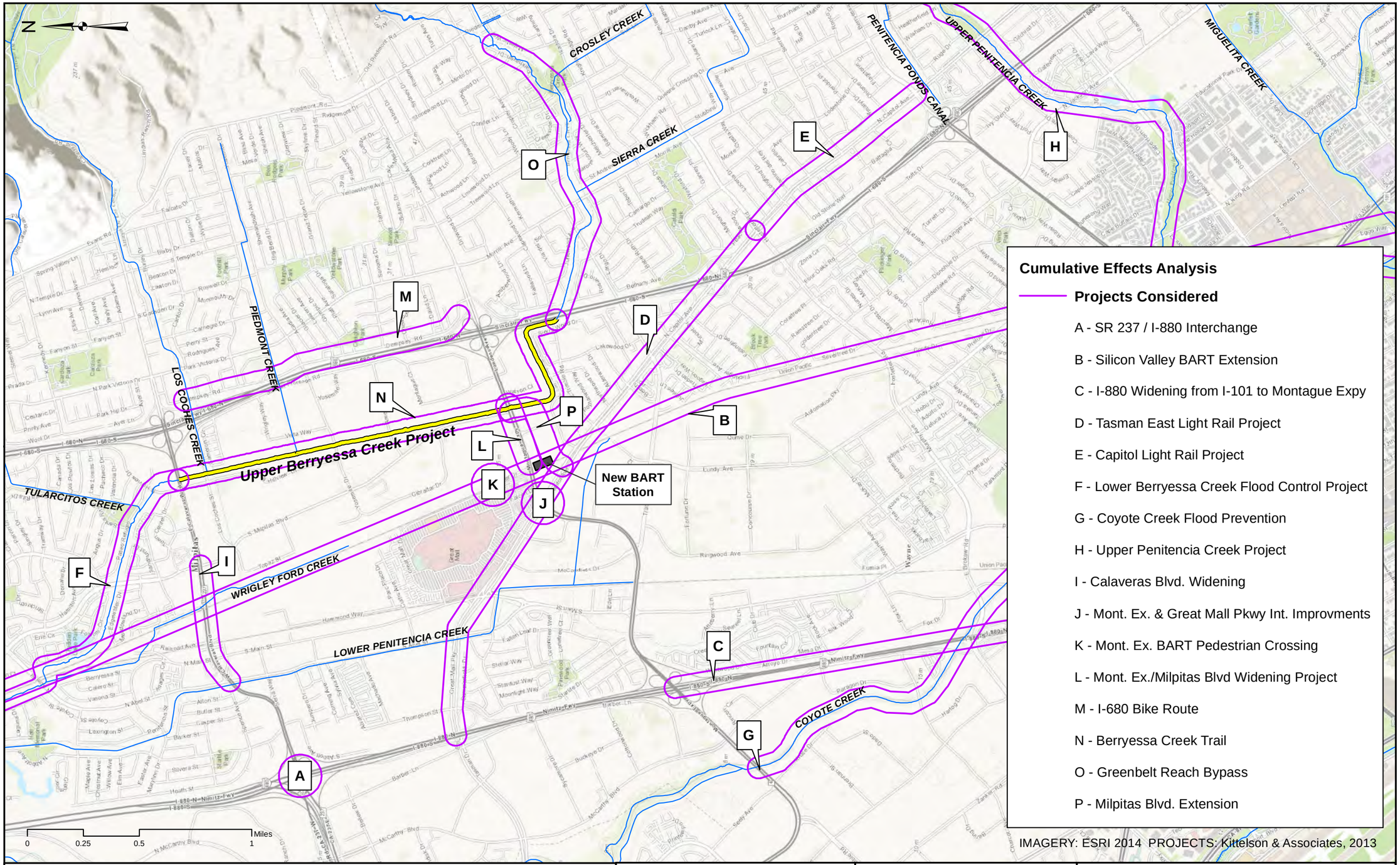

IMAGERY: ESRI 2014 PROJECTS: Kittelson & Associates, 2013

Figure 4.1 Projects Considered in Cumulative Effects Analysis

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Santa Clara Valley Water District

UPPER BERRYESSA CREEK
FLOOD RISK MANAGEMENT PROJECT
0798

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Table 4.1 Past, Present, and Planned Projects in or near Upper Berryessa Creek.			
Projects Considered in Cumulative Analysis	**Location & Distance from Proposed Project**	**Year(s) Completed or Under Construction**	**Potential for Significant Cumulative Effect**
Prior Modifications to Berryessa Creek: Previous work to confine Berryessa Creek flows through industrial, commercial, residential areas (not shown on map)	Co-terminus	Pre-1990	Construction effects are several decades in the past. No potential for cumulative effect. Previous work established current project side-to-side boundaries.
A. Highway 237/I-880 Interchange Reconstruction Project: This transportation project includes two elements: (1) Carpool connectors from southbound I-880 to westbound Route 237 and from eastbound Route 237 to northbound I-880, and (2) a southbound "braided" exit ramp from I-880 to Tasman Dr. (USACE 2014).	One-and-half miles west of the project.	2005	Construction effects are a decade old. Provides carpool incentives for westbound traffic on Calaveras Boulevard. No potential for cumulative effect.
B. Bay Area Rapid Transit (BART) Silicon Valley Extension Project: This project involves the extension of BART to Milpitas, San Jose and Santa Clara. Current construction activities involve the Berryessa extension through Milpitas and into San Jose. Two stations are included in the current work – Montague Expressway/Capitol in Milpitas (sub-surface station) and Berryessa (elevated station) in San Jose (VTA 2015a).	Line is 3000' west of creek at Calaveras; 1000' west at Montague Exp.	Construction work substantially complete in mid-2016. Train testing in 2016-2017, with opening in 2018.	Most of work is occurring in UPRR right-of-way. Calaveras Blvd. passes over tracks. Work affecting traffic on Montague Expressway in vicinity of the Milpitas station is complete, though work in station area will continue until early 2016. Any concurrent construction effects expected to be minor.
C. I-880 Widening from North First Street to Montague Expressway: This highway project widens I-880 between U.S. 101/North First St. and Montague Exp. from a four to a six-lane freeway (USACE 2014).	Intersection of I-880 and Montague Exp. are 1 ½ miles west of the project.	2004	Provided extra freeway lane parallel to project area, providing additional capacity that will benefit the project during lane closures on Calaveras Boulevard (Alt. 2B and 4).
D. Tasman East Light Rail Project: This project consists of a light rail extension from Baypointe Parkway to just south of Hostetter Rd., later extended to Alum Rock. Eleven new light rail stations were added (USACE 2014).	1000' west at Montague Exp.	2004	Provides alternatives to the car for commuters and travelers in San Jose, Milpitas, Mountain View and other south bay communities. Such alternatives could be beneficial to commuters during project construction.
E. Capitol Light Rail Project: This project consists of a light rail extension of the Tasman Light Rail Line, along the Capitol Exp. The Capitol Light Rail adds two new light rail stations (VTA 2015b).	4+ miles south of Montague Exp.	Environmental review completed February 2014. No current timeframe for construction.	Project construction schedule unknown due to lack of funding. Any concurrent construction effects expected to be minor due to distance from project area.

Projects Considered in Cumulative Analysis	Location & Distance from Proposed Project	Year(s) Completed or Under Construction	Potential for Significant Cumulative Effect
F. Lower Berryessa Creek and Lower Calera Creek Flood Protection Improvement Project: The SCVWD proposes to construct a project that will provide protection from the 100-year flood event along Berryessa Creek between Lower Penitencia Creek confluence and Calaveras Blvd. Included in this project are improvements to Calera Creek and Tularcitos Creek, both tributaries to Berryessa Creek (SCVWD 2015a).	Adjacent to north terminus of proposed project.	Environmental review complete in 2012. Construction currently expected 2015-2018.	Construction-related traffic impacts on local roads, plus air quality and noise effects if there is concurrent construction. Potential for temporary adverse effects on aesthetics. Upon completion of the two projects, there would be a cumulative benefit from enhanced flood attenuation.
G. Coyote Creek Flood Protection Project: The SCVWD has completed the first element of this project by constructing flood damage reduction features on lower Coyote Creek from Montague Exp. downstream to the San Francisco Bay. Future phases would involve flood protection improvements south of Montague Expressway to I-280 (SCVWD 2015b).	The northern reach of the project at Montague Exp. is over 2 miles from Upper Berryessa Creek at Montague Exp.	Current schedule unknown	Distance of projects from each other would minimize any adverse cumulative effect if there is concurrent construction.
H. Upper Penitencia Creek Flood Protection Project: The SCVWD is partnering with the U.S. Army Corps of Engineers, San Francisco District, to complete a feasibility study which will identify a plan to improve Upper Penitencia Creek from the confluence with Coyote Creek upstream to Dorel Dr., a length of approximately 4.1 miles, to ensure flood protection from a 100-year event (SCVWD 2015c).	Approximately two miles south of project area.	2021-2024	The projects, upon completion, would provide flood protection benefits to San Jose and downstream cities. Concurrent construction unlikely, as the proposed project is scheduled for completion in 2019.
I. Calaveras Blvd. Widening: The two bridges between Milpitas Blvd and Abel St. would be replaced with a six-lane bridge complete with 10' sidewalks and 6' bike lanes. Auxiliary lanes between Abel St. and I-880 together with operational improvements at the Abel St. and Abbott Ave. intersections would be added to insure smooth transitions and continuous bike lanes (USACE 2017).	The eastern end of the project is 2000' from Upper Berryessa Creek at Calaveras Blvd.	Post-2017	Current schedules show that the proposed project would be complete prior to start of construction of the Calaveras Boulevard widening project. Under this scenario, there would be a longer overall period of traffic disruption (esp. with Alternatives 2B and 4), but at a lesser degree than if there were concurrent construction affecting Calaveras Boulevard. Air quality would also be heightened if there were concurrent construction.

Projects Considered in Cumulative Analysis	Location & Distance from Proposed Project	Year(s) Completed or Under Construction	Potential for Significant Cumulative Effect
J. Montague Expressway and Great Mall Parkway Interchange Improvements: Montague Expressway/Great Mall-Capitol Ave. urban interchange would have a grade separation of the Great Mall-Capitol through lanes over Montague Exp. and would greatly enhance capacity and maintain compatibility with the existing elevated light rail structure and future BART service (USACE 2014).	1000' west of proposed project.	Post-2017	Assuming project schedules remain separated, no cumulative adverse effects are expected.
K. Montague Expressway/ BART Pedestrian Overcrossing: The project would connect the future Milpitas BART station to the Great Mall of the Bay Area and future Transit-oriented development as highlighted in the City of Milpitas Transit Area Specific Plan (USACE 2014).	1000' west of the proposed project.	Post-2017	Assuming project schedules remain separated, no cumulative adverse effects are expected.
L. Montague Expressway/Milpitas Blvd Widening Project: The proposed project would widen a 0.6 mile segment of Montague Expressway in the City of Milpitas for the purpose of constructing a fourth lane in each direction (USACE 2014).	Crosses over Upper Berryessa Creek at Montague Exp.	2016-2017	It is likely that bridge work over Upper Berryessa Creek would happen in roughly the same time period as work on the proposed project. If the work were occurring at the same time as work on the Calaveras bridge project under Alts. 2B and 4 traffic impacts would be exacerbated as through lanes on two major east-west arterials would be reduced. The effect would be significant but mitigable.
M. I-680 Bike Route: Class III Bike Route along Dempsey Street, east of I-680 (City of Milpitas, 2009).	1/3 mile east of proposed project	In Milpitas Bike Master Plan	Involves bike route signage on Dempsey Street. No cumulative effects.
N. Berryessa Creek Trail: Class I Bike Path paralleling Upper Berryessa Creek (City of Milpitas, 2009).	Co-terminus with proposed project	In Milpitas Bike Master Plan	Would likely be undertaken sometime after completion of proposed project. Would provide cumulative recreational and non-motorized transportation benefit.
O. Greenbelt Reach Bypass: This bypass is a potential project proposed by the USACE that would convey water around the Greenbelt Reach upstream of I-680 in order to alleviate flooding in the upper watershed (USACE 2014).	Adjacent to south terminal of proposed project.	Post-2017	Upon completion of the two projects, there would be beneficial effects on area flooding. Note that Alts. 2B and 4 are built on the premise of completing the bypass project.

Projects Considered in Cumulative Analysis	Location & Distance from Proposed Project	Year(s) Completed or Under Construction	Potential for Significant Cumulative Effect
P. Milpitas Boulevard Extension: Milpitas Boulevard will be extended at its southern-most end to accommodate the Milpitas BART Transit Station (VTA 2015c).	Adjacent to lower end of Reach 4, on west bank.	2018	Project would likely occur after completion of proposed project. Cumulative impacts associated with proposed project not likely.
SCVWD Stream Maintenance Program 2: Routine stream and canal maintenance activities allowing SCVWD to meet flood control mandates. Includes sediment removal, vegetation management, repair work to levees, and bank protection actions (not shown on map) (SCVWD 2011; SCVWD 2015d).	Adjacent and co-terminus with the proposed project.	2014 - 2023	During construction, maintenance activities in the project area would not be needed. Upon completion, less maintenance work would be needed during the early years due to improved infrastructure.
SCVWD Raw and Treated Water Pipelines Rehabilitation project: Preventive and remedial maintenance activities (not shown on map). Source: 2015 PAWS Report: Programs to Sustain Supply Reliability, Santa Clara Valley Water District (SCVWD 2011; SCVWD 2015d).	In the general project area, especially related to the Milpitas pipeline	On-going	Construction activities are not expected to overlap in geographic proximity.
Residential developments: City of Milpitas has approved development projects for up to 2500 dwelling units. Projects under construction include: Sinclair Renaissance (80 units at 245-371 Sinclair Frontage Road); Robson Single Family (83 units at 905-980 Los Coches St.); Los Coches Residential. Projects with approvals: Milpitas Station (303 units at 1425 S. Milpitas Blvd); 1200 Piper Dr. (732 units); Los Coches Live/Work Residential Project (33 units at Milpitas/Los Coches) (Milpitas Planning Division, 2015). No San Jose development projects are in proximity to the proposed project. (not shown on map) (City of San Jose 2015b).	Generally located near the Montague Exp./Great Mall Pkwy between I-680 and I-880; others located in vicinity of Los Coches St.	2012-2017+	Traffic effects from these approved developments are reflected in the 2017 baseline traffic volumes. Effects as identified by models prepared for this project would be less than significant.
Berryessa Creek Recreational and Transportation Trail	Adjacent to Berryessa Creek in Reaches 1 through 3	Post 2017	Construction of the trail would result in minor air quality, noise, and water quality impacts. Operational impacts would be negligible.

4.3. SIGNIFICANCE CRITERIA

Implementation of the proposed project and other closely related past, present, and reasonably foreseeable probable future projects could result in significant cumulative impacts. This section analyzes whether cumulative impacts would be significant, and for areas with significant cumulative impacts, if the proposed project would make a cumulatively considerable contribution to the significant impact.

4.4. POTENTIAL CUMULATIVE IMPACTS

4.4.1. Aesthetics

The geographic scope of potential cumulative impacts for visual resources includes the project area and immediate vicinity. Cumulative aesthetics impacts could occur if the proposed project and the projects identified in Table 4.1 involved the removal of trees or other actions that would affect the same visual resources, and if impacts to visual resources arising from individual projects were either long-term or their construction schedules overlap with the proposed project. Such projects may include the Calaveras Boulevard widening project, which is located outside of the viewshed of the proposed project, and the Lower Berryessa Creek Program. The implementation of both the proposed project and the Lower Berryessa Creek Program would result in the removal of trees along the creek. The cumulative impact of tree removal would only be apparent where the northern end of the proposed project area meets the southern end of the Lower Berryessa Creek Project. Tree and shrub replacement per USACE commitments would ensure that visual conditions along the creek would be restored upon project completion, and the cumulative impact on aesthetics would be less than significant after mitigation is applied.

4.4.2. Air Quality

The proposed project would have a significant effect on air quality by emitting NOx during construction in excess of BAAQMD thresholds. Implementation of mitigation measures AIR-A and AIR-B would reduce construction–period emissions, but not below the BAAQMD thresholds. Construction activities from multiple, overlapping projects in the same air basin would result in direct, significant effects on air quality mainly related to combustion emissions and dust emissions. Implementation of mitigation measures during construction of any of the projects identified in Table 4.1 would reduce emissions to the extent possible, but emissions of NOx will still exceed BAAQMD thresholds for the proposed project and for several of the other large projects in Table 4.1, resulting in a significant and unavoidable cumulative impact. Construction of the Lower Berryessa Creek Program may overlap with construction of the project. It is expected that effects from these projects would be similar to the proposed project in that effects would be primarily due to construction activities. Therefore, construction of these projects would increase emissions of criteria pollutants, including ROG, NOx, CO, and PM emissions. Both the Lower Berryessa Creek Program and the proposed project would generate emissions of NOx above thresholds and the cumulative impact of these emissions would be significant. The proposed project would make a cumulatively considerable contribution to this significant cumulative impact on air quality. There are no additional feasible mitigation measures to reduce the proposed project's contribution below cumulatively considerable.

4.4.3. Agriculture and Forestry

There are no agricultural or forestry lands in the project vicinity, therefore there are no impacts from the proposed project or from other nearby past, present, or reasonably foreseeable other projects. Cumulative impacts to agriculture and forestry would be less than significant.

4.4.4. Biological Resources

The proposed project would have a significant impact on riparian vegetation, migratory birds, and trees protected under the City of Milpitas' Tree Ordinance. The geographic scope of potential biological resources encompasses jurisdictional waters of the U.S. and waters of the State, riparian habitat, trees protected under the City of Milpitas Tree Ordinance, and habitats for migratory birds within the project vicinity.

The proposed project would result in less than significant impacts to special status species. Other proposed or ongoing projects in the Berryessa and Coyote Creek watershed, such as the Lower Berryessa Creek Program, the Coyote Creek Flood Protection Project, and the Upper Penitencia Creek Flood Protection Project may disturb or harm special status animal species during project construction. Surveys would be conducted during spring and summer or prior to construction to determine species presence and location of nesting sites. Because some or all of these projects may affect sensitive species or their habitat, they would likely have a significant cumulative impact on special status species. However, there would be no significant adverse impacts to special status species from the proposed project due to the limited biological resources found in the project area. Therefore, the proposed project would not add to cumulative significant impacts to migratory birds or special status species.

The proposed project would remove healthy stands of trees and shrubs. Healthy stands of trees and shrubs may be lost during other construction of other projects occurring along stream corridors, including the Lower Berryessa Creek Program and the Upper Penitencia Creek Flood Protection Project. These cumulative impacts would be significant, and the project's incremental contribution to these impacts would be cumulatively considerable, but it would be reduced to less than cumulatively considerable by implementation of Mitigation Measures BIO-B and BIO-D.

The proposed project would have significant impacts on bird migration due to tree removal, and other projects requiring tree removal would also have these impacts. The Berryessa Creek Recreational and Transportation Trail would increase human use of the creek ROW and increase the potential for human disturbance of birds or vandalism of nests. This cumulative impact would be significant, and the project's incremental contribution to this impact would be cumulatively considerable, but it would be reduced to less than cumulatively considerable by implementation of Mitigation Measures BIO-A and BIO-B.

Trees protected under the City of Milpitas' Tree Protection Ordinance would be removed during construction. Other trees protected under this ordinance may be lost during construction of other projects. This cumulative impact would be significant, and the project's incremental contribution to this impact would be cumulatively considerable, but it would be reduced to less than cumulatively considerable through implementation of Mitigation Measures BIO-B and BIO-D.

The proposed project will not remove jurisdictional wetlands. Some temporary loss of vegetated other waters of the U.S. will occur during construction of both the Lower Berryessa Creek Program and the proposed project. This vegetation will regrow in the same quantity and quality after project construction is complete. The Lower Berryessa Creek program will remove jurisdictional wetlands, but these will be replaced through active planting at 1.2:1 (created: removed) ratio. Other projects that may occur in the

same timeframe are unlikely to affect jurisdictional wetlands or vegetated other waters of the U.S. to a significant degree. Cumulative impacts on jurisdictional wetlands and vegetated other waters of the U.S. would be less than significant.

4.4.5. Cultural Resources

The proposed project would have a significant effect on site CA-SCL-593, which would also represent a cumulatively considerable contribution to significant impacts on known archeological resources in the project area. Implementation of Mitigation Measure CUL-A would reduce the project's impact to less than cumulatively considerable.

During construction, there is the potential for previously unknown archeological sites or human remains to be disturbed. To the extent that other projects in the area disturb additional ground, the overall effect would be an increased chance of uncovering previously unknown sites in the greater area. If these sites contain burial artifacts or human remains, there is the potential for significant, adverse cumulative effects upon cultural resources. Implementation of Mitigation Measure CUL-B would reduce the proposed project's contribution to impacts on unknown archeological sites and human remains to less than cumulatively considerable.

4.4.6. Geology, Soils, and Mineral Resources

The geographic scope of potential cumulative geologic and seismic impacts encompasses the project area and immediate vicinity, including downstream receiving waters where eroded soils may be deposited. Project construction would require significant earthwork activities such as excavation, stockpiling, and transportation of soils and could result in substantial erosion and loss of topsoil, in conjunction with other future projects are in the immediate proximity. The Lower Berryessa Creek Project connects with the proposed project in the vicinity of Calaveras Boulevard. While there is overlap at this location, measures to control erosion and sedimentation will be implemented as written in a Stormwater Pollution Prevention Plan for each project. The Montague Expressway/Milpitas Boulevard Widening Project would overlap the proposed project at Montague Expressway. If constructed at similar times, these projects could lead to loss of topsoil and erosion that would be cumulatively significant, and the proposed project's cumulative contribution to that impact would be cumulatively considerable. Erosion control measures would be implemented to reduce the amount of soil erosion resulting from the proposed project (see Mitigation Measure WAQ-C); therefore, the contribution of the proposed project would not be cumulatively considerable after mitigation.

Also, although the proposed project could expose structures or engineered slopes to adverse effects from seismic ground shaking, this is a highly localized effect that would not contribute to a significant cumulative impact.

4.4.7. Greenhouse Gas Emissions

Past, present, and reasonably foreseeable probable GHG emissions are expected to have a significant impact on worldwide temperatures and will contribute to climate change that will result in significant cumulative effects on the environment. The air quality analysis in this EIR uses the SMAQMD threshold for significant emissions of GHGs, and this threshold already recognizes that GHG emissions impacts are inherently cumulative. GHGs emitted by the project during construction would exceed the significance threshold established by SMAQMD, but would be negligible during operation. It is likely that other

projects of similar size will contribute significant amounts of GHGs in the same construction period as the proposed project. Therefore, the proposed project would result in a cumulatively considerable contribution to GHG impacts.

4.4.8. Hazardous Materials

The geographic scope of cumulative impacts related to hazardous materials includes the project area and areas outside of the project area that may contribute to impacts within the project area via groundwater plume migration. The proposed project is in the vicinity of several known hazardous material sites identified in Section 3.9, but those contaminated sites are being actively remediated, and pollutant levels have been significantly reduced from original levels. Their isolation from other projects identified in Table 4.1 reduces the potential for them to contribute to a significant cumulative impact.

The proposed project would result in significant impacts due to transport and disposal of hazardous materials/wastes and creating the potential for upset or accident exposing persons to hazardous/materials/wastes. These project impacts would be reduced to less than significant through implementation of mitigation measures HWM-A, HWM-B, HWM-C, and WAQ-C. The other projects listed in Table 4.1 would also routinely transport hazardous materials/wastes to and from the project area during construction. The SMP2, the Milpitas Boulevard Extension, and the Montague Expressway/Milpitas Boulevard Widening Project are the only projects listed in Table 4.1 that overlap with the footprint of the proposed project. The SMP2 is a District program and already incorporates District BMPs to minimize the potential for releases of hazardous materials. The Milpitas Boulevard Extension Project and the Montague Expressway/Milpitas Boulevard Widening Project would incorporate standard mitigation measures to minimize impacts related to accidental release of hazardous materials similar to those that would be implemented for the proposed project. These projects would not prevent the ongoing cleanup of contaminated sites in the area. Impacts expected to result from the proposed project and closely related past, present, or reasonably foreseeable probable future projects would not be significant.

4.4.9. Land Use and Planning

The geographic scope of potential cumulative land use impacts encompasses the project area and immediate vicinity, including proposed staging areas and detour routes. Past, present, and reasonably foreseeable projects in the vicinity would result in a densification of residential uses and increased transportation infrastructure in the form of new BART Service, increased capacity on roadways, and a new trail for pedestrian and non-motorized transport uses along the creek. These changes would be in conformance with the City of Milpitas and City of San Jose Master Plans. Cumulative land use impacts would not be significant because future development would likely not divide established communities, or conflict with land use plans and policies or HCPs. Therefore, although the project before mitigation would conflict with the City of Milpitas Trails Master Plan, this conflict would not represent a cumulatively considerable contribution to a significant land use impact.~~Due to the relatively large amount of development in the area, land uses changes expected to result from the proposed project and nearby past, present, or reasonably foreseeable probable future projects would be significant. The proposed project would not directly or indirectly change types or intensities of land uses; the proposed project would not make a cumulatively considerable contribution to this significant impact.~~

4.4.10. Noise

The proposed project would have a significant effect by generating construction noise outside of allowable construction windows set by the City of Milpitas. Mitigation Measures NOI-A, NOI-B, and NOI-C would reduce construction noise impacts, but noise occurring outside of the construction window of 7:00 am to 7:00 pm would constitute a significant and unavoidable impact.

Cumulative noise impacts would result from simultaneous construction activities in proximate location to one another. The only projects from Table 4.1 that are physically overlapping are the Milpitas Boulevard Extension Project, the Montague Expressway/Milpitas Boulevard Widening Project and SMP2. The Calaveras Boulevard project may occur at the same time as the proposed project, but is located approximately 2,000 feet from the project area, so noise impacts from the two projects would remain isolated. The noise-producing activities of SMP2 would not occur during construction of the proposed project. Although there is the potential for overlap between the Montague Expressway/Milpitas Boulevard Widening Project and the proposed project, there are no sensitive receptors in the immediate vicinity of the creek at Montague Expressway. Nevertheless, because other projects could contribute to the proposed project's temporary noise impacts, cumulative noise impacts would be significant, the proposed project's contribution would be cumulatively considerable, and feasible mitigation measures are not available to reduce the proposed project's contribution to less than cumulatively considerable.

4.4.11. Population and Housing

Several of the projects identified in Table 4.1 would be growth-inducing, including the residential developments in the City of Milpitas, the BART Silicon Valley Extension Project, and the various street widening and improvement projects. These projects would create a significant impact on population and housing. The proposed project would not contribute to increases in population or the need for additional housing, and is not growth-inducing, so there would be no significant population and housing impact.

4.4.12. Public Services

It is considered unlikely that multiple, concurrent events would occur that would overwhelm the capacity of emergency service providers as a result of the construction projects identified in Table 4.1. If construction workers move families to the project areas during the construction periods, impacts to schools and parks would be dispersed and would not be cumulatively significant. Cumulative impacts expected to result from the proposed project and closely related past, present, or reasonably foreseeable probable future projects would be less than significant.

4.4.13. Recreation

Upper Berryessa Creek within the project boundaries has relatively little recreational use. The existing exercise equipment and 460 linear feet of recreational trail near the confluence of Berryessa and Los Coches creeks would be removed by the proposed project; however these small recreational features receive minimal use and their removal would not result in significant impacts to recreational opportunities. During construction of the proposed project, existing unauthorized public access to the creek ROW would be temporarily limited. Similar restrictions would be in place during construction of the Lower Berryessa Creek Program. The local population would have access to other bicycle and walking trails and public recreational facilities in the area during construction periods of the two projects. After construction of the project is completed, the existing public recreational trail along Lower Berryessa Creek would be re-opened for public use. The proposed project would accommodate a recreational trail along Upper Berryessa Creek planned by the City of Milpitas. If that trail is built,

recreational opportunities along the creek would be increased compared to the existing condition. Cumulative impacts to recreation expected to result from the proposed project and closely related past, present, or reasonably foreseeable probable future projects would be less than significant.

4.4.14. Traffic and Transportation

The proposed project would generate significant effects by conflicting with plans design to promote transportation efficiency, increasing hazards to other road users, impeding emergency access, and conflicting with performance of public transportation and alternative transportation modes. Implementing Mitigation Measures TRA-A and HWM-B would reduce these impacts to less than significant. Under current project schedules, construction of the proposed project may coincide with construction of the Montague Expressway/Milpitas Boulevard Widening Project and the Calaveras Boulevard Widening Project. The proposed project lane would temporarily close traffic lanes on Ames Avenue, Yosemite Drive, and Los Coches Street for up to 10 days. Because Montague Expressway traffic may divert to Ames Avenue or Yosemite Drive to avoid traffic slowdowns, significant traffic delays could occur at these intersections. Additionally, trucks entering Montague Expressway from Reach 4 access roads will contribute to traffic volumes and slowdowns if they do so during construction of the Montague Expressway/Milpitas Boulevard Widening Project. Trucks entering Calaveras Boulevard could contribute to slowdowns in addition to those that may occur as a result of the Calaveras Boulevard Widening Project. Collectively, these traffic slowdowns could affect transit schedules, increase commute times, and increase emergency response times, constituting significant cumulative transportation impacts. The proposed project's contribution to these impacts would be cumulatively considerable.

Mitigation Measure TRA-A would require preparation and implementation of a Traffic Control and Traffic Management Plan in coordination with local traffic agencies, emergency responders, transit agencies, and other stakeholders. The proponents/sponsors of the other projects mentioned above will create similar traffic management plans. Those plans would be coordinated to reduce impacts to traffic and transportation. Therefore, after implementation of mitigation, the proposed project would not result in a cumulatively considerable contribution to this significant impact.

4.4.15. Utilities and Service Systems

The proposed project would result in a significant impact by encountering contaminated groundwater from the JCI offsite plume area and disposing of that untreated contaminated groundwater, which would exceed wastewater treatment requirements of the SFBRWQCB. Measures WAQ-B and HWM-C would be implemented to reduce this impact to less than significant. The other projects listed in Table 4.1 would not be expected to encounter contaminated groundwater with the exception of the Milpitas Boulevard/Montague Expressway Widening Project, which may require relatively deep excavations to replace the Montague Expressway Bridge crossing Berryessa Creek. The sponsors of that project will prepare a Site Management Plan and a Health and Safety Plan to specify methods for handling and disposing of contaminated groundwater encountered during construction consistent with water quality standards (County of Santa Clara Roads and Airports Department. March 2013). The cumulative impact of handling and disposing of contaminated water from the JCI plume would be significant before mitigation, and the proposed project's contribution to this impact would be cumulatively considerable. However, after implementation of Mitigation Measure HWM-C, the proposed project's contribution to this impact would be less than cumulatively considerable.

The schedule for construction of the Calaveras Boulevard Widening Project and the Montague Expressway/Milpitas Boulevard Widening Project overlap with the proposed project. Both of these projects would include excavation and removal of construction debris that would be deposited at local landfill facilities, but since those projects are confined to a smaller footprint and will require less excavation, disposal quantities will be less than under the proposed project. Additionally, approximately 156,000 cubic yards of material could be deposited in landfills as a result of construction of the Lower Berryessa Creek Program, which would be constructed prior to and concurrently with the proposed project.

Analysis of potential effects on landfill capacity in Section 3.16.6 indicated that most disposal facilities in the project vicinity have sufficient capacity to accept the debris from the proposed project without losing significant amounts of their remaining capacity. Disposal of up to 90,000 cubic yards of material, as is predicted under the worst-case scenario for the proposed project, would use between 0.2 and 1.2 of the remaining capacity at five of the seven landfills identified in Table 3.41. At the other two landfills, between 13 and 20 percent of the capacity would be used. Assuming that the projects mentioned above, including the proposed project, collectively sent up to 400,000 cubic yards of materials to any of the five sites with high remaining capacity, the worst case would be a reduction of approximately 5 percent of remaining capacity at the site with the least capacity, which is the Vasco Road Sanitary Landfill. The cumulative impact on waste generation and disposal from closely related past, present, or reasonably foreseeable probable future projects would be less than significant.

4.4.16. Hydrology and Water Quality

The geographic scope of potential cumulative hydrology and water quality impacts generally encompasses the Berryessa Creek watershed, which includes the following water bodies: Lower Berryessa Creek, Upper and Lower Calera Creek, Tularcitos Creek, and Lower Penitencia Creek and the underlying Santa Clara sub-basin groundwater.

The Lower Berryessa Creek Program has the most potential to cause cumulatively significant impacts to water quality in combination with the proposed project. Both of these projects have the potential to degrade surface water quality as a result of construction-related soil erosion and accidental discharges of hazardous materials into downstream water bodies within the project vicinity. The sponsors of the proposed project would implement Mitigation Measures HWM-A, HWM-C, WAQ-A, WAQ-B and WAQ-C to reduce the proposed project's water quality impacts to less than significant. The sponsor of the Lower Berryessa Creek Program would implement similar measures to prevent adverse water quality impacts during construction. Also, both projects would obtain and implement Construction General Permits, which include requirements for creating Stormwater Pollution Prevention Plans. Therefore, the cumulative impact to water quality from these two projects would be significant and the proposed project's contribution to this impact would be cumulatively considerable before mitigation. However,~~But~~ after implementation of mitigation measures the proposed project's contribution would be less than cumulatively considerable.

All projects listed in Table 4.1 have low potential to affect groundwater quality and recharge, since they are not designed to increased consumptive use of groundwater and are not expected to decrease groundwater recharge capacity. Cumulative impacts to groundwater quality and recharge from closely related past, present, or reasonably foreseeable probable future projects would be less than significant.
The proposed project would result in altered drainage patterns in the long-term and could potentially result in downstream erosion or siltation depending on the change in flow velocity and subsequent increase in capacity of the channel to erode and mobilize bed and bank sediments. Of the cumulative

projects considered in this analysis, the BART Berryessa Extension Project and the Lower Berryessa Creek Program could also have a potential to alter drainage patterns and cause subsequent erosion or siltation in the project area. Closely related past, present, or reasonably foreseeable probable future projects would not significantly change the locations of drainages, and would increase their flow conveyance and sediment transport capacities. They would not substantially change the largely depositional nature of the channel reaches within the project area. Cumulative impacts to drainage, erosion, and siltation from closely related past, present, or reasonably foreseeable probable future projects would be less than significant.

Under existing conditions, the 100-year flow causes flooding throughout the project area. Implementation of the proposed project would reduce flooding immediately upstream and downstream of the project area. This will result in increased flows to Lower Berryessa Creek downstream of the project area during high flow events. Construction of the Lower Berryessa Creek Program is underway and will increase the flow conveyance capacity of Lower Berryessa Creek so that it can convey the increased flows from Upper Berryessa Creek without increased flood hazards. Cumulative impacts to hydrology expected to result from the proposed project and closely related past, present, or reasonably foreseeable probable future projects would be less than significant.

5. ALTERNATIVES ANALYSIS

5.1. INTRODUCTION

~~The California Environmental Quality Act (~~CEQA~~)~~ Guidelines Section 15126.6(a) states that an ~~environmental impact report (~~EIR~~)~~ must describe and evaluate a reasonable range of alternatives that would feasibly attain most of the project's basic objectives, but that would avoid or substantially lessen any identified significant adverse environmental effects of the project. An EIR is not required to consider every conceivable alternative to a proposed project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation.

CEQA Guidelines Section 15126.6(e) states that, "The specific alternative of 'no project' shall also be evaluated along with its impact." The EIR must evaluate the comparative merits of the alternatives and include sufficient information about each alternative to allow meaningful evaluation, analysis. Specifically, the CEQA Guidelines set forth the following criteria for selecting and evaluating alternatives:

- The discussion of alternatives should focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives or would be more costly (CEQA Guidelines §15126.6[b]).
- The range of potential alternatives should include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects (CEQA Guidelines §15126.6[c]).
- The specific alternative of "No Project" (referred to as the No Project Alternative) should also be evaluated along with its impact (CEQA Guidelines §15126.6[e][1]).
- The alternatives should be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project. The range of feasible alternatives should be selected and discussed so as to foster meaningful public participation and informed decision making (CEQA Guidelines §15126.6[f]).

5.2. ALTERNATIVES DEVELOPMENT

5.2.1. Alternatives Identification and Screening

The USACE developed alternatives for the proposed project with the assistance of the District as the local partner. In developing the alternatives, USACE applied federal planning criteria which require that the project contribute to National Economic Development (NED) and National Ecosystem Restoration. The specific planning objectives for the project are:

Objective 1: *Reduce flood damages from Berryessa Creek upstream of Calaveras Boulevard throughout the study reach, during the 50-year period of analysis beginning in 2017. Completed project would meet FEMA certification standards in all 4 project reaches.*

Objective 2: *Use environmentally sustainable design practices in addressing the flood risk management purpose of the project wherever possible within the study reach, including taking*

advantage of restoration opportunities that may be pursued incidental to the flood damage reduction purpose.

Objective 3: *Be consistent with the Berryessa Creek Flood Risk Management Project Plan selected by USACE in the Director's Report of May 29, 2014.*

During development and evaluation of alternatives, USACE and the District also considered the following planning considerations:

- Use the District's Natural Flood Protection (NFP) objectives when evaluating the alternatives and selecting the locally preferred project alternative.
- Coordinate closely with affected cities on their recreational projects to avoid design conflicts to the extent practical, and provide opportunities for cities to incorporate recreational features into the project.
- Reduce maintenance requirements especially due to sedimentation.
- Improve water quality by reducing sedimentation within the creek.
- Cooperate with the mutually beneficial goals of related plans, projects, and agencies.
- Fully coordinate with other Federal, State, local agencies, and stakeholders.

In 1987, USACE prepared the Interim Feasibility Report and Environmental Impact Statement for Coyote and Berryessa Creeks (USACE, 1987), which evaluated a number of non-structural and structural alternatives to provide flood protection for the Upper Berryessa Creek area. Table 5.1 lists the alternatives considered and the findings of the 1987 report:

Table 5.1 Consideration of Alternatives in 1987 USACE Interim Feasibility Report

Alternative	Evaluation
Non-Structural	
Flood Insurance	Implemented in project area
Flood Forecast, Warning, Evacuation	Infeasible due to rapid rise time of Berryessa Creek
Floodproofing	Not cost effective, benefit-cost ratio is 0.2
Remove existing structures from floodplain	Would require removal of 655 residential and commercial structures, which would be economically infeasible and socially unacceptable
Protect movable, damageable property	Not effective due to rapid rise time of Berryessa Creek
Channel Modifications	
Rectangular concrete channel (RCC)	Carried forward for analysis
RCC with articulated concrete mats	Rejected because flow velocities would exceed the design velocities of the mats
Trapezoidal concrete channel and slope protection	Carried forward for analysis
Trapezoidal concrete channel	Carried forward for analysis

Congress passed the Water Resources Development Act (WRDA) of 1990 which authorized the Berryessa Creek Flood Control Project. The authorized design extended from 600 ft. upstream of Old Piedmont Road to 50 ft downstream of Calaveras Boulevard. The project authorized in the WRDA of 1990 had a length of 4.5 miles (i.e. about double the length of the proposed project analyzed in this EIR). The 1990 authorized project consisted of a trapezoidal concrete channel, two debris basins, and levees along portions of the channel (USACE, 2014). The authorized project

would prevent overtopping of banks during the 1% annual chance of exceedance (ACE) event. At that time, risk and uncertainty concepts were not applied to the project.

In 2013 and 2014, USACE performed a re-evaluation of the 1990 authorized project to determine the project design that would best meet NED objectives (USACE, 2014). They screened four potential non-structural management measures, 13 structural management measures, 15 habitat management measures, and 9 recreation and public access management measures to determine their effectiveness in meeting the project objectives and potential environmental, economic, and social effects. The screening criteria for the management measures were:

- Reduce flood damages
- Provide ecological functions/environmental values
- Provide natural physical stream functions and processes
- Avoid and minimize effects to riparian and aquatic habitat
- Minimize O&M especially due to sedimentation
- Integrate watershed processes
- Provide access and recreation to the public
- Cooperate with mutually beneficial goals of related plan, projects, and agencies
- Maximize community benefits beyond flood protection
- Minimize life cycle costs
- Assumed community acceptability
- Property availability/rights of way
- Implementation cost

The re-evaluation also applied risk and uncertainty concepts to analyze two levels of flood protection performance: Moderate Performance, defined as 50% conditional non-exceedance probability (CNP) for the ACE flood event; and National Flood Insurance Program (NFIP) performance, which has a 95 percent CNP for the 1 percent flood event (USACE 2014). USACE, working with the District, formulated an array of project alternatives that would be consistent with the project authorized by Congress and include those management measures found to be most effective at meeting the project objectives. The No Action alternative was also carried forward for comparison purposes. Table 5.2 summarizes the initial array of alternatives.

Table 5.2 Initial Array of Project Alternatives

Alternative	Description	Level of Performance
1	No Action	n/a
2A	Incised Trapezoidal Channel	Moderate
2B	Incised Trapezoidal Channel	NFIP
3A	Terraced Trapezoidal Channel	Moderate
3B	Terraced Trapezoidal Channel	NFIP
4A	Walled Trapezoidal Channel	Moderate
4B	Walled Trapezoidal Channel	NFIP
5	Authorized Project	Moderate

USACE analyzed the costs to implement each of the project alternatives listed in Table 5.2. The cost of implementing Alternatives 3A or 4A would be more than double the cost of implementing Alternative 2A and would provide no additional benefits; therefore project alternatives 3A and 4A were eliminated from further consideration. Alternative 3B would provide no additional

environmental or economic benefits beyond Alternative 4B, so it was also eliminated from further consideration. Alternative 4B was retained but was renamed Alternative 4 since 4A had been eliminated.

The cost analysis also found that providing flood protection for the area upstream of Interstate 680 would have Benefit-Cost Ratio (BCR) well below 1 (i.e. the costs would exceed the benefits). In contrast, the portion of the project downstream of I-680 would have a BCR greater than 1 (i.e. benefits would exceed costs). Therefore, the project sponsors decided to limit the project improvements to the area downstream of I-680. To signify this change, the symbol "/d" was added to each alternative's designation (USACE, 2014). The final array of alternatives considered in the USACE GRR and EIS is presented in Table 5.3.

Table 5.3 Final Array of Project Alternatives

Alternative	Description	Level of Performance
1	No Action	n/a
2A/d	Incised Trapezoidal Channel	Moderate
2B/d	Incised Trapezoidal Channel	NFIP
4/d	Walled Trapezoidal Channel	NFIP
5	Authorized Project	n/a

Alternatives 2B/d and 4/d assume that a bypass structure would be built upstream of I-680 and that the existing bridges crossing Berryessa Creek at Los Coches Street and Calaveras Boulevard would be replaced with new 100-ft spans. Alternative 2A/d does not include these elements. Alternatives 2B/d and 4/d also include replacement of the Montague Expressway Bridge crossing Berryessa Creek with a new 70-ft span (USACE, 2014). Santa Clara County Roads and Airports Department is currently replacing that bridge and a new bridge with sufficient capacity for the 1% ACE flow will be in place prior to the expected completion date of the proposed project (County of Santa Clara, 2013). Therefore, this element is no longer included in any of the project alternatives evaluated in this report. The USACE-selected plan is Alternative 2A/d. USACE completed the Final GRR/EIS in March 2014. In May 2014, USACE Director of Civil Works approved the NEPA Record of Decision (ROD) and issued the Director's Report for the selected plan (i.e. Alternative 2A/d). The ROD states:

> The recommended plan is considered the environmentally preferred alternative. The recommended plan avoids or minimizes impacts to environmental resources to a greater extent than do the other alternatives, mainly due to a shorter construction period, while meeting the flood risk management purpose, although there would still be temporary disturbance of habitats and air quality in the construction area. Adverse environmental effects will be reduced to a less than significant level through project design, construction practices, preconstruction surveys and analysis, regulatory requirements and best management practices. All practicable means to avoid, minimize, and mitigate adverse environmental impacts were included in the plan formulation process and have been incorporated into the selected plan. Although the selected plan would not result in any long-term significant impacts, there would be short-term effects to air quality, water quality, wildlife, cultural resources, transportation and noise.
>
> Mitigation measures pertaining to the selected plan and included within the assessment of effects in the final GRR/EIS are adopted in this Record of Decision (ROD) as environmental commitments that will be implemented by the Corps. Monitoring plans

included as the assessments in the final GRR/EIS are also adopted in this ROD to ensure that impacts described in the final GRR/EIS are not exceeded and mitigation features function as intended.

Technical and economic criteria used in the formulation of alternative plans were those specified in the Water Resources Council's Economic and Environmental Principles and Guidelines for Water and Related Land Resource Implementation Studies. All applicable laws, executive orders, regulations, and guidelines were considered in the evaluation of alternatives and the selection of the recommended plan. Based on review of these evaluations, I find that the flood risk management and recreation benefits gained by construction of the recommended plan serve the public interest and outweigh any adverse effects. This ROD completes the National Environmental Policy Act process.

Additional hydraulic analysis of Alternative 2A/d found that the level of performance could be increased to meet NFIP requirements by increasing the height and length of the floodwalls located near the Piedmont Creek confluence and upstream of Montague Expressway (USACE 2014). The District found that those modifications would provide considerable benefit to the local community by removing a large number of parcels from the designated flood hazard area designated by FEMA (USACE 2014). The District seeks to capture that benefit by using District funds to pay for the increased cost of taller and longer floodwalls at these two locations. Thus, the proposed project analyzed in this EIR is the USACE-selected Alternative 2A/d with larger floodwalls to meet the NFIP level of performance.

5.2.2. Alternatives Evaluated in EIR

In accordance with CEQA Guidelines § 51526.6(a), several alternatives to the proposed project have been developed and analyzed in this EIR. Alternatives are numbered as 2A, 2B and 4 to provide consistency with the numbering scheme in the corresponding General Reevaluation Report/Environmental Impact Statement (GRR/EIS) prepared by the U.S. Army Corps of Engineers (USACE 2014). This EIR analyzes the proposed project and project alternatives included in the Final Array of Project Alternatives contained in the USACE GRR/EIS, with the exception of the authorized project from the 1990 WRDA, which has been updated and replaced by the current USACE-selected alternative of 2A/d. Because all of the alternatives are located downstream of I-680, the designator "/d" has been dropped in this EIR.

In accordance with CEQA Guidelines § 51526.6(a), four alternatives to the proposed project have been developed and evaluated in this ~~D~~EIR. They are intended to provide a range of alternative actions that could feasibly achieve the project objectives while reducing the proposed project's significant adverse impacts. The alternatives are as follows;

- **No Project Alternative**,
- **Alternative 2A**: USACE-Selected Project,
- **Alternative 2B**: Expanded Incised Trapezoidal Channel (FEMA Certification Performance)
- **Alternative 4**: Walled Trapezoidal Channel (FEMA Certification performance)

Brief descriptions of the alternatives are given below. Sections 5.2.3.1 through 5.2.3.4 describe the No Project Alternative as well as features of the action alternatives. Table 5.4, below, summarizes project features under each build alternative, and since the alternatives share numerous construction components with the proposed project, project features for the proposed project are

also described. No impacts to Agriculture or Forestry Resources were identified, therefore that category is not discussed further in this document.

Most project features are designed to increase the level of flood protection offered to the surrounding homes, businesses, and infrastructure. Non-structural features have been included in the interest of restoring and enhancing ecosystem functions. These features include installation of riparian terraces and revegetation of the floodplain with native riparian and wetland species.

Potential impacts occurring under each alternative are assessed in this chapter. To facilitate comparison of the alternatives, Table 5.5 provides a summary of the effects under each of the alternatives, the level of significance of impacts, and mitigation that would either reduce the significance of impacts to less than significant or further reduce impacts that already are less than significant. Table 5.6 shows the construction quantities associated with each alternative.

Table 5.4 Summary of Project Alternative Features				
Project Feature	**Proposed Project, Widened Trapezoidal Channel (FEMA Certification Performance)**	**Alternative 2A USACE-Selected Alternative**	**Alternative 2B Expanded Incised Trapezoidal Channel (FEMA Certification Performance), Accommodate Upstream Bypass Channel**	**Alternative 4 Walled Trapezoidal Channel (FEMA Certification Performance)**
I-680 Bridge to 900 ft downstream of I-680 bridge	Remove accumulated sediment at downstream face.			
Channel from 900 ft downstream of I-680 to Montague Expressway	Excavate 9- to 12-foot deep, 16-foot bottom width earthen channel with buried rock revetment and turf reinforcement mats at 2H:1V sideslope. 450-ft long buried concrete floodwall upstream of Montague Expressway.		Excavate 6- to 22-foot bottom width earthen channel with cellular bank stabilization at 2H:1V sideslope and access road along left bank slope; construct free-standing concrete floodwall to maximum height of 4 feet.	Excavate 10-foot earthen channel with 10 and 22-foot vegetated terraces and vertical concrete walls extending a maximum of 3 feet above existing ground.
Channel from Montague Expressway to UPRR Trestle	Excavate 10.5 foot deep, 12-foot bottom width earthen channel with buried rock revetment and turf reinforcement mats at 2H:1V sideslope		Excavate 14-foot bottom width earthen channel with cellular bank stabilization at 2H:1V sideslope; construct free-standing concrete floodwall to maximum height of 2 feet.	Excavate 10-foot earthen channel with 10 and 22-foot vegetated terraces and vertical concrete walls extending a maximum of 3 feet above existing ground.
UPRR Railroad Trestle Bridge	Remove existing timber trestle; construct double-barreled concrete box culvert with warped wingwall transition structure.			
Channel from UPRR Trestle to UPRR Culvert	Excavate 10.5 foot deep, 12-foot bottom width earthen channel with buried rock revetment and turf reinforcement mats at 2H:1V sideslope		Excavate 10 to 12-foot bottom width earthen channel with cellular bank stabilization at 2H:1V sideslope and access road along left bank slope	Excavate 10-foot earthen channel with 10- and 32-foot vegetated terraces and vertical concrete walls extending to existing ground
UPRR Railroad Culvert	Not Included		Remove existing triple box culvert; construct 60-foot span 12-foot rise bridge	
Channel from UPRR Culvert to Ames Ave.	Excavate 11-foot deep, 12-foot bottom width earthen channel with buried rock revetment and turf reinforcement mats at 2H:1V sideslope		Excavate 17-foot bottom width earthen channel with cellular bank stabilization at 2H:1V sideslope and access road along left bank slope	Excavate 10-foot earthen channel with 10- and 32-foot vegetated terraces and vertical concrete walls extending to existing ground
Ames Ave. Bridge	Excavate 12-foot bottom width channel beneath bridge; construct abutment and pier protection and wingwall transition structure		Excavate 17-foot bottom width channel beneath bridge; construct abutment and pier protection	
Channel from Ames Ave. to Yosemite Dr.	Excavate 9.5 feet deep, 12-foot bottom width earthen channel with buried rock revetment and turf reinforcement mats at 2H:1V sideslope		Excavate 24-foot bottom width earthen channel with cellular bank stabilization at 2H:1V sideslope and access road along left bank slope	Excavate 10-foot earthen channel with 10- and 32-foot vegetated terraces; construct concrete floodwall to extend maximum of 6

Table 5.4 Summary of Project Alternative Features				
Project Feature	**Proposed Project, Widened Trapezoidal Channel (FEMA Certification Performance)**	**Alternative 2A USACE-Selected Alternative**	**Alternative 2B Expanded Incised Trapezoidal Channel (FEMA Certification Performance), Accommodate Upstream Bypass Channel**	**Alternative 4 Walled Trapezoidal Channel (FEMA Certification Performance)**
				feet above existing ground
Yosemite Dr. Bridge	Excavate 20-foot bottom width channel beneath bridge; construct abutment and pier protection; no transition structure		Excavate 38-foot bottom width earthen channel beneath bridge; construct abutment and pier protection	Excavate channel and construct walls beneath bridge; construct abutment and pier protection
Channel from Yosemite Dr. to Los Coches St.	Excavate 9-14 foot deep, 20-40-foot bottom width earthen channel with buried rock revetment and turf reinforcement mats at 2H:1V sideslope; access road along left bank slope; construct 2,200 foot floodwall with maximum height of 2 feet. Remove existing timber UPRR trestle and install concrete culvert crossing Piedmont Creek for access road and UPRR spur track, and additional culvert at mouth of Los Coches Creek. Remove exercise equipment upstream of Los Coches Street.	Same as proposed project except Reaches 2/3 floodwall would be approximately 1,300 feet long and 1.5 ft high.	Excavate 38-foot bottom width earthen channel with cellular bank stabilization at 2H:1V sideslope and access road along left bank slope; construct free-standing concrete floodwall to maximum height of 5 feet	Excavate 10-foot earthen channel with 10- and 32-foot vegetated terraces; construct concrete floodwall to extend maximum of 6 feet above existing ground
Los Coches St. Bridge	Construct transition to existing structure		Remove existing bridge; construct 100-foot span bridge with raised deck and 4-foot high solid bridge face	
Channel Reach from Los Coches St. to Calaveras Blvd.	Excavate 12-14 foot deep, 40-foot bottom width earthen channel with buried rock revetment and turf reinforcement mats at 2H:1V sideslope; access road along left bank slope. Remove pocket park and exercise equipment.		Excavate 38-foot bottom width earthen channel with cellular bank stabilization at 2H:1V sideslope and access road along left bank slope; construct free-standing concrete floodwall to maximum height of 5 feet. Remove pocket park and exercise equipment.	Excavate 10-foot earthen channel with 10- and 32-foot vegetated terraces; construct concrete floodwall to extend maximum of 6 feet above existing ground. Remove pocket park and exercise equipment.
Calaveras Blvd. Bridge Transition at Upstream Face	Construct transition to existing structure		Remove existing box culvert; construct 100-foot span bridge with raised deck	
Channel Reach Downstream of Calaveras Boulevard	No change		Construct transition to downstream project	

Table 5.5 Summary of Significant Effects, Mitigation Measures, and Level of Significance by Alternative

ENVIRONMENTAL RESOURCE	**PROPOSED PROJECT** Widened Trapezoidal Channel (FEMA Certification Performance)	**NO PROJECT ALTERNATIVE**	**ALTERNATIVE 2A** USACE-Selected Alternative	**ALTERNATIVE 2B** Expanded Incised Trapezoidal Channel (FEMA Certification Performance), Accommodate Upstream Bypass Channel	**ALTERNATIVE 4** Walled Trapezoidal Channel (FEMA Certification Performance)
KEY: (+) Impacts greater than for Proposed Project, **(=)** Impacts equal to Proposed Project, **(-)** Impacts less than for Proposed Project, **(NI)** No Impact, **(LS)** Less than Significant Impact, **(LM)** Less than Significant Impact with Mitigation, **(S)** Significant Impact, **(SU)** Significant and Unavoidable Impact * Although impacts associated with these resource types were determined to be less than significant, a mitigation measure is proposed, or a measure proposed to address another significant impact would further reduce this already LTS impact.					
Aesthetics	No significant impacts	**(-)** No significant impacts	No significant impacts	No significant impacts	No significant impacts
BIO-B: Compensate for Trees Removed During Construction*	✓		✓	✓	✓
Significance Determination Before Mitigation/After Mitigation	LS	NI	LS	LS	LS
Air Quality	NOx emissions above BAAQMD thresholds (AIR-2 and AIR-3)	**(-)** No significant impacts	**(=)** NOx emissions above BAAQMD thresholds (AIR-2 and AIR-3)	**(+)** NOx emissions above BAAQMD thresholds (AIR-2 and AIR-3)	**(+)** NOx emissions above BAAQMD thresholds (AIR-2 and AIR-3)
AIR-A. Reduce Construction Period Dust Emissions	✓		✓	✓	✓
AIR-B. Reduce Construction Equipment Emissions	✓		✓	✓	✓
Significance Determination Before Mitigation / After Mitigation	S / SU	NI	S / SU	S / SU	S / SU
Agriculture and Forestry	None	None	None	None	None
Significance (No Mitigation)	NI	NI	NI	NI	NI
Biological Resources	Adverse impacts on riparian habitat and healthy trees/shrubs (BIO-2).Adverse impacts on bird migration (Impact BIO-4). Conflict with policies in Milpitas Tree Ordinance (BIO-5)	**(-)** No significant impacts	**(=)** Adverse impacts on riparian habitat and healthy trees/shrubs (BIO-2). Adverse impacts on bird migration (Impact BIO-4). Conflict with policies in Milpitas Tree Ordinance (BIO-5)	**(+)** Adverse impacts on riparian habitat and healthy trees/shrubs (BIO-2). Adverse impacts on bird migration (Impact BIO-4). Conflict with policies in Milpitas Tree Ordinance (BIO-5)	**(+)** Adverse impacts on riparian habitat and healthy trees/shrubs (BIO-2). Adverse impacts on bird migration (Impact BIO-4). Conflict with policies in Milpitas Tree Ordinance (BIO-5)

ENVIRONMENTAL RESOURCE	PROPOSED PROJECT Widened Trapezoidal Channel (FEMA Certification Performance)	NO PROJECT ALTERNATIVE	ALTERNATIVE 2A USACE-Selected Alternative	ALTERNATIVE 2B Expanded Incised Trapezoidal Channel (FEMA Certification Performance), Accommodate Upstream Bypass Channel	ALTERNATIVE 4 Walled Trapezoidal Channel (FEMA Certification Performance)
BIO-A. Perform Pre-Construction Nesting Bird Surveys	✓		✓	✓	✓
BIO-B. Compensate for Trees and Shrubs Removed During Construction	✓		✓	✓	✓
BIO-C. Use native grasses and forbs to hydroseed disturbed areas.	✓		✓	✓	✓
BIO-D. Provide Buffers Around Riparian Trees	✓		✓	✓	✓
Significance Determination Before Mitigation / After Mitigation	S / LM	NI	S / LM	S / LM	S / LM
Cultural Resources	Adverse impact on historical/archaeological site CA-SCL-593 (Impact CUL-1 and CUL-2) Potential adverse impacts on unknown cultural resources and human remains (CUL-4)	**(=)** No significant impacts	**(=)** Adverse impact on historical/archaeological site CA-SCL-593 (Impact CUL-1 and CUL-2). Potential adverse impacts on unknown cultural resources and human remains (CUL-2 and CUL-4)	**(+)** Adverse impact on historical/archaeological site CA-SCL-593 (Impact CUL-1and CUL - 2).Potential adverse impacts on unknown cultural resources and human remains (CUL-2 and CUL-4)	**(+)** Adverse impact on archeological site CA-SCL-593 (Impact CUL-1 and CUL-2). Potential adverse impacts on unknown cultural resources and human remains (CUL-2 and CUL-4)
CUL-A. Implement the CA-SCL-593 MOA and HPMP	✓	✓	✓	✓	✓
CUL-B. Archaeological Monitoring and Unanticipated Discovery Plan	✓		✓	✓	✓
Significance Determination Before Mitigation / After Mitigation	S / LM	S / LM	S / LM	S / LM	S / LM
Geology, Soils, and Mineral Resources	Potential to expose structures or engineered slopes to adverse effects from seismic ground shaking (GEO-1). Potential for soil erosion or loss of topsoil (GEO-2)	**(-)** No significant impacts	**(-)** Potential to expose structures or engineered slopes to adverse effects from seismic ground shaking (GEO-1). Potential for soil erosion or loss of topsoil (GEO-2)	**(+)** Potential to expose structures or engineered slopes to adverse effects from seismic ground shaking (GEO-1). Potential for soil erosion or loss of topsoil (GEO-2)	**(+)** Potential to expose structures or engineered slopes to adverse effects from seismic ground shaking (GEO-1). Potential for soil erosion or loss of topsoil (GEO-2)
GEO-A. Implement Geotechnical Recommendations	✓		✓	✓	✓

ENVIRONMENTAL RESOURCE	PROPOSED PROJECT Widened Trapezoidal Channel (FEMA Certification Performance)	NO PROJECT ALTERNATIVE	ALTERNATIVE 2A USACE-Selected Alternative	ALTERNATIVE 2B Expanded Incised Trapezoidal Channel (FEMA Certification Performance), Accommodate Upstream Bypass Channel	ALTERNATIVE 4 Walled Trapezoidal Channel (FEMA Certification Performance)
WAQ-C. Prepare and Implement a Rain Event Action Plan	✓		✓	✓	✓
Significance Determination Before Mitigation / After Mitigation	S / LM	LS	S / LM	S / LM	S / LM
Greenhouse Gases and Energy Use	Emissions of GHGs in excess of SMAQMD threshold (GHG-1)	**(-)** No significant impacts	**(=)** Emissions of GHGS in excess of SMAQMD threshold (GHG-1)	**(+)** Emissions of GHGs in excess of SMAQMD threshold (GHG-1)	**(+)** Emissions of GHGs in excess of SMAQMD threshold (GHG-1)
AIR-A. Reduce Construction Period Dust Emissions	✓		✓	✓	✓
AIR-B. Reduce Construction Equipment Emissions	✓		✓	✓	✓
Significance Determination Before Mitigation / After Mitigation	S / SU	NI	S / SU	S / SU	S / SU
Hazardous Materials	Potential for accidental spills or exposure to contaminated groundwater (HWM-1). Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment (HWM-2)	**(-)** No significant impacts	**(-)** Potential for accidental spills or exposure to contaminated groundwater (HWM-1). Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment (HWM-2)	**(+)** Potential for accidental spills or exposure to contaminated groundwater (HWM-1). Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment (HWM-2)	**(+)** Potential for accidental spills or exposure to contaminated groundwater (HWM-1). Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment (HWM-2)
HWM-A. Prepare and Implement Spill Prevention and Response Plan (SPRP)	✓		✓	✓	✓
HWM-B. Prepare and Implement Emergency Evacuation Plan	✓		✓	✓	✓
HWM-C. Treat VOC-Contaminated Groundwater Encountered at JCI Off-Site Area.	✓		✓	✓	✓

ENVIRONMENTAL RESOURCE	PROPOSED PROJECT Widened Trapezoidal Channel (FEMA Certification Performance)	NO PROJECT ALTERNATIVE	ALTERNATIVE 2A USACE Selected-Alternative	ALTERNATIVE 2B Expanded Incised Trapezoidal Channel (FEMA Certification Performance), Accommodate Upstream Bypass Channel	ALTERNATIVE 4 Walled Trapezoidal Channel (FEMA Certification Performance)
TRA-A: Prepare and Implement a Transportation Management Plan*	✓		✓	✓	✓
WAQ-C. Prepare and Implement a Rain Event Action Plan*	✓		✓	✓	✓
Significance Determination Before Mitigation / After Mitigation	S / LM	NI	S / LM	S / LM	S / LM
Land Use and Planning	Conflict with Milpitas Trails Master Plan (LND-2)	(-= No significant impacts	**(=)** Conflict with Milpitas Trails Master Plan (LND-2)	**(+)** Conflict with Milpitas Trails Master Plan (LND-2)	**(+)** Conflict with Milpitas Trails Master Plan (LND-2)
LND-A: Allow Public Access to Creek Right of Way	✓		✓	✓	
Significance Determination Before Mitigation / After Mitigation	S / LM	NI	S / LM	S / LM	S / LM
Noise	Short-term exceedance of local noise standards (NOI-1) and substantial temporary increase in noise levels (NOI-4)	**(-)** No significant impacts	**(=)** Short-term exceedance of local noise standards (NOI-1) and substantial temporary increase in noise levels (NOI-4)	**(+)** Short-term exceedance of local noise standards (NOI-1) and substantial temporary increase in noise levels (NOI-4)	**(+)** Short-term exceedance of local noise standards (NOI-1) and substantial temporary increase in noise levels (NOI-4)
NOI-A. Alert Neighbors	✓		✓	✓	✓
NOI-B. Use Noise Suppression Techniques	✓		✓	✓	✓
NOI-C. Limit Construction Hours	✓		✓	✓	✓
Significance Determination Before Mitigation / After Mitigation	S / SU	LS	S / SU	S / SU	S / SU
Population and Housing	No significant impacts	**(=)** No significant impacts	**(=)** No significant impacts	**(=)** No significant impacts	**(=)** No significant impacts
Significance (No Mitigation)	LS	NI	LS	LS	LS

ENVIRONMENTAL RESOURCE	PROPOSED PROJECT Widened Trapezoidal Channel (FEMA Certification Performance)	NO PROJECT ALTERNATIVE	ALTERNATIVE 2A USACE Selected-Alternative	ALTERNATIVE 2B Expanded Incised Trapezoidal Channel (FEMA Certification Performance), Accommodate Upstream Bypass Channel	ALTERNATIVE 4 Walled Trapezoidal Channel (FEMA Certification Performance)
Public Services	No significant impacts	**(=)** No significant impacts	**(+)** No significant impacts	**(+)** Adversely affect response times of emergency vehicles (PBS-1)	**(+)** Adversely affect response times of emergency vehicles (PBS-1)
TRA-A: Prepare and Implement a Transportation Management Plan*	✓		✓	✓	✓
Significance Determination Before Mitigation / After Mitigation	LS	LS	LS	S / LM	S / LM
Recreation	No significant impacts	**(-)** No significant impacts	**(=)** No significant impacts	**(=)** No significant impacts	**(=)** No significant impacts
REC-A. Detour Signage for Pedestrians and Cyclists*	✓		✓	✓	✓
LND-A: Allow Public Access to Creek right of way*	✓		✓	✓	
Significance Determination Before Mitigation / After Mitigation	LS	LS	LS	LS	LS
Transportation and Traffic	Conflict with a plan ordinance or policy establishing measures of effectiveness for performance of the circulation system (TRA-1). Hazards design features or construction vehicles (TRA-4). Inadequate emergency access (TRA-5). Conflict with plan or policy regarding public transit, bicycle, or pedestrian facilities (TRA-6).	**(-)** No significant impacts	**(=)** Conflict with a plan ordinance or policy establishing measures of effectiveness for performance of the circulation system (TRA-1). Hazards design features or construction vehicles (TRA-4). Inadequate emergency access (TRA-5). Conflict with plan or policy regarding public transit, bicycle, or pedestrian facilities (TRA-6).	**(+)** Conflict with a plan ordinance or policy establishing measures of effectiveness for performance of the circulation system (TRA-1). Hazards design features or construction vehicles (TRA-4). Inadequate emergency access (TRA-5). Conflict with plan or policy regarding public transit, bicycle, or pedestrian facilities (TRA-6).	**(+)** Conflict with a plan ordinance or policy establishing measures of effectiveness for performance of the circulation system (TRA-1). Hazards design features or construction vehicles (TRA-4). Inadequate emergency access (TRA-5). Conflict with plan or policy regarding public transit, bicycle, or pedestrian facilities (TRA-6).
TRA-A. Prepare and Implement a Traffic Management Plan	✓		✓	✓	✓

ENVIRONMENTAL RESOURCE	PROPOSED PROJECT Widened Trapezoidal Channel (FEMA Certification Performance)	NO PROJECT ALTERNATIVE	ALTERNATIVE 2A USACE Selected-Alternative	ALTERNATIVE 2B Expanded Incised Trapezoidal Channel (FEMA Certification Performance), Accommodate Upstream Bypass Channel	ALTERNATIVE 4 Walled Trapezoidal Channel (FEMA Certification Performance)
HWM-B. Prepare and Implement Emergency Evacuation Plan*	✓		✓	✓	✓
Significance Determination Before Mitigation / After Mitigation	S / LM	LS	S / LM	S / LM	S / LM
Utility and Service Systems	Contaminated groundwater may exceed RWQCB water quality standards (UTL-1)	**(-)** No significant impacts	**(=)** Contaminated groundwater may exceed RWQCB water quality standards (UTL-1)	**(+)** Contaminated groundwater may exceed RWQCB water quality standards (UTL-1)	**(+)** Contaminated groundwater may exceed RWQCB water quality standards (UTL-1)
HWM-C. Treat VOC–contaminated Groundwater Encountered at JCI Off-site Area*	✓		✓	✓	✓
Significance Determination Before Mitigation / After Mitigation	S / LM	LS	S / LM	S / LM	S / LM
Hydrology and Water Quality	Significant water quality impacts from spills of hazardous materials, contaminated groundwater, and creek dewatering (WAQ-1, WAQ-5, and WAQ-6)	**(-)** No significant impacts	**(+)** Significant water quality impacts from spills of hazardous materials, contaminated groundwater, and creek dewatering (WAQ-1, WAQ-5, and WAQ-6)	**(+)** Significant water quality impacts from spills of hazardous materials, contaminated groundwater, and creek dewatering (WAQ-1, WAQ-5, and WAQ-6)	**(+)** Significant water quality impacts from spills of hazardous materials, contaminated groundwater, and creek dewatering (WAQ-1, WAQ-5, and WAQ-6)
WAQ-A. Implement Measures for Reducing Erosion and Protecting Water Quality	✓		✓	✓	✓
WAQ-B. Prepare and Implement a Dewatering Plan	✓		✓	✓	✓
WAQ-C. Prepare and Implement a Rain Event Action Plan	✓		✓	✓	✓
HWM-A. Prepare and Implement a Spill Prevention and Response Plan*	✓		✓	✓	✓
HWM-C. Treat VOC-contaminated groundwater encountered at the JCI off-site area*	✓		✓	✓	✓

ENVIRONMENTAL RESOURCE	**PROPOSED PROJECT** Widened Trapezoidal Channel (FEMA Certification Performance)	**NO PROJECT ALTERNATIVE**	**ALTERNATIVE 2A** USACE Selected-Alternative	**ALTERNATIVE 2B** Expanded Incised Trapezoidal Channel (FEMA Certification Performance), Accommodate Upstream Bypass Channel	**ALTERNATIVE 4** Walled Trapezoidal Channel (FEMA Certification Performance)
Significance Determination Before Mitigation/After Mitigation	S / LM	LS	S / LM	S / LM	S / LM

Table 5.6 Construction Features for Build Alternatives				
Construction Features	**Proposed Project**	**2A**	**2B**	**4**
Project Construction Duration ~~(Months)~~	September 2016 to December 2017~~One year, beginning in fall of 2017, or two years during dry seasons (May-October), starting in 2016~~			
Project Length (Linear Feet)	11,820		11,920	
Total Project Area (Acres)	37.21	35.71	38.71	36.84
Floodwall Length (All Reaches) (Linear Feet)	2,200	1,300	9,800	23,200
Total Excavation (Cubic yards)	90,000	90,000	123,464	175,500
Quantity Excavated (Reaches 1-3)	74,500	74,500	98,664	145,275
Quantity Excavated (Reaches 4)	15,500	15,500	24,800	30,225
Estimated Daily Truck Trips[1]	61	61	86	114
Remove excavated materials (Reaches 1-3)	38	38	50	72
Remove excavated materials (Reach 4)	8	8	14	16
Bring in materials and equipment (Reaches 1-3)	12	12	16	18
Bring in materials and equipment (Reach 4)	3	3	6	8
[1]Assumes 16 cy per truck trip, with each round trip reported as 2 truck trips.				

5.2.2.1. *No Project Alternative*

The No Project Alternative is analyzed within this EIR under CEQA Guidelines Section 15126.6(e), which states that the "no project" analysis shall discuss "…what is reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services."

This alternative assumes that the proposed project would not be constructed. No improvements to the existing flood control channels would occur. No improvements to the existing maintenance roads would occur, and ongoing problems associated with difficult access to the channel would continue. On-going maintenance and operation of existing facilities would continue as part of the District SMP2 and would include sediment and vegetation management.

Under the No Project Alternative, the current level of flood risk would remain and periodic floods would likely recur. The channel of Upper Berryessa Creek would continue to be unable to contain the 1% recurrence flow. Specifically, the following is likely to occur:

- Continuance and likely increase of the existing flood threat to the cities of Milpitas and San Jose,

- Result in increased future O&M costs compared to with-project conditions due to poor channel access, especially with respect to sediment removal and prevention/repair of bank erosion, flood response, and emergency costs.

The extent of flooding would be dependent on rainfall, but flood waters would likely result in the closure of streets and highways, and result in damages to homes, schools, infrastructure, and businesses that are located within the flood zone. As with past flooding, emergency repairs would be required and would include removal of large amounts of sediment that would be deposited by flood flows, repair of channel banks, access roads, surface roadways, and other facilities that could become inundated during flooding.

AESTHETICS. Under the No Project Alternative, visual conditions on a large-scale would remain the same, as they would result from land use and development regulations under the Milpitas and San Jose general plans. Trees in the channel and along overbank areas would not be removed. Small-scale or in-stream views would continue to be determined by local use. The floodwalls included as part of the project would not be built and would not be available for graffiti, although many existing structures in the project area would continue to provide areas for graffiti. In comparison to conditions anticipated under the proposed project, impacts to scenic resources from the No Project Alternative would be less extensive.

AIR QUALITY. Under the No Project Alternative, no construction activities would occur. Under most conditions, existing sources of air pollution would be expected to remain the same. Air quality would continue to be influenced by local and regional emissions from vehicles, local commercial and industrial land uses, and climate and geographic conditions.

Under the No Project Alternative, the current level of risk would remain for flooding in Milpitas and San Jose. The magnitude of the impact of flooding resulting from a flood event would depend on the severity of the storm. Cleanup actions in the event of a flood would require use of heavy construction equipment that would result in short-term, temporary emissions. The extent of these emissions are dependent on the extent of flooding that would occur in the Upper Berryessa Creek area, but based on past flooding, flooded areas would include the project area and significant areas downstream of the proposed project area, necessitating a very extensive flood response and cleanup operation. It is also expected that extensive repairs to the Upper Berryessa Creek channel would be required after each large flood, resulting in emissions from operation of vehicles and equipment. Flood response and cleanup operations after individual floods would likely result in periodic air quality impacts of much shorter duration than would occur under the proposed project, so air quality impacts under the No Project Alternative would be less extensive than under the proposed project.

BIOLOGICAL RESOURCES. Under the No Project Alternative, construction impacts of the proposed project would be avoided. The current level of risk would remain for flooding in Milpitas and San Jose. The magnitude of the impact of flooding resulting from a flood event would depend on the severity of the storm event. During operations, increased flooding could affect downstream biological resources but the extent of such impacts is speculative. Any impacts from the No Project Alternative would be restricted to already generally poor quality biological features and would be less than significant. Overall, biological impacts of the No Project Alternative would be less than the proposed project's impacts.

CULTURAL RESOURCES. Under the No Project Alternative, no construction activities would occur and the benefits of flood protection would not be realized. Accordingly, no ground disturbance as a result of construction would occur and there would be no risk of impacts on cultural resources from construction. Impacts would be less than for the proposed project and less than significant.

GEOLOGY, SOILS, AND MINERAL RESOURCES. Under the No Project Alternative, current levels of erosion would continue. Erosion and loss of topsoil would be more extensive under this alternative than under the proposed project, since the channel walls in many locations are much steeper than they would be under proposed conditions, and water velocities under flood flows would be likely higher. Furthermore, loss of topsoil during floods would likely occur outside of the stream channel, meaning that the effects would be more widespread than under proposed conditions, under which flood flows are much more likely to be contained within the channel. Maintenance activities, including sediment and vegetation removal would continue but would not result in impacts on geology and soils. Also, although the proposed project may result in loss of topsoil during construction, this impact would be largely confined to the construction period, whereas erosion and loss of topsoil due to flooding would be expected to recur every 5-10 years. Impacts from operations and maintenance would be greater than under the proposed project as there would be more frequent need for sediment removal, resulting in soil disturbance, but would be less than significant.

GREENHOUSE GASES. Equipment used for flood response and cleanup would emit GHGs but in amounts that are not likely to result in significant generation of GHGs. Over time, the use of heavy machinery for multiple cleanup efforts and flood response is likely to generate considerable GHGs, but the effects would not be significant and less than GHG emissions generated by the proposed project.

HAZARDOUS MATERIALS. Under the No Project Alternative, no construction activities would occur; therefore, no accidental spills of hazardous materials would occur from construction. Impacts would be less than for the proposed project. Potential exposure to existing sources of hazardous materials would be expected to remain the same. Downstream of I-680 are two sites of concern near the project area: Jones Chemical Company and Great Western Chemical Company. These sites contain plumes of contaminated groundwater. If the ongoing remediation efforts do not successfully contain or treat the groundwater plumes, then groundwater contamination could migrate into the project area in the future.

LAND USE AND PLANNING. There would be no changes in land uses during operations as a result of the No Project Alternative. Operation and maintenance of the creek and overbank areas would not change and the impacts of operations and maintenance on adjacent land uses would be the same as existing conditions, though frequencies and intensities may change over time. This alternative would avoid removal of the existing section of trail upstream of Los Coches Street, but would also not construct crossings at Los Coches and Piedmont creeks that could accommodate a new longer trail as envisioned in the Milpitas Trails Master Plan. The proposed project would remove the existing section of trail but would build the two creek crossings that would benefit a future trail if built. Overall, impacts would be the same as for the proposed project.

NOISE. Under the No Project Alternative, no construction activities would occur; therefore, no potential exists for the project to generate short-term or long-term construction noise. The levels of noise and vibration would continue to be influenced by roadway traffic, human activities, and other sources such as wind. Noise-sensitive receptors would be expected to experience the same noise conditions as under existing conditions. Impacts would be less than for the proposed project.

POPULATION AND HOUSING. Under the No Project Alternative, there would be no construction and therefore no change in population and housing conditions. Current levels of flood risk would persist, exposing area residents to occasional risk of flooding. These impacts would likely occur on a very occasional basis and would be temporary, therefore they are expected to be less than significant. Impacts would be similar to those occurring under the proposed project.

PUBLIC SERVICES. Under the No Project Alternative, the need for public services related to the Upper Berryessa Creek channel is generally minimal. However, periodic floods with a recurrence interval of 5-10 years would result in increased demand for public services including emergency responders, crews and equipment for cleanup and flood response, and to assist with impacts to traffic. However, emergency response demands during proposed project construction would be avoided under the No Project Alternative. Overall, public services impacts would be similar to the proposed project.

There would be no changes to operation and maintenance of the Upper Berryessa Creek channel. Emergency response vehicles would have similar access to the channel and the surrounding area. Channel conditions would continue to be monitored and if risks to safety were found, such as eroding banks or potential infrastructure failures, they would be repaired or resolved.

RECREATION. Under the No Project Alternative, no construction activities would take place and no changes to unofficial pedestrian or cycling use of the overbank access roads would result. Occasional loss of recreational opportunities may occur during floods if access to parks was restricted, but there are few recreational facilities in the area. Although the potential for this type of impact to occur is greater under the No Project Alternative than under proposed project, overall recreation impacts of the No Project Alternative would be less than the proposed project's impacts.

Under the No Project Alternative, the overbank areas of the Upper Berryessa Creek channel may eventually be developed into an official part of the City of Milpitas Bikeways trail system. Until then, incidental use of the channel by pedestrians or bicyclists would continue to occur.

TRANSPORTATION AND TRAFFIC. Under the No Project Alternative, no construction activities would occur, so there would be no construction-related impacts to traffic or transportation. The existing roadway network, types of traffic, and circulation patterns would be expected to experience increases in traffic of 1 percent each year based on historical trends and a qualitative assessment of the on-going economic recovery in the region (Kittelson 2012). Table 5.7 compares existing traffic to the projected 2017 traffic at the key intersections in the study area. Traffic impacts would be less than for the proposed project.

Table 5.7 Existing and 2017 Baseline Levels of Service at Key Intersections

Intersection	Existing				2017 Base			
	AM Peak		PM Peak		AM Peak		PM Peak	
	LOS	Delay (in seconds)	LOS	Delay (in seconds)	LOS	Delay (in seconds)	LOS	Delay (in seconds)
Jacklin Rd. & I-680 Northbound Ramps	N/A		B	16.2	N/A		B	16.3
Jacklin Rd. & I-680 Southbound Ramps	N/A		B+	11.5	N/A		B+	11.8
Calaveras Blvd. & I-880	B	12.5	B	16.8	B	13.3	B-	18.1

Northbound Ramps								
Calaveras Blvd. & Abel Street	D+	38.1	D	44.1	D	40.0	D	46.5
Calaveras Blvd. & Milpitas Blvd.	D	40.2	D	44.1	D	42.5	D	48.8
Great Mall Pkwy. & I-880 Northbound Ramps	C	27.1	C+	20.3	C	29.9	C+	21.5
Great Mall Pkwy. & Abel St.	D	40.7	D+	36.7	D	40.7	D+	35.9
Montague Exp. & Capitol Blvd.	D	49.7	E+	56.6	E+	57.6	E	61.0
Montague Exp. & Milpitas Blvd	D	39.6	D+	35.1	D	50.7	D	43.2
Montague Exp. & I-680 Northbound Ramps	D	40.5	D	46.2	D	44.7	D-	51.1
Montague Exp. & Main St./Old Oakland	E	68.1	D-	54.8	E-	75.7	E	64.8
Montague Exp. & Trade Zone Blvd.	F	94.8	F	81.4	F	96.3	F	91.9

UTILITIES AND SERVICE SYSTEMS. There would be no construction associated with this alternative and, therefore, no construction impacts would result. Existing utilities would remain in place. Maintenance actions would continue but would be unlikely to result in adverse impacts to utilities or service systems. Overall impacts to utilities and service systems would be less than under the proposed project.

Under the No Project Alternative, damage to utilities may occur. Extensive channel incision or erosion of banks may expose buried power, gas, sewer, or water lines. Flooding may also cause sewer failure and overwhelm stormwater facilities. However, overall impacts to utilities and service systems would be less than under the proposed project.

HYDROLOGY AND WATER QUALITY. Under the No Project Alternative, construction-related water quality impacts of the proposed project would be avoided. The current level of risk would remain for flooding in Milpitas and San Jose. The magnitude of the impact of flooding resulting from a flood event would depend on the severity of the storm. The District would continue to manage the project area under SMP2, leading to less soil disturbance and less turbidity than under the proposed project.

Erosion of channel banks during low and high flow events and flooding would continue and increase over time as more eroded surface area is exposed, causing increasing sediment load, suspended solids, and nutrient loading downstream. Although this would not directly result in a violation of water quality standards, it would contribute to degradation of water quality and habitat value downstream. Overall, hydrology and water quality effects of the No Project Alternative would be greater than under the proposed project due to increased operational impacts.

5.2.2.2. *Alternative 2A: Widened Incised Trapezoidal Channel (FEMA-Certification Performance)*

Alternative 2A was authorized as the USACE's selected alternative. This alternative would increase flood conveyance relative to current conditions and would meet the USACE's goal of containing the 100-year

flood. However, it would not meet FEMA certification requirements, and therefore would not fully meet the District's objectives for this project.

Under Alternative 2A, a 1,300-foot concrete floodwall, 1.5 feet in height, would be installed on the west overbank area from a point upstream from Los Coches Street and ending at the confluence of Piedmont Creek and Upper Berryessa Creek. This floodwall would be cast in place, and would be constructed between the top of bank and the west access road. The total length of this floodwall would be approximately 900 feet shorter than the proposed project floodwall (2,200 feet), which has a maximum 2 foot height. In all other respects, including modifications to bridges and trestles, Alternative 2A is identical to the proposed project. Representative cross sections of Alternative 2A are shown in Figure 5.1.

AESTHETICS. Construction of Alternative 2A would result in impacts similar to, but less than the proposed project. The primary difference would be that Alternative 2A would have a floodwall in Reaches 1-3 that would be shorter in length and height. Despite the difference in floodwall length, the presence of the floodwall would change the overall visual character of Reaches 2/3, in both Alternative 2A and the proposed project, meaning that little difference between the two alternatives would be noted by viewer groups. Overall, due to the already industrialized use of the area and associated visual conditions, the introduction of the floodwall would not substantially change the character of the channel. Visual impacts would be less than significant under both alternatives, and in comparison to the proposed project, this alternative would have only an incrementally smaller impact on aesthetics.

AIR QUALITY. Emissions under this alternative would exceed local significance thresholds for NOx, resulting in a significant and unavoidable impact. The air quality emissions under this alternative are slightly less than for the proposed project, shown in Tables 3.6 and 3.7. Although construction under this alternative would be slightly reduced relative to the proposed project, it would still result in a significant and unavoidable impact to air quality.

Operation and maintenance of this alternative would be similar to maintenance practices for the proposed project, but maintenance needs would be slightly reduced due to the shorter floodwall. Removal of sediment and other maintenance requirements would still occur at the same levels under this alternative in comparison to the proposed project. As a result, there would be no additional long-term increase in regional emissions of criteria pollutants associated with maintenance activities and vehicle trips. This alternative would conform to applicable Federal and State standards, and local thresholds on a long term basis.

BIOLOGICAL RESOURCES. Alternative 2A would have comparable impacts to biological resources in comparison to the proposed project. A shorter floodwall would place less restriction on wildlife access to the stream, although there is not likely to be significant presence of wildlife in the project area. This slight reduction in impacts would not significantly change the level of impact from those described in the proposed project. Biological impacts would be significant, but less than significant after mitigation.

CULTURAL RESOURCES. Impacts to cultural resources are the same under this alternative as for the proposed project. As with the proposed project impacts, significant impacts could occur to known human remains under this alternative, but mitigation measures described in Section 3.6.6 would reduce these effects to less than significant.

GEOLOGY, SOILS AND MINERALS. Because Alternative 2A would have the same construction footprint but slightly less excavation quantities, it would have slightly less impacts related to loss of topsoil, but the same ground shaking impacts as the proposed project. These impacts would be significant, but less than significant after mitigation.

GREENHOUSE GASES. GHG emissions from construction and operations under this alternative would be slightly reduced relative to the proposed project due to slightly less construction for the shorter floodwall, and reduced operational activities overall. During construction, Alternative 2A would generate GHGs at levels above the SMAQMD significance threshold, which would be a significant impact. Implementation of Mitigation Measures AIR-A and AIR-B would help to offset these emissions, but emissions would still be above SMAQMD significance thresholds, therefore this impact is unavoidable. Emissions during operations would be well below threshold value, and would be less than significant.

Alternative 2A would not conflict with any plan, policy, or regulation of an agency adopted to reduce the emissions of GHGs, and the mitigation measures listed in Section 3.3.6 would be implemented to contribute to a lower carbon footprint. These impacts would be less than significant.

HAZARDOUS MATERIALS. Potential effects related to hazardous materials under Alternative 2A are the same as under the proposed project except that the concrete floodwall constructed on the west bank would be somewhat shorter. This reduction would require slightly less excavation and less construction time, which could slightly reduce the chances of spills of hazardous materials routinely used in construction. Potential impacts from worker exposure to VOCs from the Great Western or Jones Chemical plumes would be the same, as any differences between the alternatives are restricted to the overbank area on the west bank, well above the level of the plume. The associated risks of exposure of workers and the public to hazardous materials would be slightly less than under the proposed project for construction and operations (significant, but less than significant with mitigation). Potential impacts to emergency access or evacuation plans would be less than significant with mitigation, the same as for the proposed project.

LAND USE AND PLANNING. Impacts to land use from construction and operations under Alternative 2A would be the same as under the proposed project. There would be no physical division of communities. Alternative 2A would include the construction of fences and gates that would prevent public access to the creek ROW. This alternative would also construct creek access roads and culverts crossing Los Coches and Piedmont Creeks that could accommodate a future recreational and transportation trail as described in the Milpitas Trails Master Plan. Similar to the proposed project, future development of that trail in Reaches 1 through 3 would require the City and District to execute a JUA to allow public access to a trail on the creek ROW. This alternative would result in a conflict with the Milpitas Trails Master Plan (as would the proposed project) which would be a significant impact. Implementation of Mitigation Measure LAN-1 would reduce this impact to less than significant.

Minor and temporary changes in land uses would occur at the staging areas, but these areas would be restored to their original condition and uses after completion of construction, so this impact would be less than significant. Overall impacts from this alternative would be the same as under the proposed project, and would be less than significant.

NOISE. Temporary increases in noise levels would result from excavation of the channel, construction of the floodwall, and construction of the replacement culvert at the UPRR Trestle. The duration of noise impacts from construction would be slightly reduced relative to the proposed project, as construction

needed for the floodwall is less than what would be needed for construction of the floodwall under the proposed project. Ongoing maintenance of the stream channel may result in minor noise effects associated with maintaining floodwalls or culverts, or repairing access roads, but effects would be the same as under the proposed project. These actions would be performed by small crews using light to medium duty equipment, and would be temporary, therefore impacts would be less than significant. Noise impacts from Alternative 2A would be slightly less than under the proposed project. Most noise impacts would be significant, but less than significant with mitigation. However, as with the proposed project, noise impacts associated with replacement of the UPRR trestle with a concrete box culvert would occur outside of Milpitas' allowable construction times of 7:00 am to 7:00 pm over the course of a 72-hour period, and would be significant and unavoidable. In addition, the temporary increase in ambient noise during construction of this alternative would also likely be significant, as is the case for the proposed project.

POPULATION AND HOUSING. Impacts from Alternative 2A to population and housing would be identical to those of the proposed project, and would be less than significant.

PUBLIC SERVICES. Impacts from Alternative 2A to public services would be less than significant with mitigation and the same as for the proposed project.

RECREATION. Impacts from Alternative 2A to recreation would be identical to those of the proposed project. The pocket park would be removed, resulting in the loss of this recreational resources, but this would still be a less than significant impact to recreation overall.

TRAFFIC AND TRANSPORTATION. The types of impacts from implementing Alternative 2A would be slightly less than those from the proposed project. Potential impacts on traffic flow would be slightly reduced since the shorter floodwall would require less materials, resulting in fewer haul trucks entering and exiting the access roads between Calaveras Boulevard and Ames Avenue. The main sources of potential impacts would be associated with temporary lane closures on Los Coches Street, Yosemite Avenue, and Ames Avenue, and with temporary traffic slowdowns when haul trucks enter or exit the access roads and staging areas. Similarly to the proposed project, lane closures would not require diversion to other streets and with the presence of flaggers, orderly traffic flow will be maintained. Other types of impacts from construction and operations would be similar to the proposed project. Traffic impacts would be significant, but less than significant with implementation of mitigation measures described in Section 3.15.6.

UTILITIES AND SERVICE SYSTEMS. This alternative would have the same potential to encounter VOC-contaminated groundwater at the JCI off-site area as the proposed project. Impacts associated with contaminated groundwater exceeding RWQCB water quality standards would be the same under this alternative as under the proposed project. This impact would be significant, but less than significant after mitigation consisting of treating the contaminated groundwater before discharging it to the creek.

HYDROLOGY AND WATER QUALITY. In comparison to the proposed project, Alternative 2A would slightly reduce the risk of a spill or discharge of uncured concrete or other hazardous materials into the water as a result of requiring a shorter floodwall in Reaches 2/3, and may result in slightly less opportunity for a violation of water quality standards. However, there would still be the potential for impacts and the alternative would require the same mitigation measures as described in Section 3.17.6, resulting in a less than significant impact with mitigation that would be similar as for the proposed project. Impacts to groundwater quality, changes to drainage patterns, or generation of polluted runoff

would be the same as for the proposed project, and all impacts would be less than significant with mitigation.

5.2.2.3. *Alternative 2B: Expanded Incised Trapezoidal Channel (NFIP-Certification Performance)*

Alternative 2B proposes an earthen trapezoidal channel section with varying bottom widths. Most of the construction components are similar to those described for the preferred alternative, with the primary differences being the length of floodwalls, amount of material excavation, and construction of new bridges at Calaveras Boulevard and Los Coches Street. This alternative is designed assuming a bypass structure is in place through a greenbelt reach along Berryessa Creek upstream of I-680, with the intent to reduce flooding in the upper watershed. The structure would route high flows around the greenbelt reach to reduce flooding in the upper watershed. The bypass structure would be developed and implemented by the District as a locally funded project, and is not evaluated in this document.

Typical sections showing the overall configuration of Alternative 2B are shown in Figure 5.2. The primary features of Alternative 2B are as follows;

- Channel excavation and earthen levee construction to the water surface level of the 95 percent certainty, 1% exceedance probability event discharge from I-680 to Calaveras Boulevard (proposed channel dimensions for various reaches are shown in Figure 5-2),
- 2H:1V sideslopes with turf reinforcement mats and buried rock revetment for scour protection,
- Free-standing concrete floodwalls in the immediate vicinity of Montague Expressway and between Yosemite Drive and Calaveras Boulevard on both banks resulting in a total installation length of 9,800 feet,
- Access road intermittently along one or both banks, within the channel (between the 0.1 and 0.04 exceedance probability events),
- Replacement of UPRR trestle with a 2-barrel box culvert,
- Replacement of UPRR culvert with a 60-foot span,
- Shoring of bridge abutments at Ames Avenue and Yosemite Drive to accommodate widened channel,
- Replacement of Los Coches Street Bridge with 100-foot span,
- Replacement of Calaveras Boulevard Bridge with 100-foot span, and
- Utility relocations, as needed.

Replacement of the UPRR trestle would be the same under this alternative as for the proposed project. However, under this alternative the existing UPRR culvert upstream of Ames Avenue would also be replaced with a new bridge. Replacement of the UPRR culvert would occur on an expedited schedule to minimize the amount of time the line is out of service (similar as for the UPRR trestle replacement under the proposed project) and would likely require after hours construction work.

Calaveras Boulevard Bridge is an eight-lane divided roadway. The crossing comprises four 8-foot-high-by-11-foot wide culvert barrels. In order to provide the necessary conveyance capacity for Alternative 2B, the culvert barrels would need to be replaced by a 100-foot open span bridge. The sideslopes would be 2H:1V to match the excavated channel footprint for Alternative 2B, and vertical abutments would be needed for Alternative 4.

The Lower Berryessa Creek Project, described in the cumulative impacts section, is assumed to be constructed prior to the operation of any of the project alternatives under consideration. The Lower Berryessa Creek Project extends to the existing Calaveras Boulevard Bridge but does not include modifications to the structure itself; as such, the project improvements proposed for Alternatives 2B include a transition to match the Lower Berryessa Creek Project approximately 50 feet downstream of Calaveras Boulevard Bridge.

Replacing the Calaveras Boulevard Bridge would require closure of half of the travel lanes for a period of 120 days. Partial traffic flow would be maintained at all times by restriping the open portion of the roadway to leave two lanes of traffic in each direction.

Los Coches Street would be completely closed along the construction area for 60 days to allow installation of a 100-foot bridge span. Full closures of streets would temporarily require vehicles, bicycles and pedestrians to use alternative traffic routes and parking lanes during the construction period.

One traffic lane and one parking lane would be closed on Yosemite Drive for up to 10 days. Traffic would continue to use two lanes in one direction but only one lane in the other direction. This would add delays to traffic on Yosemite Drive but would not require diversion to alternative routes.

One traffic lane and one parking lane would be closed on Ames Road for up to 10 days. The traffic flow on Ames Avenue could be maintained on the single available lane using construction flagging during the period of lane closure.

Minor parking lane closures would occur surrounding ingress and egress points for construction vehicles.

AESTHETICS. Under Alternative 2B the types of construction period effects on aesthetics would be similar to but greater than the proposed project. Excavation would increase in all reaches, increasing to 98,664 cy in Reaches 1-3 and 24,800 cy in Reach 4, requiring additional truck trips in comparison to the proposed project. The additional truck trips would temporarily reduce the visual quality of the area, but would not substantially increase the level of impact in comparison to the proposed project. The truck traffic would be temporary and would occur in an already industrialized area, where visual quality is already compromised.

The total length and location of floodwalls would increase from approximately 2,200 linear feet under the proposed project, to 9,800 linear feet in this alternative (4,900 feet on both sides of the creek), with floodwalls located near Montague Expressway and extending between Yosemite Drive and Calaveras Boulevard, a much longer distance than included for the proposed project. This would result in increased impacts to visual condition in comparison to the proposed project. As with the proposed project, the introduction of floodwalls into the already industrialized and artificial environment of Upper Berryessa Creek channel would not substantially change the character of aesthetics. However, because the floodwalls would be much longer than those that would be installed under the proposed project, there would be much more room for graffiti. The additional maintenance that would be needed to remove graffiti would increase the use of staff, equipment, and solvents relative to the proposed project. This would be a less than significant impact to visual resources since the District would control graffiti regularly, but the level of effect associated with use of solvents and equipment would be increased compared to the proposed project.

Under this alternative, several bridges would be replaced. The UPRR culvert would be replaced with a 60-foot bridge span, and both Los Coches Bridge and Calaveras Bridge culverts would be replaced with a 100-foot bridge span. Transition structures would tie bridges into the newly graded trapezoidal channels, resulting in an overall improvement in visual quality to the area from existing conditions. However, in comparison to the proposed project, changes to aesthetics would be minimal, since the proposed project also includes new transition structures. Alternative 2B would have less than significant impacts and be comparable in aesthetic impacts to the proposed project.

AIR QUALITY. Table 5.8 shows air emissions from construction activities in Reaches 1-3 and Reach 4 based on results of the modeling for Alternative 2B. During construction this alternative would not produce emissions exceeding BAAQMD significance thresholds for criteria pollutants with the exception of NOx. The estimated worst-case annual NOx emissions generated from implementation of Alternative 2B would not exceed Federal thresholds, but would exceed BAAQMD thresholds and therefore, this impact would be significant and unavoidable. NO_x emissions would be slightly greater than under the proposed project.

Table 5.8 Modeled Air Quality Emissions (Alternative 2B)

Criteria Pollutant	ROG	CO	NO_x	PM_{10}	$PM_{2.5}$	CO_2
Reaches 1-3						
Estimated Daily Emissions	8.9 lbs*	48.4 lbs*	102.2 lbs*	24.6 lbs*	8.2 lbs*	13,188 lbs*
Estimated Project Emissions	<1 ton	4.9 tons	9.2 tons	2.7 tons	<1 ton	1,145 tons
BAAQMD Project Construction Thresholds***	54 lbs./day	N/A	54 lbs/day	72 lbs/day	54 lbs/day	N/A
Federal Conformity Rule Thresholds	50 tons/year**	100 tons/year**	50 tons/year**	100 tons/year**	N/A	N/A
SCAQMD Construction Thresholds for GHGs	N/A	N/A	N/A	N/A	N/A	1,210 tons/year
Exceed Thresholds	No	No	Yes	No	No	No
Reach 4						
Estimated Daily Emissions	8.2 lbs *	44.4 lbs *	89.3 lbs *	24.2 lbs *	8.0 lbs *	10,067 lbs *
Estimated Project Emissions	<1 ton	4.5 tons	8.4 tons	2.7 tons	<1 ton	941 tons
BAAQMD Project Construction Thresholds***	54 lbs./day	N/A	54 lbs/day	72 lbs/day	54 lbs/day	N/A
Federal Conformity Rule Thresholds	50 tons/year**	100 tons/year**	50 tons/year**	100 tons/year**	N/A	N/A
Criteria Pollutant	**ROG**	**CO**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**
Exceed Thresholds	No	No	Yes	No	No	No

ROG=reactive organic gases, NO_x=nitrogen oxides, CO=carbon monoxide, CO_2=carbon dioxide, PM_{10}=particulate matter less than 10 microns. $PM_{2.5}$=particulate matter less than 2.5 microns.*Represents maximum pounds per day, usually during grading/excavation phase.
**Per year or for construction period, whichever is shorter.

Operation and maintenance under this alternative would be similar to the proposed project, although increased maintenance trips may be necessary due to the longer floodwalls. However, it is not expected that the increase in trips would be substantial enough in comparison to maintenance requirements under the proposed project to result in increased emissions. As a result, long-term increase in regional emissions of criteria pollutants associated with maintenance activities and vehicle trips would be minimal, and impacts would be less than significant. Implementation of Alternative 2B would conform to applicable Federal and State standards and local thresholds on a long term basis. Operational impacts would be slightly greater than the proposed project and less than significant.

BIOLOGICAL RESOURCES. Potential impacts to wetlands, special status species including migratory birds, and stands of healthy trees and shrubs would be the same as for the proposed project, and would be significant but less than significant with mitigation specified in Section 3.5.6.

The addition of substantially more floodwall length and height under this alternative would impair wildlife access to the channel to a much greater degree than under the proposed project, but would not substantially increase effects associated with its use as a dispersal corridor. Given the low habitat value in the project area, low utilization of this area by wildlife in general, and its lack of suitability to support protected or sensitive species specifically, this impact would be less than significant, but still greater than under the proposed project.

CULTURAL RESOURCES. Based on the expected extent of ground disturbance represented by the total soils exported per day and the increased project footprint, Alternative 2B would have more potential than the proposed project to impact cultural resources. Since the extent of archeological resources present is unknown, as with the proposed project, it would be necessary to implement mitigation measures as described in Section 3.6.6 to ensure proper protection of any unearthed cultural resources. With mitigation in place, the potential impact under this alternative to impact cultural resources would be less than significant with mitigation, but would have the potential to result in greater impacts than the proposed project.

GEOLOGY, SOILS AND MINERALS. Because Alternative 2B would have greater excavation quantities and longer floodwalls than under the proposed project, it would have greater impacts related to erosion or ground shaking as the proposed project. These impacts would be significant, but less than significant after mitigation.

GREENHOUSE GAS EMISSIONS. Table 5.8 summarizes CO2 emissions from activities undertaken during construction. The amount of CO2 emissions is estimated to be 1,145 tons in Reaches 1-3 and 941 tons in Reach 4. Alternative 2B GHGs would exceed SMAQMD significance thresholds (1,210 T/yr) for annual GHG emissions. Impacts from GHG emissions would be significant and unavoidable and slightly greater than for the proposed project.

HAZARDOUS MATERIALS. Alternative 2B differs from the proposed project in the area and amount of excavation and replacement of bridges and culverts. These additions would require more soil disturbance and introduction of materials including concrete, which could provide more opportunity for spills of hazardous materials routinely used in construction, and for greater risk to workers from increased exposure to potential VOC contamination from the JCI Site and Great Western Site plumes. However, taking these potential increased risks into account, and assuming the mitigation measures proposed in Section 3.9.6 are implemented, the associated risks to workers and public would be less

than significant with mitigation, and greater than under the proposed project. Impacts associated with accidental spills of hazardous materials from implementing Alternative 2B would be avoided or minimized through the implementation of the District's BMPs and creation and implementation of a Spill Prevent and Response Plan (SPRP). Similarly to the proposed project, impedance of emergency access or evacuation routes would be less than significant with mitigation described in Section 3.16.6.

As discussed for the proposed project, the potential for impacts associated with hazardous materials in Reach 4 is low during construction, assuming implementation of mitigation measures identified in Section 3.9.6. Potential effects associated with use of fuels, solvents, and other potentially hazardous materials is higher than under the proposed project since construction activities would be more extensive, but mitigation measures would reduce risks associated with this impact to less than significant. Potential for effects occurring during operations would be higher than under the proposed project since the floodwalls would be more extensive and require additional maintenance and removal of graffiti. However, potential impacts associated with during operations are still anticipated to be less than significant due to reduced needs for operations actions overall.

LAND USE AND PLANNING. Alternative 2B would occur within the same area as the proposed project and would therefore have impacts on land use and planning similar to the proposed project. However, because this alternative would not install culverts at Los Coches Creek and Piedmont Creek as would the proposed project, a future continuous recreational and transportation trail in Reaches 1 through 3 as proposed as part of Milpitas' Trails Master Plan would be more costly under this alternative than under the proposed project due to the need for post-project construction of crossings of Los Coches and Piedmont creeks. The proposed project would construct those creek crossings. Under this alternative, Upper Berryessa Creek would be widened and this may preclude construction of creek access roads that could accommodate a future trail open to public use. At the very least, implementation of this alternative would require costly construction of a footbridges at these locations to allow the proposed trail to cross these creeks and execution of a JUA between the City of Milpitas and the District to allow public access to a trail on the Creek ROW. This alternative would result in a conflict with the Milpitas Trails Master Plan (as would the proposed project) which would be a significant impact.

NOISE. The types and duration of construction noise under Alternative 2B would be the same as the proposed project, but the potential noise levels would be higher due to an increase in truck trips and additional use of excavators and scrapers needed for increased excavation work and bridge and culvert replacements. With the implementation of mitigation measures identified in Section 3.11.6, most noise impacts would be less than significant with mitigation, but would still be greater than noise impacts under the proposed project. However, noise impacts associated with replacement of the existing UPRR trestle with a concrete box culvert and replacement of the existing UPRR culvert with a bridge would occur outside of Milpitas' allowable construction times of 7:00 am to 7:00 pm over the course of a 72-hour period, and would be significant and unavoidable. In addition, the temporary increase in ambient noise during construction of this alternative would also likely be significant, as is the case for the proposed project.

Ongoing maintenance of the stream channel and structures would be the same as under the proposed project, but may require more visits over the course of any given year, due to the increased number of features requiring maintenance and the increased length of the floodwall. However, the increased number of trips would not in themselves increase noise impacts from current levels, and actions associated with maintenance of floodwalls, culverts, and access roads would be short-term.

POPULATION AND HOUSING. Impacts from Alternative 2B to population and housing would be identical to those of the proposed project; less than significant.

PUBLIC SERVICES. Like the proposed project, this alternative would not result in increased need for public services, or make a public service unavailable, therefore there would be no impact associated with these criteria.

Due to temporary lane closures and traffic delays during construction of the Calaveras Boulevard and Los Coches Street Bridges, there is the potential for significant adverse impacts to emergency vehicles responding to needs within the project area or surrounding areas. This impact is greater under this alternative than under the proposed project. Prior to construction, a traffic management plan would be prepared and approved by Caltrans and the cities of Milpitas and San Jose. Any road or lane closures would be identified, along with duration of closure and proposed detour routes. This traffic management plan would be presented to emergency agencies in the area. During construction, in areas where lane closures are occurring, emergency vehicle movements would be given priority. Emergency vehicle response times are not anticipated to increase significantly with adequate coordination. However, impacts to emergency response time would be greater under this alternative than under the proposed project due to closure of one lane of traffic on Calaveras Boulevard. These impacts are anticipated to be temporary during construction and less than significant with mitigation specified in Section 3.16.6.

RECREATION. Impacts from Alternative 2B to recreation would be similar to those of the proposed project. The pocket park near Los Coches Street would be removed, resulting in a loss of the park, but the impact to recreation would be less than significant since there are other parks in the vicinity that can replace the lost values. Because this alternative would lack the installation of culverts at Los Coches Creek and Piedmont Creek that would be included as part of the proposed project, a continuous recreational trail proposed as part of Milpitas' Trails Master Plan would be less viable under this alternative. However, implementation of this alternative would not prevent the city from constructing footbridges at these locations or implementing other measures to allow the proposed trail to cross these creeks, therefore the impact upon recreation is less than significant, and the same as under the proposed project.

TRAFFIC AND TRANSPORTATION. Traffic volume would increase under this alternative in comparison to the proposed project as a result of increased construction crew commuter trips. In general, up to 40 workers would access the construction zone on a daily basis, with up to 50 workers on specific occasions. Most workers would likely enter the construction zone before 7:00 AM and leave between 4:00-5:00 PM.

Construction trucks would access the staging and construction areas off of adjacent streets. Up to 86 truck trips per day (approximately 9 per hour) are expected during construction throughout the project area. While the presence of these vehicles would incrementally add to area traffic, analysis of carrying capacity of surrounding streets indicates that impacts associated with this number of truck trips and construction crew commuter trips on surrounding traffic congestion would be greater than under the proposed project but less than significant.

Traffic delays and congestion may occur due to lane closures on Calaveras Boulevard, Los Coches Street, Yosemite Drive, and Ames Avenue. Bridge construction would occur at the Upper Berryessa Creek crossing east of North Hillview Drive. Partial road closures on Calaveras Boulevard would last up to 120

days. Half of the existing lanes would be closed for that period. Partial traffic flow would be maintained at all times by restriping the open portion of the roadway to two lanes in each direction. As a worst case analysis, it is assumed that with partial closure of Calaveras Boulevard, 50 percent of the traffic in the eastbound direction would choose to divert from Calaveras Boulevard to alternative routes. Existing traffic counts at each intersection on Calaveras Boulevard were used to estimate the origins and destinations of traffic through the affected area. Based on proportions of turn movements, it was estimated that approximately 50 percent of the traffic in each direction is destined towards the north and 50 percent towards the south (Kittelson 2012). Although several alternative routes would be available, as a conservative analysis all diverted traffic was assumed to use Great Mall Parkway and Montague Expressway to cross between I-880 and I-680 in each direction. Table 5.9 summarizes the level of service at the study intersections during a partial closure.

During the AM peak hour, the Montague Expressway/Capitol Avenue intersection would change from LOS of E to an LOS of F. During the AM and PM peak hour, Montague Expressway/Main Street/Old Oakland intersection LOS would change from an LOS of E to an LOS of F. During the AM and PM peak hour, the LOS at the Montague Expressway/Trade Zone intersection would continue as LOS F. The Calaveras Boulevard closure would add more than 4 seconds of delay to the critical movements on the Montague Expressway during the AM and PM peak. While traffic impacts on Calaveras Boulevard itself during the lane closure period would be less than significant, the impacts to other area roadways would be significant. These impacts would be greater than under the proposed project but would be reduced to less than significant with mitigation (see Section 3.15.6 for mitigation measures).

Los Coches Street would be closed for 60 days to allow construction of a new 100-foot span over the creek. Closure of Los Coches Street would require diversion to alternative routes such as Yosemite Drive. The number of vehicles impacted would be up to 550 during peak hours. The diverted vehicles would be within the capacity of the alternative routes (Kittelson 2012). This would be a less than significant impact.

Construction at or near Yosemite Drive would involve closing one traffic lane for up to 10 days. Traffic would continue to use two lanes in one direction but only one lane in the other direction. This would add delays to traffic on Yosemite Drive but traffic volumes on Yosemite Drive are low enough that diversion to alternative routes would not be required (Kittelson 2012). The impacts would be less than significant.

Construction at or near Ames Avenue would involve closing one traffic lane for up to 10 days. The traffic flow on Ames Avenue could be maintained on the single available lane using construction flaggers during the period of lane closure. A portion of this traffic may use Sinclair Frontage Road and Yosemite Drive as an alternative. The impacts would be less than significant.

Table 5.9 2017 Baseline Turning Movements and Partial Closure of Calaveras Blvd., Alts. 2B and 4

Intersection	2017 Base				2017 Calaveras Partial Closure			
	AM Peak		PM Peak		AM Peak		PM Peak	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Jacklin Rd. & I-680 Northbound Ramps	N/A		B	16.3	N/A		B	16.3
Jacklin Rd. & I-680 Southbound Ramps	N/A		B+	11.8	N/A		B+	11.8
Calaveras Blvd & I-880 Northbound Ramps	B	13.3	B-	18.1	B	12.5	B	13.9
Calaveras Blvd. & Abel Street	D	40.0	D	46.5	D	39.2	D	44.8
Calaveras Blvd. & Milpitas Blvd.	D	42.5	D	48.8	D	40.0	D	43.0
Great Mall Pkwy. & I-880 Northbound Ramps	C	29.9	C+	21.5	C-	32.8	C-	34.2
Great Mall Pkwy. & Abel Street	D	40.7	D+	35.9	D	40.1	D+	35.8
Montague Exp. & Capitol Blvd.	E+	57.6	E	61.0	F	83.8	E	63.0
Montague Exp. & Milpitas Blvd.	D	50.7	D	43.2	D-	54.6	D	50.6
Montague Exp. & I-680 Northbound Ramps	D	44.7	D-	51.1	D	44.7	D-	51.1
Montague Exp. & Main St./Old Oakland	E-	75.7	E	64.8	F	97.3	F	98.7
Montague Exp. & Trade Zone Blvd.	F	96.3	F	91.9	F*	124.5	F*	114.8

*Level of service would remain at F but with increased duration of delay.

Transit Impacts. Route 47, operating on Calaveras Boulevard, would experience delays due to the partial closure of Calaveras Boulevard. The contractor would coordinate with Santa Clara VTA to identify the schedule of the lane closure and, if necessary, provide for temporary manual traffic control to give priority for transit vehicles through the congested corridor during the construction period. Implementation of this mitigation measure would reduce this temporary impact to less than significant with mitigation. The eastbound bus stop for Route 47 on Calaveras Boulevard east of S. Hillview Drive may need to be relocated slightly east of its existing location depending on the physical length of the lane closure during the 30 days of bridge work. AC Transit Route 217 may also experience some minor, temporary delays in the vicinity of Calaveras Boulevard and S. Hillview Drive during bridge construction.

Diversion of traffic to Great Mall Boulevard and Montague Expressway during the Calaveras Boulevard bridge construction period may impact transit travel times on these roads during the 120 days of bridge work and affect Routes 46, 70, 71, 104, and 180. The contractor would coordinate with Santa Clara VTA to determine the need for temporary manual traffic control to give buses priority. These impacts would

be significant and greater than impacts occurring under the proposed project, but would be reduced to less than significant with incorporation of mitigation measures specified in Section 3.15.6.

Railroad. The UPRR culvert south of Ames Avenue would be reconstructed with a longer span. There would be a temporary disruption of rail service on the spur line during the reconstruction period, similar to the proposed project. Based on an examination of aerial photographs, one business appears to be impacted by the temporary loss of rail service, though up to a dozen properties front the spur line. Significant disruption of rail service to these businesses could be avoided by staging the work to minimize the duration of railroad track closure.

Impacts to Non-Motorized Transit. Closure of travels lanes and sidewalks would affect bicyclists and pedestrians using Calaveras Boulevard during bridge construction. Under Alternative 2B, construction would last 120 days. The sidewalk on the south side of the street would be closed during this period, requiring pedestrians to use the sidewalk on the north side of Calaveras Boulevard. It is important to note that there is no pedestrian crossing of Calaveras Boulevard between S. Hillview Drive on the east and S. Park Victoria Drive, a distance of approximately ½ mile (2,500 feet). Pedestrians traveling from the west side of S. Hillview Drive could access businesses southwest of I-680 via Los Coches Street. The closure of Los Coches Street could be timed so that it does not occur simultaneously with the closure of Calaveras Boulevard traffic lanes.

There are no bicycle lanes on Calaveras Boulevard, though the shoulder lanes are quite wide. During the 120 days of Calaveras Boulevard bridge work, there would be two through lanes and no shoulders in each direction, which could impact bicycle movements through the area. Calaveras Boulevard is not currently a designated bicycle route west of I-680.

Under Alternative 2B, the complete closure of Los Coches Street would temporarily require bicycles and pedestrians to use alternate routes during the 60-day construction period. The pedestrian bridge cantilevered on the south side would need to be reconstructed. The nearest crossing of the creek would be at Yosemite Drive, 3000 feet south. The creek could also be crossed at Calaveras but with limited or no access to destinations west of I-680.

Sidewalks on one side of Ames Avenue and Yosemite Drive may be temporarily closed during bridge construction work as outlined above. The sidewalk on the opposite side of each bridge would still be accessible. Appropriate signage would be provided to guide pedestrians to the alternate crossing, and safety features, possibly including lights or a temporary crosswalk, would be installed to ensure safe passage from one side of the street to the other. Bicycle traffic would be subject to the same traffic detours as with motorized vehicles for the short period of bridge work.

The construction contractor would prepare traffic management plans which include advance notice of street closures so that bicyclists and pedestrians who typically use the creek crossings can identify alternate routes. Implementation of mitigation measures would reduce the temporary impact to less than significant. During the partial lane closures, it would be necessary to close the sidewalk on one side of the street at each location for safety reasons. Pedestrians would need to detour to the sidewalk on the other side of the street. This closure could cause some inconvenience but would not cause significant delay of pedestrian movements. The overall effect of this alternative on non-motorized transportation would be greater than under the proposed project but less than significant with mitigation.

Safety and Emergency Access. Measures to ensure safe operation of construction vehicles described under the proposed project would be implemented under this alternative. Emergency response times could be increased by traffic delays associated with lane closures on Calaveras Boulevard, constituting a significant impact. Prior to construction, traffic and transportation management plans would be prepared by the project proponent and construction contractor, as described in Section 3.15.6. Implementing these plans would ensure that emergency vehicles are given priority passage through the construction area and traffic control personnel would be trained to ensure that access by emergency vehicles would be unrestricted to the degree possible. Creating and implementing these plans as described in Section 3.15.6 would reduce this impact to less than significant with mitigation.

UTILITIES AND SERVICE SYSTEMS. This alternatives would have the same potential to encounter VOC-contaminated groundwater at the JCI off-site area as the proposed project. Impacts associated with contaminated groundwater exceeding RWQCB water quality standards would be the same under this alternative as under the proposed project. This impact would be significant, but less than significant after mitigation consisting of treating the contaminated groundwater before discharging it to the creek.

Under this alternative, excavation quantities would increase to 123,464 cubic yards, as compared to 90,000 cubic yards under the proposed project. As shown in Table 3.38, this amount of material would not significantly diminish remaining capacity of most of the landfills that may be accessed during construction. Similarly to the proposed project, if all materials were disposed of at the Zanker Materials Processing Facility or the Zanker Road Resource Recovery Operations Landfill, the remaining capacity of these landfills could be substantially reduced, which would be a significant impact. However, it is unlikely that all of the excavated materials would be disposed of offsite, since many of the materials can likely be reused onsite. Also, these facilities do not accept contaminated wastes, which are likely to comprise a significant portion of the materials that eventually are disposed of in landfills. Considering these factors, it is expected that potential effects related to landfill capacity would be greater than under the proposed project, but would still be less than significant.

WATER RESOURCES. In comparison to the proposed project, Alternative 2B would require more excavation, soil disturbance, and structures, due to greater excavation amounts and increased floodwall lengths, which could provide more opportunity for spills of hazardous materials routinely used in construction. The extra construction would also mean use of more concrete within the channel, with a slightly elevated risk of discharge and violation of water quality standards. However, with the implementation of the mitigation measures specified in Section 3.17.6, construction impacts of Alternative 2B would be greater than for the proposed project, but would still be less than significant.

The risk of impacts to water resources during operations and maintenance would be slightly higher under this alternative than under the proposed project since there would be greater needs associated with maintenance of the longer floodwall, but operational impacts to water resources would still be less than significant.

5.2.2.4. *Alternative 4: Walled Trapezoidal Channel*

Most construction features under Alternative 4 would be similar to features under the proposed project, with the primary differences being the length of floodwalls and degree of excavation. Alternative 4 proposes the construction of floodwalls along nearly the complete length of the project area, for a total of approximately 11,600 feet. The channel, as with all other alternatives, would be graded into an earthen trapezoidal channel section with varying bottom widths. Similar to Alternative 2B, this alternative is designed assuming a bypass structure is in place along a greenbelt reach along Berryessa

Creek upstream of I-680. Alternative 4 also includes vegetated floodplain terraces that would be constructed in Reach 4. Vegetation would be hydroseeded as with all alternatives, and consist of native California grasses.

The SFBRWQCB expressed support for this alternative in a letter to USACE (Lichten, 2015). That letter stated that this alternative would better support beneficial uses of the creek than the proposed project. The letter also stated that Alternative 4 could be modified to include free-span bridges for the railroad crossings at Piedmont and Berryessa creeks. USACE found that installation of free-span bridges would be logistically impracticable because it would result in a lengthy loss of service for weeks to months on the affected rail lines, which is unacceptable to UPRR. In contrast, the proposed box culverts at these railroad crossings would be pre-fabricated and installed within 72 hours, which is acceptable to UPRR (Tetra Tech, 2015f).

Typical sections showing the overall configuration of Alternative 4 are shown in Figure 5.3. The primary features of Alternative 4 are:

- Channel excavation and earthen levee construction to the water surface level of the 95 percent certainty, 0.01 exceedance probability event discharge from I-680 to Calaveras Boulevard (proposed channel dimensions for various reaches are shown in Figure 5-2),
- Cast in place concrete floodwalls along much of the length of the entire project area for a total of approximately 11,600 linear feet on both banks, for a total installation length of 23,200 feet,
- 2H:1V sideslopes with turf reinforcement mats and buried rock revetment for scour protection,
- Two vegetated floodplain benches in Reach 4 only, 32 feet wide on west bank and 10 feet wide on east bank from Montague Expressway upstream to I-680,
- Replacement of UPRR crossings at Piedmont Creek and Berryessa Creek with box culverts,
- Replacement of UPRR culvert with a 60-foot span,
- Shoring of bridge abutments at Ames Avenue and Yosemite Drive to accommodate widened channel,
- Replacement of Los Coches Street Bridge with 100-foot span,
- Replacement of Calaveras Boulevard Bridge with 100-foot span, and
- Utility relocations, as needed.

Bridge and road closure or rerouting details for Alternative 4 are the same as for Alternative 2B.

AESTHETICS. With increasing excavation and floodwalls comes the potential for increasing impacts to visual quality of the project area. Total area of excavation is greater under this alternative, with almost twice as many cubic yards of material removed compared to the proposed project. This larger excavation quantity would result in more total truck trips per day (114) than other alternatives (86 or 61). However, the increase in truck trips would not significantly impact visual quality during construction, since the area is already in an industrialized zone that is aesthetically compromised. Trucks would be present in the area and the visual character of the area would not be impacted by the number of trips made.

Alternative 4 also prescribes the expansion of floodwalls by more than double that of Alternative 2B, and at a length that is over 20,000 feet longer than the proposed project. Despite the already industrialized character of the project area, this nearly complete enclosure of the channel by floodwalls would be a dramatic change to the visual character of Upper Berryessa Creek. Viewer groups observing the channel from outside the channel would be cut off from seeing the channel itself by floodwalls of up

to 3 feet in height, including the associated greenery and water flows, and would instead see only concrete and gravel access roads. This impact would be much more extensive than visual impacts occurring under the proposed project, but would be less than significant since the floodwalls would still be consistent with the highly developed area that surrounds them.

Another visual difference in the design of Alternative 4 is the inclusion of vegetated terraces in Reach 4. Terraces would be created in the channel side slopes, which would expand channel flood capacity, and create a bench that would host native California grasses. Because of the extent of the floodwalls in this alternative, terraces would have no impact on the visual character of the area, except for viewers who are immediately adjacent to floodwalls. Terraces would provide greater visual variety for viewers.

AIR QUALITY. Estimated emissions are shown in Table 5.10, showing that, as with all other alternatives, construction in all reaches under Alternative 4 would exceed local air quality thresholds for NOx; therefore, impacts to air quality would be significant and unavoidable. Emissions would be higher under this alternative than under the proposed project, therefore the intensity of the impact would be greater.

Operation and maintenance activities related to floodwall and culvert maintenance under Alternative 4 would be greater than under the proposed project due to the greater length of the floodwalls, and would result in greater emissions due to more vehicular use. However, increased emissions due to floodwall maintenance are not expected to esceed any air quality thresholds, and would be be less than significant. The proposed project would conform to applicable Federal and State standards, and local thresholds on a long term basis. These impacts would be comparable to those for the proposed project and considered less than significant.

Table 5.10 Modeled Air Quality Emissions (Alternative 4)

Criteria Pollutant	**ROG**	**CO**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**
Reaches 1-3						
Estimated Daily Emissions	9.0 lbs./day*	48.9 lbs./day*	107.9 lbs./day*	24.7 lbs./day*	8.3 lbs./day*	14,472 lbs./day*
Estimated Project Emissions	<1 ton	4.9 tons	9.5 tons	4.7 tons	<1 ton	1,213 tons
BAAQMD Project Construction Thresholds	54 lbs./day	N/A	54 lbs/day	72 lbs/day	54 lbs/day	N/A
Federal Conformity Rule Thresholds	50 tons/year	100 tons/year	50 tons/year	100 tons/year	N/A	N/A
Criteria Pollutant	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**CO2**
SMAQMD Construction Thresholds for GHGs	N/A	N/A	N/A	N/A	N/A	1,210 tons/year
Exceed Thresholds	No	No	Yes	No	No	Yes
Reach 4						

Estimated Daily Emissions	8.3 lbs./day*	44.5 lbs./day*	90.0 lbs./day*	24.2 lbs./day*	8.0 lbs./day*	10,218 lbs./day*
Estimated Project Emissions	<1 ton	4.5 tons	8.5 tons	2.7 tons	<1 ton	949 tons
Criteria Pollutant	**ROG**	**CO**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**
BAAQMD Project Construction Thresholds	54 lbs./day	N/A	54 lbs/day	72 lbs/day	54 lbs/day	N/A
Federal Conformity Rule Thresholds	50 tons/year	100 tons/ year	50 tons/year	100 tons/ year	N/A	N/A
Exceed Thresholds	No	No	Yes	No	No	No
ROG=reactive organic gases, NO_x=nitrogen oxides, CO=carbon monoxide, CO_2=carbon dioxide, PM_{10}=particulate matter less than 10 microns. $PM_{2.5}$=particulate matter less than 2.5 microns.*Represents maximum pounds per day, usually during grading/excavation phase.						

BIOLOGICAL RESOURCES. Types of impacts to biological resources under Alternative 4 would be similar to those occurring under the proposed project. This alternative would be consistent with the Santa Clara Valley HCP. The same amount of waters of the U.S. and waters of the State would be impacted during construction, and potential impacts to special status species and migratory birds, would be the same. The same number of trees would be removed as under the proposed project. Similarly to the proposed project, these significant impacts would be reduced to less than significant with implementation of the mitigation measures identified in Section 3.5.6. Impacts to general wildlife species would be more extensive than under the proposed project, due to the presence of floodwalls throughout the entire project area, which would serve as a barrier to smaller wildlife trying to access the channel for foraging or to find water.

Reach 4 segments of the project area would receive vegetated terraces extending upslope from the stream channel. These terraces would be planted with native California vegetation and would provide more suitable habitat than the non-terraced stream banks of the other alternatives. Although the amount of excavation and recontouring required for the additional terraces and lengthened floodwalls increases the overall amount of earthwork, the overall impact of Alternative 4 construction would be comparable to the proposed project. Biological impacts would be significant, but less than significant after mitigation.

CULTURAL RESOURCES. Based on the expected extent of ground disturbance represented by the total soils exported per day, Alternative 4 would have greater potential to impact archaeological resources than the proposed project. Alternative 4 also poses the most disturbance in the vicinity of archaeological site CA-SCL-593, as a result of the construction of floodwalls and terraces through the site. Though the potential for unintended damage of the site is highest under this alternative, it is the purpose of the mitigation measures to ensure protection of cultural resources. With appropriate application of mitigation measures, this alternative is expected to result in a less than significant impact to cultural resources, although potential for impacts is greater than under the proposed project.

GEOLOGY, SOILS AND MINERALS. Because Alternative 4 would have greater excavation quantities and longer floodwalls than under the proposed project, it would have greater impacts related to erosion or

ground shaking as the proposed project. These impacts would be significant, but less than significant after mitigation.

GREENHOUSE GAS EMISSIONS. Table 5.10 summarizes CO2 emissions from activities undertaken during construction. Emissions under this alternative are estimated to be 1,213 tons in Reaches 1-3, and 949 tons in Reach 4, which are greater than under the proposed project. The combined total of GHGs from Alternative 4 would exceed SMAQMD's significance threshold (1,210 T/yr) for annual GHG emissions. With mitigation, Alternative 4 GHG emissions would decrease by up to 20% but would still exceed SMAQMD significance thresholds. GHG emissions would be significant and unavoidable.

HAZARDOUS WASTES. Overall, the extent of excavation, soil disturbance, and construction would be greater than under the proposed project, with similar corresponding opportunity for spills of hazardous materials routinely used in construction, and for risk to workers from increased exposure to potential VOC contamination from the JCI and Great Western plumes. However, taking these potential risks into account, and assuming the mitigation measures proposed in Section 3.9.6 are implemented, the associated risks to workers and the public would be greater than under the proposed project, but less than significant with mitigation. Potential impacts to emergency access or evacuation plans would be the same as for the proposed project.

LAND USE AND PLANNING. Alternative 4 would occur within the same area as the proposed project and would therefore have impacts on land use and planning similar to the proposed project. A continuous recreational trail proposed as part of Milpitas' Trails Master Plan would be less viable under this alternative than under the proposed project. Under this alternative Berryessa creek would be widened and this may preclude construction of creek access roads that could accommodate a future trail open to public use. At the very least, implementation of this alternative would require costly construction of a footbridges at these locations to allow the proposed trail to cross these creeks. This alternative would result in a conflict with the Milpitas Trails Master Plan (as would the proposed project) which would be a significant impact.

NOISE. The types and duration of construction noise under Alternative 4 would be the same as the proposed project, but the potential noise levels could be higher due to an increase in truck trips, additional use of excavators and scrapers needed for increased excavation work, and bridge and culvert replacements. With the implementation of mitigation measures identified in Section 3.11.6 noise impacts would be greater than those for the proposed project, but most noise impacts would still be less than significant overall. However, noise impacts associated with replacement of the UPRR trestle and the UPRR culvert would occur outside of Milpitas' allowable construction times of 7:00 am to 7:00 pm over the course of a 72-hour period, and would be significant and unavoidable. In addition, the temporary increase in ambient noise during construction of this alternative would also likely be significant, as is the case for the proposed project.

Ongoing maintenance of the stream channel would require similar actions as under the proposed project, but may require additional visits over the course of any given year, due to the increased number of features requiring maintenance. If additional maintenance trips are necessary, the number of trips would not be substantial enough to increase noise impacts from current levels.

POPULATION AND HOUSING. Impacts from Alternative 4 to population and housing would be similar to those of the proposed project, and would be less than significant. The presence of increased floodwalls or terraced banks would not result in increased impacts to population or housing.

PUBLIC SERVICES. Like the proposed project, this alternative would not result in increased need for public services, or make a public service unavailable, therefore there would be no impact associated with these criteria. Potential impacts associated with emergency services would be greater than under the proposed project since lane closures on Calaveras Boulevard would increase response times for emergency vehicles. Although this impact would be greater than under the proposed project, mitigation measures described in Section 3.15.6 would reduce this impact to less than significant.

RECREATION. Impacts related to recreation from Alternative 4 will be similar to those of the proposed project. The pocket park would be removed, resulting in the loss of recreational opportunities at this location. This impact would be less than significant because there are other recreational facilities in the vicinity that can provide similar services. Because this alternative would lack the installation of culverts at Los Coches Creek and Piedmont Creek that would be included as part of the proposed project, a continuous recreational trail proposed as part of Milpitas' Trails Master Plan would be less viable under this alternative. However, implementation of this alternative would not prevent the city from constructing footbridges at these locations or implementing other measures to allow the proposed trail to cross these creeks, therefore the impact upon recreation is less than significant.

TRAFFIC AND TRANSPORTATION. Traffic analysis presented for Alternative 2B pertains to this alternative, as partial closure of Calaveras Boulevard would occur under both Alternative 2B and Alternative 4. In general, the types of effects to traffic and transportation would be the same as under the proposed project, but would be much more extensive. Truck trips per day would increase to 114 (approximately twelve per hour), and closures of lanes on Calaveras Boulevard, Los Coches Street, Yosemite Drive, and Ames Avenue would increase travel times and emergency response in Reaches 1 and 2. With implementation of mitigation measures identified in Section 3.15.6, these impacts would still be greater than under the proposed project but would be reduced to less than significant. Operations and maintenance impacts would also be similar, still resulting in a less than significant effect.

UTILITIES AND SERVICE SYSTEMS. Impacts associated with contaminated groundwater exceeding RWQCB water quality standards would be the same under this alternative as under the proposed project. This impact would be significant, but less than significant after mitigation.

WATER RESOURCES. Overall, the extent of excavation, soil disturbance, and construction would be greater than all other alternatives, with similarly increasing opportunity for spills of hazardous materials routinely used in construction, accidental discharges associated with use of concrete, and sediment input due to erosion. However, taking these factors into consideration, with the implementation of the mitigation measures identified in Section 3.17.6, construction impacts of Alternative 4 would be less than significant and comparable to the proposed project.

As with other action alternatives, Alternative 4 would result in fewer potential impacts from operations and maintenance, since less operation and maintenance would be needed under post-project conditions. In comparison to the proposed project, there would not be a greater potential for water quality impacts resulting from the incremental increase in operations and maintenance needs. The presence of terraced vegetated banks would improve water quality through wetland filtration.

5.2.3. Comparison of Alternatives

Table 5.5 presents a comparison of the environmental impacts of the proposed project with the impacts of each of the 4 alternatives that were carried through the analysis of impacts presented in the previous sections.

No Project Alternative

In the absence of flooding, the No Project Alternative would avoid significant construction-related impacts related to air quality, biological resources, cultural resources, geology and soils, hazardous materials and wastes, noise, traffic and transportation, utilities and service systems, and hydrology and water quality that would result from the proposed project. However, implementing mitigation measures identified in this EIR would decrease all of the significant impacts of the proposed project to less than significant with mitigation, with the exception of air quality, greenhouse gas emissions, and noise. The No Project alternative would avoid those significant impacts.

However, without implementation of the proposed project, flooding would likely occur on regular intervals between 5 and 10 years, resulting in impacts including economic damages; traffic congestion; damage to homes, businesses, and public infrastructure; increased demand on emergency service providers and corresponding emergency response times; temporary increases in criteria gas emissions and noise due to use of heavy equipment; increased erosion and sedimentation; damage to utilities; and temporary impacts to biological resources. The proposed project would prevent overbank flows up to the 100-year event, and the flood-related environmental impacts described above would not result. The No Project Alternative would not meet any of the project objectives.

Alternative 2A: USACE Selected Plan

Alternative 2A would result in similar significant impacts as the proposed project. Significant impacts in the areas of biological resources, cultural resources, geology and soils, hazardous materials and wastes, traffic and transportation, utilities and service systems, and hydrology and water quality would be the same as for the proposed project, and would be mitigated to less than significant through application of mitigation measures contained in this EIR. Alternative 2A, like the proposed project, would result in significant, unavoidable impacts to air quality, greenhouse gases, and noise, but these impacts would be slightly less than for the proposed project.

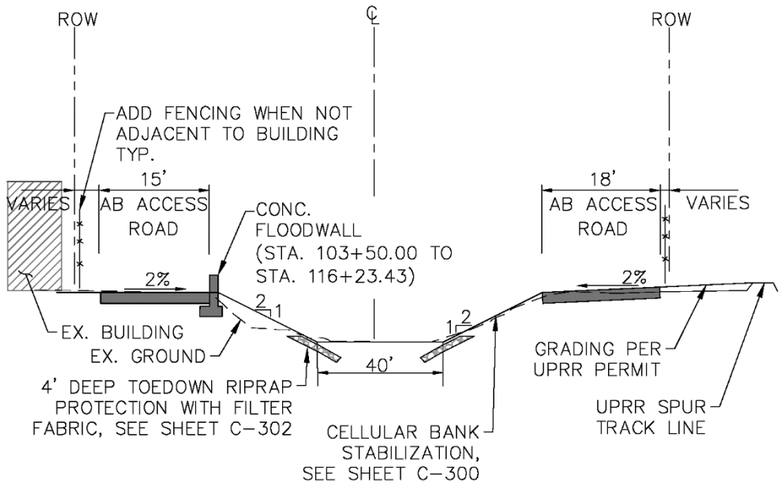
Alternative 2A would meet project objectives other than Objective ~~2~~1: Achieving FEMA certification requirements for containing the 100-year flood event in all reaches. Flood protection in Reaches 1 and 4 would meet FEMA requirements, but parts of Reaches 2 and 3 would be short of meeting FEMA requirements, due to the lower floodwall. In contrast, the proposed project would fully meet all project objectives.

Alternative 2B: Expanded Incised Trapezoidal Channel

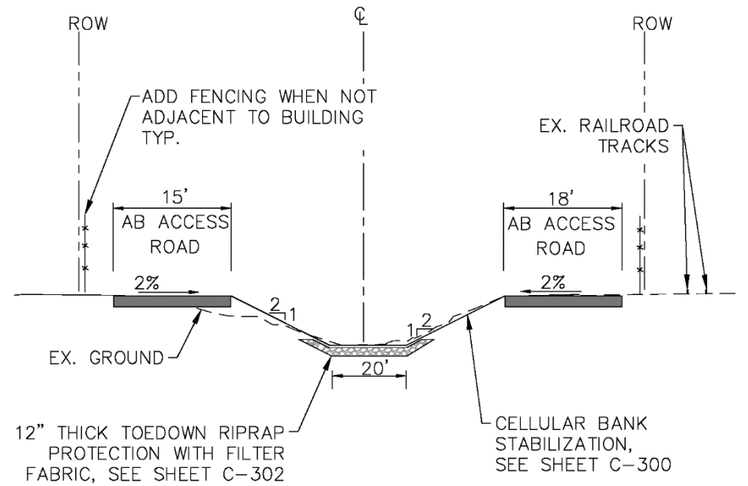
Alternative 2B would have a slightly larger footprint than the proposed project, and although most of the construction actions would be similar, they would also be more extensive. This alternative would not avoid any of the significant impacts that would occur under the proposed project. Because Alternative 2B would require greater excavation than the proposed project, it would result in greater construction period impacts than the proposed project to air quality, biological resources, cultural resources, geology and soils, hazardous materials, noise, hydrology, traffic and transportation, and water quality. Alternative 2B would also require more bridge modification and lane closures than the proposed project, resulting in increased impacts to traffic and transportation and emergency access. Because of

the increased excavation area and quantities, this alternative would have a greater number of truck trips and additional disposal of construction debris, greater potential to encounter unknown archaeological resources or human remains, and additional impacts to visual resources due to the extended floodwall. It would also have greater potential for significant traffic impacts, due to partial closure of the Calaveras Boulevard Bridge and full closure of the Los Coches Bridge, both for up to 120 days to allow for replacement of those structures. Although these traffic impacts would be less than significant with mitigation, they would still be considerably more extensive than traffic impacts that would occur under the proposed project. Alternative 2B would also result in greater emissions of GHGs during construction than the proposed project, although emissions from both alternatives would exceed the significance threshold established by SMAQMD. This alternative would provide increased areas for planting of native vegetation and in the long term would result in increased riparian habitat in the creek channel relative to the proposed project.

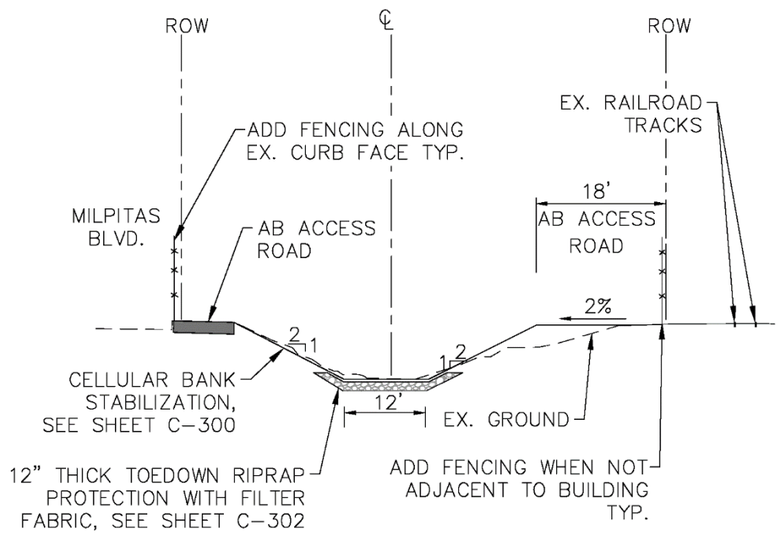
As would be the case for the proposed project, all impacts would be mitigated to less than significant levels, except construction period emissions of NO_x, temporary construction noise levels, and greenhouse gas emissions, which would be significant and unavoidable. Although this alternative was designed to accommodate an upstream bypass, there are currently no plans to construct this bypass, therefore this alternative does not offer a functional benefit over the proposed project. Alternative 2B would fully meet all project objectives, except Objective 3. Alternative 2B includes a much larger channel than the USACE-selected plan and would require reconstruction of existing Calaveras Boulevard and Los Coches Street bridges. The USACE-selected plan does not include revisions to these bridges. The USACE GRR/EIS estimates that the cost to implement Alternative 2B ~~is also expected to~~ would be more than twice that of the proposed project (USACE, 2014). Alternative 2B would conflict with the USACE-selected plan and would not meet Project Objective 3.



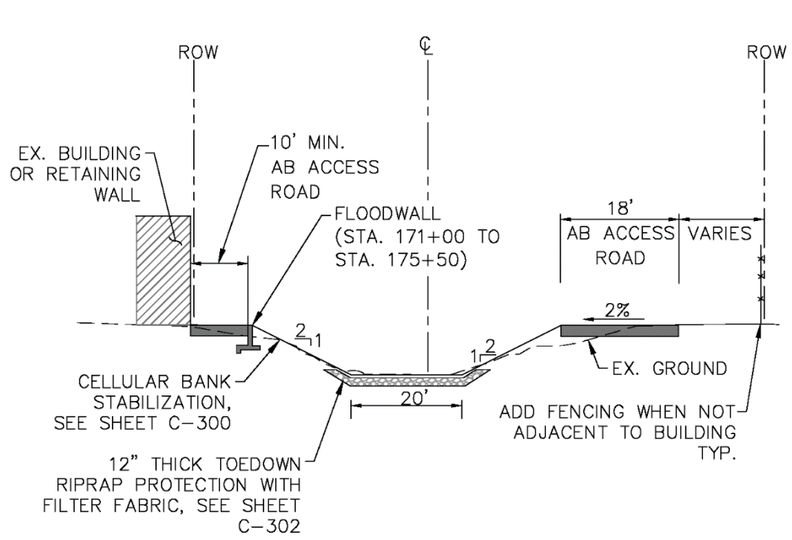
Typical section between Calaveras Boulevard and Piedmont Creek



Typical section between Yosemite Drive and Montague Expressway



Typical section between Piedmont Creek and Yosemite Drive



Typical section south of Montague Expressway

Figure 5.1 Alternative 2A Typical Sections

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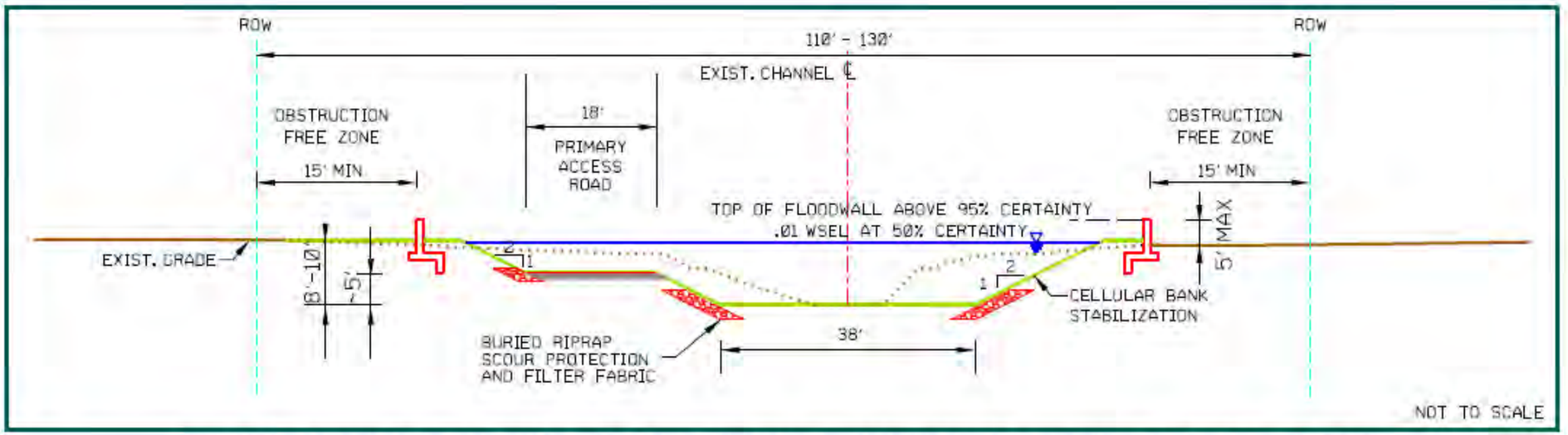
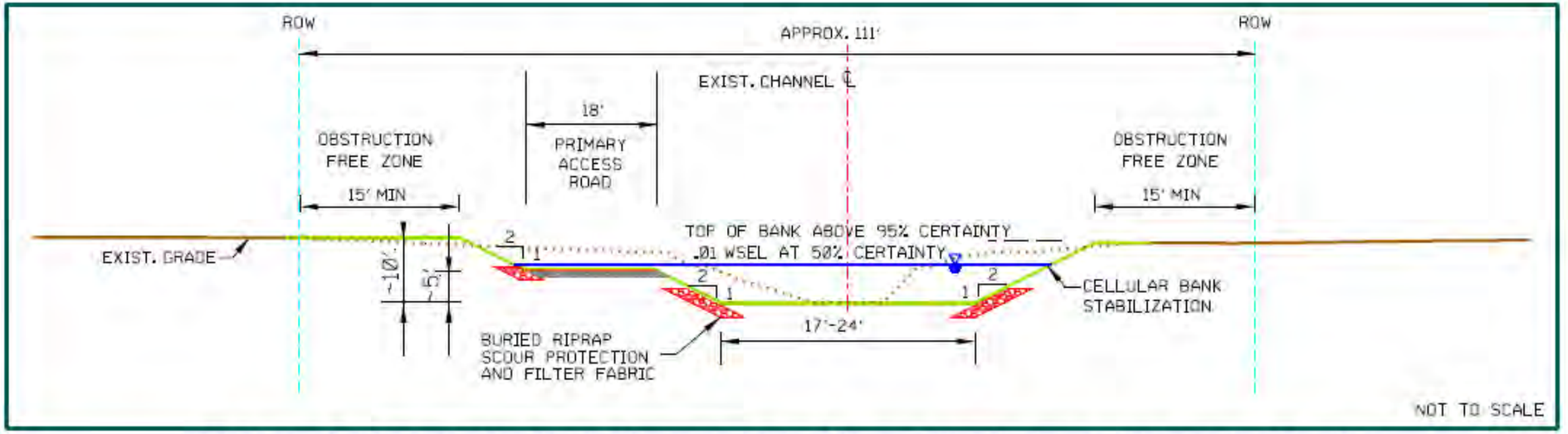


TYPICAL CROSS SECTION, CALAVERAS BLVD TO YOSEMITE DR (STA 130 TO 170)



TYPICAL CROSS SECTION, YOSEMITE DR TO MILPITAS BLVD (STA 170 TO 195)

Figure 5.2 Alternative 2B Typical Sections

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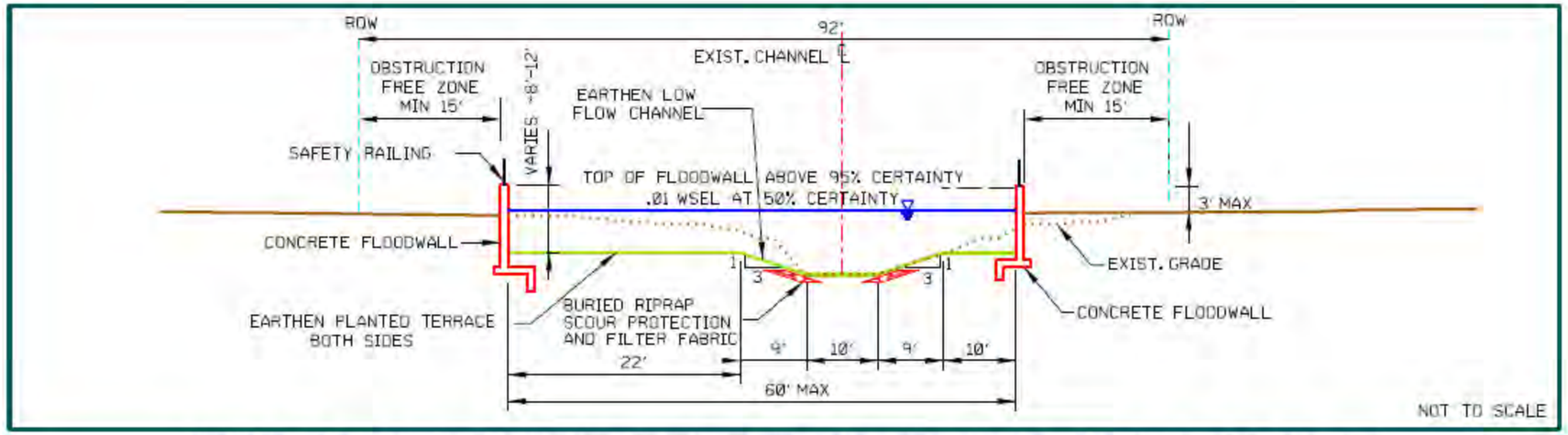
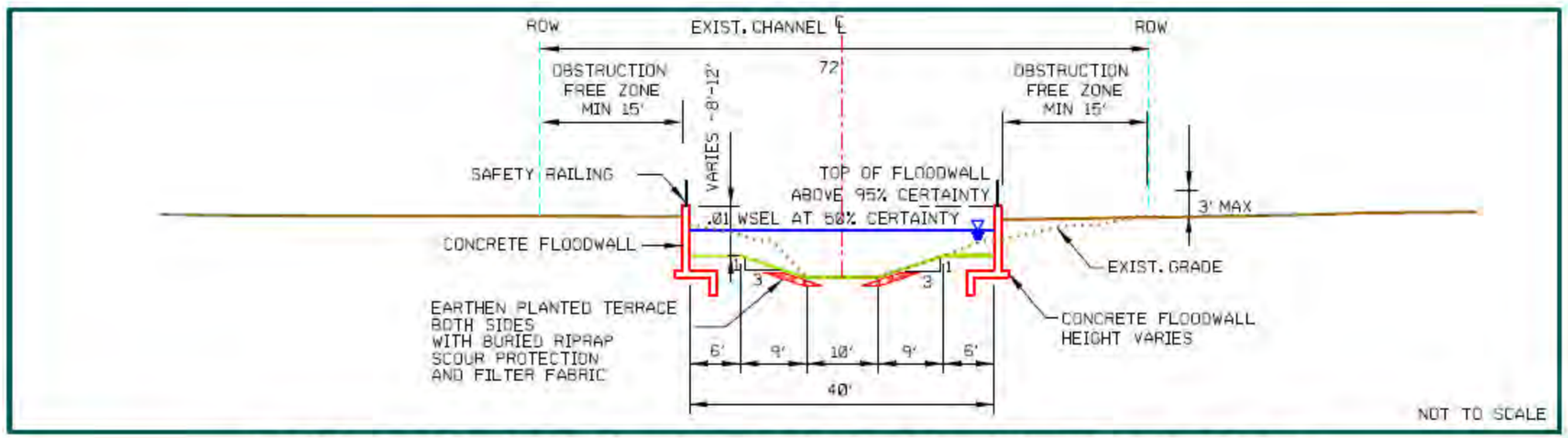


TYPICAL CROSS SECTION, MILPITAS BLVD TO LAKEWOOD CT (STA 195 TO 230)



TYPICAL CROSS SECTION LAKEWOOD CT TO I–680 (STA 230 TO 248)

Figure 5.3 Alternative 4 Typical Sections

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5.2.3.1. *Alternative 4: Walled Trapezoidal Channel*

Under Alternative 4, floodwalls would be located on both banks of the channel through the entire project area, resulting in substantially more impacts to visual resources than the proposed project. The floodwalls would form a low barrier between the overbank area and the channel, which would be a barrier for smaller wildlife such as skunks, mice, and possums that may enter the channel to forage or find water. This effect is not expected to impact special status species. Alternative 4 would not avoid any of the significant impacts that would occur under the proposed project, but would create in-channel riparian habitat which the proposed project would not. This project feature would provide increased habitat for wildlife of the area, an environmentally beneficial feature, although special status species would not benefit because they do not occur at the project area.

Because Alternative 4 would require greater excavation than the proposed project, it would result in greater impacts than the proposed project to air quality, biological resources, cultural resources, geology and soils, hazardous materials, noise, hydrology, traffic and transportation, and water quality. Alternative 2B would also require more bridge modification and lane closures than the proposed project, resulted in increased impacts to traffic and transportation and emergency access. Because of the increased excavation area and quantities, this alternative would have a greater number of truck trips and additional disposal of construction debris, greater potential to encounter unknown archaeological resources or human remains, and additional impacts to visual resources due to the extended floodwall. It would also have greater potential for significant traffic impacts, due to partial closure of the Calaveras Boulevard Bridge and full closure of the Los Coches Bridge, both for up to 120 days, to allow for replacement of those structures. Although these traffic impacts would be less than significant with mitigation, they would still be considerably more extensive than transportation and traffic impacts that would result from the proposed project. Alternative 4 would also result in greater emissions of GHGs during construction than the proposed project, although emissions from both alternatives would exceed the significance threshold established by SMAQMD.

As would be the case for the proposed project, all impacts could be mitigated to less than significant levels, except construction period emissions of NO_x, temporary noise levels, and greenhouse gas emissions, which would be significant and unavoidable.

Alternative 4 would meet all project objectives, except Objective 3. This alternative would construct a walled trapezoidal channel which is fundamentally different from the incised channel included in the USACE-selected plan. The USACE GRR/EIS estimates that the cost to implement Alternative 4 ~~is also expected to~~would be over triple that of the proposed project (USACE, 2014). Alternative 4 conflicts with the USACE-selected plan and would not meet Project Objective 3.

5.2.4. **Environmentally Superior Alternative**

CEQA guidelines in Section 15126.6(e)(2) require that an EIR identify an "environmentally superior alternative." The guidelines go on to state that if the No Project Alternative is the environmentally superior alternative, then the EIR must also identify an environmentally sensitive alternative from among the build alternatives.

The No Project Alternative would avoid many of the environmental effects of the build alternatives but would not meet project objectives.

The four build alternatives under consideration each have a combination of adverse and beneficial effects on the environment. As shown in Table 5.5, significant unavoidable adverse effects to air quality, greenhouse gases, and temporary noise levels were determined for all four build alternatives. In this instance, the types of effects were the same across the alternatives, with the primary difference occurring in the magnitude of emissions of criteria pollutants and greenhouse gases during construction. Alternatives 2B and 4 would have greater impacts to air quality, greenhouse gases, and construction noise than the proposed project or Alternative 2A. Alternatives 2A, 2B and 4 would also result in a significant impact (LND-1) that could be mitigated to less than significant as is the case for the proposed project.

Alternatives 2B and 4 would result in greater significant impacts than either the proposed project or Alternative 2A in the areas of air quality, cultural resources, geology and soils, GHG emissions, hazardous wastes and materials, noise, transportation and traffic, utility services, and hydrology and water quality. Alternatives 2B and 4 would also result in greater impacts to visual quality and public services than the proposed project or Alternative 2A, although these impacts would not be significant for any of the alternatives. Alternatives 2B and 4 would have greater construction period impacts to biological resources than the proposed project or Alternative 2A. These alternatives would also result in long-term effects due to inclusion of floodwalls that would be a barrier to wildlife movement. Alternative 4 would offset these impacts by creating riparian habitat on in-channel terraces, a beneficial impact to biological resources. Overall, Alternatives 2B and 4 would result in substantially greater environmental impacts than either the proposed project or Alternative 2A.

The proposed project and Alternative 2A would have very similar impacts. They would both result in significant impacts in the areas of air quality, biological resources, cultural resources, geology and soils, hazardous wastes and materials, noise, transportation and traffic, utilities and service systems, and hydrology and water quality. For both the proposed project and Alternative 2A, all significant impacts, except for impacts to air quality, noise, and greenhouse gases, would be reduced to less than significant through application of mitigation measures contained in this FEIR. Alternative 2A would not avoid any of the significant impacts of the proposed project and would not result in any significant impacts not associated with the proposed project. Both the proposed project and Alternative 2A would meet Objectives 2 and 3. However, the proposed project would meet Objective 1 by providing flood protection meeting FEMA certification standards in all 4 project reaches, while Alternative 2A would not meet FEMA certification standards. The proposed project is the alternative that fully meets the project objectives with the least environmental impacts; therefore it is the environmentally superior alternative.

No feasible alternative has been identified that would meet the basic project objectives but reduce the proposed project's significant impacts to less than significant levels. The design of the proposed project already incorporates environmentally sustainable design practices. Further, any build alternative that could achieve most of the proposed project's flood protection objectives would have significant construction impacts similar in type to those of the proposed project.

6. OTHER STATUTORY CONSIDERATIONS

6.1. GROWTH INDUCING IMPACTS

Guidelines under CEQA (15126.2(d)) require that an EIR evaluate the growth-inducing impacts of a proposed project. A project may have direct or indirect growth-inducement potential, meaning the implementation of the project could result in the increased capacity of the area of support new neighborhoods or businesses. An example of a direct growth-inducement might be the construction of new housing. Growth inducement may result from projects that increase capacity for housing, such as expansion of public services or utilities.

The proposed project provides for increased flood protection to the Cities of Milpitas and San Jose. For residents and businesses already located in the flood zone, the additional protection would provide reduced risks to health and safety, improved home valuation, and reduced costs for protection and mitigation of flood events. A potential indirect effect is that the reduced risk of flooding could induce growth and housing demand in the area. However, most areas immediately surrounding the channel are zoned for industrial or commercial uses and would not be available for residential development. Additionally, commercial and residential areas surrounding the channel are already at or near maximum build-out, meaning that finding areas for new construction or higher density uses would be difficult. Therefore, the proposed project would not indirectly induce growth by providing increased levels of flood protection, and this impact would be less than significant.

The project would not result in an increase in the number of temporary or permanent residents in the project area or surrounding vicinity. The project does not include the construction of new housing or business structures that would result in direct growth. Temporary growth would not result during construction, as workers would be drawn from the existing Milpitas, San Jose, or surrounding populations.

Growth is not necessarily positive or detrimental to a community. The Cities of Milpitas and San Jose carefully guide development patterns through the establishment of growth policies that require the orderly expansion of urban development supported by adequate urban public services. Furthermore, the Cities of Milpitas and San Jose are predominantly built out and the proposed project would not change the current land uses within either city.

The construction and operation of the proposed project is not anticipated to result in either direct or indirect growth-inducement.

6.2. UNAVOIDABLE SIGNIFICANT EFFECTS OF SELECTED ALTERNATIVE

As presented in Chapter 3, the proposed project would result in the following significant, unavoidable impacts:

1) Construction-period NOx emissions would exceed local significance thresholds and cause significant, unavoidable impacts associated with Impact Air-2 (violate an air quality standard or contribute substantially to an air quality violation) and AIR-3 (result in a cumulatively considerable increase in a non-attainment pollutant).
2) Noise impacts would be significant after mitigation because construction activities associated with installation of the UPRR trestle and operation of generators powering the dewatering and groundwater treatment system at the Jones Chemical groundwater plume area would occur

outside of allowable construction windows specified in the City of Milpitas Noise Ordinance, and cause a significant, unavoidable impact associated with Impact NOI-1 (Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standard of other agencies).

3) Greenhouse gas emissions would exceed significance thresholds established by the SMAQMD and cause a significant, unavoidable impact associated with GHG-1 (Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment).

6.3. SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

CEQA Guidelines (Section 15126) require a discussion of the significant irreversible environmental changes which would be involved in a project should it be implemented. The irreversible and irretrievable commitment of resources is the permanent loss of resources for future or alternative purposes. Irreversible and irretrievable resources are those that cannot be recovered or recycled or those that are consumed or reduced to unrecoverable forms. The proposed project would result in the irreversible and irretrievable commitment of energy and material resources during construction and operation, including the following:

- Construction materials, including such resources as soil, rocks, wood, concrete, and steel; and
- Energy expended in the form of electricity, gasoline, diesel fuel, and oil for equipment and transportation vehicles that would be needed for project construction and operation.

The use of these nonrenewable resources would not account for a significant portion of the region's resources and would not affect the availability of these resources for other needs within the region. Construction activities would not result in inefficient use of energy or natural resources. Long-term project operation would not result in substantial long-term consumption of energy and natural resources.

7. PUBLIC COMMENTS ON THE DEIR AND DISTRICT RESPONSES

7.1 INTRODUCTION

Pursuant to the California Environmental Quality Act, the District, as the Lead Agency for the proposed project, prepared a DEIR to evaluate environmental impacts of the proposed project. The District released the DEIR for public and agency review on September 25, 2015 (SCH# 2001104013). The public review and comment period closed on November 12, 2015, a period of 49 days. The DEIR was distributed for review and comment to the State Clearinghouse, Santa Clara County Clerk-Recorder's Office, regulatory agencies, and interested members of the public. The District received comment letters from Santa Clara County Parks and Recreation Department, Caltrans District 4, San Francisco Bay Regional Water Quality Control Board (RWQCB), and Valley Transportation Administration during the comment period. The Citizens Committee to Complete the Refuge (CCCR) contacted the District prior to the end of the comment period and requested leave to submit a late comment letter, which the District granted. On November 30, 2015, CCCR and Santa Clara Valley Audubon Society submitted a late joint comment letter, which the District accepted.

The DEIR for the proposed project together with these responses to comments on the DEIR constitutes the FEIR for the proposed project. The FEIR is an informational document prepared by the Lead Agency (in this case the District) that must be considered by decision-makers before approving the proposed project and must reflect the Lead Agency's independent judgement and analysis of the significant environmental effects of the proposed project on the environment (CEQA Guidelines Section 15090). CEQA Guidelines Section 15132 specifies the following:

"The final EIR shall consist of:

(a) The Draft EIR or a revision of the draft.
(b) Comments and recommendations received on the Draft EIR either verbatim or in a summary.
(c) A list of persons, organizations, and public agencies commenting on the DEIR.
(d) The responses of the Lead Agency to significant environmental points raised in the review and consultation process.
(e) Any other information added by the Lead Agency."

This document has been prepared according to these guidelines. This Responses to Comments section reproduces the written comments from public agencies and the general public and also contains the District's responses to those comments. This chapter has been added in its entirety to the DEIR.

7.2. AGENCIES AND ORGANIZATIONS COMMENTING ON THE DRAFT EIR

Table 7.1 lists all agencies and organizations that submitted written comments on the DEIR during the public review and comment period as well as the receipt date of each comment letter or email. No verbal comments were received. All comment letters appear in Appendix G.

Table 7.1 Agencies and Organizations Submitting Comments

Letter Number	Agency or Organization/Signatory	Date Received
1	Santa Clara County Parks and Recreation Department/ Will Fourt, Park Planner III	10/2/2015

2	California Department of Transportation (Caltrans)/ Patricia Maurice, District Branch Chief	11/10/2015
3	San Francisco Bay Regional Water Quality Control Board/ William B. Hurley, Senior Engineer	11/12/2015
4	Roy Molseed, Valley Transportation Authority	11/13/2015
5	Citizens Committee to Complete the Refuge and Santa Clara Valley Audubon Society/Eileen McLaughlin and Shani Kleinhaus	11/30/2015

7.3. WRITTEN COMMENTS AND DISTRICT RESPONSES ON THE DRAFT EIR

This section contains the individual comments, identified by submitter, followed by the District's response to each comment.

Comment 1-1 (Santa Clara County Parks and Recreation): Land Use and Planning (Section 3.10)
As described on page 3-128 of the DEIR, the entire length of the project area is a planned multiple-use recreational trail alignment (Berryessa Creek Trail) as adopted by the City of Milpitas in the Milpitas Trails Master Plan (1997), Bikeway Master Plan Update (2009), and the General Plan. A multiple-use trail along this creek corridor is also consistent with the goals and policies of the Santa Clara Countywide Trails Master Plan (1995) which includes goals and policies for multi-agency collaboration for implementation of trail projects of regional significance, such as the Berryessa Creek Trail.

The project description does not include recreational trail improvements along the creek channel. Because of the project's lack of a trail component, as described on page 3-129, "the proposed project would conflict with the Milpitas Trails Master Plan, which would be a significant impact." To mitigate this impact, Mitigation Measure LND-A would require that the District work with the City of Milpitas to allow public trail access through a Joint Use Agreement.

For the purposes of regional trail planning, and establishing an interconnected regional multi-use trail system, it is important to consider the development of the proposed trail alignment in the future.

Response 1-1
Comment 1-1 does not raise an issue with respect to adequacy of the DEIR. Nonetheless, the following response is provided. Congress authorized the Coyote and Berryessa Creeks Flood Control Project pursuant to Section 101(a)(5) of the Water Resources Development Act (WRDA) of 1990. After the USACE prepared the Berryessa Creek Integrated GRR and EIS which was finalized in 2014, the USACE selected a Berryessa Creek Flood Risk Management Project plan. The District has determined that partnering with USACE to implement the Congress-authorized project would further the flood protection mission of the District. Lead agencies have broad discretion under CEQA to define objectives for proposed projects, and for the proposed project, the District has determined that the objectives would be to implement a project that is consistent with the Congress-authorized project and to provide flood protection along the study reach in Upper Berryessa Creek to meet FEMA certification standards. Development or improvement of trails is not one of the objectives of implementing the project; thus the project description does not include trail improvements along the creek channel.

In analyzing Impact LND-2 (Conflict with applicable land use plan or policy), the EIR describes on page 3-129 that the proposed access roads in Reaches 1 through 3 would accommodate most of the planned trail included in the City's Milpitas Trails Master Plan. However, because the proposed project would

include fencing and locked gates at the entrances to the creek access road from the paved streets, public access to the creek right of way would not be permissible in the event that a trail is built in the future. Accordingly, the EIR concludes Impact LND-2 to be significant and proposes Mitigation Measure LND-A to address this impact through execution of a joint use agreement with the City to allow public access. This mitigation measure is sufficient to reduce the impact to a level of less-than-significant.

When planning for future projects, the District will continue to consult and work with the County and cities and if a District project could accommodate future or improve existing recreational facilities, the District would consider incorporating such elements in the project. This determination would have to be made on a project-by-project basis considering many factors including project objectives, feasibility, and schedule.

Comment 2-1 (California Department of Transportation): Figures, Floodwall Cross-Sections (Chapters 2 and 5)

Floodwall Cross Sections: Please clarify whether the corresponding floodwall typical cross sections have been updated to include the new wall extension. The original proposed floodwall will be extended from 1,300 feet (-ft) to 2200-ft along the west bank in Reaches 2 and 3 with a wall extension from "roughly the Piedmont Creek confluence to 1,500 feet upstream of Los Coches street". Figures 5.1, 5.2 and 5.3 show the original typical cross sections for alternatives 2A, 2B and 4. Figure 2.7 .shows the typical cross sections for the revised project. It appears both Figures 2.7 and 5.1 show the same floodwall limits unchanged from stations 103+50 to 116+23.43 (1273-ft).

Response 2-1

Please note that this comment does not raise an issue related to the adequacy of the EIR impact analysis. Nevertheless, the following response is provided.

Figure 5.1 shows representative cross sections of Alternative 2A, which is USACE's selected alternative plan. The proposed project design is identical to Alternative 2A except that in Reaches 2/3 the proposed project includes a longer and taller concrete floodwall (approximately 2,200 feet long and up to 2 feet tall) than Alternative 2A. Under Alternative 2A the floodwall would be approximately 1,300 feet long and 1.5 feet high. Figure 2.7 has been revised and renumbered as Figure 2.8, and now contains a cross-section showing the proposed project floodwall.

Comment 2-2 (California Department of Transportation): Figures, Floodwall Cross-Sections (Chapters 2 and 5)

Figures 2.7 and 5.1: Please clarify why the 450-ft second floodwall in Reach 4 (171+00 to 175+50) was shown on Figure 5.1 (Alternative 2A sections, south of Montague Expressway) but not on the revised typical cross sections of Figure 2.7.

Response 2-2

Please note that this comment does not raise an issue related to the adequacy of the EIR impact analysis. Nonetheless, the following response is provided.

The Reach 4 floodwall was inadvertently omitted from Figure 2.7 in the Draft EIR. Figure 2.7 (now Figure 2.8 in the Final EIR) has been revised to include the buried floodwall in Reach 4.

Comment 2-3 (California Department of Transportation): FEMA Flood Map (Chapter 2)

Federal Emergency Management Agency (FEMA) Flood Map: The DEIR states that the proposed project would remove an estimated 500 parcels of land from the flood hazard zone. Caltrans recommends that the FEMA flood map be included in the DEIR with an exhibit showing the approximate areas where the flood hazard will be lifted.

Response 2-3
Figure 2.4 shows the areas that would be flooded during the 100-year event under current creek conditions (i.e., without implementation of the proposed project). The 100-year flood zone shown in Figure 2.4 is based on modeling conducted during preparation of the USACE's Feasibility Study/GRR and differs somewhat from the FEMA flood hazard areas because of the availability of more recent hydrology and modeling results. Figure 2.5 (a new figure included in the Final EIR) shows the existing FEMA Special Flood Hazard Areas in the project area and the areas that would be removed from the flood hazard zone if the proposed project were implemented. The proposed project would remove about 650 parcels from the FEMA flood hazard area (see Figure 2-5).

Comment 2-4 (California Department of Transportation): Storm Drains (Section 3.17)
Fourth sentence of the third paragraph of Section 3.17.2.2 (p. 3-189): This sentence states "Numerous storm drains empty into the system...." It is unclear the kind of "storm drains being referred to and discharged into which ''system" (i.e.; "the system" referring to the channels/creek or the drainage systems as a whole?). Please clarify in the DEIR which storm drains and system.

Response 2-4:
Section 3.17.2.2 of the EIR has been revised to indicate the number of storm drains and to clarify what is meant by "system".

Comment 2-5 (California Department of Transportation): Floodplains (Section 3.17)
Page 3-190 of Section 3.17.2.2. Hydrology and Flooding: This section describes the existing conditions as "there is essentially no floodplain'' for Reaches 1-3 and "almost complete disconnection from the floodplain" for Reach 4. Based on Figure 2.4, it appears that the floodplain mainly contained in the channel and overtops to the surrounding area with the depth less than 1 foot during a 100 yr. flood event.

Response 2-5
The District concurs with this comment. The existing floodplain is mostly confined to the channel. Under existing conditions, the 100-year event would result in water overtopping the creek banks, causing flooding of nearby areas with water depths of 1 to 3 feet.

Comment 2-6 (California Department of Transportation): Encroachment Permit (Sections 2.5.6 and 3.10.3)
Please be advised that any work or traffic control that encroaches onto the State ROW requires an encroachment permit that is issued by Caltrans. To apply, a completed encroachment permit application, environmental documentation, and five (5) sets of plans, clearly indicating State ROW must be submitted to: David Salladay, District Office Chief, Office of Permits, California Department of Transportation, District 4, P.O. Box 23660, Oakland, CA 94623-0660. Traffic-related mitigation measures should be incorporated into the construction plans prior to the encroachment permit process. See this website for more information: www.dot.ca.gov/hq/traffops/developserv/permits.

Response 2-6
The need for an encroachment permit has been identified in Section 3.10.3.1 of the FEIR. The USACE will be responsible for securing project permits, and will apply to Caltrans for an encroachment permit consistent with applicable laws and regulations.

Comment 3-1 (San Francisco Bay Regional Water Quality Control Board): Introductory Comments
San Francisco Bay Regional Water Quality Control Board (Water Board) staff has reviewed the *Public Review Draft Environmental Impact Report for the Upper Berryessa Creek Flood Risk Management Project (State Clearinghouse No. 2001104013)* (DEIR) prepared by the Santa Clara Valley Water District (District) pursuant to the California Environmental Quality Act (CEQA). The project purpose is to convey the 1 percent exceedance probability flood event in Berryessa Creek from U.S. Interstate 680 in the City of San Jose for 2.2 miles downstream to Calaveras Boulevard in the City of Milpitas (Project).

The District is the local sponsor for the Project that the U.S. Army Corps of Engineers is constructing. The District is contributing a significant portion of the project cost; managing all real estate transactions for right-of-way land acquisition and easements; and will own and operate the project after it is constructed. Although the Corps previously screened alternatives in the *General Reauthorization Report/Environmental Impact Statement* (GRR/EIS) (March 2014), the District must also analyze alternatives pursuant to CEQA. The Corps-selected project design includes (but is not limited to) a roughly 1,300 foot long, 1.5 foot high floodwall. The District's preferred alternative is the same as the Corps' but with modifications which increase the length of the floodwall to about 2,200 feet, and the height by up to 0.5 feet. The added length and height would bring Alternative 2A to meet the Federal Emergency Management Administration's (FEMA) standards. As described further below, we provide the following comments on the DEIR, including, but not limited to:

- The DEIR alternatives analysis is limited to that of the Corps' GRR/EIS, so does not meet CEQA requirements to include a full array of feasible alternatives.
- Inconsistencies related to sediment and vegetation maintenance activities and mitigations.
- The Project preferred alternative would not comply with the *San Francisco Bay Water Quality Control Plan* (Basin Plan) requirement that impacts to wetlands and other waters of the State be avoided and minimized to the extent practicable.
- Mitigation for impacts on waters of the U.S. and waters of the State does not comply with the State and Regional Water Board policies.

Response 3-1
The District appreciates the SFBRWQCB's review of the DEIR. The bulleted comments above are addressed in detail in the responses to Comments 3-2 through 3-10.

Comment 3-2 (San Francisco Bay Regional Water Quality Control Board): Alternatives (Chapter 5)
The District only analyzed alternatives that were previously screened by the Corps for the Corps' Final GRR/EIS (March 2014). Therefore, the DEIR's alternatives analysis does not constitute a full array of feasible alternatives, so does not fully meet the CEQA requirements. This is particularly relevant because the Water Board cannot permit or certify the Project unless we concur with the lead agency's CEQA determination. As currently proposed, the Project does not meet the Water Board's policies, nor does it adequately meet CEQA requirements for reasons discussed in the following comments.

Response 3-2

Pursuant to CEQA Guidelines Section 15126.6, an EIR must analyze a reasonable range of alternatives that could feasibly attain the project's basic objectives while avoiding or substantially reducing any of its significant impacts. Generally, the nature and scope of alternatives to be evaluated in an EIR is governed by the rule of reason; the scope of alternatives must be considered in light of the nature of the project, the project's impacts, relevant agency policies, and other material facts. "Feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors (CEQA Guidelines, Section 15364). In this case, the District is partnering with the USACE to implement a Congressionally-authorized project, and as such the project has to be consistent with the preferred alternative selected by the USACE (see Objective 3). Any alternative that differs substantially from the USACE's preferred alternative would require re-authorization by Congress, which would make that alternative infeasible. Therefore, it is reasonable to limit the consideration of alternatives only to those that would be consistent with the USACE's preferred alternative.

The statement that the Water Board cannot permit or certify the Project unless it concurs with the Lead Agency's CEQA determination does not accurately describe a Responsible Agency's role. CEQA does not call for a Responsible Agency to "concur" with the Lead Agency's EIR. If a Lead Agency has properly consulted with a Responsible Agency but the Responsible Agency believes that a Final EIR is not adequate for its use, CEQA Guidelines Section 15096(e) allows the responsible agency to either take the issue to court, be deemed to have waived any objection, or prepare a subsequent EIR under the limited circumstances allowed by CEQA Guidelines Section 15162.

Comment 3-3 (San Francisco Bay Regional Water Quality Control Board): Sediment Transport (Section 3.1)

The Project will result in a wider and deeper channel than the existing channel morphology, but the DEIR does not explain how sediment will be transported through the Project reach. Without explaining sediment transport in the Project, the DEIR does not adequately describe the potential post-Project impacts or mitigations necessary to address impacts for sediment removal maintenance activities. The DEIR, section 3.1 (last paragraph) states:

> *Because the proposed project is being designed to result in less erosion due to lower flow velocities, more stable bank design, and enhanced flow conveyance through bridges and culvert openings, operations and SMP2 maintenance actions associated with sediment removal and repair of eroded banks or access roads are likely to be reduced in magnitude compared to existing channel operations and maintenance activities.*

This statement is unfounded because the DEIR does not include data about existing sediment maintenance and how the Project will cause less sediment maintenance needs. In addition, without a sediment transport analysis, there is no evidence to show that the source of sediment is from eroding banks within the Project reach. Water Board staff's best professional judgment regarding sediment transport in the Project reach is that the existing channel expresses a sustainable shape throughout the system, and the Project documents do not support that the proposed channel design is sustainable (Attachment A1 through A3). For example, the channel models could not identify depositional areas due to the ongoing maintenance to remove sediment (Attachment A-3: GRR/EIS, Appendix B, Part III-Geomorphologic and Sediment Transport Assessment, pg. 2-17). The existing channel width is consistently about 10 to 12 feet, including areas upstream and downstream of the Project reach as

Water Board staff observed on September 4, 2015 and as shown in the Corps' draft 60 percent design plans (June 2015). The sediment processes in the Project reach will result in sediment accumulation and eventually the same channel dimensions as existing conditions. This could adversely impact flow conveyance, which would not be consistent with the Project objectives. Based on these findings, the Project will require ongoing, repetitive maintenance for sediment removal, which will result in repetitive impacts on the creek habitat which the DEIR does not disclose. Although the DEIR states that the District plans to conduct sediment maintenance to maintain conveyance (sections ES-5, 3.5.2.1), the maintenance needs may exceed the District's Stream Maintenance Program ("SMP2") thresholds, but this is not addressed in the DEIR. Please revise the DEIR to adequately explain the sediment transport processes in the Project, and the associated impacts due to future sediment maintenance activities and mitigations for the impacts.

Response 3-3

The EIR's sediment transport analysis is supported by substantial evidence. The proposed project would result in a channel slope that is very similar to the existing conditions (longitudinal grade between 0.2% and 0.5%), but with a widened channel to handle the 1% flood flows. The proposed channel design includes armoring of the bed and bank toe to prevent erosion, and according to our most recent sediment analyses (Tetra Tech 2015g), the proposed reach will act as a threshold channel, passing input sediment through with minimal deposition. In addition, sediment removal will continue in Upper Berryessa Creek, limiting the amount of sediment inflow into the project reach. It was observed through field visits that the existing project reach was mainly filled with fine sediment from local rill and gully erosion, which appears to be the primary source of sediment in the project reach areas, since most coarse sediment has deposited in the upstream reaches (from the debris basin, or removed from the channel) when transitioning to the flatter valley slope. With the proposed project, the banks will be stabilized and local sediment input will be reduced. In summary, overall sediment load in the creek will decrease after construction of the proposed project, and will be in equilibrium with sediment transport capacity, reducing the overall need for future sediment removal. Sediment removal may still be required at areas of local deposition.

According to the sediment transport model prepared by the District for this project (Tetra Tech 2015g), sediment aggradation would only occur at two locations, the UPRR trestle and UPRR culvert locations. The maximum increase would be about one foot (for five 10-year events) and would extend some 600 feet upstream of UPRR Culvert (for the 100-year flood event). However, the total depositional volume for the entire reach downstream of I-680 would be less than under the existing creek conditions. The District will continue to follow its Stream Maintenance Program Manual including implementing applicable BMPs during future sediment removal to ensure that effects on water quality or creek habitat, if any, would be less than significant.

Comment 3-4 (San Francisco Bay Regional Water Quality Control Board): Objectives (Section 2.3.5)

The DEIR lists the following three objectives for the Project (Section 2.3.5):

Objective 1: Reduce flood damages from Berryessa Creek upstream of Calaveras Boulevard throughout the study reach during the 50-year period of analysis beginning in 2017. Completed project would meet FEMA certification standards in all 4 project reaches.

Objective 2: Use environmentally sustainable design practices in addressing the flood risk management purpose of the project wherever possible within the study reach, including taking advantage of restoration opportunities that may be pursued incidentally to the flood damage reduction purpose.

Objective 3: Be consistent with Berryessa Creek Flood Risk Management Project Plan selected by USACE in the Director's Report of May 29, 2014.

Regarding Objective 2, the DEIR does not define "environmentally sustainable design practices." Please revise the DEIR to include the District's definition for this and to specify how the proposed Project meets this objective. Given Water Board staff's concerns regarding sediment transport in the Project (see Comment 2), the ongoing maintenance we anticipate will be necessary would not be consistent with an environmentally sustainable design.

Regarding Objective 3, the DEIR is not entirely consistent with the GRR/EIS because it does not include the GRR/EIS objective to "reduce sedimentation and maintenance requirements" (GRR/EIS, section 1.1). Please revise the DEIR to reconcile this discrepancy in consistency with the GRR/EIS.

Response 3-4
In regards to Objective 2, the fact that the reconstructed channel of Berryessa Creek after project implementation would require future maintenance (possibly including sediment removal) does not render the proposed project inconsistent with the project objectives. Project Objective 2 is "use environmentally sustainable design practices in addressing the food risk management purpose of the project wherever possible". The District considers environmental sustainability when making decisions that could impact the environment. Specifically, in the context of flood protection, the District strives to protect parcels from flooding by applying an integrated watershed management approach that balances environmental quality and protection from flooding. USACE and the District have carefully considered the potential environmental effects of the proposed project throughout the project planning and design process. However, this will not eliminate the need for future maintenance of a facility. The District will continue to perform necessary maintenance actions on stream channels to preserve flood conveyance capacity and structural integrity. The proposed project is designed to minimize impacts to the environment as documented in this FEIR and is consistent with Objective 2.

In regards to Objective 3, there is no legal requirement that USACE and the District have the same project objectives. The proposed project would result in an overall reduction in need for future sediment removal, which is substantiated by the project sediment transport model (Tetra Tech 2015g). The fact that the project would require future maintenance including sediment removal does not make the project inconsistent with the third project objective.

Comment 3-5 (San Francisco Bay Regional Water Quality Control Board): Sediment Removal, Biological Resources (Sections 2.3.5 and 3.5.5)
The DEIR, Section 2.5.5 states that the District plans to operate the Project under the District's existing Stream Maintenance Program (SMP2) for sediment removal tasks to maintain flow conveyance capacity and vegetation removal to maintain access and for fire prevention.

However, this contradicts the District's statement that the existing open water/aquatic vegetation (1.25 acres) and transitional vegetation ranging from the active channel to the channel uplands (up to about

3.27 acres) that will be removed for the Project would recolonize and thus serve to mitigate for what the District is calling a temporary impact that is less than significant with mitigation.

The following excerpt is the District's rationale for this finding (section 3.5.5.1):It is anticipated that wetland and transitional vegetation would regenerate naturally over the course of the first two growing seasons, and since the bottom width of the stream channel would be wider than under existing conditions, additional areas of wetland plant communities are likely to form.

Because wetland vegetation would regrow after construction is complete and the area of wetlands vegetation would increase when compared to the existing condition, this impact would be less than significant. Water Board staff does not agree that the impacts would be less than significant, given that the DEIR contains no plans or evidence to support that the same or comparable hydrophytic vegetation would colonize naturally and meet or surpass the functions and values of the existing vegetation. In addition, the District plans to remove sediment and vegetation (section 2.5.5), so the assumption that the impacted vegetation would recolonize is unfounded.

Please revise the DEIR to include appropriate mitigation to compensate for both temporal and spatial losses in functions and values of the open water/aquatic vegetation and transitional vegetation. Such a plan would need to include, at least at the conceptual level, the types, numbers, densities, and locations of vegetation plantings, and success criteria. The details would need to be further developed in a mitigation and monitoring plan. We note that while the DEIR includes plans to hydroseed the banks to promote bank stabilization, particularly after coconut-fiber blanket biodegrade (3+ years), the DEIR does not discuss the nature of hydroseed (e.g., the species make-up), monitoring plans, or other details to demonstrate appropriate level of compensation for impacts on open water/aquatic and transition vegetation.

Response 3-5

In analyzing Impacts BIO-2 and BIO-3, the EIR concludes that the construction impacts on riparian habitat, wetland vegetation, and waters of the U.S./State would be temporary and less than significant because vegetation would re-establish within two years and the wider channel would result in an increased amount of vegetation overall. This conclusion is based on the District's many years of experience constructing and maintaining streams in the Santa Clara Valley and conducting research into the regrowth of vegetation after disturbance due to ground-disturbing construction or maintenance activities. Research conducted by District biologists into regrowth is documented in in the "Instream Wetland Vegetation Regrowth Study" prepared by the District (Rankin and Hillman 2000). That research found that vegetation in similar creeks re-colonizes after sediment removal. This study found 65% and 98% regrowth within one and two years, respectively, after 1997 sediment removal at six non-tidal freshwater study sites. It also found that vegetation dominance and quality, as represented by vegetation type, total percent cover of vegetation, and relative percent cover of native and invasive species, were similar between pre- and post-project years. This research provides strong support for the rapid regrowth after disturbance of in-channel vegetation. Both the coverage area and species mix of the regrowth will be similar to pre-existing vegetation. This will be true after both project construction and future channel maintenance activities. Since the EIR concludes that Impacts BIO-2 and BIO-3 would be less than significant, no mitigation would be required.

Please also note that the conclusion of less-than-significant impacts on riparian habitat or wetland vegetation does not contradict or affect the EIR text informing the public and the decisionmakers that

after project construction, the District will perform future maintenance such as sediment removal under the ongoing Stream Maintenance Program.

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The proposed project includes hydroseeding to revegetate disturbed areas after construction is complete. Measure BIO-C in Section 3.5.6 of the FEIR requires that the hydroseed mix include only native grass and forbs seeds, consistent with Recommendation 4 of the USFWS CAR. This measure will promote establishment of native vegetation in the project area.

Comment 3-6 (San Francisco Bay Regional Water Quality Control Board): Beneficial Uses (Section 3.17)
The DEIR repeatedly states or implies that the existing habitat is of marginal quality (e.g., sections 3.5.2.1, 3.5.2.3, and Table 3.12) and uses this as a basis for maintaining the status quo or even reducing the Project reach's beneficial uses.

Water Board staff observed flowing and ponded water and egrets and mallard ducks in multiple sites along Reaches 1-3 during a site visit on September 4, 2015, despite the inspection occurring in the end of the dry season in the midst of a severe drought. These observations are consistent with the REC-2 (non-contact recreation such as bird-watching) and WILD (wildlife habitat) beneficial uses of the Project reach designated by the Water Board and listed in the Basin Plan, Table 2.1. The other beneficial uses are for body-contact recreation (REC-1); and warm water aquatic habitat (WARM). Because the Project would impact aquatic and transitional vegetation, the habitat the vegetation supports would be impacted. However, the DEIR does not address this. Please revise the DEIR to recognize the Project reach's designated beneficial uses and a plan to appropriately mitigate any unavoidable impacts on the creek habitat, especially the REC-2 and WILD beneficial uses.

Response 3-6
Section 3.5.2 and Appendix C of the EIR provide detailed information on the types of habitat and their quality in the project area. Appendix C documents the results of detailed investigations of the project area by qualified biologists in 2014. The findings of these recent investigations are consistent with the findings of the project Coordination Act Report (CAR) issued by USFWS in 2013. The CAR states "The project area has poor to non-existent wildlife habitat due to channelization and vegetation removal. Field surveys conducted in the project area have documented some of the common species that inhabit the area. Bird species observed include: great egret, black-crowned night heron, western scrub jay and mourning dove. Amphibians found in the creek include Pacific tree frog and western toad. Mammals observed include ground squirrels and muskrat, as well as feral cats." The USFWS also noted "the only fish species likely to be found in the project area are the mosquitofish and California roach. The mosquitofish is a non-native freshwater species introduced throughout California for mosquito control. The California roach is a native species widely distributed throughout central and northern California. Neither the mosquito fish or California roach is State or federally listed, or has any special status." Both the CAR and the more recent field investigations confirm that wildlife habitat of the project area is heavily disturbed and marginal.

During site visits the RWQCB casually observed the presence of egrets and multiple ducks in the project area. These birds are common in urban areas and their presence is not inconsistent with marginal habitat quality. The District believes that the description of habitat value in the DEIR, which is based on recent biological field investigations and the USFWS CAR, is accurate and based on substantial evidence.

The proposed project would temporarily disturb the marginal aquatic and riparian habitat occurring in the project area, temporarily displacing wildlife of the area. No impacts to endangered, threatened, or other special status wildlife would result. As described in Section 3.5.3 of the EIR, the project area would re-vegetate rapidly after construction, facilitated by hydroseeding with native grasses and forbs and planting of native trees and shrubs. As explained in the response to Comment 3-5, rapid regrowth of the transitional wetland vegetation in this area is expected, and there is considerable similar habitat found adjacent to and downstream of the project area that will provide similar benefits to wildlife during construction and while regrowth is occurring.

The beneficial uses of Berryessa Creek surface water, ground water, and wetlands are described in Section 3.17.3.2 of the EIR. Section 3.17.5.2 of the EIR analyzes the potential impacts to those beneficial uses and concludes that the proposed project would result in significant impacts to designated beneficial uses of Berryessa Creek, primarily through degradation of water quality during the construction period, which could adversely beneficial uses, including warm freshwater habitat (WARM) and wildlife habitat (WILD). To reduce impacts to beneficial uses, the following mitigation measures would be applied during project implementation:

- WAQ-A: Implement measures for protecting water quality
- WAQ-B: Prepare and implement a dewatering plan
- WAQ-C Prepare and implement a rain action event plan
- HMW-A Prepare a spill prevention and response plan
- HMW-C Treat VOC-contaminated groundwater encountered at JCI Off-site Area

As described in Section 3.17.6 of the EIR, application of these measures would reduce impacts to beneficial uses, including WARM and WILD by preventing the transport of pollutants to the creek channel. The residual impact to beneficial uses designated in the Basin Plan after application of these measures would be less than significant.

EIR Section 3.14.5 analyzes potential impacts to non-contact recreational uses (i.e. beneficial use REC2) of Berryessa Creek. Those uses would be temporarily disrupted during the construction period for the proposed project which will last an estimated two years. Construction activities would prevent access to the creek for recreational uses and generate noise and visual impacts that would degrade the recreational experience. However, only portions of the creek would be under construction at any one time, and REC2 uses would continue in the areas not under active construction. Thus, the temporary disruption of REC2 uses at a particular location would last for less than two years and the impact would be less than significant. In addition, Sections 3.14.2 and 3.14.5 discusses that there are no existing water contact recreational use (Beneficial Use REC1) due to limited water in the creek and lack of fish species that are of interest of anglers. The project's impact on REC1 use would be less than significant.

After construction is complete, implementation of Mitigation Measure LND-A would increase the length of recreational trail along the creek compared to the existing conditions. Thus, with application of Mitigation Measure LND-A, the proposed project would have a long-term positive impact to REC-2 uses.

Comment 3-7 (San Francisco Bay Regional Water Quality Control Board): Groundwater, Hydrology (Section 3.17)

The District's alternatives analysis does not adequately address the potential of exposing the water table in new areas and resultant alterations in the creek's hydrology. Consequently, the DEIR does not include any mitigation for this potential impact on the post-Project hydrology. The Project would excavate to variable depths of 9 to 20 feet (Table 5.4). Given that the depth to groundwater ranges from about 7 to 20 feet below grade (EIR, Appendix D-Geotechnical Report), the post-Project conditions would likely result in more area of the channel invert being in the groundwater table than existing conditions. Please revise the DEIR to address the post-Project hydrology conditions, and the impacts from vegetation and sediment maintenance activities on the creek's functions, values, and beneficial uses.

Response 3-7

Table 5.4 of the EIR does not state that the project would excavate to a depth of 20 feet. The table presents the size of the enlarged channel after project implementation, which would range in depth up to 14 feet below the top of bank. However, compared to the existing channel, the average channel depth would increase by only 18 to 24 inches. This minimal increase in channel depth would not result in significant changes in creek hydrology due to increased inflow of groundwater as the typical depth to groundwater would continue to be greater than the post-construction channel depth.

During project construction, portions of the channel will be overexcavated (i.e. excavated below the finished channel bed elevation) to install bed armor and culverts and to relocate utility lines. These excavations have the potential to encounter groundwater. Mitigation Measure WAQ-B requires the preparation and implementation of a dewatering plan to handle groundwater that seeps into construction area during construction. The dewatering plan will include testing of the groundwater that seeps into the construction area before it is released downstream to prevent adverse effects on water quality. Additionally, energy dissipation methods will be employed to prevent bed scour when the water is released. In the JCI plume area, encountered groundwater will be collected and treated to meet RWQCB standards before release to the downstream creek channel (see Mitigation Measure HWM- C in FEIR section 3.9.6).

As described in FEIR Section 3.17.3.2, the Basin Plan adopted by the RWQCB designates the following beneficial uses of Berryessa Creek surface water: water contact recreation (REC1), noncontact water recreation (REC2), warm freshwater habitat (WARM), and wildlife habitat (WILD). FEIR Section 3.5.5 analyzes the potential for the proposed project to impact the creek's biological functions and values, including WARM and WILD beneficial uses. FEIR Section 3.14.5 analyzes the potential for the proposed project to affect REC1 and REC2 beneficial uses. These analyses confirm that the proposed project would result in less than significant impacts to the creek's functions, values, or beneficial uses.

Comment 3-8 (San Francisco Bay Regional Water Quality Control Board): Bank Stabilization (Section 2.5.1)

> A. The DEIR main body discusses that biodegradable coconut mats will be used for erosion control and bank stabilization (sections ES4, 2.5, and others). However, Appendix D Geotechnical Report (April 2015), section 2.1 states: "The erosion protection will consist of rip rap on the lower portion of the slope and geocells filled with aggregate or concrete on the upper portion of the slope," and this is reiterated in section 23. In addition, Appendix D, section 12 states: Rip rap is also being used for the channel invert between approximately Stations 115+00

and 164+00." Please revise the DEIR to reference any inaccuracies in the Geotechnical Report (or any other appendices, as appropriate). Please note that the Water Board staff has communicated to the Corps-District design team that the use of geocell bank stabilization does not comply with Water Board policies or the requirements in the Basin Plan to avoid and minimize impacts to the extent practicable.

B. Hydroseed. The DEIR states: "Channel banks would be protected with biodegradable erosion control blankets and hydroseeded" (ES-4; Table ES-2; section 2.5.2; and others). We caution that erosion control treatments such as hydroseeding, hydraulic mulch, tackifiers, soil binders, and straw mulch could wash into the channel rendering the erosion prevention method ineffective. Other soil bioengineering methods such as the planting of willow stakes and emergent in-stream vegetation could be used to stabilize the bed and banks below the mean high water level. Has the District considered integrating willow stakes or other bioengineering methods in the Project for bank stabilization?

Response 3-8

Since the DEIR was released for public review, the Geotechnical Report (Tetra Tech 2015c) has been updated and geocells are no longer included in the project. The updated Geotechnical Report is included in Appendix D of this FEIR. The following text has been added to Sections ES-4 and 2.5.2: The channel banks would be protected with biodegradable erosion control blankets and hydroseeded, an approach that has been shown in the project Design Documentation Report (Tetra Tech 2015f) to be sufficient to prevent significant erosion.

The bed of the reconstructed channel will be hydroseeded with native wetlands plans to promote vegetation growth and protect against erosion, consistent with the RWQCB's recommendations. USACE and the District considered planting of willows in the creek channel as recommended by the RWQCB but found that this approach would increase channel roughness and decrease flow conveyance capacity. This would result in the need to either enlarge the channel or add higher levees/floodwalls to meet the project's flood protection objective. These new structural features would add to the considerable cost of installing and maintaining the planted willow trees. In addition, the construction of levees/floodwalls would result in adverse environmental impacts to visual quality, air quality, biological resources, noise, recreation, and transportation and traffic. During the construction period, building the levees/floodwalls would generate greater construction noise, vehicle trips, and emissions of criteria pollutants and greenhouse gases as compared to the proposed project. The floodwalls/levees would worsen unavoidable and significant impacts in the areas of construction noise and emissions of air pollutants and greenhouse gases. After construction, the levees/floodwalls would constitute a barrier between the creek channel and surrounding lands, adversely affecting visual quality of the area, REC2 beneficial uses, and wildlife movement; however, these impacts would not be significant. Additionally, USACE policies require the maintenance of a 15-ft vegetation-free zone on either side of levees and floodwalls (USACE, 2008), which would preclude mitigation measure BIO-B and result in potentially significant adverse effects to riparian habit. Because erosion control can be achieved without incurring the prohibitive costs and adverse environmental effects to visual quality, air quality, biological resources, noise, recreation, and transportation and traffic that would result from planting willow trees in the channel, USACE and the District reject this suggested measure.

Comment 3-9 (San Francisco Bay Regional Water Quality Control Board): Alternatives Analysis for the 401 Certification

Please note that for the Water Board to permit the proposed Project pursuant to the Clean Water Act, Section 401, we require a project proponent to conduct an alternatives analysis consistent with the U.S. Environmental Protection Agency's 404(b)(1) Guidelines. The Basin Plan incorporates the 404(b)(1) Guidelines by reference to determine the circumstances under which filling of wetlands, streams or other waters of the U.S. and/or the State, as the District proposes with this Project, may be permitted. In accordance with the Basin Plan, filling, dredging, excavating and discharging into a wetland or water of the state is prohibited unless the project meets the least environmentally damaging practicable alternative (LEDPA) standard as determined through the 404(b)(1) alternatives analysis. Although the LEDPA analysis is not required by CEQA, a project proponent may tailor their alternative analysis to fulfill both the CEQA and 404(b)(1) requirements to help expedite the Water Board's Project review to issue a 401 Certification.

For example, during pre-CEQA interagency meetings, Water Board staff made suggestions that would help the Project meet the LEDPA standard by minimizing impacts in the creek and maximizing its beneficial uses (Interagency meetings, August 4 and August 11, 2015). This input includes: (1) planting willow stakes in the streambed edges; (2) installing the proposed pre-cast concrete culverts at grades that allow the formation of earthen bottoms; (3) using bioengineering methods in place of concrete for bank armoring and/or some or all floodwalls; and (4) identifying opportunities to maximize both flood conveyance capacity and opportunities for future adaptive management of the channel by increasing channel cross section. For example, such adaptive management practices could be completed where the Corps' preferred alternatives propose reaches with maintenance access roads on both sides of the channel, by removing or lowering the road on the non-multi-purpose path side.

The District did not incorporate the Water Board staff's suggestions in the CEQA analysis, except for DEIR Alternative 4. At three times the cost of the District preferred alternative, Alternative 4 is cost-prohibitive because it apparently incorporates the "all options" scenario (though this is not explicitly explained in the DEIR). Water Board staff recommends the District revise the CEQA alternatives analysis to include feasible alternatives to meet the LEDPA standard. This would help expedite Water Board staff's project review for the 401 Certification process.

Response 3-9

The project sponsors are aware of the need for approval of the project under Section 401 of the CWA. Section 2.5.6 of the Draft EIR describes required permits and approvals, including detailed discussion of the need for Section 401 approval. The CWA requires the USACE to apply the 404(b)(1) guidelines in deciding whether to permit discharges of dredged or fill material into waters of the U.S. The guidelines generally prohibit the Corps from issuing a permit if there is a practicable alternative to the proposed discharge that would have less adverse impact on the aquatic ecosystem, as long as the alternative does not have other significant adverse environmental consequences (40 CFR 230.10(a)). Thus, Section 404(b)(1) requires that a project directly affecting waters of the U.S. must be the least environmentally damaging practicable alternative (LEDPA) to receive regulatory approval. A key part of LEDPA is the legal definition of practicable: "practicable" means "available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes." (40 CFR 230.3).

The District agrees that a LEDPA analysis is not required by CEQA, but contrary to the RWQCB comment, has concluded based on substantial evidence that the proposed project is the LEDPA, as defined by EPA regulations at Title 40 CFR 230. The proposed project would result in significant impacts in the following

topic areas before implementation of mitigation measures: Air quality (Impacts AIR-2 and AIR-3), biological resources (Impacts BIO-4 and BIO-5), cultural resources (Impacts CUL -1, CUL2, and CUL-4), geology and soil (Impacts GEO-1 and GEO-2), greenhouse gas emissions (Impacts GHG-1), hazardous materials (Impacts HWM-1 and HWM-2), land use and planning (LND-2), noise (NOI-1 and NOI-4), traffic and transportation (TRA-4, TRA-5, TRA-6), utilities and service systems (UTL-1), and water quality and hydrology (WAQ-1, WAQ-5, and WAQ-6). EIR Alternative 2A would have almost identical impacts as the proposed project, with the only differences being slightly reduced seismic hazards (Impact GEO-1) and reduced potential for hazardous material spills and exposure of persons (HWM-1 and HWM-2). However, the proposed project would meet all project objectives while Alternative 2A would not. EIR Alternatives 2B and 4 would result in greater impacts than the proposed project in a number of topic areas. Construction period emissions of criteria pollutants and greenhouse gases would be greater (AIR 2 and AR-3). Alternatives 2B and 4 would also have larger footprints and longer construction period than the proposed project, result in increased construction- period impacts to biological resources (BIO-2, BIO-4, and BIO-5), increased potential for impacts to cultural resources (CUL-1, CUl-2, and CUL-4), increased potential for seismic hazards and soil erosion (GEO-1 and GEO-2), increased potential for spills or releases of hazardous materials or contaminated groundwater (HWM-1, HWM-2, and UTL-1), increased construction noise (NOI-1 and NOI-2), increased construction traffic (TRA-4 and TRA-5), and greater impacts to water quality (WAQ-1, WAQ-5, and WAQ-6). Additionally, Alternative 4 would have greater potential for conflict with the Milpitas Trails Master Plan due to the adverse effects of floodwalls on recreational quality. Similar to Alternative 4, the RWQCB-proposed alternative would have a larger footprint, a longer construction period, and extensive floodwalls, resulting in greater construction-period impacts to air quality, biological resources, cultural resources, geology and soils, hazardous materials, noise, traffic and transportation, and water quality than the proposed project. In the long-term, the RWQCB-recommended alternative would result in somewhat higher quality riparian and aquatic habitat than the proposed project. Overall, the RWQCB–recommended alternative would be more environmentally damaging than the proposed project due to the severity and wide number of construction-period impacts. For those reasons the District believes that the proposed project would be the less damaging alternative.

In regard to the measures recommended by the RWQCB, measures 1, 3, and 4 would require the construction of levees/floodwalls to meet the project design flow. Construction of floodwalls/levees would result in adverse environmental impacts to visual quality, air quality, biological resources, noise, recreation, and transportation and traffic. During the construction period, building the levees/floodwalls would generate greater construction noise, vehicle trips, and emissions of criteria pollutants and greenhouse gases as compared to the proposed project. The floodwalls/levees would worsen unavoidable and significant impacts in the areas of construction noise and emissions of air pollutants and greenhouse gases. After construction, the levees/floodwalls would constitute a barrier between the creek channel and surrounding lands, adversely affecting visual quality of the area, REC2 beneficial uses, and wildlife movement; however, these impacts would not be significant. Additionally, USACE policies require the maintenance of a 15-ft vegetation-free zone on either side of levees and floodwalls (USACE, 2008), which would preclude planting or growth of trees in much (if not all) of the project area, resulting in long-term adverse effects to WILD, REC1 and REC2 beneficial uses. Measure 2 would be difficult and expensive to construct due to the presence of underground utility lines in the vicinity of the proposed culverts at the UPRR trestle, Piedmont Creek confluence, and Los Coches Creek confluence.

The RWQCB-recommended alternative, like Alternative 4 in the Draft EIR, would include a larger channel size (compared to the proposed project or Alternative 2A) which would enlarge the project footprint and

result in greater implementation costs for both land acquisition and construction. The existing creek ROW is bounded by dense urban development on all sides and acquiring the land to enlarge the channel to implement the RWQCB would be prohibitively expensive and logistically impracticable due to the need to remove active railroad tracks. Neither the USACE nor the District has the legal authority to acquire land containing active railroad lines without the owner's consent. UPRR has stated that they intend to continue operating the railroad tracks adjacent to the creek channel indefinitely, and have entered long-term contracts with customers to provide service using these tracks (Ygbuhay, 2014). Therefore, the RWQCB-recommended alternative is impracticable for the same reasons as Alternative 4 in the DEIR.

Comment 3-10 (San Francisco Bay Regional Water Quality Control Board): Summary
In summary, Water Board staff appreciates the opportunity to provide comments on the DEIR. The DEIR is well-organized, but it does not adequately describe the proposed Project's environmental impacts and associated mitigations. In addition, the proposed Project would not meet the Water Board's requirements for project proponents to avoid and minimize impacts and to appropriately compensate for any unavoidable impacts in accordance with the Basin Plan and (404(b)(1) Guidelines.

Response 3-10
The District appreciates the RWQCB's review of the DEIR and the comments submitted by the agency. See also responses to comments 3-2, 3-5, 3-6, and 3-8 above for additional analysis of project alternatives and impacts. As documented in the FEIR, the proposed project avoids and minimizes environmental impacts to the maximum practicable extent. As stated in the response to comment 3-9 above, USACE and the District have determined that the proposed project is the LEDPA as defined in the 404)(b)(1) guidelines.

Comment 4-1 (VTA)
VTA has no comments on the Draft EIR for the above referenced project. Thanks.

Response 4-1
The District appreciates the efforts by VTA to participate in the CEQA process for this important project.

Comment 5-1 (Citizens Committee to Complete the Refuge/Santa Clara Valley Audubon Society): Integration with USACE EIS
We appreciate the District's recognition that FEMA certification needs to be an outcome of the Project, therefore initiating this DEIR. There is the question: wasn't that concern known when the Corps was preparing its Environmental Impact preparing its Environmental Impact Statement (EIS), prior to 2013? As the Draft EIS was an integrated document, why didn't the District participate in it or, in parallel, prepare a DEIR? Wouldn't it have been suitable to include a FEMA certifiable alternative at that time?

Response 5-1
This comment does not raise an issue related to the adequacy of the EIR impact analysis. Nevertheless, the following response is provided.

The National Environmental Policy Act is a Federal law applicable to Federal Agencies, including USACE. In 2014, USACE prepared a General Re-Evaluation Report/Environmental Impact Statement meeting NEPA requirements. The California Environmental Quality Act is a state law applicable to California state and local agencies, including the District. The District prepared the Draft EIR in conformance with CEQA

requirements. There are no legal requirements for a project EIS and EIR to be a combined document. For logistical and resource allocation reasons, as well as timing of funding, the District and USACE were not able to produce a combined document.

Comment 5-2 (Citizens Committee to Complete the Refuge/Santa Clara Valley Audubon Society): Section 401 Water Quality Certification/RWQCB Concerns

These questions come to mind in light of the Corps' decision that it may invoke the Clean Water Act (CWA) 404r exemption. Under that action the Corps proposes replacing the San Francisco Bay Regional Water Quality Control Board (RWQCB) for Section 401 Water Quality Certification. Through our experience with other projects, we are aware that the certification process of the RWQCB requires the review of a Final EIR, per obligations of the State of California established under the Porter Cologne Act. While acting as the agent for the federal responsibility, the RWQCB also assures that particular water quality interests of the State are fulfilled, oversight that the 404r will not provide. Aren't the State's interests of value to this Project and to the District? If the District had produced a Final EIR in 2013, wouldn't that have provided time for a RWQCB 401 certification process to complete in time for construction to begin in 2016?

Response 5-2
This comment does not raise an issue related to the adequacy of the EIR impact analysis. Nevertheless, the following response is provided.

The District takes great strides all its operations to protect water quality and biological resources within the waterways owned and operated by the District. Potential project impacts to water quality are analyzed in Section 3.17 Hydrology and Water Quality of the EIR. That section also contains measures to mitigate those impacts to a less than significant level. See also the response to comment 3-9 above for a discussion of the CWA permit requirements applicable to the proposed project.

There is no requirement that an EIR and EIS for the same project be prepared concurrently. The possible benefits and drawbacks of having prepared the EIR at a different time are speculative.

The state's interests are of value to the District and USACE; the Section 401 water quality certification process is in process. USCACE submitted a Section 401 application to the RWQCB on September 25, 2015. On October 23, 2015, the RWQCB responded by requesting additional project information. USACE submitted the requested additional information to RWQCB on December 18, 2015. Consultation between USACE (i.e. project applicant) and RWQCB regarding the 401 certification is ongoing.

Comment 5-3 (Citizens Committee to Complete the Refuge/Santa Clara Valley Audubon Society): Notice of Preparation
There is substantive concern that the Notice of Preparation of record is 14 years old. In this DEIR, the District explained that it tried but was unable to contact commenters to that NOP. The District must explain why a new NOP was not issued for this DEIR. It is quite likely that the affected and interested parties may have changed. For instance, are today's Milpitas residents and that City's park officials aware that they will lose a pocket park and its associated pocket ecosystem? Based on these considerations, it appears that the NOP should have been recirculated. That was the path the District followed not long ago, for its CEQA process for the Shoreline Feasibility Study, again local partner to the

Corps. Please respond to these concerns. Finally, the Notice of Availability (NOA) for this DEIR was inadequate, it being notable that five major, local environmental organizations were not noticed on it (Joint Letter to J. Manitakos, 11/12/15). Given the long, forgotten NOP, the District needed to make a very significant effort to deliver the NOA to interested parties which it did not.

Response 5-3
The District prepared the NOP for the EIR in conformance with CEQA Guidelines section 15082, which does not require recirculation of the NOP after a set time period. Therefore, the District met all legal requirements for preparation and circulation of the NOP. As described in Section 1.2.1 of the Draft EIR, the District conducted a robust effort to circulate the NOP that met all CEQA requirements. The District's efforts include filing the NOP with the State Clearinghouse, posting it at local libraries, and mailing it directly to interested parties including state and local agencies. The District has met many times with the City of Milpitas staff to discuss the proposed project, including the need to remove the pocket park. The District also hosted project information meetings in May and August 2015 for local residents of the project area.

The pocket park is described and potential project impacts to it are analyzed in sections 3.10 Land Use and Planning and 3.14 Recreation of the EIR. The District has met with City of Milpitas representatives on many occasions to discuss the proposed project. Additionally, the District provided copies of the DEIR to the City Planning Department in the number and formats requested by the City of Milpitas. The DEIR provided useful information on the project and an opportunity for interested parties to comment on the proposed project.

Comment 5-4 (Citizens Committee to Complete the Refuge/Santa Clara Valley Audubon Society): Notice of Availability
Under the heading of "Basic Purposes of CEQA" in the General Concepts, 14 CCR § 15002, the first listed purpose is:

> (1) Inform governmental decision makers and the public about the potential, significant environmental effects of proposed activities.

Toward that end, we share comments here on issues that inadequately meet the need to inform by omission, by use of assumption or, perhaps, by simple oversight of information relevant to associated impacts and mitigations.

Response 5-4
The District followed all legal requirements for provision of the NOA, published a display ad in the San Jose Mercury News, and made the DEIR available at multiple locations. In addition, copies of the DEIR were sent to multiple recipients, including all agencies and individuals that had previously expressed interest in this project. In addition, the District responded favorably to a request from five environmental groups for additional time to review the Draft EIR and submit comments beyond the Nov. 12, 2015 legally established comments period end date. Two of these groups submitted comment letter No. 5 on November 30, 2015. The District not only accepted that late comment letter but carefully considered the concerns raised in the letter and provides full responses herein to the comments in that letter.

Comment 5-5 (Citizens Committee to Complete the Refuge/Santa Clara Valley Audubon Society): Land Use and Water Quality (Sections 3.10 and 3.17)

Piedmont and Los Coches Creeks: The Project Description includes the following statement: "Installation of concrete box culverts and wingwalls at Los Coches and Piedmont Creeks, with access roads constructed over the top of the culverts."

Subsequently the DEIR explains that the new culverts will improve contributory creek hydrology, angled to direct flow downstream and a change removing the current right angle juncture. These are major changes to creeks that contribute to the flood risks of upper Berryessa and for which a full characterization is needed of the affected area of each creek. What are the existing uses on the adjoining land such as where the access road will go? Might the new culvert have upstream impacts and are they beneficial? Given Los Coches upstream extent, what level of sediment does it transport?

Response 5-5

Existing land uses at the project area and adjacent lands are described in Section 3.10 Land Use and Planning of the EIR. That section also analyzes potential project impacts to those land uses. Impacts of the project on hydrology and sedimentation of the creek channel are analyzed in Section 3.17 Hydrology and Water Quality of the EIR. The proposed project would add a concrete culvert at the downstream end of Los Coches Creek, replacing the existing failing sacked concrete, eroded banks, and concrete bed lining. The new culvert would be within 100 ft of the creek's confluence with Lower Berryessa creek and construction disturbance would affect only the short section of creek at the confluence. Since the bottoms of the culverts are designed to be installed below the invert elevation of Los Coches and Piedmont Creeks, flow volumes and sediment transport capacity would not be affected by the proposed project, and the culvert will not restrict flow or sediment passage. The existing uses at the culvert location consist of the Los Coches Creek and an adjacent paved pathway. The proposed project would replace those uses with a more stable creek channel and an access road surfaced with compacted aggregate. The change in land use would not be significant.

Comment 5-6 (Citizens Committee to Complete the Refuge/Santa Clara Valley Audubon Society): Sedimentation (Section 3.17)

Sediment Deposition and Maintenance: In discussion of Hydrology Impact WAQ-3, the section on operations includes the following:

"Although reduced velocities and lower water surface elevations may reduce the sediment transport capacity, this effect is likely to be balanced by decreased erosion and diminished sediment input. Furthermore, any backwater effect that occurs where the downstream end of Reach 1 at Calaveras Boulevard transitions into the Lower Berryessa Creek channel would be eliminated when the Lower Berryessa Creek Program is constructed, further reducing sediment deposition in the lower end of Reach 1." (Ed. Note: italics added) This argument, supporting a conclusion of less than significant impact, uses the assumptive "may", "likely" and "would" as its basis. Were these assumptions tested through hydrologic modelling? This is a 2.2 mile long project. How can it be known if the Lower Berryessa Project "would" have a beneficial sediment transport impact in Reach 1 or possibly further upstream? The geomorphology discussed in Section 3.17.2.1 is of a stream with minimal gradient throughout its length, with slope in the range of a mere 0.35% to 0.5%. With the widened channel reducing water velocity, detailed analysis needs to be evident to demonstrate whether or not sediment deposition is significant.

Will the Project necessitate increased frequency for maintenance dredging to ensure the flood risk reduction is achieved long term? If analysis exists that supports the DEIR's conclusion, please provide it.

Response 5-6
As described in Section 3.17 Hydrology and Water Quality of the EIR, the proposed project would reduce sediment input into Upper Berryessa Creek by stabilizing the currently eroding bed and banks of the creek. The proposed project would not increase the frequency of future sediment removal activities. Section 8.3 of the FEIR contains a complete bibliography of all scientific and technical literature cited in the DEIR. See also the response to Comment 3-3 above and the following key technical studies: Northwest Hydraulic Consultants, 2006; SCVWD, 2015b, Tetra Tech, 2012, 2015a, 2015e, and 2015g; and Winzler and Kelly, 2010.

Comment 5-7 (Citizens Committee to Complete the Refuge/Santa Clara Valley Audubon Society): Contaminated Soils (Section 3.9)
Contaminated Soil Testing and Disposal: As discussed in detail in the EIR, a substantial area of Reach 2 of the Project is affected by locally historic spills of hazardous materials at sites adjoining or near enough to have produced large plumes that run below the creek. These spills introduced a number of volatile organic compounds (VOC) and other hazardous materials into the environment. While the responsible businesses no longer exist, monitoring and mitigation of these spills is ongoing. Two of the sites are each the source of the separate, large plumes: The former Jones Chemicals Inc. adjoins and is parallel to the creek. The other, the former Great Western Chemical Company, is set back about a block from the creek. Due to their proximity, additional testing was performed for the DEIR along that area of Reach 2. Soil tests were conducted of core samples collected by boring along the creek's access road. Results showed that VOC concentrations detected in the upper 15 feet (as deep as the project expects to dredge the channel) are below risk-based screening levels. On this basis, the EIR states that reuse and transport of soils off-site for disposal would be classified non-hazardous. As a result, no hazardous waste impact addresses soil testing. While the tests results are relevant, the expanse of the contaminated area and the possibility that pockets of higher contamination levels may exist questions whether such a conclusion is adequate environmentally. The existing conditions imply that all due caution is needed. We are aware that clean soils from other District creek projects are transported for reuse by the South Bay Salt Pond Restoration Project for sensitive restoration actions. As a responsible agency, all appropriate precaution should be taken by the District to assure that there is no likelihood that hazardous levels of VOCs or other contaminants are present before transport for any other reuse. Prior to transport, the Project should be monitoring soil for such hazards.

Response 5-7
The two groundwater plumes referenced in the comment are described in great detail in Section 3.9 Hazardous Materials of the EIR. That section also analyzes the potential for project construction activities to encounter contaminated soil or groundwater and concludes that contaminated soil is not expected to occur within the project footprint and would not be encountered during project construction (for additional details, see the HTRW Soil Sampling Report in FEIR Appendix E). Although soil at the project area is not contaminated, contaminated groundwater may be encountered. Mitigation Measure HWM-C requires treatment of contaminated groundwater prior to its release to the environment to prevent adverse water quality effects. The treated groundwater would comply with levels established by the San Francisco Bay Regional Water Quality Control Board in Order No. R2-2012-0012 and would not result in adverse effects to the environment. See also response to Comment 3-2.

Comment 5-8 (Citizens Committee to Complete the Refuge/Santa Clara Valley Audubon Society): Nesting Bird Impacts (Section 3.5)

State Regulation of Plants and Wildlife: The Project took guidance for Biological Resources impacts from the US Fish & Wildlife Service response to the Corp's Integrated Document, finalized in 2013. While that guidance is appropriate, it is not sufficient in California. The California Department of Fish & Wildlife (CDFW) sets requirements that provide protection for Species of Special Concern as well as for protection of sensitive habitats e.g. nesting birds. These regulations need to be applied in mitigation BIO-A (p. 3-69) during construction, in addition to the USFWS requirements. From the DEIR: "Mitigation Measure BIO-A would require pre-construction nesting bird surveys and establishment of appropriate buffers, reducing impacts to nesting resident bird species. " This statement leaves open the question of what "pre-construction" means nor does it establish a time of- year. Whenever possible, construction should not occur during nesting season. If done during nesting season, then special precautions are necessary. Birds can build a nest, lay eggs, and start raising young within two weeks, and an entire reproductive cycle may start and end within 30 days. Mr. Dave Johnston, Environmental Scientist, CDFW, recommends that pre-construction and pre-vegetation removal surveys should occur no more than 24 hours before work commences. If work in a particular location stops for more than 24 hours (such as over a weekend or holiday), surveys should be done again before work recommences. Surveys should take place at all locations within 300 feet of actual project activity and if the project 'moves" to a new location then the buffer and surveys should move as well. Mr. Johnston also recommends a preliminary survey 30 days ahead of time to give the project proponent an idea of what to expect once they are ready to begin work. It is important too to survey for ground-nesting birds in addition to those that nest in shrubs and trees. Surveys for ground-nesting birds should be performed 24-hours prior to vegetation removal or disturbance. If nests are found, buffers would be set and work within the buffer areas should be postponed until the nestlings have fledged. If raptors or special status species nests are found, CDFW should be called on to set appropriate buffers.

Response 5-8

The District provided two copies of the Draft EIR directly to CDFW; no comments on the DEIR were received from CDFW. The District agrees with the comment authors that implementation of Mitigation Measure BIO-A: Perform Pre-construction Nesting Bird Surveys and Establish Appropriate Buffers will prevent significant adverse effects to nesting birds, including ground-nesting birds. The measure specifies the time of year when surveys would occur, the appropriate buffer distances for nesting birds and an enlarged buffer for raptor nests. The timing of the pre-construction surveys will adhere to established protocols as determined by the qualified biologist conducting the surveys and will be sufficient to reduce potential impacts to less than significant levels (see Sections 3.5.5 and 3.5.6 of the EIR). As noted in the comment, the reproductive cycle for birds takes 30 days, therefore it is not necessary to conduct pre-construction surveys within 24 hours of the start of construction to prevent adverse effects to nesting birds.

Comment 5-9 (Citizens Committee to Complete the Refuge/Santa Clara Valley Audubon Society): Pocket Park Removal (Sections 3.10 and 3.14)

The pocket park near the juncture with Los Coches Creek, is planned for removal by the Project to make way for an access road. As mentioned previously, we are curious as to whether the current residents are informed on the removal. In the Recreation analysis, it is noted that the next closest city park is a mile from the Pocket Park site, on the other side of I-680. Under the DEIR's land use analysis, the existing conditions mention "relatively small amounts of single family residential and parks/open space" and then does not further address the impact of replacing the park/open space with an access road. The

Land Use and Recreation sections both refer to Milpitas trail plans but do not explain if the possibility of using the access road in a trail system is accepted as suitable mitigation for loss of the Pocket Park and of the pocket-ecosystem it provided. The loss requires formal, specified mitigation.

Response 5-9
Potential project impacts to the pocket park are analyzed in Section 3.14 Recreation of the EIR. As discussed in Section 3.14 Recreation, the equipment in the park receives minimum use and thus the impact from removing the park would be less than significant and does not require mitigation. With respect to the impact relating to the closure of the access road to public use as a trail, if the proposed project is implemented the District would work with the City of Milpitas to execute a Joint Use Agreement to allow public access to a trail along the creek (See Mitigation Measure LND-A Allow Public Access to Creek Right of Way in the EIR); this mitigation would be sufficient in reducing the impact to a less-than-significant level.

Comment 5-10 (Citizens Committee to Complete the Refuge/Santa Clara Valley Audubon Society): Land Use and Planning (Section 3.10)
Our review of this Project sparked disappointment. Here we see again a long trapezoidal channel designed only for the purpose of water transport, having long spans devoid of any shade nor of any other functions that a creek can provide. This is inconsistent with the direction that creek actions have taken in recent decades and is not the preference of local jurisdictions. The DEIR reports the expectation that the City of Milpitas will one day incorporate the extended access roads in its trail system. To that point the DEIR provides the following quotes from the City's General Plan:

4.g-I-7. Ensure that all landscaping within and adjoining a Scenic Corridor or Scenic Connector enhances the City's scenic resources by utilizing an appropriate scale of planting, framing views where appropriate, and not forming a visual barrier to views; and relates to the natural environment of the Scenic Route; and provides erosion control.

4.g-I-13 - Develop the section of Berryessa Creek which runs through the Town Center into a scenic as well as a recreational resource for the Town Center. Town Center is found on both sides of the creek along the Calaveras Boulevard corridor, and includes approximately 800 feet of the channel area in Reach 1.

2.a-I-17. Foster community pride and growth through beautification of existing and future development. Or consider DEIR quotes from Envision 2040, the San Jose General Plan:
Development adjacent to creekside areas should incorporate compatible design and landscaping, including appropriate setbacks and plant species that are native to the area or are compatible with native species. Development should maximize visual and physical access to creeks from the public right-of-way while protecting the natural ecosystem. Consider whether designs could incorporate linear parks along creeks or accommodate them in the future.

Clearly these jurisdictions value the aesthetic contribution that a shaded, vegetation-lined creek can provide. The 2001 NOP listed the following objectives:

1. Improve flood protection in the cities of San Jose and Milpitas;
2. Reduce sedimentation and maintenance requirements in the creek;
3. Provide for recreational amenities;

4. Integrate ecosystem restoration into the project.

Unfortunately, that NOP describes a project that would involve a much longer length of the creek and does not help us know what the intentions were for the portion that is now this Project. Even so, the principle of ecological consideration as part of the design is consistent with inclusion of such action at whatever location it is possible, improving and going above and beyond, in this case, the function of flood control. This Project plans to hydroseed the slopes of the rebuilt creek and plant replacement trees within the Project but it does not discuss such planting as ecological improvements nor suggest an objective to produce an attractive, multi-functional, waterway-focused community amenity. This Project is funded, in part, by the District's Safe, Clean Water & Natural Flood Protection Program, a program that was approved in 2012 by well over two thirds of the voters. The Programs web page has the following:

"The voters of Santa Clara County clearly recognize the importance of a safe, reliable water supply. They value wildlife habitat, creek restoration and open space."

Response 5-10
Potential project impacts to land uses and the degree of project conformance with land use policies of the Cities of San Jose and Milpitas are analyzed in Section 3. 10 Land Use and Planning of the EIR. Significance criterion LND-2 expressly addresses potential conflicts with local land use plans and policies. The proposed project would be consistent with City of Milpitas Master Plan policies 4.d.-A-8 and 4.g.I-13, which address design of flood protection projects and development of Berryessa Creek in the Town Center area (i.e. Reach 1 of the project area). The proposed project would provide flood protection as called for by Policy 4.d.-A-8 and would facilitate future development of a recreational trail in the Reach 1 Town Center area as called for by Policy 4.g.I-13. Only a portion of Reach 4 is within the city limits of San Jose. The proposed project would provide flood protection in accordance with goals EC5.4 and EC5.5 of the *Envision San Jose 2040* General Plan.

Comment 5-11 (Citizens Committee to Complete the Refuge/Santa Clara Valley Audubon Society): Tree Removal (Section 3.5)
Considering these planning principles together, it saddens us to see a District Project that is so out of sync with the design preferences of today. The mitigation for tree removal states that the Corps will plant replacement trees in the "vicinity." The Project should develop that action jointly with the local jurisdictions, toward an outcome of an improved water course that attracts and enriches the community.

Response 5-11
See Mitigation Measure BIO-B Compensate for Trees and Shrubs Removed During Construction in Section 3.5.6 of the EIR. This measure requires the planting of native trees and shrubs in the project vicinity to replace the trees and shrubs removed during project construction. The project development team has identified locations within the project area suitable for planting of the number of native trees and shrubs recommended by USFWS and the project design incorporates these planting areas. The native trees and shrubs would be planted within a few feet of the creek channel and would benefit the aesthetic, recreational, and biological values of the creek corridor.

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8. AGENCIES AND PERSONS CONTACTED, REFERENCES AND LITERATURE CITED, AND REPORT PREPARERS

8.1. CONSULTATION AND COORDINATION

Agencies and other groups that were consulted with during the preparation of this EIR include the following:

U.S. Army Corps of Engineers
Bay Area Air Quality Management District
California Department of Fish and Wildlife, Central Coast Region
California Department of Water Resources
California Department of Transportation
California Air Resources Board
San Francisco Bay Regional Water Quality Control Board
Santa Clara County, Planning Office

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APPENDICES

Appendix A **Public Comments and Notice of Preparation**

Appendix B **Air Quality Model Data Sheets**

Appendix C **Wetlands/ Other Waters of the U.S. / Waters of the State Delineation Report**

Appendix D **Geotechnical Report**

Appendix E **Hazardous Toxic, and Radioactive Waste (HTRW) Soil Sampling Report**

Appendix F **Tree and Shrub Survey Report and Impact Analysis**

Appendix G **Public Comments on the DEIR**

Appendix H **Draft Groundwater Management Plan**

EXHIBIT 6

0903

Sent via electronic mail: No hard copy to follow

March 14, 2016
CIWQS Place ID 818597 (SG)
Regulatory Measure ID: 403119

U.S. Army Corps of Engineers
1455 Market Street
San Francisco, CA 94103
Attention: Ms. Amanda Cruz
Email: Amanda.b.cruz@usace.army.mil

Subject: Water Quality Certification for the Upper Berryessa Creek Flood Risk Management Project in Cities of Milpitas and San Jose, Santa Clara County

Dear Ms. Cruz:

San Francisco Bay Regional Water Quality Control Board (Water Board) staff has reviewed the application for certification for the Upper Berryessa Creek Flood Risk Management Project (Project) the U.S. Army Corps of Engineers (Corps) submitted on September 25, 2015. As the federal administrating agency for regulating the discharge of dredge and fill materials to waters of the United States pursuant to section 404 of the Clean Water Act (CWA) (33 U.S.C. 1344), the Corps signed the Record of Decision dated May 29, 2015, stating that the Project meets all environmental statutes.

The Corps (the Applicant) has applied to the Water Board under Section 401 of the CWA for water quality certification (Certification) that the Project does not violate State water quality standards. The Water Board received the application on September 25, 2015 (Application). On October 23, 2015, the Water Board notified the Applicant via email that the Application was incomplete and listed the supplemental information needed before the Certification could be issued. The Applicant submitted supplemental information to the Water Board via email on January 6, 2016, (letter dated December 28, 2015) and other emails from January 8 through February 22, 2016. The Application package includes the Project's 95 percent Planting Plan received January 26, 2016; Groundwater Management Plan received January 26, 2016; and 90 percent design plans dated January 14, 2016, received on February 22, 2016. Water Board staff has determined that the original Application materials and supplemental Application materials received through February 22, 2016, constitute a complete Application. The Water Board provided public notice of the Application on October 14, 2015, and received one comment letter from the Citizens Committee to Complete the Refuge. The Water Board Executive Officer (Executive Officer) has carefully considered all

comments received on the Application before issuing Certification. The Water Board hereby issues Certification for the Project.

The Applicant is partnering with the Santa Clara Valley Water District (District) on the Project. This Certification authorizes construction of the Project as proposed by the Applicant in its Application.

This Certification is being issued to facilitate the Applicant's contracting and construction schedule for the Project, which is intended to result in the completion of Project construction prior to the planned opening of the Milpitas Bay Area Rapid Transit (BART) station in late 2017. Subsequent to issuance of this Certification, the Water Board will consider adoption of Waste Discharge Requirements (WDRs) with the District named as the permittee for the Project. The following is a partial list of items the WDR will address:

- Future operation and maintenance;
- Requirements for monitoring of vegetation reestablishment and channel cross and longitudinal sections to inform future maintenance guidelines under the District's Stream Maintenance Program;
- A plan to compensate for the capital project's impacts;
- Requirements for post-construction stormwater treatment from newly-constructed or replaced impervious surface; and
- Plans for future site uses.

As of the date of this Certification, the Applicant has not yet submitted information necessary for the Water Board to accept final plans (the creek dewatering plan, 100 percent Planting Plan, and 100 percent design plans), although it has submitted initial or draft information. This Certification requires preparation and submittal of final plans prior to commencement of construction for the relevant Project component.

I. FINDINGS

A. **Project Purpose.** The Project is intended to provide protection from the one percent exceedance probability flood flow event for 650 parcels along Berryessa Creek between Calaveras Boulevard in the City of Milpitas and Interstate 680 (I-680) in the City of San Jose (Attachment A, Figure 1). The area being protected encompasses the new Milpitas BART station and rail line infrastructure, which is part of a $2.3 billion (including $900 million of federal funding) BART expansion project that will extend BART service from Fremont through Milpitas to San Jose.

B. **Project Description.** The Applicant proposes to modify Upper Berryessa Creek from the upstream face of Calaveras Boulevard in Milpitas to the downstream face of I-680 in San Jose, for a length of about 2.2 miles (11,400 linear feet) (Attachment A, Figure 1). The Project will also modify 210 linear feet of Los Coches Creek and 60 linear feet of Piedmont Creek, which are tributary to Upper

Berryessa Creek. The Project is located just upstream of the "Lower Berryessa Creek and Lower Calera Creek Flood Protection Improvements Project" (Lower Berryessa-Calera Project) currently under construction by the District. Both the Lower Berryessa-Calera Project and the Project are scheduled for completion before the opening of the new Milpitas BART station in late 2017.

The major Project features include: (1) enlarging the Upper Berryessa Creek channel; (2) armoring channel beds and banks with rock riprap; (3) constructing concrete box culverts and associated concrete structures; and (4) building other concrete structures including floodwalls and access ramps. These elements have the following details below and are shown in Attachment A, Figures 2-1 and 2-2. In addition, fill and excavation information is presented in Table 1.

1. Enlarge the creek channel from approximately 9.6 to 17.2 acres for a trapezoidal channel cross section with bed width varying from 12 to 40 feet, height varying from 8 to 14 feet, and banks with a 2-to-1 horizontal-to-vertical (2:1) slope.

2. Build new pre-cast concrete box culverts (where currently none exist) and associated cast-in-place concrete wingwalls and concrete or grouted rock riprap transition structures at the Los Coches Creek and Piedmont Creek confluences, and to replace the existing Union Pacific Railroad (UPRR) wooden trestle bridge;

3. Build rock riprap of 9 to 15 inches (or 24-inch grouted rock riprap) in channel beds and banks for erosion protection, with the following details:

   a. Total area of 10.1 acres of rock riprap, including 9.96 acres in Upper Berryessa Creek, 0.14 acres in Los Coches Creek, and less than 0.01 acres in Piedmont Creek;

   b. Grouted rock riprap at the Piedmont Creek confluence and beneath the existing Yosemite Drive bridge crossing (total of 0.58 acres);

   c. Rock riprap in channel beds and banks (7,378 linear feet), with riprap extending up to the 2.5 to 10-year water surface elevation;

   d. Bank riprap extending 5 feet below the channel invert elevation in an additional 2,435 linear feet of Upper Berryessa Creek upstream of Calaveras Boulevard, where creek beds are not lined with riprap;

   e. Native sediment covering channel bed and bank riprap, followed by biodegradable erosion control blankets from the bank toe to the top of banks, with hydroseed in beds and banks to promote native vegetation growth and erosion protection; and

   f. Rock riprap linear and areal extent includes replacing existing concrete to be removed at the 90 degree bend upstream of Montague Expressway (400 linear feet);

4. Construct concrete floodwalls of 1,273-feet long by up to 2-feet high on the west bank of Upper Berryessa Creek between Los Coches Street and Piedmont Creek, and 450-feet long by 3-feet deep to be buried on the west bank upstream of Montague Expressway to reinforce an existing retaining wall;

5. Build concrete access ramps, one each on the east and west banks upstream of Montague Expressway, and a single concrete ramp on the east bank downstream of I-680;

6. Construct a 10-foot wide concrete approach ramp leading to a new UPRR culvert on the east bank;

7. Construct concrete and rock riprap transition structures at the upstream face of the existing Calaveras Boulevard Bridge;

8. Build new and replace existing maintenance roads (10,360 linear feet), with a width of 18 feet on the east bank and 15 to 18-feet wide on the west banks, with the exception of the section downstream of I-680, which lacks space on the west bank for a road;

9. Remove an unspecified volume of sediment and vegetation from about 200 linear feet of concrete-lined creek section just downstream of I-680; and

10. Replace and realign existing utilities within the Project right-of-way (see item I.C for additional information).

Table 1. Fill and Excavation Quantities [1]

Project Element	Material	Excavation (cubic yards)	Fill (cubic yards)	Length (linear feet)	Area (acres)
Trapezoidal channel construction	Sediment	148,400	41,800	10,453	17.2
Riprap in beds and banks (9 to 24-inch diameter)	Imported rock	---	91,000	9,813	10.1
Pre-cast concrete culverts	Concrete	---	1,300	340	0.15
Cast-in-place concrete wingwalls and transition structures	Concrete	---	1,508	346	0.37
Access ramps	Concrete	---	144	300	0.08
Access road (10-ft wide) to new UPRR culvert	Concrete	---	15	15	0.01
Floodwalls	Concrete	---	424	1,723	0.06
Remove concrete channel lining	Concrete	597 [2]	---	400	0.37

Build new and replace existing roads	Aggregate base	---	5,654	10,360	7.1

Notes:

Notation as "---" means this category is not applicable.

UPRR – Union Pacific Railroad

[1] Impacts of fill and excavation activities to waters of the U.S. and of the State are reported in Table 3.

[2] This quantity is estimated based on an area of 0.37 acres, a length of 400 feet, and an assumed thickness of 1 foot.

C. **Replace and Realign Existing Utilities.** Several utility lines are within the Project right-of-way including electric, stormwater, potable water, and fiber optics lines. Some utility lines will be protected in place while others will be replaced and realigned. The Application states that the locations of some utility lines are estimated and the Applicant's contractor will verify and document their locations. In addition, the Application states that all utility work will be implemented by cut and fill procedures with no directional drilling.

D. **Staging, Stockpiling, and Hauling.** Two areas outside of the Project right-of-way will be used for staging and sediment stockpiling (Attachment A, Figures 2-1 and 2-2). Access to and from the Project site and the staging areas will occur along existing paved roads via Calaveras Boulevard, Los Coches Street, Yosemite Drive, Ames Avenue, and Montague Expressway.

E. **Reuse or Dispose of Exported Material.** The Applicant will haul about 106,600 cubic yards of sediment from the site in addition to demolition debris such as concrete and utility components. Sediment and demolition debris will be reused or recycled to the extent feasible. The Application states that disposal of any demolished material and debris shall be in accordance with all applicable local, State, and federal regulations. This Certification requires the Applicant to characterize any sediment removed from the Project area to determine an appropriately-permitted upland location for disposal or for beneficial reuse, as appropriate.

F. **Dewatering.** The Applicant plans to conduct construction during dry weather. However, dewatering of surface water or groundwater that accumulates at excavated areas will likely be necessary. The creek areas where dewatering is most likely to be necessary are downstream of the Piedmont Creek confluence, where water flow is more persistent, and in the area downstream of Montague Expressway, where deep excavations for the replacement of the UPRR trestle bridge are more likely to encounter groundwater. This Certification contains a condition that prohibits creek dewatering to occur before submitting a Dewatering Plan to the Water Board. The Dewatering Plan shall be consistent with the Applicant's 90 percent specifications, which state that dewatering will be controlled at all times to maintain compliance with existing State water quality standards (Specification no. 01 57 20.00 10). In addition, the Environmental Impact Report (EIR) for the Project includes Mitigation Measure WAQ-B-Prepare and Implement a Dewatering Plan to mitigate for potentially significant water quality impacts due to construction activities.

G. **Groundwater Management.** The Project is within the footprint of a past solvent release from the Jones Chemical, Inc., former chemical plant. The Water Board requires the Applicant to capture and treat all groundwater encountered from within the potential extent of the toxic waste plume as demarcated in the 90 percent design plans. Any such groundwater must meet the standards of the NPDES General Permit for the *Discharge or Reuse of Extracted and Treated Groundwater Resulting from the Cleanup of Groundwater Polluted by Volatile Organic Compounds (VOC), Fuel Leaks and Other Related Wastes* (Water Board Order No. R2-2012-0012; NPDES Permit No. CAG912002) (VOC and Fuel General Permit), as stipulated in a letter to the Applicant dated August 14, 2015 (see Attachment B). The Applicant's Groundwater Management Plan submitted by email to the Water Board on January 26, 2016, is currently under review by Water Board staff.

H. **Operations and Maintenance.** The Application states that the District, as the Project's local sponsor, will be responsible for post-project operations and maintenance (O&M) of the channel. As such, the Applicant is not proposing to complete O&M activities under this Certification, and O&M activities are not covered by it. Rather, such activities will be considered for permitting as a part of the WDRs for the Project to be brought before the Water Board later this year. The Applicant will complete an O&M Manual for the Project to inform the District's subsequent activities.

   The Project's EIR states that sediment removal maintenance activities have been pre-mitigated under the District's existing Stream Maintenance Program. However, capital projects such as the Project are not covered by the Stream Maintenance Program, in accordance with the Stream Maintenance Program Manual, which the Water Board adopted with *Water Quality Certification and Waste Discharge Requirements for Santa Clara Valley Water District Stream Maintenance Program* (Water Board Order No. R2-2014-0015). Mitigation necessary for future O&M activities is intended to be considered as a part of the WDRs for the Project to be brought before the Water Board later this year.

   In addition, the WDRs are intended to address the process to transition the Project into the Stream Maintenance Program. This will be facilitated by the District's collection of information on Project performance during the first 5 years after Project completion.

I. **Impacts.** A jurisdictional wetland delineation consistent with the 1987 Corps Wetlands Delineation Manual was conducted in 2014 (Tetra Tech, 2014). The Project's delineation results are presented in Table 2. The Project will impact the entire area of 4.18 acres of waters of the U.S. within the Project limits. These waters are also waters of the State.

   No jurisdictional wetlands are in the Project. However, the wetland delineation identified patches of wetland vegetation fringing the margins of the Upper Berryessa Creek active channel, with a combined area of less than 0.5 acres.

For the purposes of this Certification, the Water Board finds that about 0.45 acres of wetland vegetation is in the Project.

Table 2. Wetland Delineation Results in the Project Site

Location	Waters of the U.S. and of the State	Area (acres)
Upper Berryessa Creek	Intermittent and Perennial Stream	4.05
Los Coches Creek at confluence with Upper Berryessa Creek	Intermittent Stream	0.10
Piedmont Creek at confluence with Upper Berryessa Creek	Perennial Stream	0.03
TOTAL		4.18

The San Francisco Bay Basin Water Quality Control Plan (Basin Plan) assigns the following beneficial uses to Berryessa Creek, which also apply to Los Coches Creek and Piedmont Creek by the Tributary Rule: wildlife habitat (WILD); warm water habitat (WARM); water contact recreational uses (REC-1); and non-contact water recreational uses (REC-2). Upper Berryessa Creek is a tributary of Lower Penitencia Creek, which, in turn, flows into Coyote Creek, a tributary to San Francisco Bay. The beneficial uses of Lower Penitencia Creek are the same as for Upper Berryessa Creek. Some of the beneficial uses of Coyote Creek, which also apply to Upper Berryessa Creek by the Tributary Rule, include migration habitat (MIGR), spawning habitat (SPWN), preservation of rare and endangered species (RARE), and cold water habitat (COLD).

The Project could indirectly impact waters of the State and the United States during excavation and construction of the creek channel. The water quality of Upper Berryessa Creek could be impacted by accidental releases of soil and debris during excavation of the creek channel, installation of riprap, and creek dewatering activities, as well as by the accidental release of hazardous materials and contaminants used or encountered during construction. These releases could cause violations of the water quality objectives proscribed in Chapter 3 of the Basin Plan including, but not limited to, water quality objectives for the following parameters: bacteria, dissolved oxygen, floating material, oil and grease, pH, sediment, settleable material, suspended material, temperature, toxicity, turbidity, and specific chemical constituents.

Furthermore, impervious surfaces created and/or replaced by the Project may also collect and concentrate stormwater runoff and pollutants that are subsequently discharged to Upper Berryessa Creek. The Project will result in the construction of 7.1 acres of redeveloped maintenance roads with impervious aggregate base (AB) material and an additional 0.08 acres of impervious maintenance ramps. This issue is intended to be considered as a part of the WDRs for the Project to be brought before the Water Board. The issue includes

the District's responsibility to comply with the post-construction best management practices (BMP) requirements in the NPDES *Municipal Regional Stormwater Permit* (MRP) (Water Board Order No. R2-2015-0049; NPDES Permit No. CAS612008) by using pervious material or by constructing post-construction stormwater BMPs to capture, detain, retain, and treat stormwater runoff from the Project's impervious surfaces or from an equivalent or greater amount of impervious surfaces offsite. The O&M Manual this Certification requires will need to include O&M of the maintenance roads and any associated BMPs to ensure compliance with the MRP for the life of the Project.

In addition, the Project will directly impact waters of the U.S. (classified as "other waters") in Upper Berryessa Creek, Los Coches Creek, and Piedmont Creek. These direct impacts are described in the Application (90 percent design plan dated June 19, 2015; email of January 13, 2016, from Corps staff to Water Board staff; and 95 percent Planting Plan dated January 15, 2016) and listed in Table 3.

Table 3. Impacts on Waters of the U.S. (Other Waters) by the Project

Project Activity	Permanent [1]		Temporary [1]	
	Acres	Linear Feet	Acres	Linear Feet
Dewater creeks [2]	--	--	4.18	10,763
Enlarge creek channel [3]	--	--	4.18	10,763
Rock riprap in channel beds and banks [4]	10.1 [3]	9,813 [4], [5]	--	--
UPRR concrete culvert and associated structures for trestle bridge replacement [4]	0.33 [6]	138	--	--
Other concrete culverts, wingwalls, and transition structures	1.42	636	--	--
Concrete ramps	0.08	300	--	--
Concrete access road	0.01	40	--	--
Concrete floodwalls	--	--	0.06	1,723
Remove patches of wetland vegetation	--	--	0.45	--
Remove native trees and shrubs	--	--	53 native trees and shrubs	
Conduct future maintenance	--	--	To be addressed in WDRs to be considered by the Water Board	

Notes:

The "-- " notation means the category is not applicable to the project activity.

[1] The sums for linear feet and acreage of different impacts are not quantified since impacts are overlapping within the same maximum length of 10,763 linear feet and area of 9.49 acres.

[2] Although the area and length dimensions are for all three creeks combined, some areas may be dry and would not require dewatering. The areas where surface water and/or groundwater will likely be present during construction activities are: (1) Upper Berryessa Creek from Calaveras Boulevard to the trestle bridge

replacement area downstream of Montague Expressway (about 7,700 linear feet); and (2) Piedmont Creek (60 linear feet).

[3] The area reported is based on post-project conditions.

[4] This length includes the length of concrete channel bed and bank lining to be removed (400 linear feet) and replaced with rock riprap.

[5] This length is the sum for lengths of Upper Berryessa, Los Coches, and Piedmont creeks.

[6] This area was calculated by multiplying the length of 138 feet by the width of 104 feet based on the combined width of the concrete structures spanning across the channel from the top of bank to top of bank.

J. **Avoidance and Minimization.** The Applicant proposes to implement the following avoidance and minimization measures:

1. The Project design avoids removing some native trees and shrubs, thereby reducing impacts to the connectivity between the channel and riparian habitat at the top of bank to the extent feasible. In addition, the Applicant's construction specifications state that existing trees and shrubs will be protected in place.

2. The Applicant will implement a stormwater pollution prevention plan and use erosion control BMPs to prevent construction-related pollution, sedimentation, and erosion, including hyroseeding the banks with native grass species.

3. Groundwater encountered from within the toxic waste plume boundary demarcated in the 90 percent design plans will be pumped and treated to meet the VOC and Fuel General Permit standards and protect receiving water quality.

4. The Applicant will only work during designated work windows when the creek has little or no flow to avoid impacts on fish and other aquatic life.

5. The Applicant will conduct pre-construction aquatic life and wildlife surveys; protect nesting birds; and relocate wildlife and aquatic life as necessary during construction activities. In addition, the Applicant will conduct pre-construction awareness training for detection and avoidance of wildlife and aquatic species.

K. **Mitigation.** The Application states the Applicant will replace any native trees and shrubs that will be removed and maintain them for five years. The Applicant submitted a 95 percent Planting Plan on January 26, 2016, which shows the locations for native tree and shrub species to be planted in the Project and states that the Applicant will plant replacement trees and shrubs at a rate of three plants for each plant the Project will remove. The Applicant will seed the creek channel beds with wetland species to serve as a seed bank to restore the 0.45 acres of wetland vegetation to be removed by the Project, as shown in the 90 percent design plans, sheet C-200. The Applicant will also seed the banks with native grass species. The wetland and grass species palettes are listed in the 90 percent design specifications (specification no. 32 92 19). Because the existing vegetation on the banks contains non-native species, the establishment of native

grasses to replace the existing vegetation is expected to increase the functions and values of the bank vegetation. As noted elsewhere herein, the Water Board will also consider WDRs to address other needs for the Project, including the need to compensate for temporal and permanent losses of functions and values by the Project design and future O&M activities and to monitor vegetation establishment and success.

I. **California Environmental Quality Act Compliance.** The District, as lead agency, certified an Environmental Impact Report (EIR) on February 9, 2016, in accordance with the California Environmental Quality Act (CEQA) (Project State Clearinghouse Number 2001104013). The Water Board, as a responsible agency under CEQA, finds that impacts during the construction of the Project that are within the Water Board's purview and jurisdiction have been identified and will be mitigated to less-than-significant levels. Specifically, the Applicant will implement BMPs as required under the NPDES *General Permit for Discharges of Storm Water Associated with Construction Activities* (Order No. DWQ-2009-0009, as amended by Order Nos. 2010-0014-DWQ and 2012-006-DWQ) (Construction Stormwater Permit). The EIR does not include necessary detail for long-term impacts and mitigation and impacts from O&M activities (see Finding I.E). The need for compensation of impacts from the Project design and future O&M will be addressed as a part of the WDRs for the Project to be brought before the Water Board later this year.

II. CERTIFICATION AND WASTE DISCHARGE REQUIREMENTS

Certification and General Waste Discharge Requirements: I hereby issue an order certifying that any discharge from the referenced Project will comply with the applicable provisions of CWA sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 303 (Water Quality Standards and Implementation Plans), 306 (National Standards of Performance), and 307 (Toxic and Pretreatment Effluent Standards) and with other applicable requirements of State law. This discharge is also regulated under State Water Resources Control Board Order No. 2003-0017-DWQ, *General Waste Discharge Requirements for Dredge and Fill Discharges That Have Received State Water Quality Certification* which requires compliance with all conditions of this Certification. The following conditions are associated with this Certification:

Conditions

1. The Applicant shall be responsible for work conducted by its consultants, contractors, and any subcontractors.

2. Project construction activities shall not commence until all required documents, reports, plans, and studies required by this Certification have been submitted.

3. The Project shall be constructed in conformance with the Project description provided in the approved Application materials. The Applicant shall notify the Executive Officer in writing should the Applicant need to significantly alter the Project. If the Water Board is not notified of a significant alteration to the Project, the Applicant will be considered in violation of this Order and may be subject to Water Board enforcement actions.

4. The Applicant shall obtain coverage under and comply with, or ensure its contractor obtains coverage and complies with, the Construction Stormwater Permit before beginning construction of the Project. All work performed within waters of the State shall be completed in a manner that minimizes impacts to water quality and the beneficial uses of Upper Berryessa Creek, Los Coches Creek, and Piedmont Creek and waters downstream of these creeks.

5. No equipment shall be operated in stream channels or other waters where there is flowing or standing water. No fueling, cleaning, or maintenance of vehicles or equipment shall take place within any areas where an accidental discharge to waters of the State may occur.

6. Concrete used in the Project shall be allowed to completely cure (a minimum of 28 days) or be treated with a California Department of Fish and Wildlife-approved sealant before it comes into contact with flowing water.

7. This Certification does not allow for the take, or incidental take, of any special status species. As applicable, the Applicant shall utilize the appropriate protocols, as approved by the California Department of Fish and Wildlife, National Marine Fisheries Service, and/or U.S. Fish and Wildlife Service, to ensure that Project

activities do not adversely impact water quality or the beneficial uses of Upper Berryessa Creek, Los Coches Creek, and Piedmont Creek, or other beneficial uses of waters downstream of the Project as referenced in Finding I.F.

8. All work performed within waters of the State shall be completed in a manner that minimizes impacts to beneficial uses and habitat. Measures shall be employed to minimize disturbances that will adversely impact the water quality of waters of the State. Disturbance or removal of vegetation shall not exceed the minimum necessary to complete Project implementation.

9. There shall be no violation of any water quality standard for receiving waters adopted by the Water Board or the State Water Resources Control Board. Creek dewatering discharges, accumulated groundwater or stormwater removed during dewatering of excavations, and diverted creek and stormwater flows shall not be discharged to waters of the State without meeting the receiving water objectives in the Basin Plan.

10. Disturbance or removal of vegetation shall be minimized. The site shall be stabilized through incorporation of appropriate BMPs, including the successful establishment of native grass vegetation, to compensate for impacts to wildlife habitat values, and to prevent and control erosion and sedimentation.

11. The Applicant shall revegetate the Project based on the 95 percent Planting Plan and Specifications for trees and shrubs; the 90 percent design specifications for native wetland and grass species palettes (specification no. 32 92 19); the 90 percent design plans, sheet C-200, for native wetland and grass seeding details; or the most current revised plans and specifications. The Applicant shall maintain trees and shrubs for five years as stated in the Application.

12. The Applicant shall prepare and implement, or ensure its contractor prepares and implements, a dewatering plan consistent with EIR Mitigation Measure WAQ-B, the 90 percent design specifications, and Finding I.C of this Certification. Creek dewatering shall not commence before the Applicant submits a Dewatering Plan to the Water Board. The Dewatering Plan shall provide details about the types and locations of any coffer dams; flow diversion pumps and containment; discharge dissipation devices; discharge locations; and measures to meet the receiving water quality objectives required in the Basin Plan.

13. The Applicant shall carry out a Groundwater Management Plan to meet the Water Board's requirements stipulated in a letter to the Applicant dated August 14, 2015, (Attachment B) for capturing and treating all groundwater encountered from within the boundary of the toxic waste plume as demarcated in the 90 percent design plans. The Water Board requires the Applicant's groundwater discharges to meet the standards of the VOC and Fuel General Permit.

14. All sediment being hauled offsite and waste materials shall be beneficially reused or recycled to the extent feasible. If reuse or recycling is infeasible, all waste

materials shall be disposed at an appropriately-permitted upland location. This applies to materials such as, but not limited to, sediment, concrete and asphalt demolition debris, and utility components (e.g., pipelines and manhole covers) being removed from the Project area.

15. This Certification prohibits conducting directional drilling in the Project.

16. This use of bank stabilization methods and materials other than the methods and materials in the 90 percent design plans and specifications are not authorized under this Certification.

17. This Certification prohibits the use of imported sediment or soil in the Project.

18. This Certification prohibits the alignment of any utilities, or maintaining existing utility lines in the Project, in such a manner that will create an obstacle to flow or destabilize the creek channel.

Plans and Reporting Requirements

19. No later than 15 days before starting construction for the Project, the Applicant shall submit final 100 percent design plans to the Water Board. In addition, the 100 percent plans shall include, or otherwise be accompanied by, information, including an appropriately-detailed narrative description, describing all changes from the 90 percent plans.

20. No later than 15 days before starting construction for the Project, the Applicant shall submit a final 100 percent Planting Plan to the Water Board.

21. To document channel and bank conditions immediately upstream and downstream of the Project site, as well as the Project site itself, the Applicant shall establish a minimum of 12 photo-documentation sites at the Project site, in addition to sites sufficient to document each bridge crossing in the Project. These photo-documentation sites shall be selected to document channel and bank conditions immediately upstream and downstream of each site, as well as the Project reach. The Applicant shall prepare site maps with the photo-documentation points clearly marked. Prior to implementing the Project, the Applicant shall photographically document the condition of each site. Following implementation of the Project, the Applicant shall photographically document the immediate post-construction condition of the sites and submit a report to the Water Board including the pre-construction photographs, the post-construction photographs, and the map with the locations of the photo-documentation points. This report shall be submitted to the Water Board along with the as-built plans required in Condition 24 of this Certification.

22. The Applicant shall submit the final Project Operations and Maintenance Manual, as referenced in Finding I.E, to the Water Board upon transfer of the Project to the local sponsor.

23. The Applicant shall notify the Water Board by electronic mail or by hard copy of Project completion upon transfer of the Project to the local sponsor. This notification, known as a Project Completion Report, shall consist of the following information: (a) the CIWQS Place ID for this Project (i.e., CWIQS Place ID 818597); (b) the date Project construction activities were completed; and (c) the completion date of mitigation plantings. Project construction activities for the purpose of this condition are defined as activities associated with construction of the Project, establishing native grass vegetation on the banks, and planting trees and shrubs as per the Planting Plan. The Project Completion Report shall be submitted to Susan Glendening at Susan.Glendening@waterboards.ca.gov, or the current Water Board staff member assigned to the Project.

24. The Applicant shall submit an as-built report of the Project in both digital format and hard copy of at least 11-inches by 17-inches to the Water Board before or at the same time as the Applicant transfers the Project to the local sponsor. The as-built report shall be submitted either by email to staff or by uploading it to the Water Board's FTP internet site. Instructions for uploading documents to the FTP internet site are available at http://www.waterboards.ca.gov/sanfranciscobay/publications_forms/documents/FTP_Discharger_Guide-12-2010.pdf. If the as-built report is submitted by uploading it to the FTP internet site, the Applicant shall notify the Water Board case manager via email.

Standard Conditions

25. This Certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to section 13330 and section 3867 of the California Water Code (CWC), Title 23 of the California Code of Regulations (23 CCR).

26. Certification action is not intended and shall not be construed to apply to any activity involving a hydroelectric facility and requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent certification application was filed pursuant to 23 CCR subsection 3855(b) and that application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.

27. The Water Board may add to or modify the conditions of this Certification, as appropriate, to implement any new or revised water quality standards and implementation plans adopted and approved pursuant to the CWC or CWA section 303 or in response to new information concerning the conditions of the Project. Additionally, the Water Board reserves the right to suspend, cancel, or modify and reissue this Certification, after providing notice to the Corps, if the Water Board determines that the Project fails to comply with any of the conditions of this Certification, or when necessary to implement any new or revised water quality standards and implementation plans adopted or approved pursuant to the CWC or CWA section 303 (33 U.S.C. § 1313).

29. The Applicant, shall grant Water Board staff, or an authorized representative (including an authorized contractor acting as a Water Board representative), upon presentation of credentials and other documents as may be required by law, permission to:

    a. Enter upon the Project or compensatory mitigation site(s) premises where a regulated facility or activity is located or conducted or where records are kept;

    b. Have access to and copy any records that are kept and are relevant to the Project or the requirements of this Certification;

    c. Inspect any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Certification; and

    d. Sample or monitor for the purposes of assuring Certification compliance. The Corps, as the permittee for this Certification, shall be responsible for work conducted by its consultants, contractors, and any subcontractors.

29. A copy of this Certification shall be present at the Project site at all times during construction of the Project and made available to Water Board staff upon request. All foremen and other employees responsible for overseeing that construction of the Project complies with permitting requirements shall have access to and be familiar with the Certification requirements.

This Certification applies to the Project as proposed in the Application materials. Please be advised that failure to implement the Project as proposed is a violation of this Certification. Failure to comply with any condition of this Certification shall constitute a violation of the CWA. Any such Certification previously granted shall immediately be revoked and any or all discharges shall cease. The Applicant and/or discharger may then be subject to injunctive release, including stop work and/or restoration orders.

Should new information come to our attention that indicates a water quality problem with this project, the Water Board may issue WDRs pursuant to 23 CCR Section 3857.

If you have any questions, please contact Susan Glendening of my staff at (510) 622-2462 or by email to Susan.Glendening@waterboards.ca.gov.

Sincerely,

Digitally signed by Bruce H. Wolfe
DN: cn=Bruce H. Wolfe, o=SWRCB, ou=Region 2, email=bwolfe@waterboards.ca.gov, c=US
Date: 2016.03.14 12:58:45 -07'00'

Bruce H. Wolfe
Executive Officer

Attachment A – Figures

1 – Project Location Map
2.1 – Project Elements, Calaveras Boulevard to Ames Avenue
2.2 – Project Elements, Ames Avenue to Interstate 680

Attachment B – Letter from Water Board to Corps dated August 14, 2015, Regarding Groundwater Management Plan Requirement

Cc: Corps:
Jay Kinberger, Jay.Kinberger@usace.army.mil
Tom Kendall, Thomas.R.Kendall@usace.army.mil
Arijs Rakstins, Arijs.A.Rakstins@usace.army.mil
SCVWD:
Melanie Richardson, MRichardson@valleywater.org
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Jim Manitakos, JManitakos@valleywater.org
Judy Nam, JNam@valleywater.org
Chris Hakes, CHakes@valleywater.org
U.S. EPA:
Luisa Valiela, valiela.luisa@epa.gov
Melissa Scianni, Scianni.Melissa@epa.gov
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USFWS:
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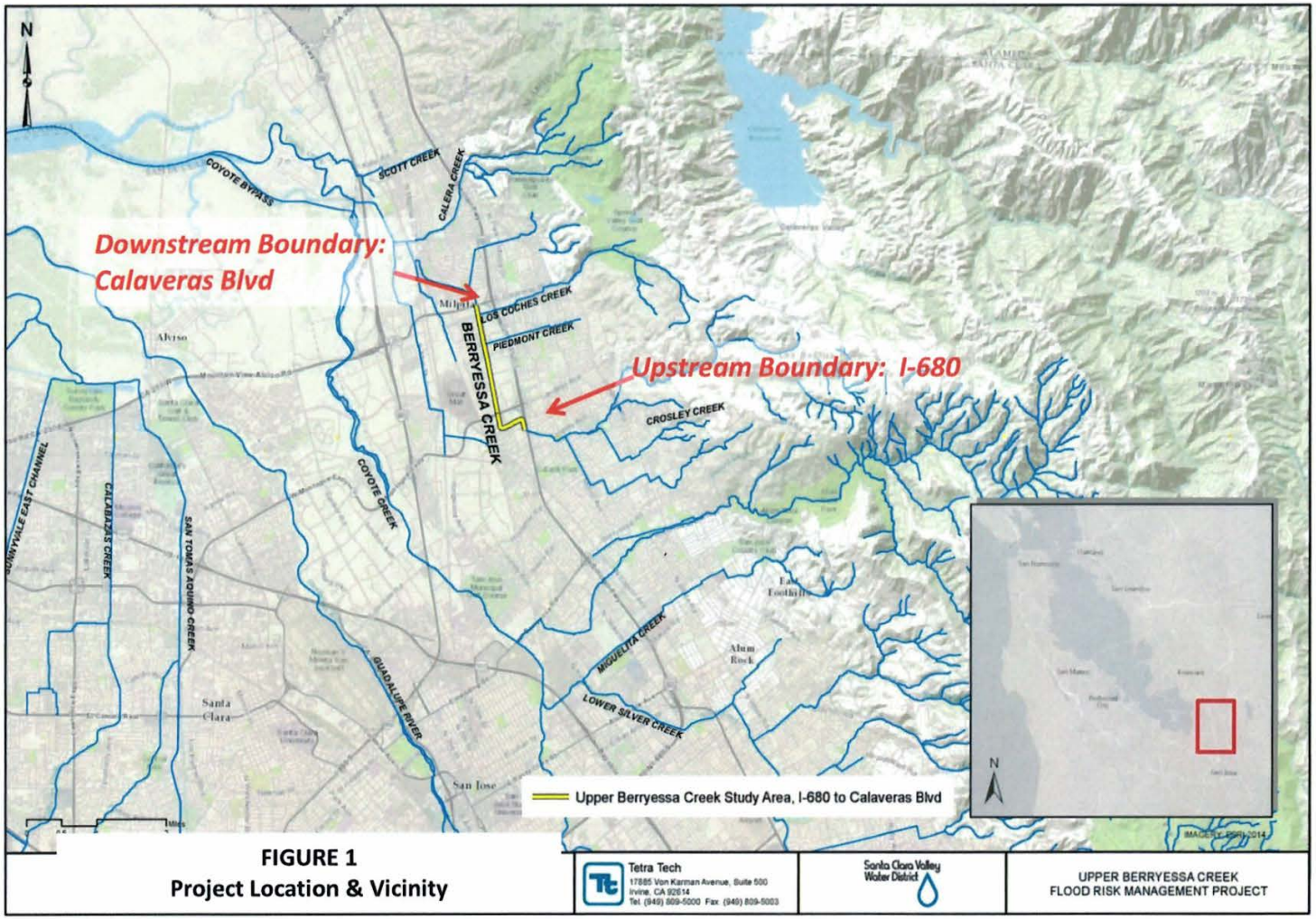
Anne Morkill, Anne_Morkill@fws.gov
Joy Albertson, Joy_Albertson@fws.gov
Melisa Amato, Melisa_Amato@fws.gov
CDFW:
Brenda Blinn, Brenda.Blinn@Wildlife.ca.gov
Tami Schane, Tami.Schane@Wildlife.ca.gov
SWRCB-DWQ, Stateboard401@waterboards.ca.gov
Water Board:
Victor Aelion, Victor.Aelion@waterboards.ca.gov

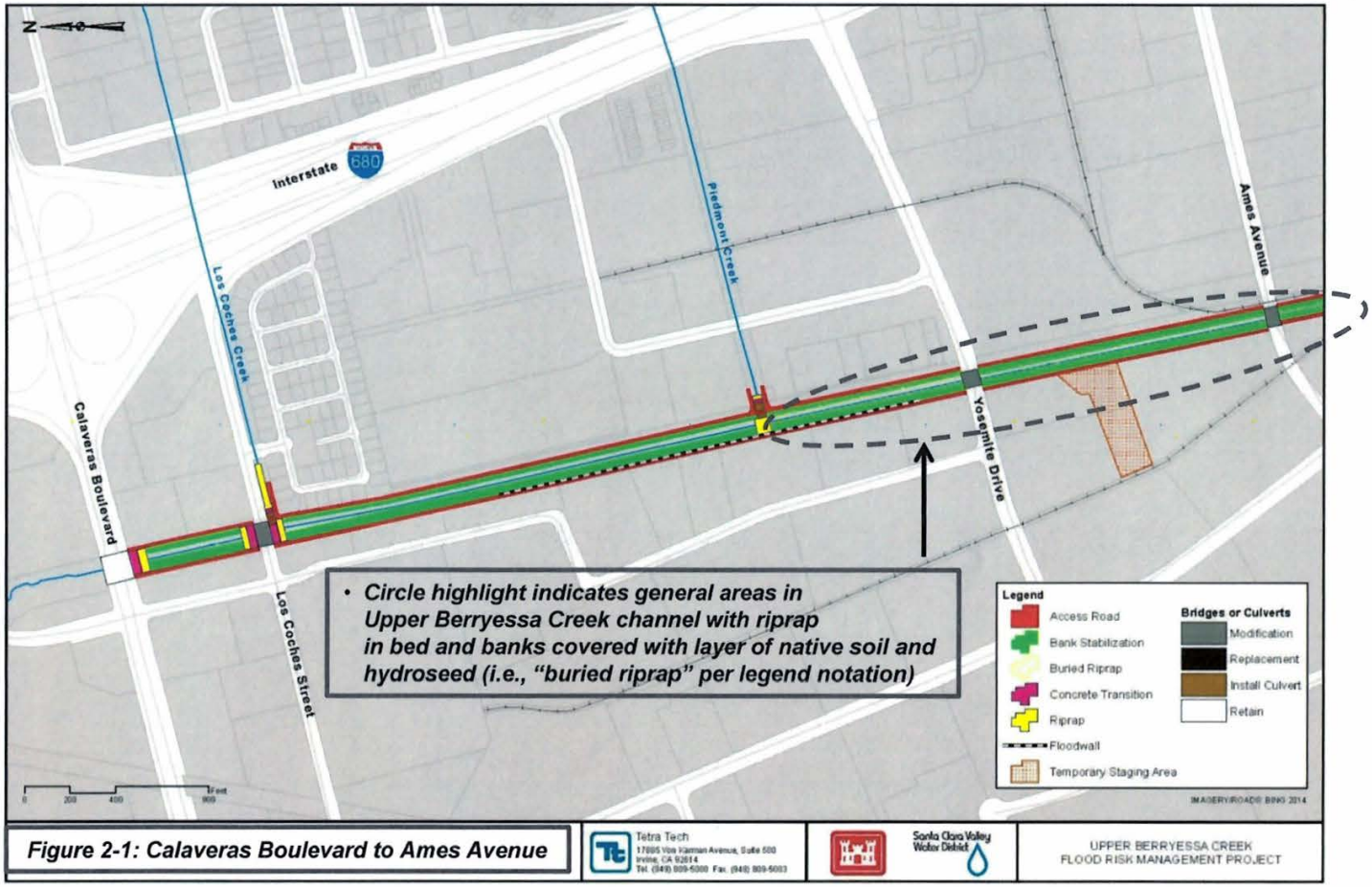
Attachment A

Figure 1 – Project Location and Vicinity



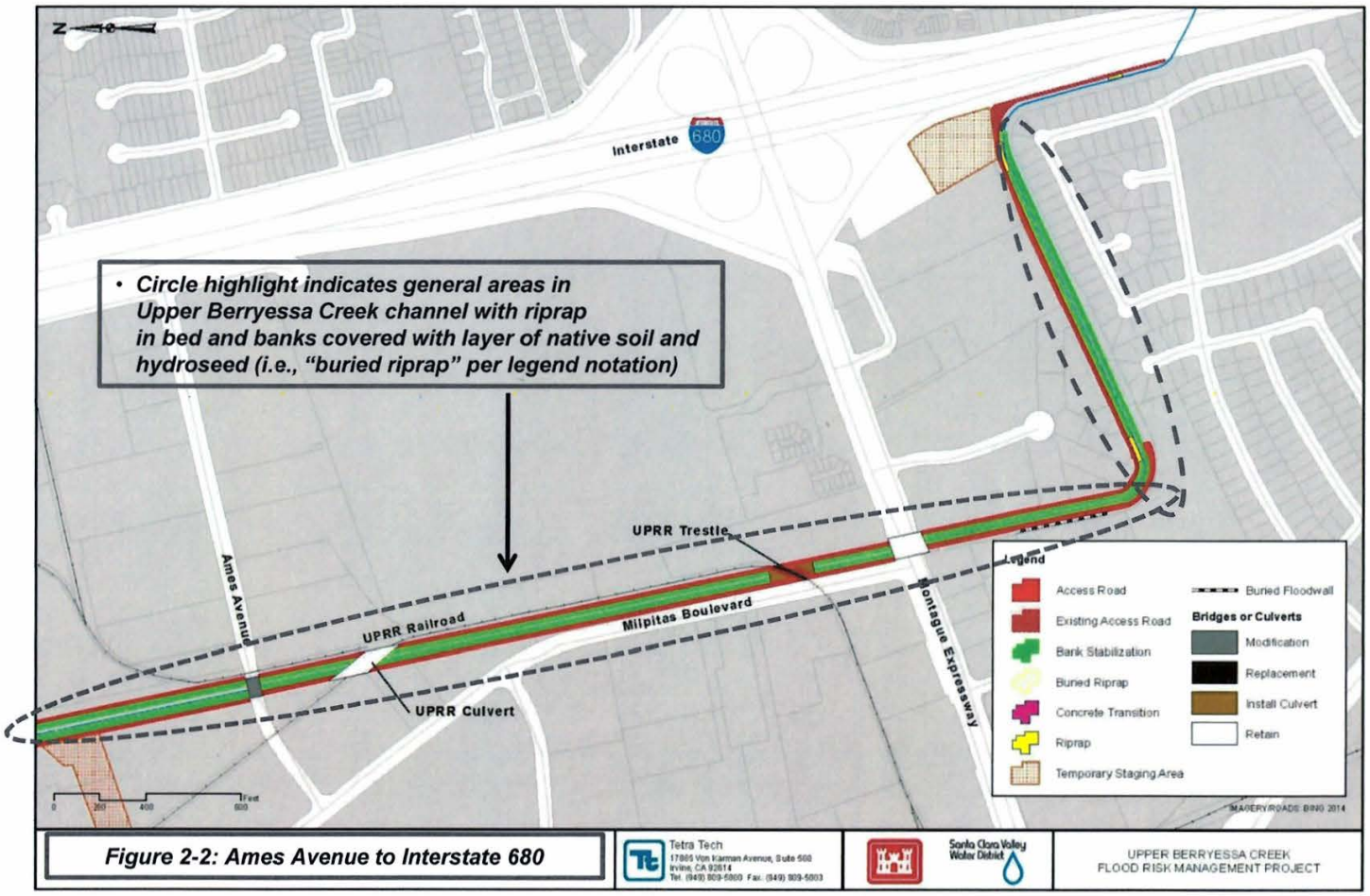
Attachment A

Figure 2-1 – Project Elements, Calaveras Boulevard to Ames Avenue



Attachment A

Figure 2-2 – Project Elements, Ames Avenue to Interstate 680



CALIFORNIA
Water Boards

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

San Francisco Bay Regional Water Quality Control Board

August 14, 2015
File No. 43S0065 (mej)

Amanda Cruz
San Francisco Planning Branch
US Army Corps of Engineers
1455 Market Street
San Francisco, CA
Amanda.B.Cruz@usace.army.mil

SUBJECT: Berryessa Creek Channel Modification Project, adjacent to the former JCI Jones Chemicals Facility, 985 Montague Expressway, Milpitas, Santa Clara County

Dear Ms. Cruz:

Thank you for meeting with Regional Water Board staff to discuss the upcoming creek channel modification project being conducted by the U.S. Army Corps. of Engineers and the Santa Clara Valley Water District. As we have discussed, the groundwater contaminant plume of volatile organic compounds (VOCs) originating from the former JCI Jones facility passes beneath passes beneath Berryessa Creek, immediately to the west of the former facility.

We understand that you will be working in the creek bed immediately adjacent to the former Jones site. As part of the construction, groundwater may be encountered. To manage groundwater that may be encountered during construction, a groundwater management plan will be developed that will include control and diversion of water, if necessary, using the most efficient means such as coffer dams, sump pumps, dewatering wells or other techniques. Any water that may be generated will be treated and discharged downstream or to a storm drain. The treatment standards for this discharge water will comply with those set forth in our NPDES General Permit (R2-2012-0012) for fuel and VOC impacted sites. However, you will not be obtaining an NPDES permit for this work. A copy of the groundwater management plan will be submitted to this agency for our review and comment.

Based on our understanding of the work outlined above and with the condition that the groundwater is treated to the standards described, we will not recommend enforcement for discharging without a permit.

The work in the creek bed will also include movement of soil/sediment as part of the construction activities. As discussed, there is no reason to believe shallow soil/sediment in the area adjacent to the former Jones facility is impacted. This being the case, no soil/sediment management plan is necessary for movement of the materials. In the case that impacted soil is encountered, it will be segregated and stockpiled for offsite disposal. We find this acceptable.

If you have any questions, please contact Mark Johnson of my staff at (510) 622-2493 [e-mail mjohnson@waterboards.ca.gov].

Sincerely,

Bruce H. Wolfe
Executive Officer

cc: Ira Artz, Ira.Artz@tetratech.com
Susan Glendening, susan.glendening@waterboards.ca.gov
Tim Gaffney, JCI Jones Chemicals, Inc. tgaffney@jcichem.com
Chuck Pardini, Arcadis Chuck.Pardini@arcadis-us.com

EXHIBIT 7

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

Tentative Order

Waste Discharge Requirements for:

Santa Clara Valley Water District and U.S. Army Corps of Engineers
Upper Berryessa Creek Flood Risk Management Project, Santa Clara County

The California Regional Water Quality Control Board, San Francisco Bay Region (Water Board), finds that:

1. The Santa Clara Valley Water District (District) delivers water and is responsible for flood protection and stream stewardship in Santa Clara County (County). The District is charged with providing local flood protection within five major watersheds in the County, including the 322-square mile Coyote Creek watershed, which drains from the southeastern hills of the County to Lower San Francisco Bay.

2. Berryessa Creek is in the Coyote Creek watershed in Santa Clara County, and drains from the undeveloped Diablo Range hills east of San Jose, through urbanized areas in San Jose and Milpitas, then discharges to Lower Penitencia Creek, which is tributary to Coyote Creek. Under existing conditions, Berryessa Creek overtops its banks about once every four to 25 years in the 2.2-mile-long reach from Calaveras Boulevard in Milpitas upstream to Interstate 680 (I-680) in San Jose (Upper Berryessa Creek) (Attachment A, Figure 1).

3. **Local-Federal Partnership.** The District is partnering with the U.S. Army Corps of Engineers (Corps) for the Upper Berryessa Creek Flood Risk Management Project (Project) to increase flood protection in the surrounding community. The District and Corps are each funding Project costs, and carrying out design, construction, and post-construction roles and responsibilities in accordance the federal Water Resources Development Act (WRDA) of 1990, and the revised 1996 WRDA, with the following cost-sharing schedule for the non-federal, local sponsor:

    - Provide a cash contribution equal to 5 percent of structural flood control features.

    - Provide all lands, easements, rights-of-way, relocations, and disposal areas (LERRD).

    - If the sum of the above two items is less than 35 percent of the costs assigned to flood control, non-federal sponsors will pay the difference in cash.

    - If it is greater than 35 percent, total non-federal costs shall not exceed 50 percent of total project costs assigned to flood control.

    - Contributions in excess of 50 percent will be reimbursed by the federal government to the non-federal sponsor.

4. **Dischargers**. The Water Board is issuing this Order to the District and Corps, collectively referred to as the "Discharger," because the Project activities will cause or contribute to a discharge of waste that could affect the quality of Waters of the State and the United States.

5. **Project Purpose**. The Project is intended to provide flood protection in Upper Berryessa Creek from the one percent exceedance probability flood event (also known as the one-percent-annual-chance flood event, or the 100-year flood event) for an estimated 650 land parcels, and contribute to reduced flood risks for an unquantified additional parcel where flow from Upper Berryessa Creek combines with other flood waters. The Project will also modify 210 linear feet of Los Coches Creek and 60 linear feet of Piedmont Creek, which are tributary to Upper Berryessa Creek. The completed Project will meet Federal Emergency Management Administration (FEMA) Certification standards.

   The area being protected encompasses the new Milpitas Bay Area Rapid Transit (BART) station and rail line infrastructure, part of a $2.3 billion (including $900 million in federal funding) BART expansion project to extend BART service from Fremont through Milpitas to San Jose. The Project construction activities are expected to begin in October 2016 and to be completed in approximately nine months. The Project is located just upstream of the "Lower Berryessa Creek and Lower Calera Creek Flood Protection Improvements Project" (Lower Berryessa-Calera Project) currently under construction by the District, as authorized by the Water Board in October, 2015. Both the Project and Lower Berryessa-Calera Project are intended to be complete before the planned opening of the new Milpitas BART station in late 2017.

6. **Project Elements and Coverage of this Order.** This Order covers Project construction activities, as well as the operations and maintenance activities after the Project is constructed (i.e., see Finding 16 for additional information about maintenance). This Order also covers the mitigation and monitoring requirements necessary for the compliance with federal and State regulations (i.e., see Findings 21 through 30).

   The Project's major construction features include: (1) enlarging the Upper Berryessa Creek channel; (2) armoring the channel beds and banks with rock riprap; and (3) constructing concrete box culverts and concrete transition structures, floodwalls, and access ramps. The Project construction elements have the following details below and are shown in Attachment A, Figures 2 and 3; and the fill and excavation information is presented in Table 1:

   a. Widen, deepen, and contour Upper Berryessa Creek to create a trapezoidal channel cross section with a bed width varying from 12 to 40 feet, depth varying from 8 to 14 feet, and banks with a 2-to-1 horizontal-to-vertical (2:1) slope. The channel footprint from top of bank to top of bank in Upper Berryessa Creek will increase from 9.7 to 17.2 acres.

   b. Build three new pre-cast concrete box culverts (where currently none exist) consisting of a box culvert at both the Los Coches Creek and Piedmont Creek mouths, and a double-barrel box culvert to replace the existing Union Pacific Railroad (UPRR) wooden trestle bridge downstream of Montague Expressway, and the associated cast-in-place concrete wingwalls and concrete or grouted rock riprap transition structures;

c. Armor the channel bed and banks with rock riprap, covered by soil and hydroseed for erosion protection, with the following details:

   i. Total area of 9.81 acres (10,072 linear feet (ft)) of rock riprap, including 9.71 acres in Upper Berryessa Creek (9,831 linear ft), 0.09 acres in Los Coches Creek (221 linear ft), and less than 0.01 acres in Piedmont Creek (20 linear ft);

   ii. Rock riprap (9 to 24 inches thick) in channel beds and banks extending up to the 2.5 to 10-year water surface elevation (7,547 linear feet);

   iii. Rock riprap in banks (additional 2,525 linear feet in Upper Berryessa Creek) extending from 5 feet below the channel invert elevation up to the 2.5 to 10-year water surface elevation;

   iv. A 4-inch layer of native soil covering channel bed and bank riprap (10,072 linear ft), covered by biodegradable coconut fiber mats from the toe to top of banks, with hydroseed in beds and banks to promote herbaceous native vegetation growth and erosion protection; and

   v. Grouted rock riprap (24 inches thick) at the Piedmont Creek confluence and beneath the existing Yosemite Drive bridge crossing.

d. Construct concrete floodwalls of 1,123-feet long by up to 2-feet high on the left bank (looking downstream) of Upper Berryessa Creek between Los Coches Street and Piedmont Creek at the top of bank, and 450-feet long by 3-feet deep, to be buried on the left bank upstream of Montague Expressway to reinforce an existing retaining wall;

e. Construct three concrete access ramps, one each on the right and left banks (looking downstream) upstream of Montague Expressway, and a single concrete ramp on the right bank downstream of I-680; and a concrete access road to the new UPRR culvert;

f. Construct concrete and rock riprap transition structures at the upstream face of the existing Calaveras Boulevard Bridge;

g. Build new and redevelop existing maintenance roads, with a width of 18 feet on the right bank and 15 to 18-feet wide on the left banks, except in two areas that lack space on the left bank for a road, downstream of Montague Expressway and downstream of I-680;

h. Remove an unspecified volume of sediment and vegetation from about 200 linear feet of a concrete-lined reach of Upper Berryessa Creek just downstream of I-680; and

i. Replace and realign existing utilities within the Project right-of-way (see Finding 12, below, for additional information).

Table 1. Fill and Excavation Quantities

Project Element	Material	Excavation (cubic yards)	Fill (cubic yards)	Length (linear feet)	Area (acres)
Enlarge and contour channel	Soil	148,400	33,600 native soil	10,453	17.2
Riprap in beds and banks	Imported rock (9 to 24-inch diameter)	--	15,233	10,072	9.23
Grouted riprap in beds and banks	Imported rock (24-inch diameter)	--	1,882	319	0.58
Pre-cast concrete culverts	Concrete	--	675	284	0.11
Cast-in-place wingwalls and transition structures	Concrete	--	37	100	<0.01
Access ramps	Concrete	--	144	215	0.01
Access road (10-ft wide) to new UPRR culvert	Concrete	--	15	15	0.01
Floodwalls	Concrete	--	424	1,573	0.04
Concrete channel lining	Concrete	290	---	262	0.36
Maintenance roads	Aggregate base material	--	5,654	16,843[1]	6.8

Notes:

- - – Not applicable; UPRR – Union Pacific Railroad

[1] This length is the total for roads on both sides of the channel. Roughly 10,400 linear feet of Upper Berryessa Creek will have maintenance roads on at least one side of the channel.

7. **Staging, Stockpiling, and Hauling.** Two areas outside of the Project right-of-way will be used for staging and sediment stockpiling (Attachment A, Figures 2 and 3). Access to and from the Project site and the staging areas will occur along existing paved roads via Calaveras Boulevard, Los Coches Street, Yosemite Drive, Ames Avenue, and Montague Expressway.

8. **Reuse or Dispose of Exported Material.** The Discharger will haul about 114,800 cubic yards of sediment from the Project site in addition to demolition debris such as concrete and utility components. Soil and demolition debris will be reused or recycled to the extent feasible. Disposal of any demolished material and debris will be in accordance with all applicable local, State, and federal regulations. The soil to be transported off-site is suitable

for non-hazardous landfill disposal, according to the Project Environmental Impact Report (EIR) (State Clearinghouse No. 2001104013).

9. **Construction General Permit.** The Discharger is required to seek coverage under and comply with, or oversee that its contractors seek coverage and comply with, the NPDES General Permit for Discharges of Storm Water Associated with Construction Activities (Order No. DWQ-2009-0009, as amended by Order Nos. 2010-0014-DWQ and 2012-006-DWQ) (Construction Stormwater Permit) (Provision 5).

10. As of the date of adoption of this Order, the items listed below either have been submitted to the Water Board and are not complete or otherwise not yet acceptable to the Board, or have not been submitted. This Order requires the Discharger to submit the following plans and reports that meet or exceed the criteria and standards outlined in this Order, and are acceptable to the Executive Officer, before the beginning of construction:

    a. Narrative of differences between the 100 percent Design Plans received by Water Board on August 11, 2016 (including Planting Plan) and previous design plans;

    b. Utilities Plan (Finding 12; Provision 8);

    c. Dewatering Plan (Finding 14; Provision 9);

    d. Groundwater Management Plan (Finding 15; Provision 10);

    e. Adaptive Management Plan (Finding 17; Provision 15);

    f. Mitigation and Monitoring Plan (including a plan for off-site mitigation (Finding 21; Provision 16); and

    g. Post-construction Stormwater Management Plan (Finding 20; Provision 12).

11. **Final 100 Percent Design Plans.** The Water Board received 100 percent design plans and specifications on August 11, 2016, and a 100 percent Planting Plan (dated April 1, 2016) and specifications on July 21, 2016. For purposes of this Order, the Planting Plan is part of the Design Plans because the removing selected trees and grading others must be incorporated in the construction design plans. The Water Board requires the 100 percent plans to include: (a) 100 percent complete drawings including those addressing project construction phasing, and which incorporate all comments by individuals and agencies and requirements of this Order; (b) a revised Design Documentation Report with narrative to highlight changes between the 90 and 100 percent plans; (c) final specifications with narrative to highlight the changes that have been incorporated since the 90 percent plans Design Plans and 95 percent Planting Plan; and (d) revisions in the Planting Plan for monitoring duration of plantings within the Project right-of-way of no less than five years for herbaceous hydroseed plantings, and no less than ten years for shrubs and trees, consistent with the guidelines in Attachment C.

12. **Replace and Realign Existing Utilities.** Multiple utility lines are in the Project right-of-way, including sanitary sewer, stormwater, irrigation, cable, electrical, telephone, fiber optic, and gas lines. The locations of some utilities are estimated and will be confirmed during Project construction activities. To date, the utility lines planned for replacement and/or realignment are sanitary sewer, stormwater lines and outlets, a water irrigation line, an electric line, and two electric utility vaults. In addition, two groundwater monitoring wells and a gauging port will be relocated. This Order requires the Discharger to prepare a Utilities Plan to identify any utility lines, including any protective caps and supporting infrastructure, that are located immediately above or within five feet below a creek bank or channel bottom within the Project site. The plan must describe whether each of those utility lines has the potential to impede flow or constrict natural movement of the creek, and include a workplan to relocate any utility line with such potential.

13. **Rain Event Action Plan.** The Discharger shall develop and implement a Rain Event Action Plan (REAP), as required by the Construction General Permit, designed to protect all exposed portions of their sites within 48 hours prior to any likely precipitation event. The REAP requirement is designed to ensure that the discharger has adequate materials, staff, and time to implement erosion and sediment control measures that are intended to reduce the amount of sediment and other pollutants generated from the active site. A REAP must be developed when there is likely a forecast of 50 percent or greater probability of substantial precipitation in the project area.

14. **Dewatering.** Dewatering of surface water or groundwater that accumulates at excavated areas will likely be necessary. The Project areas where dewatering is most likely to be necessary are in Piedmont Creek and downstream of its confluence, where surface water flow is more persistent, and in Upper Berryessa Creek in the area downstream of Montague Expressway, where deep excavations for the replacement of the UPRR trestle bridge are more likely to encounter groundwater. The depth to groundwater in the vicinity of the UPRR trestle bridge is about 9.3 to 13.4 feet below grade, and excavation depth will exceed the maximum groundwater depth. The Corps submitted a Groundwater Management Plan for groundwater discharges in the area impacted by the groundwater contamination plume from the former JCI Jones Chemical Facility. Because the Groundwater Management Plan only addresses a portion of the Project area, and does not address surface water, this Order prohibits dewatering before the Discharger submits and implements a complete Dewatering Plan that meets the minimum criteria outlined in Provision 9, acceptable to the Executive Officer.

15. **Groundwater Management.** The Project is within the footprint of a past solvent release from the former Jones Chemical, Inc. chemical plant. The Water Board requires the Discharger to capture and treat all groundwater encountered from within the potential extent of the toxic waste plume as demarcated in the 90 percent design plans (Plume). Any such groundwater must meet the standards of the NPDES General Permit for the Discharge or Reuse of Extracted and Treated Groundwater Resulting from the Cleanup of Groundwater Polluted by Volatile Organic Compounds (VOC), Fuel Leaks and Other Related Wastes (Water Board Order No. R2-2012-0012; NPDES Permit No. CAG912002) (VOC and Fuel

General Permit), as stipulated in a letter to the Discharger dated August 14, 2015 (see Attachment B).

16. **Maintenance**. The Project EIR states that regular maintenance such as sediment and vegetation removal in Upper Berryessa Creek will be necessary after the Project is constructed. The EIR also states that the Project will result in less sediment accumulation and less volume than existing conditions, and, specifically, that sediment will accumulate only at the UPRR trestle bridge replacement site and the other UPRR culvert upstream of Ames Avenue. These conclusions are based on the Project sediment transport modeling results.

    However, Water Board staff's best professional judgement indicates a different interpretation of the modeling results (Water Board Staff Memo, April 12, 2016[1]). For example, shear stress will be reduced by the Project. The lower shear stress, along with other lines of geomorphic evidence including field observations, comparison of historic and current cross sections, and maintenance records, indicate the Project will result in a more-depositional system than existing conditions. In addition, an independent peer review panel[2] found that sedimentation can occur at various locations in the Project reach.

    As part of the federal-local partnership, and in accordance with the WRDA of 1990 (Finding 3), an Operations and Maintenance Manual (O&M Manual) will be developed to guide maintenance, such as sediment removal, for the life of the Project, which is approximately 50 years. The completion of the O&M Manual will be timed after the Local Cost Agreement is completed between the Corps and the District. This Order requires the following criteria and processes in development and implementation of the O&M Manual:

    a. **Santa Clara Valley Water District Stream Maintenance Program**. The timing of the Local Cost Agreement to occur, and for the transfer of the Project from the Corps to the District, is uncertain, and the O&M Manual may not be available immediately after the Project is constructed. Therefore, this Order authorizes the District to conduct maintenance consistent with the District's existing Stream Maintenance Program (SMP) (Provision 14), authorized under Water Board Order No. R2-2014-0015 (SMP Order), and any future revisions. To the extent there are any inconsistencies between the O&M Manual, this Order, and/or the SMP, compliance with this Order will be determined by compliance with the terms of this Order.

    b. **Multiagency Collaboration**. Development of the O&M Manual will be accomplished through a collaboration of the Water Board and other appropriate state agencies. This is necessary to ensure the planning and implementation of maintenance are consistent with

[1] Riley, Ann L., and Setenay Bozkurt Frucht, 2016. Projected Future Maintenance on the Upper Berryessa Creek Flood Risk Management Project. Internal Staff Memorandum from A. Riley and S. Bozkurt Frucht to Keith Lichten, Chief, Watershed Management Division, San Francisco Bay Regional Water Quality Control Board. Available online at http://www.waterboards.ca.gov/sanfranciscobay/water_issues/hot_topics/Berryessa.shtml.

[2] Batelle Memorial Institute, 2013. Final Independent External Peer Review Report Berryessa Creek, Santa Clara County, California, General Reevaluation Study (GRS) Draft General Reevaluation Report and Environmental Impact Statement/Environmental Impact Report. Department of the Army U.S. Army Corps of Engineers Flood Risk Management Planning Center of Expertise for the Baltimore District. Batelle, Columbus, OH.

the SMP, and, accordingly, will minimize environmental impacts. Additionally, it is consistent with the SMP approach, which includes a multi-agency collaborative process to determine maintenance needs, based on avoiding and minimizing impacts in waters to the extent practicable.

c. **Maintenance Action Thresholds**. The O&M Manual will set maintenance action thresholds based on channel capacities and a performance standard based on protecting 50 percent of the project design freeboard, consistent with the maximum tolerance applied by the Corps in flood control projects it co-sponsors. The plan will include using a combination of vegetation and/or sediment management to meet flood risk objectives while minimizing environmental impacts. Using maintenance action thresholds is consistent with the District's SMP Manual process for developing reach- and creek-specific maintenance guidelines. Maintenance action thresholds will be revised iteratively, if needed, based on data to be collected under the Adaptive Management Plan described in the next finding.

d. **Five-Year Assessments for Adaptive Management, and Previously-Mitigated Areas**. The O&M Manual will be evaluated at least every five years to incorporate the findings under the activities required in the next finding to prepare and implement an Adaptive Management Plan.

e. **Authority to Conduct Maintenance in the Project Site**. Maintenance in the Project site, after construction is completed, is authorized under this Order until such time that the Water Board Executive Officer determines the site may be folded into the District's SMP. This is necessary because the monitoring necessary to verify sediment transport processes cannot be maintained under the SMP procedures for priority project budgeting and implementation.

17. **Adaptive Management Plan.** This Order requires the Discharger to submit an Adaptive Management Plan, acceptable to the Executive Officer, pursuant to Provision 15. The Adaptive Management Plan will describe channel dimension and flow data to be collected, which the Discharger will use to understand how the Project is performing after construction (e.g., stage-discharge relationships); and to generate quantifiable channel capacity flood protection objectives (e.g., acceptable freeboard at bridge crossings) to guide future maintenance activities. The objectives shall be revised iteratively as new data are collected under post-construction conditions, and shall inform the O&M five-year assessments. Adaptive management is consistent with the District's SMP, which requires development of channel and reach-specific triggers for maintenance (i.e., maintenance guidelines) that minimize disturbance of the creek channel vegetation and substrate. This approach informs sediment and vegetation removal based on field observations of channel processes and performance, rather than solely using design criteria.

18. **Waters of the U.S. and of the State.** Based on a jurisdictional wetland delineation (Tetra Tech, 2014), the Project has 4.18 acres of waters of the U.S. as creek waters (other waters). The waters of the U.S. are also waters of the State. An additional area of 5.92 acres from the ordinary high water mark elevation to the tops of banks constitutes waters of the State (but

not waters of the U.S.), for a total area of 10.1 acres of waters of the State. This elevation difference, i.e., the vertical distance from ordinary high water mark to the top of bank, ranges from zero to 6 feet. The linear extent of the Project activities in waters of the U.S. and of the State is approximately 10,072 linear feet of other waters.

No jurisdictional wetlands are in the Project area. However, the wetland delineation identified patches of wetland vegetation fringing the margins of the Upper Berryessa Creek active channel, with a combined area estimated at less than 0.5 acres. An early assessment found an area of 0.39 acres of fringing wetland vegetation. The difference between these two surveys are likely due to variations in the extent of vegetation colonizing and growing from year to year until a high pulse flow washes out the vegetation. For purposes of this Order, about 0.45 acres of fringing wetland vegetation is in the Project downstream of the Piedmont Creek confluence, where flow is most likely to be present year round and support wetland vegetation.

19. **Rare and Endangered Species.** The Project site does not presently support any rare or endangered species. It provides potential habitat for such species.

20. **Impacts.** The Project will result in impacts to 4.18 acres of waters of the U.S. (classified as "other waters") that are also waters of the State, and an additional 5.63 acres of waters of the State, for a total of 9.81 acres of waters of the State in Upper Berryessa Creek, Los Coches Creek, and Piedmont Creek. The impacts extend along 10,072 linear feet of creek channel. No jurisdictional wetlands based on the Corps manual definition for "wetland" exist within the Project site. Other waters will be impacted; specifically, the creek channels in Upper Berryessa Creek, Los Coches Creek, and Piedmont Creek. The impacts associated with the various Project elements are shown in Table 2.

    The Project will temporarily impact waters of the State and the U.S. during the excavation, grading, and construction of the Upper Berryessa Creek channel and other Project elements. The Project will also temporarily impact native vegetation, consisting of woody species throughout the Project top of banks, and about 0.45 acres of wetland vegetation fringing the active channel downstream of the Piedmont Creek tributary.

    In addition, the waters of the State and the U.S. will be permanently impacted by the Project design, which includes new concrete surfaces and grouted rock riprap in the creek bed of Upper Berryessa Creek, and rock riprap buried by a 4-inch layer of soil in the creek beds and banks of Upper Berryessa Creek, Los Coches Creek, and Piedmont Creek. The concrete features, grouted riprap surfaces, and rock riprap armor will restrict natural processes that occur in channels with earthen bed and banks, including the types of vegetation that can thrive, channel movement, and sediment transport processes. Consequently the project design will significantly restrict the beneficial uses that could be supported by the creek, and which are supported in the creek reaches immediately upstream and downstream of the Project.

    The water quality of Upper Berryessa Creek, Los Coches Creek, and Piedmont Creek could be impacted by accidental releases of soil and debris during the excavation, grading, fill

installation, and creek dewatering activities, as well as by the accidental release of hazardous materials and contaminants used or encountered during construction. These releases could cause violations of the water quality objectives proscribed in Chapter 3 of the Basin Plan, including, but not limited to, water quality objectives for the following parameters: bacteria, dissolved oxygen, floating material, oil and grease, pH, sediment, settleable material, suspended material, temperature, toxicity, turbidity, and specific chemical constituents.

Furthermore, impervious surfaces created and/or replaced by the Project may also collect and concentrate stormwater runoff and pollutants that are subsequently discharged to Upper Berryessa Creek. The Project will result in the construction of 6.84 acres of new or redeveloped maintenance roads with impervious aggregate base (AB) material, and an additional 0.11 acres of impervious maintenance ramps. This Order requires the Discharger to submit and implement a Post-Construction Stormwater Management Plan sufficient to demonstrate it is complying with the post-construction best management practice (BMP) requirements in the NPDES *Municipal Regional Stormwater Permit* (MRP) (Water Board Order No. R2-2015-0049; NPDES Permit No. CAS612008) by using appropriately designed and installed pervious material or by constructing post-construction stormwater BMPs to capture, detain, retain, and treat stormwater runoff from the Project's impervious surfaces or from an equivalent or greater amount of impervious surfaces offsite. The Discharger will be responsible for operation and maintenance of roads and any associated BMPs.

Table 2: Impacts on Creek Habitat
Upper Berryessa Flood Risk Management Project

Project Elements	**Permanent Impacts**[1]		**Temporary Impacts**[1]	
	Acres	**Linear ft**	**Acres**	**Linear ft**
Creek dewatering	--	--	9.81	10,453
Creek excavation and grading	--	--	9.81	10,072
Rock riprap in channel beds and banks[2]	9.81	10,072	--	--
Grouted riprap	0.58	319	--	--
Net new concrete surfaces from culverts, wingwalls, transition structures, ramps, driveway[3]	0.20	861	--	--
Remove wetland vegetation	--	--	0.45	--
Concrete floodwalls[4]	--	1,123	--	450
Remove native shrubs and trees	--	--	53 native shrubs and trees to be removed	
Impacts from future O&M activities	To be tracked during post-project O&M activities			

Notes:

ft – feet; O&M – operations and maintenance; "- -" – not applicable

[1] The areal and linear extents of impacts are overlapping, so they are not summed.

[2] This area is based on the existing creek dimensions from top of bank to top of bank; post-project area will be 17.2 acres (see Table 1).

[3] The net area and linear feet account for removal of 0.37 acres in 290 linear feet of concrete bed and banks in Upper Berryessa Creek between Montague Expressway and I-680.

[4] The 1,123 foot long floodwall is a permanent impact because it will be on the top of the bank obstructing flow. A 450 long floodwall, upstream of Montague Expressway, will be buried to reinforce an existing retaining wall, and therefore will not result in new impacts to waters of the U.S.or the State.

21. **Mitigation.** This Order requires the Discharger to submit a Mitigation and Monitoring Plan (MMP), acceptable to the Executive Officer, before beginning Project construction (Provision 16), and to timely implement the MMP. The MMP must propose mitigation such that the Project and mitigation, taken together, meet the California Wetlands Conservation Policy (Executive Order W-59-93), known as the "No Net Loss Policy," as described in Section 4.23.4 of the Basin Plan (see Findings 28 and 30). Mitigation shall preferentially occur at the impacted site, which is referred to as "on-site" mitigation (i.e., within the Project right-of-way), and shall recreate the same type of water as the impacted water which is referred to as "in-kind" mitigation.

    This Order requires that permanently-affected waters of the U.S. and of the State will be mitigated at a minimum mitigation-to-effect ratio of 2:1. As such, the mitigation package for habitat shall provide a minimum restoration of approximately twice the 10.1-acre area and 10,072-linear-foot length feet of creek habitat area, or the equivalent, as compared to the area and linear feet in which rock riprap and concrete will be installed. Restoration of temporarily-affected habitat will be mitigated at a minimum mitigation-to-effect ratio of 1.5:1. The minimum ratio of 2:1 for permanent impacts and 1.5:1 for temporary impacts will apply as long as construction of a mitigation activity is completed within 12 months of the date when the associated impact first occurs. An additional 10 percent mitigation per year, on an areal basis, will be required for the portion of mitigation not completed within the required 12-month period.

    In addition, the Water Board may require a higher amount of mitigation than those amounts stated above, depending on the type (i.e., in-kind or out-of-kind) and proximity (i.e., on-site or off-site) of proposed mitigation relative to the impacted creeks in the Project. For example, the following situations warrant additional mitigation:

    - The placement of off-site mitigation waters or the creation of out-of-kind mitigation (created or restored waters that are different habitat types than the impacted waters), though this can be allowed where it is demonstrated that an overall net gain will occur;

    - Mitigation project has uncertainty of the success associated with the construction or restoration of mitigation wetlands and/or waters; and

- Delays in the construction or restoration of mitigation wetlands and/or waters, relative to when the Project's impacts occur.

When determining whether to accept out-of-kind mitigation, the Water Board may consider such sources as the *Baylands Ecosystem Habitat Goals* (1999) and the *Baylands Ecosystem Species and Community Profiles* (2000) (referred to collectively as the "Habitat Goals Reports"), the San Francisco Estuary Project's *Comprehensive Conservation and Management Plan (1993)*, or other plans specific to the District's flood protection and stream stewardship goals that would result in project with a "long-term net gain in the quantity, quality, and permanence of wetlands acreage and values ..." consistent with the Basin Plan, section 4.23.4. Examples of potentially acceptable mitigation projects include dam removal, increasing salmonid habitat complexity in another creek, replacing a concrete channel with restored riverine wetland habitat, and preparing a watershed management plan and implementing specified projects sufficient to meet the Order's mitigation requirements.

The MMP must include performance and success criteria appropriate for the type of project. For vegetation in mitigation sites, herbaceous plantings must be monitored for no less than five years, and shrubs and trees must be monitored for no less than ten years, consistent with Vegetation Performance and Success Criteria in Attachment C, or standards of equivalent or better effectiveness.

22. **Monitoring and Technical Reports.** All monitoring and technical reports required in this Order are required pursuant to CWC section 13267. The burden of preparing these reports, including costs, bear a reasonable relationship to the benefits to be obtained from the reports and monitoring. Specifically, the monitoring and technical reports will demonstrate protection of beneficial uses during construction and maintenance projects, as well as verify the success of efforts to mitigate impacts as described in Findings 20 (i.e., impacts) and 21 (i.e., mitigation requirements). The monitoring reports will log the progress of revegetation over time, and verify the success of mitigation plantings consistent with the minimum success and performance standards in the MMP. In addition, the technical reports will document the Project design and inform the Adaptive Management Plan and implementation.

23. **Water Quality Certification.** The Project will result in discharge of dredge and fill materials into waters of the U.S. and of the State. As the federal administrating agency for regulating the discharge of dredge and fill materials to waters of the U.S. pursuant to section 404 of the Clean Water Act (CWA) (33 U.S.C., section 1344), the Corps signed the Record of Decision dated May 29, 2015, stating that the Project meets all environmental statutes. On March 14, 2016, the Water Board issued Water Quality Certification pursuant to the Clean Water Act, section 401 (Certification) to the Corps for the Project. The Certification states that the Water Board would consider waste discharge requirements (WDRs) for the Project to address the future operations and maintenance activities, vegetation monitoring for construction mitigation plantings, and an off-site mitigation plan for impacts due to the Project's design.

24. **Waste Discharge Requirements.** Pursuant to section 13263 of the California Water Code (CWC) and Title 23, section 3857 of the California Code of Regulations (CCR), the Water

Board is issuing WDRs to regulate the proposed discharge of excavation, dredge and fill materials into waters of the State. The Water Board considers WDRs necessary to adequately address impacts and mitigation to beneficial uses of waters of the State from the Project, to meet the objectives of the California Wetlands Conservation Policy (Executive Order W-59-93), and to accommodate and require appropriate changes over the life of the Project, including during its construction. In accordance with CWC, sections 13263(a) and 13241, the Water Board, after considering this matter at a public hearing, has prescribed requirements as to the nature of the proposed discharge. These requirements implement the Water Board's relevant water quality control plans and policies, and take into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, and the need to prevent nuisance.

25. **California Environmental Quality Act (CEQA).** CEQA requires all discretionary projects approved by public agencies to be in full compliance with CEQA, and requires a lead agency to prepare an appropriate environmental document for such projects. The Discharger, as the lead agency, certified an Environmental Impact Report (EIR) for the Project on February 9, 2016. The EIR found several significant impacts that are under the purview and jurisdiction of the Water Board. These included significant impacts to: (1) biological resources; (2) soil or topsoil resources; (3) hazardous materials; (4) utility and service systems; and (5) hydrology and water quality. The EIR also found that the mitigation measures proposed therein would mitigate all of these impacts to less than significant levels. The EIR identified the following mitigation measures to mitigate these impacts to less than significant levels:

    - Using seeds or cuttings collected at or near the project area, or higher in the watershed if on-site collection is not feasible, replace the 53 native tree and shrubs removed at the following rates:
        - Native tree up to 8 inches diameter at breast height (dbh): plant 1 native tree for each tree removed;
        - Native trees up to 20 inches dbh: plant 2 native trees for each tree removed;
        - Native trees greater than 20 inches dbh: plant 3 native trees for each native tree removed;
        - Native shrubs: plant 2 native shrubs for each native shrub removed.
    - Maintaining a buffer zone around those riparian trees that will be protected in place during construction;
    - Replacing non-native and ruderal vegetation with native grass and forbs by hydroseeding disturbed areas;
    - Conducting conduct pre-construction aquatic life and wildlife surveys; protecting nesting birds; and relocating wildlife and aquatic life as necessary during construction activities; and conducting pre-construction awareness training for detection and avoidance of wildlife and aquatic species.

- Preventing soil erosion or loss of topsoil by preparing and implementing Rain Event Action Plans;

- Collecting and treating potentially contaminated groundwater encountered during project excavation in the JCI groundwater plume area to complying with the VOC and Fuels General Permit standards before discharging the groundwater to the environment; and

- During construction, removing hazardous materials and wastes from the creek channel prior to substantial rain so that water flowing in the creek does not to entrain hazardous substances.

26. CEQA states that a Responsible Agency "shall not approve the project as proposed if the agency finds any feasible alternative or feasible mitigation measures within its powers that would substantially lessen or avoid any significant effect the project would have on the environment." The Water Board, as a responsible agency under CEQA, has considered the EIR and finds that impacts during the construction of the Project that are within the Water Board's purview and jurisdiction have been identified and will be mitigated to less-than-significant levels through a combination of mitigation measures identified in the EIR and the requirements of this Order. This Order includes conditions and mitigation measures that will substantially lessen or avoid the Project's impacts on the environment. The need for compensation of impacts from the Project design is addressed in this Order (see Finding 21).

    The District prepared and certified a Stream Maintenance Program Update Final Subsequent Environmental Impact Report (FSEIR) on February 14, 2012, State Clearinghouse No. 2000 102 055. The FSEIR found significant impacts that are under the purview and jurisdiction of the Regional Water Board: 1) aquatic species including habitat for special status species; 2) water quality; and 3) hazardous materials. The FSEIR also found that the mitigation measures would mitigate all of these impacts to less than significant levels. The mitigation measures specified in the FSEIR include compensatory mitigation to mitigate for any temporary disturbance or loss of aquatic habitat and specific BMPs to avoid and minimize maintenance activity-related impacts. The impacts of this project related to stream maintenance (O&M implementation) are expected to be equivalent to the impacts discussion in the FSEIR. This Order includes conditions and mitigation measures that will substantially lessen or avoid the Project's impacts on the environment related to stream maintenance (O&M implementation) both during and after construction. The need for compensation of impacts from stream maintenance (O&M implementation) is addressed in this Order (see Finding 16).

27. **Water Quality Control Plans.** The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) was duly adopted by the Water Board and approved by the State Water Resources Control Board (State Water Board), U.S. Environmental Protection Agency (U.S. EPA), and the Office of Administrative Law where required. The Basin Plan is the Water Board's master water quality control planning document. It designates beneficial uses of receiving waters, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed by the Plan. Section 2.2.1 of

the Basin Plan indicates that the beneficial uses of any specifically identified water body generally apply to its tributary streams. Existing and potential beneficial uses of waters at the Project include the following:

- **Upper Berryessa Creek:** Warm Freshwater Habitat (WARM), Wildlife Habitat (WILD), Water Contact Recreation (REC-1), and Noncontact Water Recreation (REC-2)
- **Los Coches Creek:** Preservation of rare and endangered species (RARE), WARM, WILD, REC-1, and REC-2.
- **Piedmont Creek:** WARM, WILD, REC-1, and REC-2

In addition, section 2.2.3 of the Basin Plan recognizes the multiple beneficial uses provided by wetlands, and Table 1-3 of the Basin Plan lists beneficial uses associated with wetland types. Existing and potential beneficial uses for wetlands at the Project site were established as indicated in section 4.23 of the Basin Plan by (1) referencing information in the Project materials to identify wetland types at the Project site, (2) using Table 1-3 of the Basin Plan to identify examples of beneficial uses associated with these wetland types, and (3) referencing site-specific information provided in the EIR and Project materials to refine the list of example beneficial uses into a list of existing and potential beneficial uses for wetlands at the Project site. Wetlands and waters impacted in the Project site are creek habitat. The beneficial uses associated with wetlands at the Project site include WARM, WILD, REC-1, REC-2, and RARE. However, rare or endangered species do not presently inhabit the Project site.

Requirements of this Order implement the Basin Plan.

28. **Basin Plan Wetland Fill Policy.** The Basin Plan Wetland Fill Policy (Fill Policy) establishes that there is to be no net loss of wetland acreage and no net loss of wetland value when a project and any proposed mitigation are evaluated together, and that mitigation for wetland fill projects is to be located in the same area of the region, whenever possible, as the project. The Fill Policy further establishes that wetland disturbance should be avoided whenever possible, and if not possible, should be minimized, and only after avoidance and minimization of impacts should mitigation for lost wetlands be considered. The Water Board applies the Fill Policy to waters that are creeks.

29. To minimize temporal losses in functions associated with the Project's unavoidable temporary impacts, the Discharger will return temporarily-impacted waters of the State to a condition similar to their original condition upon completion of the Project by hydroseeding native wetland species in the channel bed and native grass species on creek banks in Upper Berryessa Creek, Los Coches Creek, and Piedmont Creek.

30. **California Wetlands Conservation Policy.** The goals of the California Wetlands Conservation Policy (Executive Order W-59-93, signed August 23, 1993) include ensuring "no overall loss" and achieving a "…long-term net gain in the quantity, quality, and permanence of wetland acreage and values…." The California Wetlands Conservation Policy

also calls for a "development of means to provide flexibility in the regulatory process … for allowing public agencies, water districts, and landowners to establish wetlands on their property consistent with the primary purpose of the property."

Senate Concurrent Resolution No. 28 states that "[i]t is the intent of the legislature to preserve, protect, restore, and enhance California's wetlands and the multiple resources which depend on them for benefit of the people of the State." Section 13142.5 of the CWC requires that the "highest priority shall be given to improving or eliminating discharges that adversely affect…wetlands, estuaries, and other biologically sensitive areas."

The State Water Board applies the California Wetlands Conservation Policy to waters that are creeks. Requirements of this Order implement the California Wetlands Conservation Policy.

31. **California EcoAtlas.** It has been determined through regional, state, and national studies that tracking of mitigation/restoration projects must be improved to better assess the performance of these projects, following monitoring periods that last several years. In addition, to effectively carry out the State's Wetlands Conservation Policy of no net loss to wetlands, the State needs to closely track both wetland losses and mitigation/restoration project success. Therefore, we require that the Applicant use the California Wetlands Form to provide Project information related to impacts and mitigation/restoration measures. An electronic copy of the form and instructions can be downloaded at: http://www.waterboards.ca.gov/sanfranciscobay/certs.shtml. Project information concerning impacts and mitigation/restoration will be made available at the web link: http://ecoatlas.org/regions/ecoregion/bay-delta/projects.

32. **Endangered Species Act.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

33. **Notification of Interested Parties.** The Water Board has notified interested parties, including the Corps, U.S. EPA, U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, the Guadalupe-Coyote Resource Conservation District, and the Citizens Committee to Complete the Refuge, City of Milpitas, Valley Transportation Authority, BART, Santa Clara County Parks and Recreation Department, and California Department of Transportation-District 4, of its intent to prescribe WDRs for this discharge.

34. **Consideration of Public Comment.** The Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.

35. **Records Management.** This Project file is maintained at the Water Board under CIWQS Place No. 818597, and Regulatory Measure No.403119.

36. **Fees for Dredge and Fill Projects.** The fee amount for the WDRs shall be in accordance with the current fee schedule, per California Code of Regulations (CCR), Title 23, Division 3, Chapter 9, Article 1, section 2200(a)(3).

It Is Hereby Ordered pursuant to the provisions of Division 7 of the CWC, related regulations and guidelines adopted thereunder, that the Discharger, its agents, successors, and assigns shall comply with the following pursuant to authority under CWC sections 13263 and 13267:

A. Discharge Prohibitions

1. The discharge of wastes, including debris, rubbish, refuse, or other solid wastes into surface waters or at any place where they would contact or where they would be eventually transported to surface waters, including floodplains, is prohibited.

2. The discharge of floating oil or other floating materials from any activity in quantities sufficient to cause deleterious bottom deposits, turbidity, or discoloration in surface waters is prohibited.

3. The discharge of silt, sand, clay, or other earthen materials from any activity in quantities sufficient to cause deleterious bottom deposits, turbidity, or discoloration in surface waters is prohibited.

4. The fill activities in waters of the State subject to these requirements shall not cause a nuisance as defined in CWC section 13050(m).

5. The groundwater in the vicinity of the Project shall not be degraded as a result of the Project activities or placement of fill for the Project.

6. The discharge of materials, which are not otherwise regulated by a separate NPDES permit or allowed by this Order, to waters of the U.S. and State is prohibited.

7. The use of imported soil in the Project is prohibited unless the Executive Officer grants an exception to this under the requirements of Provision 13. Under such circumstances, the Discharger shall submit the report required in Provision 13 to provide justification for the use of imported soil fill with resulting in impacts in the waters of the State .

8. Directional drilling in the Project is prohibited.

9. This use of bank stabilization methods and materials other than the methods and materials in the 90 percent design plans and specifications are not authorized under this Order.

10. This Order prohibits any creek dewatering, diversion, or discharge before the Executive Officer provides approval in writing of a Dewatering Plan the Discharger shall prepare, consistent with Provision 9.

B. Provisions

1. The Discharger shall comply with all Prohibitions and requirements of this Order immediately upon adoption of this Order or as otherwise provided below. The Discharger shall fully implement all requirements of this Order, including all plans accepted by the Water Board or Executive Officer. The Discharger shall notify the Executive Officer in writing should the Discharger need to significantly alter the Project. If the Water Board is not notified of a significant alteration to the Project, the Applicant will be considered in violation of this Order and may be subject to Water Board enforcement actions.

2. All plans and reports required under this Order shall be submitted and acceptable to the Executive Officer.

3. The Project shall be constructed in conformance with the 100 percent Design Plans consistent with Finding 11 and Provision 7, and be acceptable to the Executive Officer.

4. Dredging, excavation, and fill in Upper Berryessa Creek, Piedmont Creek, and Los Coches Creek shall not cause the turbidity in the receiving water (i.e., water in these creeks and in waters to which they discharge) to increase by more than 10 percent if the ambient turbidity of the receiving water is greater than 50 NTU, or by more than 5 NTU if the ambient turbidity of the receiving water is less than or equal to 50 NTU.

5. **Construction General Permit**. The Discharger shall seek coverage under and comply with, or oversee that its contractors seek coverage and comply with, the NPDES General Permit for Discharges of Storm Water Associated with Construction Activities (Order No. DWQ-2009-0009, as amended by Order Nos. 2010-0014-DWQ and 2012-006-DWQ) (Construction Stormwater Permit).

6. **Rain Event Action Plan.** The Discharger shall develop and implement a Rain Event Action Plan (REAP), as required by the Construction General Permit, designed to protect all exposed portions of their sites within 48 hours prior to any likely precipitation event. The REAP requirement is designed to ensure that the discharger has adequate materials, staff, and time to implement erosion and sediment control measures that are intended to reduce the amount of sediment and other pollutants generated from the active site. A REAP must be developed when there is likely a forecast of 50% or greater probability of precipitation in the project area.

7. **Final Design Plans.** No later than 15 days before starting construction for the Project, the Discharger shall submit final 100 percent design plans to the Water Board. The final Design Plan shall also include the 100 percent Planting Plan (see Finding 11). In addition, the 100 percent plans shall include, or otherwise be accompanied by, information, including an appropriately-detailed narrative description, describing all changes from the 90 percent plans dated January 14, 2016, and 95 percent Planting Plan dated January 15, 2016. The Planting Plan shall be revised to include monitoring of herbaceous plantings for no less than five years and shrubs and trees for no less than ten years, and shall meet performance and success criteria in Attachment C, or comparable standards acceptable to

the Executive Officer. The narrative description of changes for the 100 percent plans shall be in the format of a memorandum separate from the Design Documentation Report.

8. **Utilities Plan.** Before starting construction, the Discharger shall prepare and submit a Utilities Plan, acceptable to the Executive Officer. The Utilities Plan shall consist of the following report and plans for utilities in the Project right-of-way:

    a. A technical report that identifies any protective caps and supporting infrastructure, located immediately above the creek or within 5 feet below the creek banks or channel bottom and analyzes whether they could constrain the creek channel in the future (e.g., by requiring placement of a cap or related hard structure to protect them from creek flow or erosion; precluding creek migration, including downcutting; or otherwise requiring modification of the creek to protect them). Where such a potential exists, the Plan shall include a workplan, including appropriately-detailed plans and a schedule, to relocate the utilities and associated infrastructure such that they will be unlikely to affect the creek;

    b. Drawings and maps with narrative, as appropriate, sufficient to describe measures to prevent impacts during relocation; and

    c. Maps and drawings showing the locations, elevations, type, size, associated infrastructure (e.g., caps), and all other information, as appropriate, of live and abandoned utilities.

9. **Dewatering Plan.** Not later than 30 days prior to the commencement of dewatering activities, the Discharger shall submit a Dewatering Plan, acceptable to the Executive Officer. The Dewatering Plan shall include plans (i.e., diagrams or drawings; maps showing locations of activities and structure; and other design details as appropriate) for, and appropriate discussion about, all dewatering system components, such as diversion pipes, water storage, and water quality monitoring, and shall address the following specific methods and procedures:

    a. Identify an appropriate discharge point for the proposed dewatering flows downstream of the lower coffer dam;

    b. Procedures and methods for maintaining natural flow upstream and downstream of the Project area and for avoiding and preventing sedimentation and erosion upstream and downstream of the dewatered Project area;

    c. Procedures and methods to meet discharge and receiving water quality objectives in the Basin Plan and sufficient to avoid exceedances of the applicable receiving water quality objectives, including, but not limited to, turbidity, pH, temperature, dissolved sulfide, and dissolved oxygen in accordance with the Basin Plan water quality and specified in Provision 11;

    d. Methods for installing, maintaining, inspecting, and removing coffer dams with minimal or no impacts to the Creek; and

e. How the Creek will be restored when a coffer dam is are removed.

10. **Groundwater Management Plan.** The Discharger shall implement a Groundwater Management Plan, acceptable to the Executive Officer, to meet the standards of the VOC and Fuel General Permit (Finding 15; Attachment B).

11. **Discharge and Receiving Water Objectives.** Creek dewatering discharges, accumulated groundwater or stormwater removed during dewatering of excavations, and diverted creek and stormwater flows shall not be discharged to waters of the State without meeting the following discharge and receiving water limitations herein. All monitoring records at the Project site shall be maintained at a location to be designated in the Dewatering Plan, and shall be made available upon request by Water Board staff.

    a. pH - the instantaneous discharge pH shall be in the range of 6.5 to 8.5, and controllable water quality factors shall not cause changes greater than 0.5 units in the receiving water pH levels.

    b. Discharge Dissolved Oxygen - the discharge dissolved oxygen concentration shall be no less than 5.0 milligrams per liter (mg/L) (hourly average).

    c. Discharge Dissolved Sulfide - the discharge dissolved sulfide shall not be greater than 0.1 mg/L.

    d. Receiving Water Turbidity - the receiving water turbidity measured as nephelometric turbidity units (NTU) shall not be greater than 10 percent of natural conditions in areas where natural turbidity is greater than 50 NTU (daily average). All Project discharge plans shall identify an acceptable location or locations at which to measure background turbidity. The Discharger shall monitor receiving water and discharge turbidity at least one time every 8 hours on days when discharges from excavations or any other dewatering processes may occur.

    b. Receiving Water Temperature – the receiving water shall not be increased by more than 5°F (2.8°C) above natural receiving water temperature.

    c. Nutrients - the receiving waters shall not contain biostimulatory substances in concentration that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.

12. **Post-Construction Stormwater Management Plan.** No later than 60 days prior to construction, the Discharger shall submit a Post-Construction Stormwater Management Plan consistent with the Water Board's Municipal Regional Stormwater Permit (NPDES Municipal Regional Stormwater Permit (MRP) (Water Board Order No. R2-2015-0049; NPDES Permit No. CAS612008) requirements for post-construction stormwater management for new or replacement impervious surfaces. The plan shall identify construction materials, designs, treatment controls, a proposed operation and maintenance plan, and all other information, as appropriate, sufficient to ensure the appropriate

treatment of runoff from 6.84 acres of maintenance roads and 0.1 acres of concrete access roads and ramps, either on site or at an alternative off-site location.

13. No later than 30 days prior to placing any imported soil fill material at the Project area, including all placement of fill in areas below the top of bank, on levees, and at any other location where the fill is a discharge to or has the potential to discharge to any waters of the State in the Project, the Discharger shall submit a technical report, acceptable to the Executive Officer, that the chemical concentrations in the imported fill soil are in compliance with the protocols specified in the following documents:

    a. The Dredged Material Management Office (DMMO) guidance document *Guidelines for Implementing the Inland Testing Manual in the San Francisco Bay Region* (Discharger Public Notice 01-01, or most current version) (Inland Testing Manual) with the exception that the water column bioassay simulating in-bay unconfined aquatic disposal shall be replaced with the modified effluent elutriate test, as described in Appendix B of the Inland Testing Manual, for both water column toxicity and chemistry (DMMO suite of metals only); and,

    b. The Water Board May 2000 staff report *Beneficial Reuse of Dredged Materials: Sediment Screening and Testing Guidelines*, or the most current revised version. Water Board staff shall review and approve data characterizing the quality of all material proposed for use as fill prior to placement of fill at any of the levee, marsh, or channel areas at the Project site. Modifications to these procedures may be approved by the Executive Officer on a case-by-case basis, pending the Discharger's ability to demonstrate that the imported fill material is unlikely to adversely impact beneficial uses.

14. **Maintenance.** Maintenance activities shall be consistent with the District's Stream Maintenance Program as described in Finding 16, and consistent with the Adaptive Management Plan (Finding 17) this Order requires pursuant to Provision 15. In addition, the mitigation required due to impacts from maintenance activities shall be consistent with the District's Stream Maintenance Program. The Discharger shall prepare a lessons learned report, consistent with the next provision, as described in Finding 16.

15. **Adaptive Management Plan.** No later than 6 months after the date this Order is adopted, the Discharger shall submit an Adaptive Management Plan that is consistent with Finding 17. The Adaptive Management Plan shall identify the Project's performance with respect to sediment deposition and accumulation, and develop ways of reducing the need and frequency of maintenance activities and maximizing habitat acreage, values, and functions. The Adaptive Management Plan shall be implemented immediately upon Project channel construction completion. For the purposes of this Order, Project channel construction completion is defined as the first business day after construction contractors are no longer within the Project right-of-way, except for any contractor present solely for the purposes of vegetation planting, monitoring, and/or management. The Adaptive Management Plan shall include, but not be limited to, the following elements:

a. A workplan to periodically conduct cross-sectional and longitudinal profile surveys, and stage-discharge recordings, including high water stages and velocities, after the Project is constructed. The date collected shall inform the five-year report described below in section (e).

b. A decision-making process to avoid sediment and/or vegetation removal before analyzing channel capacity based on field survey data to be collected in accordance with (a) above.

c. Identification of a maintenance trigger based a stated freeboard; and other appropriate maintenance trigger(s).

d. Identification of stream gage locations necessary to implement the monitoring requirements for the Adaptive Management Plan, installation of gage(s), and data acquisition and analysis of stream flow gage(s) to implement the monitoring requirements of the Adaptive Management Plan.

e. A collaborative process comparable to the District's Notification of Proposed Work process under the Stream Maintenance Program (see Finding 16) to convene a team, including Discharger staff and Water Board staff, to jointly develop Project-specific maintenance work plan, acceptable to the Executive Officer, for any bank stabilization, sediment, and/or vegetation maintenance activities that may be necessary in the event that a maintenance trigger (or multiple triggers) occurs.

f. **Geomorphology Report.** A report submitted after 5 measurable flood events at or exceeding the estimated 2 year flood event, and one event at or exceeding the estimated 10 year flood event, to analyze data collected over the first years of Adaptive Management Plan implementation to evaluate channel performance and address the uncertainty in sediment transport processes (Finding 16, Staff Memo). The geomorphology report will evaluate:

   i. whether flow events have occurred that will enable the evaluation of sediment deposition processes in the Project;

   ii. whether sediment deposition rates have increased or decreased compared to the existing conditions;

   iii. whether sediment only accumulates at the two UPRRR culverts as stated in the Project EIR; and

   iv. a comparison of stage-discharge relationships based on collected field data and the model projections.

   In addition, the geomorphology report shall be the basis for the following possible steps to determine whether the District will continue implementing the Adaptive Management Plan:

v. The Executive Officer shall authorize the Project to be transferred to the District's Stream Maintenance Program (SMP) if results of year report indicate sediment deposition has decreased or is similar to existing conditions. The maintenance guidelines developed with the Adaptive Management Plan shall be incorporated into the District's SMP and implemented for future maintenance activities under the SMP.

vi. The District shall continue implementing the Adaptive Management Plan if the Geomorphology Report findings indicate the sediment transport issues have not been resolved, either because not enough rainfall has occurred to generate flows in the creeks to verify sediment transport processes, and/or, because, the data are inconclusive.

vii. If sediment deposition increases and/or is in various areas other than those predicted (e.g., at the UPRR culverts), the District shall submit a lessons learned report to document actual performance of the Project, rather than the design performance, and compare maintenance activities conducted to date with the previously mitigated activities (Finding 16). The lessons learned report shall include (but not be limited to):

a. A refined the sediment transport model; and

b. A project re-design report that identifies opportunities to address sediment accumulation and other Project performance issues such as alternative management approaches, which may include (but are not limited to) modifying sediment maintenance upstream of the Project.

Mitigation Requirements

16. **Mitigation and Monitoring Plan.** No less than six months from the date this Order is adopted, the Discharger shall submit a final Mitigation and Monitoring Plan (MMP), acceptable to the Executive Officer, including, but not limited to, the following elements:

a. The MMP shall include a proposal, workplan, monitoring plan, performance standards, and all other information, as appropriate, sufficient to ensure the mitigation of permanently-affected waters of the State at a minimum mitigation-to-effect ratio of 2:1 and mitigation of temporarily affected habitat at a minimum mitigation-to-effect ratio of 1.5:1 to ensure the Project results in no net loss and a long-term net gain in wetland and waters area, function, and value, consistent with Finding 21. Thus, the mitigation package (i.e., the MMP) shall provide a minimum restoration of approximately twice the 10.1-acre area and 10,072-linear-foot length feet of creek waters, or the equivalent, as compared to the area and linear feet in which rock riprap and concrete will be placed. The Water Board may require additional area and/or linear feet based on the type and proximity of the mitigation project. Thus, the size and scope of the mitigation project shall be appropriate for the Project's impacts based on variations of the ratios above, as described in Finding 21.

b. The MMP shall include (but not be limited to) the vegetation performance standards and success criteria, or comparable standards, as those in Attachment C. The mitigation plantings shall be monitored annually for success, health, and vigor as specified in Attachment C, Tables 1 and 2.

c. Plantings in mitigation areas shall be monitored for a minimum period of five years for grasses, forbs, and shrubs, and ten years for trees, until the success criteria in the MMP are achieved.

d. The Discharger shall apply the guidance in Attachment C, or comparable standards, for revegetation of on-site grasses, shrubs and trees specified in the Planting Plan.

17. **Mitigation Reporting Requirements.** The MMP shall incorporate the reporting requirements stipulated in Provisions 24 through 27.

18. To mitigate the significant impacts identified in the EIR over which the Water Board has authority, the Discharger shall implement those mitigation measures, which are summarized below and described in Finding 25:

- Replacing any native trees and shrubs of certain sizes the Project will remove during construction;

- Maintaining a buffer zone around riparian trees during construction;

- Replacing non-native and ruderal vegetation with native grass and forbs;

- Conducting pre-construction aquatic life and wildlife surveys; protecting nesting birds; and relocating wildlife and aquatic life as necessary during construction activities; and conducting pre-construction awareness training for detection and avoidance of wildlife and aquatic species;

- Preparing and implementing Rain Event Action Plans;

- Collecting and treating potentially contaminated groundwater encountered to meet the VOC and Fuels General Permit standards; and

- Preventing hazardous materials and wastes from being entrained in creek flow.

19. **Notification and Log for Impacts.** The Discharger shall notify the Water Board prior to the commencement of ground disturbing activities, with details regarding the construction schedule, in order to allow staff the opportunity to be present onsite during construction, and to answer any public inquiries that may arise regarding the Project. In addition, the Discharger shall maintain an Impacts Log to track Project activities including the start dates of impacts to waters of the State and the associated mitigation activities. The Discharger shall make the Impacts Log available for review by the Executive Officer upon request. The calendar shall include, but not be limited to, the start dates of the following Project milestones:

a. Channel excavation and grading;

b. Creek dewatering;

c. Groundwater management;

d. Hydroseeding;

e. Tree and shrub planting; and

f. Offsite mitigation construction elements (as described in the MMP (Finding 21; Provision 17).

Reporting Requirements

20. All reports pursuant to these Provisions shall be prepared under the supervision of suitable professionals registered in the State of California.

21. The Discharger shall report any water quality monitoring data that are not in compliance with Provision 11 (a non-compliance event) to the Water Board within 24 hours via telephone and shall follow up with a written report within 14 days. The written report shall provide the following:

    a. Discharge and receiving water measurements for the water quality parameter(s) collected during the non-compliance event;

    b. The location, duration, and likely cause of the non-compliance event;

    c. All actions taken to remedy non-compliance immediately after identifying the non-compliance event and to mitigate for any adverse impacts caused or contributed to by the non-compliance event; and

    d. All actions taken to prevent a non-compliance event in the future.

22. **Geomorphology Report**. The Discharger shall submit a report pursuant to Provision 15, by January 31 after the fifth of five measurable flood events at or exceeding the estimated 2 year flood event, and, at least one flood event at or exceeding the estimated 10 year flood event, occurs. If a ten year event does not occur within ten years water years (i.e., October 1 through September 30) after construction is completed, the Discharger shall submit the Geomorphology Report, due by January 31 of the eleventh water year, based on data available at the end of the tenth water year.

23. **California EcoAtlas**. The Discharger shall use the standard California Wetlands Form to provide Project information describing impacts and restoration measures no later than 14 days from the date of the final MMP approved pursuant to Provision 16. An electronic copy of the form can be downloaded at: http://www.waterboards.ca.gov/sanfranciscobay/certs.shtml. The completed form shall be submitted electronically to habitatdata@waterboards.ca.gov or shall be submitted as a

hard copy to both (1) the Regional Water Board (see the address on the letterhead), to the attention of EcoAtlas, and (2) the San Francisco Estuary Institute, 4911 Central Avenue, Richmond, CA 94804, to the attention of EcoAtlas.

24. **Mitigation Monitoring Reports**. The Discharger shall submit annual reports, no later than January 31 following each year in which mitigation is monitored, during each year of the first five years of the initial ten year monitoring period. After the first five years, the Discharger shall submit reports in years seven, nine, and ten. The reports shall summarize each year's monitoring results, including the need for any remedial actions (e.g., re-planting or bank stabilization). The annual report shall compare data to previous years and describe progress towards meeting final success criteria. The year ten report shall consist of the annual data from year 10, in addition to a comprehensive final report. Annual reports and the comprehensive final report shall include photographs from the photo-documentation points specified in Provision 29. The final report shall document whether the Project site and offsite mitigation area(s) meet the final performance criteria of the MMP. If the criteria are not met, the report shall identify remedial measures to be undertaken, including extension of the monitoring period until the criteria are met.

    Success of the mitigation program shall be determined by the Executive Officer after all the minimum success criteria in MMP are achieved. All Annual Reports shall include photographs, special-status species monitoring, and all other information, as appropriate.

25. The Discharger shall continue to submit Annual Reports after the first ten years, as necessary, until the sites have met their performance standards and final success criteria, and the Executive Officer has accepted a notice of mitigation completion (see Provision 27) for each mitigation site.

26. **EIR Mitigation Measure Implementation**. The Discharger shall submit annual reports to report on implementation of EIR mitigation measures pursuant to Provision 18. The Discharger shall submit the first annual report no later than January 31 following initiation of construction, and shall continue annual reporting until one year after completion of channel construction. Annual reporting to meet this requirement may be a section within the MMP annual reports, with clearly-defined section headings to identify the EIR mitigation annual data and information.

27. **Notice of Mitigation Completion**. When the Discharger has determined that a mitigation area achieved the performance standards and final success criteria specified in the MMP, it shall submit a notice of mitigation completion. This notice shall include a status report on the implementation of the long-term maintenance and management portion of the MMP and a description of the status of the mitigation component that has been determined to be successful. After acceptance of the notice of mitigation completion in writing by the Executive Officer, the Discharger's submittal of mitigation monitoring reports for that mitigation component is no longer required.

28. **As-built Plans.** Within 8 weeks of completing Project construction activities, including restoration and replanting of the temporarily-impacted locations, the Discharger shall

submit an as-built report and plan to the Water Board either by uploading it to the California Wetlands Portal website at http://www.californiawetlands.net/tracker/ba/list or via mail. The report shall provide a revised Project plan clearly identifying and illustrating the location of temporary impacts in waters of the State.

29. **Photo-documentation Report**. To document channel and bank conditions immediately upstream and downstream of the Project site, as well as the Project site itself, the Discharger shall establish a minimum of 12 photo-documentation sites at the Project site, and additional sites sufficient to document each bridge crossing in the Project. These photo-documentation sites shall be selected to document channel and bank conditions immediately upstream and downstream of each site, as well as the Project reach. The Discharger shall prepare site maps with the photo-documentation points clearly marked. Prior to implementing the Project, the Discharger shall photographically document the condition of each site. Following implementation of the Project, the Discharger shall photographically document the immediate post-construction condition of the sites and submit a report to the Water Board including the pre-construction photographs, the post-construction photographs, and the map with the locations of the photo-documentation points. This report shall be submitted to the Water Board along with the as-built plans (Provision 28).

Other Requirements

30. The Discharger shall immediately notify the Water Board by telephone whenever an adverse condition occurs as a result of this discharge. Such a condition includes, but is not limited to, a violation of the provisions of this Order, a significant spill of petroleum products or toxic chemicals, or damage to control facilities that would cause noncompliance. A written notification of the adverse condition shall be submitted to the Water Board within two weeks of occurrence. The written notification shall identify the adverse condition, describe the actions necessary to remedy the condition, and specify a timetable, subject to the modifications of the Water Board, for the remedial actions. The Discharger shall notify the Water Board in writing at least 30 days prior to actual start dates for each Project component (i.e., prior to the start of grading or other construction activity for any Project component, including the creek mitigation components).

31. The Discharger shall at all times fully comply with the engineering plans, specifications, and technical reports submitted with the Project materials for the Corps' CWA section 401 Water Quality Certification application and the plans and reports required by this Order (e.g., Provisions 7, 8, 9, 10, 15, 16, 28, and 29), which, together, serve as the basis for the Project description this Order covers.

32. The Discharger is considered to have full responsibility for correcting any and all problems that arise in the event of a failure that results in an unauthorized release of waste or wastewater. The discharge of any hazardous, designated or non-hazardous waste as defined in Title 23, Division 3, Chapter 15 of the California Administrative Code, shall be disposed of in accordance with applicable State and federal regulations.

33. The Discharger shall remove and relocate any wastes that are discharged at any sites in violation of this Order.

34. The Discharger shall maintain a copy of this Order at the Project site so as to be available at all times to site operating personnel and agencies.

35. The Discharger shall permit the Water Board or its authorized representatives at all times, upon presentation of credentials:

    a. Entry onto Project premises, including all areas on which wetland or waters fill or mitigation of waters of the State, is located or in which records are kept.

    b. Access to copy any records required to be kept under the terms and provisions of this Order.

    c. Inspection of any treatment equipment, monitoring equipment, or monitoring method required by this Order.

    d. Sampling of any discharge or surface water covered by this Order.

36. This Order does not authorize commission of any act causing injury to the property of another or of the public; does not convey any property rights; does not remove liability under federal, State, or local laws, regulations or rules of other programs and agencies, nor does this Order authorize the discharge of wastes without appropriate permits from other agencies or organizations.

37. The Discharger shall timely pay all fees associated with this Order. The fee amount for the Waste Discharge Requirements of this Order shall be in accordance with the current fee schedule, per California Code of Regulations, Division 3, Chapter 9, Article 1, section 2200(a)(3). The fee payment shall indicate the Order number, the CIWQS Place ID no. 818597, the Regulatory Measure ID no. 403119, and the applicable season.

38. This Order action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to section 13330 of the CWC and 23 CCR section 3867.

39. This Order action is not intended and shall not be construed to apply to any discharge from any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent Order Project materials was filed pursuant to 23 CCR subsection 3855(b) and that Project materials specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.

40. The Water Board may consider rescission of this Order upon Project completion and the Executive Officer's acceptance of notices of completion of mitigation for all mitigation, creation, and enhancement projects required or otherwise permitted now or subsequently under this Order.

This Order applies to the Project as proposed in the Project materials. Failure to implement the Project as proposed and as authorized herein is a violation of this Order. Violation or threatened violation of the Provisions of this Order is subject to any remedies, penalties, process or sanctions as provided for under applicable State or federal law, including administrative civil liability pursuant to CWC section 13350. Failure to meet any Provision of this Order may subject the Discharger to civil liability imposed by the Water Board to a maximum of $5,000 per day of violation or $10 for each gallon of waste discharged in violation of the Order. Also, any requirement for a report made as a Provision to this Order (e.g., Provisions 20 through 29) or technical or monitoring reports the Water Board requests in response to a suspected violation of the s of this Order, is a formal requirement pursuant to CWC Section 13267, and failure to submit, late or inadequate submittal, or falsification of such technical report(s) is also subject to civil liability pursuant to CWC Section 13268.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on _____ .

_____
BRUCE H. WOLFE
Executive Officer

ATTACHMENTS:

Attachment A Figures
1 – Upper Berryessa Creek Project Location and Vicinity
2 – Project Elements, Calaveras Boulevard to Ames Avenue
3 – Project Elements, Ames Avenue to Interstate 680

Attachment B Water Board Letter to Corps dated August 14, 2015, Regarding Groundwater Management Plan Requirement

Attachment C Guidelines for Vegetation Performance Standards and Criteria in Mitigation Sites

EXHIBIT 8

5750 Almaden Expressway, San Jose, CA 95118-3614 | (408) 265-2600 | www.valleywater.org

Santa Clara Valley Water District

September 19, 2016

Via e-mail and U.S. Mail

Susan Glendening
San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

Subject: Comments on Waste Discharge Requirements for the Upper Berryessa Creek Flood Risk Management Project

Dear Ms. Glendening:

The Santa Clara Valley Water District (District) appreciates this opportunity to comment on the tentative order for waste discharge requirements related to the Upper Berryessa Flood Risk Management Project (Project). The District urges the Regional Board NOT to adopt the tentative order for the reasons described in this letter. The tentative order would distract from the watershed-wide planning and habitat enhancements that the District is working on with many agencies, including the Regional Board. The Regional Board would also be responsible, under the California Constitution, for reimbursing the District for the millions of dollars that the District anticipates will cost to comply with the order's conditions. The tentative order is also legally unfounded for several reasons and unnecessary because the Regional Board previously issued 401 water quality certification to U.S. Army Corps of Engineers (USACE) for construction of the Project. Additionally, the tentative order includes numerous factual errors.

I. BACKGROUND

The Project is a single-purpose flood risk management project authorized by Congress through the Water Resources Development Act of 1990. The Project includes construction, and then operation and maintenance, of channel modifications and associated structures along 2.2 miles of Upper Berryessa Creek in the cities of Milpitas and San Jose, from I-680 downstream to Calaveras Boulevard, so as to meet Federal Emergency Management Administration (FEMA) certification standards. This Project provides 100-year flood protection for a new Milpitas BART station, a part of the Bay Area Rapid Transit (BART) system expansion project, to extend BART service from Fremont through Milpitas to San Jose. The BART expansion project is a $2.3 billion (including $900 million in federal funding) project, and the opening of the new station is expected in late 2017. Delays in this Upper Berryessa Project may result in delays and cost increases in the BART project.

The USACE is responsible for design and construction of the Project, and the District is responsible for acquiring real property rights needed for the project, making the land available to the USACE for construction, and conducting operations and maintenance (O&M) of the creek channel once the Project is constructed and the USACE transfers the Project to the District. The USACE is effectively leasing the District's property for the construction.

Construction of the Project will benefit the environment. It will result in a net increase of 3.18 acres in Waters of the United States, and will not affect jurisdictional wetlands or special status species. The biological value of the increased habitat area would also be improved over existing conditions as non-native and invasive vegetation would be removed and the area seeded with native wetland plant species. Grassland habitat, which the U.S. Fish and Wildlife Service has identified as an important habitat type in this area, would increase in area by 3 acres, and would be seeded with native grass and forbs, replacing the existing predominantly non-native vegetation cover. Finally, the Project would preserve existing upland trees and shrubs wherever possible, and would replace removed native trees and shrubs with native plantings at a 2:1 ratio.

The District is the lead agency under the California Environmental Quality Act (CEQA) for the Project, and the Regional Board is a responsible agency under CEQA. The District prepared a draft environmental impact report (EIR) for the Project. The Regional Board submitted extensive comments on the draft EIR, including on the Project's impacts to waters of the State and on sedimentation. Each of those comments was responded to, and changes were made in the final EIR. The District certified the final EIR in February 2016, finding that impacts to biological resources, soils, hydrology, and water quality (among other issues) would be less-than-significant if mitigation measures identified in the EIR were implemented. No suit or other challenge was filed to challenge the District's certification of the EIR, and the time to do so has now expired.

In 2015, the USACE, who is responsible for the design and construction of the Project, applied to the Regional Board for certification as sole permittee, under Section 401 of the federal Clean Water Act, that the Project does not violate state water quality standards. On March 14, 2016, the Regional Board, through the Executive Officer, issued to the USACE (but not to the District) a "Certification And Waste Discharge Requirements", confirming that construction of the Project, as conditioned in that order, would comply with the federal Clean Water Act and with "applicable requirements of State law." That document also confirmed that construction-related discharges would be regulated by the WDRs contained in State Water Resources Control Board Order No. 2003-0017-DWQ. Paragraph 5 of Order No. 2003-0017-DWQ provides that "[t]hese General WDRs fulfill the requirements of [the Water Code requiring WDRs for persons discharging or proposing to discharge] for proposed dredge or fill discharges to waters of the United States that are regulated under the State's CWA section 401 authority." The Regional Board's March 14, 2016 order thus had the effect of certifying that construction of the Project, as conditioned in that order, was consistent with all applicable laws and was regulated by pre-existing WDRs.

Regional Board staff are now asking the Regional Board to impose on both the USACE and the District new WDRs for construction of the Project. Those draft WDRs include an unnecessary new mitigation project (estimated to cost up to $20 million) and new conditions that conflict with the ongoing construction of the Project. Those draft WDRs also impose new conditions related to O&M for the Project—even though the Project construction will not be completed until late 2017 at the earliest, the USACE has not yet drafted the O&M Manual for the project, and O&M activities will not occur until many months or years after project construction is completed. The District has repeatedly objected and continues to object to the Regional Board's issuance of new WDRs at this time. The District incorporates all its prior objections to the extent those objections have not been fully resolved.

II. THE PARTIES SHOULD FOCUS ON WATERSHED-WIDE PLANNING

As the Project EIR indicates and this letter further explains in Section V below, this specific Project will not impact jurisdictional wetlands and will result in a substantial increase in the quality and quantity of aquatic and upland habitat at the Project area. As a separate effort, the District is developing an integrated water resources master plan (i.e., the One Water Plan) to enable the District to develop its projects using an integrated and watershed-wide approach by considering water supply, flood protection and stream stewardship objectives. The focus will be to identify and implement multi-objective projects that, together, improve the overall health of watersheds and balance the District's aforementioned three mission components. Following development of countywide guidelines and objectives, the District will develop watershed-specific plans for each of its five major watershed areas. The countywide guidance is nearing completion and the plan for Coyote Watershed (within which the Project is located) is under development and is scheduled to be completed by June 2017.

The District is eager to work with and welcomes input from the Regional Board while the District is developing its One Water Plan. Regional Board input and review could include identification of possible metrics and targets to measure progress in improving the watersheds. The District believes that development and implementation of these plans would further the mutual goals of the District and the Regional Board to maintain and improve the quality and beneficial uses in the five watershed areas while allowing the District to fulfill its mandate to provide water supply and flood protection services to the communities and act as stewards for the region's streams. The Regional Board should defer further consideration of this project-specific tentative order, so as to focus on watershed-wide planning.

Focusing on the entire watershed, rather than just this one Project, is also required by the Water Code. Section 13263(a) requires waste discharge requirements to "take into consideration ... the provisions of Section 13241." Section 13241, in turn, requires consideration of regional issues, such as the "coordinated control of all factors which affect water quality in the area", "[e]conomic considerations", and "[t]he need for developing housing within the region". Because the tentative order considers none of these things, it does not fully comply with requirements in Sections 13263 and 13241.

III. THE TENTATIVE ORDER WOULD MAKE THE REGIONAL BOARD RESPONSIBLE FOR MILLIONS OF DOLLARS IN MITIGATION COSTS

The tentative order would impose numerous conditions related to Project construction above and beyond those contained in the Section 401 certification issued to the USACE. Many of those conditions would likely be extremely expensive. The order would require, for example, off-site "restoration" of more than 20 acres of waters or wetlands in the area. (Finding 21; Provision 16.) Such a large project in this area would cost millions of dollars.

The California Constitution requires state agencies to reimburse local governments for the costs associated with mandates imposed by those state agencies that go beyond whatever mandates federal law imposes. (Cal. Const., art. XIII B, § 6(a).) The California Supreme Court just last month broadly construed this constitutional provision to hold that a Regional Board must reimburse local water agencies for the costs associated with complying with conditions in a waste discharge

requirement order because those conditions derived from State, not federal, law. (*Department of Finance v. Commission on State Mandates* (August 29, 2016) 1 Cal.5th __, no. S214855.)

The conditions in the tentative order that go beyond those contained in the 401 certification are based on State law, not any federal mandate. The 401 certification already found that the project, as certified in that order, would comply with federal law, so any additional requirements in the tentative order could only be derived from the supposed requirements of State law. And the tentative order imposes conditions related to supposed impacts to "waters of the State", which is also a concept found only in State law. Because the tentative order's new conditions go beyond what might be required under federal law, the Regional Board will be responsible for reimbursing the District for all its costs associated with those new conditions.

If, despite the other objections contained in this letter, the Regional Board nevertheless decides to adopt the tentative order, it should understand that it will ultimately be responsible for the very substantial costs of these new conditions, including all mitigation costs and the fees referred to in Provision 37 (this provision is discussed in Section V below).

IV. THE REGIONAL BOARD DOES NOT HAVE AUTHORITY TO ISSUE WDRS TO THE DISTRICT FOR CONSTRUCTION OF THE PROJECT

A. Additional Conditions On A Project The Regional Board Has Certified Complies With All Laws Are Unjustified

The Section 401 certification already found that construction of the Project, as conditioned in that order, "will comply with the applicable provisions" of federal and state law. The Project has not changed since this certification was issued. The Regional Board, having certified that construction of the project complies with all applicable laws, has no legal authority or justification for imposing additional construction-related mitigation conditions on the District or anybody else now.

Regional Board staff's response to this argument is that the certification "explicitly directs that mitigation would be deferred to the WDRs to be considered later this year." Although the certification referred to the *possibility* that the Regional Board might subsequently "consider[]" construction-related WDRs, the certification was not conditioned in any way on the Regional Board issuing additional construction-related WDRs. Nor could the Executive Officer, in such an order, pre-commit the Regional Board to issuing additional construction-related WDRs. Now that the Regional Board is being asked to consider additional construction-related WDRs, it should reject them for lack of legal authority.

Regional Board staff have also referred to various communications from Regional Board staff in which additional construction-related mitigation was raised. The District has repeatedly objected to additional construction-related mitigation. (See letters dated 30 March, 29 April, and 16 May.) Regional Board staff communications, over the District's objections, do not provide legal authority or justification for additional construction-related mitigation where there otherwise is no such authority or justification.

Regional Board staff have also justified their approach by stating that the 401 certification was "incomplete". But there is no such thing as an incomplete certification. Either a project complies with all applicable law (and is certified), or it does not. The certification here is complete.

B. The District Should Not Be Named As A Discharger For Construction Of The Project

The tentative order names both the District and the USACE as a "Discharger" relative to construction of the Project. (Findings 4 and 6.) The District is not a discharger relative to construction of the Project.

The tentative order invokes Water Code section 13263 as the source of the Regional Board's authority to issue WDRs to the District for construction-related discharges. (Finding 21.) Section 13263 authorizes the Regional Board to issue WDRs for a "proposed discharge". But the District is not proposing any discharges related to construction of the Project—the USACE is. Because the District is not proposing any construction-related discharges, Section 13263, on its face, does not authorize the Regional Board to name the District as a construction-related discharger.

Regional Board staff argue that the District should also be named as a construction-related discharger because the District owns the property on which the Project will be built. But Water Code section 13270 prohibits the Regional Board from issuing WDRs to one public agency for discharges on that agency's property by another public agency.

"Section 13270 prohibits a Regional Board from requiring a report of waste discharge and from issuing requirements to any lessor public agency which leases land to another public agency..." (State Water Board Order WQ 90-3 (San Diego Unified Port District).) Here, because the District, a public agency, is effectively leasing land to the USACE, another public agency, for construction of the Project, Section 13270 prohibits the Regional Board from issuing WDRs to the District for construction of the project on the District's property.

The Regional Board is already regulating construction of the Project via the Section 401 certification which names USACE as the sole permittee. No good reason exists to now name the District as an additional discharger for construction.

C. Issuing WDRs To The District Violates CEQA

1. CEQA Guidelines Section 15096 Prohibits The Regional Board From Second-Guessing The Environmental Analysis Of The Lead Agency

CEQA also significantly restricts the Regional Board's authority to impose mitigation measures arising from impacts that the certified EIR found to be less-than-significant. Section 15096(e) of the CEQA Guidelines provides that, if a responsible agency thinks that a certified EIR is "not adequate for use by the responsible agency", then it "must" either: (i) "[t]ake the issue to court within 30 days", or (ii) prepare a subsequent EIR "if permissible under Section 15162", or (iii) assume the lead agency role per Section 15052(a)(3). If the responsible agency does not take one of these three actions, it shall "[b]e deemed to have waived any objection to the adequacy of the EIR". (Section 15096(e)(2).) If the responsible agency does not challenge the EIR, then "the responsible agency must consider the environmental effects of the project *as shown* in the EIR". (Section 15096(f), emphasis added.) These provisions leave no room for a responsible agency to second-guess the EIR's findings about less-than-significant environmental impacts beyond the three ways specified in Section 15096(e).

Regional Board staff appear to read Section 15096(g) to allow the Regional Board, when acting as a CEQA responsible agency, to find significant effects, and impose additional mitigation measures,

even if the EIR finds those effects to be less-than-significant, and without taking any of the actions listed in Section 15096(e). (See Finding 26 (quoting Section 15096(g)(2)).) But Section 15096(g) does not say this. Subsection (g)(1) begins by noting that a responsible agency's role "is more limited than a lead agency." The responsible agency's authority to review "any significant effect the project would have on the environment" can only be referring to significant effects *identified in the lead agency's EIR*, not to effects the responsible agency might think are significant but which are not identified as such in the EIR. The District's interpretation is bolstered by the fact that CEQA prescribes that, where a project is to be carried out or approved by more than one agency, "the determination of whether the project may have a significant effect on the environment shall be made by the *lead agency*." (Pub. Res. Code § 21165(a), emphasis added.) To read Section 15096(g) any other way would deprive Section 15096(e) (which deems objections to the EIR "waived" unless the other steps in that paragraph are taken) and Section 15096(f) (which requires the responsible agency to consider the environmental effects "as shown" in the EIR) of all meaning.

In short, the Regional Board may not adopt additional mitigation for the Upper Berryessa project for impacts identified in the EIR as less-than-significant without at least taking one of the three actions in Section 15096(e). Otherwise, the Regional Board is deemed to have waived any objection to the EIR's findings about less-than-significant impacts and to the adequacy of the EIR's mitigation measures, and the Regional Board cannot impose additional mitigation.

The case law on this issue squarely supports the District. The only published case to interpret Section 15096, *Ogden*, turned on whether a responsible agency could second guess the lead agency's determination that an impact was less than significant without taking the steps identified in Section 15096(e). (*Ogden Envt'l Serv. v. City of San Diego* (S.D. Cal. 1988) 687 F.Supp. 1436, 1450-1452.) *Ogden* found for the lead agency, holding that if the responsible agency believes that the lead agency's environmental review was inadequate; the responsible agency "must take the necessary steps to challenge the lead agency's findings or otherwise be deemed to have waived any objection." (*Id.* at 1451, citing Section 15096(e).) Because the Regional Board has not taken any of the necessary steps to challenge the District's findings about less-than-significant impacts on waters, the Regional Board is deemed to have waived any objection.

Another case held that a responsible agency violated CEQA by not giving adequate consideration to the lead agency's EIR. (*RiverWatch v. Olivenhain Mun. Water Dist.* (2009) 170 Cal.App.4th 1186, 1207.) To reach that result, *RiverWatch* applied the rule that a responsible agency "must consider the environmental effects of the project *as shown in the EIR*", and that, before approving the project, the responsible agency must "find either that the project's significant environmental effects *identified in the EIR* have been avoided or mitigated, or that unmitigated effects are outweighed by the project's benefits." (*Id.*, emphasis added.) *RiverWatch* does not authorize responsible agencies to second guess the findings in the EIR; rather, *RiverWatch* effectively cautions responsible agencies, such as the Regional Board, against second guessing the findings in the EIR.

Adopting the tentative order without taking any of the steps in Section 15096(e) would violate CEQA.

2. CEQA Requires The Regional Board To Conduct Environmental Review Of The Large Project Regional Board Staff Is Proposing

The certified EIR concludes that both temporary and permanent impacts on waters would be less than significant. Putting aside that the Regional Board could have but did not challenge the certified EIR, and even assuming, for the sake of argument, that the Regional Board has authority to impose additional mitigation for impacts on waters (which the District contends it does not), CEQA requires the Regional Board to conduct additional environmental review before adopting WDRs with additional mitigation. The off-site mitigation that would be required by the tentative order includes the "restoration" of more than 20 acres of "riverine wetland area." (Finding 21; Provision 16.) Such a large off-site mitigation project is likely to have significant environmental effects; its ostensible purpose is to mitigate for other supposed significant environmental effects of the Project on waters. This is a "project" under CEQA for which the Regional Board would have to conduct environmental review before imposing. (*See Laurel Heights Improvement Assn. v. Regents of Univ. of Cal.* (1988) 47 Cal.3d 376, 401 ("mitigation measures must be discussed in an EIR").)

The tentative order contains none of the findings required by CEQA, and gives no reason why any exemption or exclusion should apply—and the District is aware of none.

Regional Board staff have suggested that, if additional environmental review is required, it will be up to "the District to prepare CEQA documentation." The District respectfully disagrees. The District, as the lead agency, has already approved the project as-is. If additional environmental review were required at this point because the Regional Board has identified new significant effects or proposed substantial project changes as mitigation, such review would be the Regional Board's responsibility. (*See* CEQA Guidelines § 15162(c) (after project approval by lead agency, "a subsequent EIR or negative declaration shall only be prepared by the public agency which grants the next discretionary approval").) Failure by the Regional Board to conduct additional environmental review before adopting the tentative order would violate CEQA.

V. THE WDRS ARE FLAWED

A. The Tentative Order Overestimates 'Waters Of The State'

Finding 18 in the tentative order claims that the Project will affect 10.1 acres of waters of the State. This conflicts with the finding in the certified EIR, which found less than 5 acres of affected waters of the State. The Regional Board does not have authority to second-guess the findings in the certified EIR. (See Section IV.C.1 above.)

Included in the 10.1 acres of "waters of the State" alleged in the tentative order is a non-wetland "area of 5.92 acres from the ordinary high water mark elevation to the tops of banks". There is no authority supporting the assertion that *non-wetland* areas above the ordinary high water mark are "waters of the State". The Water Code defines "waters of the State" as "any surface water or groundwater". (Water Code § 13050(e).) No regulations exist further refining this definition. The statutory phrase "surface water or groundwater" cannot reasonably be interpreted to include non-wetland areas above the ordinary high water mark. This area is not waters of the State.

What is more, the tentative order's proposed mitigation ratios of 1.5:1 (for temporary impacts) and 2:1 (for permanent impacts) in Finding 21 and Provision 16 are arbitrary and not supported by

evidence. There is no basis for mitigation ratios greater than 1:1. Section 4.23 of the Basin Plan provides that the "Water Board will evaluate both the project and the proposed mitigation together to ensure that there will be no net loss of wetland acreage and no net loss of wetland function." As shown elsewhere in this comment letter, the Project will not impact wetlands at all, and will improve other aquatic habitat. Because there will be no net loss of wetland acreage or function, and aquatic habitat will be improved, no mitigation is appropriate. There is certainly no basis for mitigation ratios of 1.5:1 or 2:1.

B. There Needs To Be Standards For All Submissions

Numerous provisions of the tentative order require plans or communications containing, but "not limited to", certain information. (See, e.g., Provisions 15, 15.f.vii, 16, 16.b, and 19.) Another provision would require notification to the Regional Board "whenever an adverse condition occurs as a result of this discharge", and defines "adverse condition" to include, but not be "limited to", certain events. (Provision 30.) The tentative order then threatens serious penalties for violation of any provision. These kinds of penalties would be "criminal in nature". (*See Tull v. United States* (1987) 481 U.S. 412, 418-421 (discussing analogous civil penalties under federal Clean Water Act).)

Due process requires that, before imposing criminal sanctions, the offense must be defined with "sufficient definiteness that ordinary people can understand what conduct is prohibited". (*Skilling v. United States* (2010) 561 U.S. 358, 402 (quoting *Kolender v. Lawson* (1983) 461 U.S. 352, 357), internal brackets, numbers, and quotation marks omitted.) The open-ended provisions in the tentative order that include, but are "not limited to", certain requirements, do not define in advance with sufficient definiteness what must be done to comply. These provisions violate due process and are invalid.

C. The Sedimentation Analysis Is Flawed

The tentative order would find that the Project will make the system more depositional and thereby cause sedimentation problems. (Finding 16.) However, studies and observations by the District strongly suggest that the assumptions in the tentative order about current conditions are flawed in that current conditions are erosional, so making the system more depositional would bring the system closer to equilibrium. Sediment transport modeling and analysis on the Project design by Tetra Tech also show a system closer to equilibrium after the Project is completed.

Bringing the system closer to equilibrium should reduce the need for O&M in this case. The District's Hydrology, Hydraulics, and Geomorphology Unit has prepared technical memoranda (attached as Exhibits 1 and 2) explaining these sedimentation issues, and responding to Regional Board staff's analysis of this issue.

D. The Tentative Order Includes Errors, Omissions, And Problematic Conditions

The tentative order contains numerous other errors, omissions, and problematic conditions. Those are described here:

1. **Finding 3**

This finding incorrectly states that both the USACE and the District will be responsible for Project construction. Only the USACE will be responsible for Project construction.

2. **Finding 4**

This finding incorrectly states that the District is a "Discharger" collectively with the USACE. The District is not a construction-related discharger (see Section IV.B above), and is not currently proposing any discharges associated with operations and maintenance.

3. **Finding 5**

This finding incorrectly states that construction of the Lower Berryessa Creek and Lower Calera Creek Flood Protection Improvements Project will be completed in October 2017. The current schedule shows completion of that Project (except for revegetation planting) in October 2018.

4. **Finding 6**

Finding 6 incorrectly states that the mitigation and monitoring requirements are necessary for the compliance with federal and state regulations. There are no federal monitoring requirements, and no additional construction-related mitigation is appropriate.

5. **Finding 6.e**

This finding incorrectly states that the Project will include a third ramp, downstream of the Montague Expressway crossing. The Project will include construction of only two ramps, both located upstream of the Montague Expressway crossing.

6. **Finding 6.i**

Finding 6.i could be read to suggest that the Project will replace and realign all utilities within the Project right-of-way. This overstates the Project impact. Only utilities directly affected by construction will be replaced or realigned; that replacement or realignment will be performed by the USACE as part of Project construction.

7. **Finding 6 Table 1**

This finding incorrectly lists the area of ramps as 0.01 acre. The correct area is 0.1 acre.

8. **Findings 7-9**

As a general matter, since both USACE and the District are named as "dischargers", the tentative order fails to make clear which of the two agencies would be responsible for complying with the conditions. Findings 7-9 fail to state what organization will be performing the tasks described in these sections. The USACE will be performing these tasks.

9. Findings 10-15

Finding 10 requires submission and approval by the Executive Officer of a number of plans before the beginning of construction. First, there is no legal basis for the submission of additional construction-related plans. (See Section IV above.) Second, construction is scheduled to begin before the Regional Board's consideration of the tentative order; thus, even if adopted, the submittal of these plans prior to start of construction would be infeasible.

With respect to utilities plan (see Finding 12), Regional Board staff considered, but ultimately rejected, conditioning the Section 401 certification on the submission of a utilities plan. So there is no basis to require such a plan now, when that plan was not previously included in the 401 certification.

With respect to dewatering plan, after noting that the groundwater management plan only addressed the Jones Chemical site, Finding 14 indicates that the order will require submission and implementation of "a complete Dewatering Plan that meets the minimum criteria outlined in Provision 9, acceptable to the Executive Officer." The 401 certification simply requires submission of a dewatering plan consistent with EIR Mitigation Measure WAQ-B and USACE's 90 percent specifications with no reference to acceptance by the Executive Officer. As described above, the Regional Board has no authority to require a construction-related dewatering plan, because it has already required one in the 401 certification—especially one that includes broader requirements than the one required in the 401 certification. However, the District understands that USACE will prepare a dewatering plan for the entire project area.

The District also notes several discrepancies related to these findings. For example, note Provision 9 requires dewatering plan to be submitted 30 days prior to start of dewatering activities, which is inconsistent with the due date stated in Finding 10, which requires the listed plans to be submitted before the beginning of construction. Similarly, Provision 12 requires post-construction stormwater management plan to be submitted no later than 60 days prior to construction, which is inconsistent with the "before construction" due date in Finding 10. Also, Finding 10 fails to mention that USACE submitted a project groundwater management plan to the Regional Board on or about January 26, 2016.

10. Finding 16

This finding makes incorrect statements about sedimentation. (See Section V.C above.)

This finding incorrectly states that development of the O&M Manual will be a "collaboration of the Water Board and other appropriate state agencies." The USACE alone will be developing the O&M Manual. Other statements throughout this finding about what the O&M Manual will set, include, or adapt are premature or already specified in the Section 401 certification.

This finding notes that the tentative order would authorize the District to conduct maintenance consistent with the District's existing Stream Maintenance Program. The USACE has yet to draft the O&M Manual. Depending on what the O&M Manual calls for, the District may need to approach the Regional Board for modifications to the tentative order. In addition, the statement that "... compliance with this Order will be determined by compliance with the terms of this Order" does not make logical sense.

11. Finding 17

This finding refers to submittal of an adaptive management plan to guide future maintenance activities. Note that Finding 10 requires such a plan to be submitted before construction, which is inconsistent with the requirement in Provision 15 to submit the plan no later than 6 months after the tentative order.

12. Finding 19

Finding 19 speculates that the project area "provides potential habitat for rare or endangered species." This finding is not supported by any evidence and contradicts the Final EIR and the U.S. Fish and Wildlife Coordination Act Report (CAR). With regard to federally protected species, the CAR states "The [USACE] has determined that the project would have no effect on federally-listed threatened or endangered species, and therefore no further consultation is required with the Service or NOAA Fisheries." With respect to state-protected species, the CAR states "The [USACE] has determined that due to the limitations in suitable habitat, the project would have no effect on State-listed species as well." Section 3.5.5.1 of the Final EIR analyzes the potential for the proposed project to "have a substantial adverse impact on, either directly or through habitat modification, on any species identified as candidate, sensitive, or special status in local or regional plans, policies, or regulations or by the CDFW, or USFWS." The Final EIR concludes that impacts from construction and operation of the project would be "less than significant". Similarly, Section 5.5.3.3 of the Final EIS for the Project states that it "would not substantially modify the existing habitat or adversely affect Federal and State listed species, therefore would have a less than significant effect." The Draft WDR improperly ignores these findings, which are based on intensive biological field investigations of the project area, and baselessly asserts that the project would affect protected species.

13. Finding 20

This finding describes construction-related impacts. The District is not responsible for construction, and the Regional Board has no authority to impose conditions on the District related to construction. (See Section IV above.).

Finding 20 states that the project will result in permanent impacts to waters of the State and waters of the United States. This assumption of permanent impact is contrary to the findings of the EIR, which found that impacts to waters would be less than significant, and to those of the USFWS CAR, which states "Based on our review, the proposed project would result in the temporary loss of habitat acreage and value for species inhabiting emergent wetland and annual grassland habitat. Wildlife species utilizing these areas would be displaced during construction activities and would likely return to the area following the completion of the project."

This finding also incorrectly states that buried rock riprap in the creek bed will permanently impact beneficial uses of the creek. While construction disturbance of the creek will result in a temporary impact to in-stream habitat, after construction is complete the rock riprap will be covered with native soil and seeded with native hydrophilic vegetation. This will result in an improvement in habitat compared to the existing condition. As stated in the certified EIR, the project will benefit the following beneficial uses of the creek designated in the Basin Plan: warm freshwater habitat (WARM) and wildlife habitat (WILDLIFE). The Regional Board does not have authority to second-guess that finding. (See Section IV.C.1 above.)

14. Finding 21

This finding refers to a requirement for submission of a Mitigation and Monitoring Plan (MMP) prior to the start of construction; however, this is not consistent with the Plans and Reporting Requirement section of the 401 certification. The specified due date is also inconsistent with Provision 16 in the tentative order which states that the MMP shall be submitted no less than six months from the date the order is adopted. The Regional Board also has no authority to impose additional construction-related conditions now. (See Section IV above.)

Paragraph 1 of this finding cites policies for mitigation impacts to jurisdictional wetlands. But wetland delineation studies performed in 2015/2016 found no jurisdictional wetlands to be present in the project area. The results of these investigations are summarized in section 3.5.2.7 of the Final EIR for the project and the entire wetlands delineation report is reprinted as Appendix C of the Final EIR. The Section 401 certification acknowledged (Finding I) that "[n]o jurisdictional wetlands are in the Project." No jurisdictional wetlands are present in the Project area, and none will be impacted.

Paragraph 2 of this finding fails to consider or quantify features of the Project design that will offset and mitigate impacts of Project construction to habitat included in Waters of the United States and State. For example, the project will create 16.0 acres of habitat within Waters of the U.S. and State. Section 3.5.5 of the Final EIR analyzes in detail the potential impacts of the proposed project on habitat. The proposed project would result in a net increase of 3.18 acres in Waters of the U.S. The habitat value of this increased area would also be improved over baseline conditions as non-native and invasive vegetation would be removed and the area seeded with native wetland plant species. Additionally, grassland habitat, which the USFWS identified as an important habitat type in the CAR, would increase in area by 3 acres, and would be seeded with native grass and forbs, replacing the existing predominantly non-native vegetation cover. Finally, the project would preserve existing upland trees and shrubs wherever possible, and would replace removed native trees and shrubs with native plantings at an overall ratio of 2:1. Overall, the project would result in a substantial increase in habitat acreage, and replacement of the predominantly non-native species now present within those habitats with native plantings, which will be maintained to ensure they thrive.

Paragraph 5 of this finding requires ten years of monitoring and reporting for mitigation tree/shrub plantings, which exceeds the five years of monitoring required by the Regional Board and CDFW for the Lower Berryessa Creek and Lower Calera Creek Flood Protection Improvements Project (see CIQWS Place no. 768945 (MB), SAA 1600-2013-0159-R3). Furthermore, this is inconsistent with the 5 year maintenance requirement under the condition 11 of the 401 certification.

This finding also refers to a requirement for off-site mitigation for construction-related impacts. The Regional Board does not have authority to impose these conditions on the District now. (See Section IV above.)

15. Finding 22

Finding 22 refers to requirement for monitoring and technical reports. The Regional Board has no authority to impose additional reporting conditions related to construction on the District now. (See Section IV above.) This finding also does not clarify responsibility for particular reports.

16. Finding 23

Finding 23 incorrectly asserts that the project 401 Certification states that the WDR will address "an off-site mitigation plan". The project 401 Certification does not require or discuss off-site mitigation for project impacts. In fact, the Final EIR finds that on-site plantings will mitigate for all project impacts to habitat.

17. Finding 25

Finding 25 incorrectly lists the mitigation measures that the Project EIR has identified to mitigate the significant impacts to less-than-significant levels. This finding includes the following measure which is not contained in the EIR: pre-construction aquatic life and wildlife surveys. This measure was not included in the EIR because the environmental impact analysis concluded that the Project would not result in significant impacts on any special status aquatic or wildlife species.

18. Findings 28, 30

These findings cite the Basin Plan Wetlands Fill Policy and the California Wetlands Conservation Policy. But no jurisdictional wetlands are present in the project area and the project will not impact wetlands. These policies cannot legally be applied to the Project.

19. Provisions

The Regional Board does not have authority to impose any provisions related to construction. (See Section IV above.)

Provisions 6, 8, and 9 do not clarify that the USACE will be performing project construction and will be the sole discharger during the project construction phase.

Provision 9, 12, 15 and 16 all have submission due dates that are inconsistent with the due date specified in Finding Section 10.

Provision 8 contains requirements for a construction-related utilities plan. As described above, the Regional Board considered but ultimately did not include a requirement for a utilities plan in the 401 certification, and it does not have authority to now impose construction-related conditions. (See Section IV above.)

Provision 9 contains requirements for a construction-related dewatering plan, but dewatering was already addressed in the 401 certification, and the Regional Board does not have authority to impose construction-related conditions now. (See Section IV above.)

Provision 12 states that the post-construction stormwater monitoring plan is due 60 days prior to start of construction. This was not a requirement under the 401 certification and, to the extent it is intended to require a stormwater monitoring plan for in-channel construction work, may not be legally imposed as a construction-related condition now. (See Section IV above.) Construction is also scheduled to begin before the Regional Board's consideration of the tentative order so, even if adopted, the condition would be infeasible.

Provision 13a requires extensive testing for contaminants for all "imported soil fill material." Planting soil or soil amendments used during Project revegetation will be obtained from commercial sources and will be free of contaminants.

Provision 13a also requires submission of the Adaptive Management Plan six months after the order would be issued, which is before the project Operations & Maintenance (O&M) Manual will be available. This condition would be infeasible because adaptive management principles need to be incorporated into the O&M Manual for this management approach to be effective. The Adaptive Management Plan and the O&M Manual must dovetail, which will require the simultaneous and integrated preparation of the two plans.

Provision 15, Part F requirements are based off the incorrect assumptions about sedimentation in Finding 16. (See Sections V above.)

- Part F, i: Part A would require surveys to be conducted and analyzed periodically, which conflicts with the thresholds here of five 2-yr events, one 10-yr event, or to evaluate whether flow events have occurred that can enable sedimentation analysis, as this would be done every time a survey is performed. Other projects, like the Lower Silver Creek capital project (Order R2-2002-0012), have required merely a downscaled geomorphology report that summarizes how the channel is behaving every few years (i.e., is the channel incising/aggrading?) with the type of data collected in Part A.

- Part F, ii: It is extremely difficult to determine sedimentation rates, both pre-project, and post-project. This requirement assumes that sedimentation will occur and sediment removal can be used as quantitative data, which will not be the case (current or in the future).

- Part F, iii and iv: These requirements for analyses on the UPRR bridges and stage-discharge relationships are unnecessary. Since cross section and profile monitoring will already be performed to determine capacity and sedimentation processes for O&M, conclusions about aggradation and degradation would already be known.

Provisions 16.a and 19 refer to an undefined mitigation project to mitigate for wetlands impacts even though the Project will not impact jurisdictional wetlands. There is no authority or justification for these provisions. The Regional Board would also need to comply with CEQA before committing to such a project. (See Section IV above.)
Provision 18 requires pre-construction surveys for aquatic life and wildlife. However, the certified EIR determined that no significant impacts would result to aquatic life or wildlife, and the Regional Board does not have authority to second-guess that EIR finding. (See comment on Finding 19, and Section IV, above.) Construction is also scheduled to begin before the Regional Board's consideration of the tentative order so, even if adopted, the condition would be infeasible.

Provision 28 requires submission of as-built drawings eight weeks after completion of construction, which is insufficient to complete these complex drawings. The Regional Board lacks authority to impose additional construction-related conditions now. (See Section IV above.)

Provision 37 requires the discharger to pay fees. There is no authority under the Water Code for requiring the District to pay fees. In any event, the Regional Board would be responsible for any fees the District might be required to pay. (See Section III above.)

20. Attachment A

Attachment A, Figures 2 and 3, use the terminology "Channel Bed rock armoring," which fails to account for the fact that the rock will covered with native soil and vegetated. "Vegetated buried bed and bank rock" more accurately describes the proposed Project.

Attachment A, Figure 3, incorrectly shows the upstream boundary of vegetated buried bed and bank rock.

21. Attachment C

Attachment C, item b requires plantings based on the outdated 2013 U.S. Fish and Wildlife Service Coordination Act Report. The certified EIR's Mitigation Measure BIO-B for replacement plantings of native trees and shrubs already addresses this issue. The Regional Board does not have authority to second-guess the EIR. (See Section IV.C.1 above.)

Attachment C, item c requires irrigation of wetlands plantings. The Project does not include wetlands plantings and none are necessary to mitigate project impacts.

Performance standards contained in Attachment C, Table 1, Grass and aquatic hydroseed area exceed those approved by RWQCB and CDFW for Lower Berryessa Creek and Lower Calera Creek Flood Protection Improvements Project (see CIQWS Place no. 768945 (MB), SAA 1600-2013-0159-R3). It is not possible to maintain non-native vegetation to 10% in this area where abundant amounts of non-natives are growing in the urbanized areas surrounding the creek and provide continuous input of non-native seeds. The following standards were approved by CDFW and RWQCB for the Lower Berryessa Creek and Lower Calera Creek Flood Protection Improvements Project:

- Year 1: 40% cover
- Year 2: 50% cover
- Year 3: 60% cover
- Year 4: 70% cover
- Year 5: 70% cover

Maintain invasive (but not non-native) plants ≤ 10%

Attachment C, Table 1 addresses riparian plantings. The Project will not impact riparian trees/shrubs and does not include riparian planting.

Attachment C, Table 1 addresses Seasonal wetland communities at the off-site mitigation area. The project will not impact jurisdictional wetlands and does not include off-site mitigation for impacts to seasonal wetland communities. The Regional Board lacks authority to require off-site mitigation. (See Section IV above.)

VI. PROCEDURAL REQUIREMENTS

The Regional Board's consideration of the tentative order is an adjudicatory proceeding. As such, certain procedures required by due process should be followed.

A. Right Of Reply

If, after receiving this comment letter, Regional Board staff intend to advance additional arguments, documents, or evidence, then the District requests that it be given a reasonable amount of time to review those additional materials and reply to them before any hearing.

B. Hearing

The District requests a hearing on the tentative order, with the right to call witnesses and to cross-examination.

C. Separation Of Functions And Ex Parte Communications

When acting in an adjudicatory proceeding, agencies must institute an internal separation of functions between prosecutors, decision-makers, and the decision-makers' advisors, and prohibit ex parte communications between them. (*Morongo Band of Mission Indians v. State Water Res. Control Bd.* (2009) 45 Cal.4th 731,737-739; *Dep't of Alcoholic Beverage Control v. Alcoholic Beverage Control Appeals Bd.* (2006) 40 Cal.4th 1, 10-15.) Although the District has previously asked, Regional Board staff have yet to explain how the Regional Board will implement these requirements here, and which people will serve each function. Those questions need to be answered.

VII. CONCLUSION

Based on the reasons stated above, the tentative order should be rejected. The District shares the Regional Board's interest in protecting water quality of the state. In lieu of issuing a costly and legally unfounded WDR, the District invites the Regional Board to participate in the watershed-wide planning underway as part of the District's One Water Program. The District believes that the watershed-wide planning approach is a comprehensive and more effective approach for the two agencies to work together collaboratively towards furthering our mutual goal of achieving water quality objectives.

If you have any questions, please contact me by phone at (408) 630-2035 or by email at mrichardson@valleywater.org.

Sincerely,

Melanie Richardson

Melanie Richardson, P.E.
Interim Chief Operating Officer-Watersheds

Enclosures: Exhibit 1 – Channel Stability & Geomorphologic Characteristics
Exhibit 2 – Responses to RWQCB Memo for Project Team

cc: N. Camacho, M. Richardson, N. Nguyen, R. Callender, R. Chan, J. Valencia, J. Manitakos, C. Hakes, File

Santa Clara Valley Water District

TECHNICAL MEMORANDUM
EXHIBIT 1

PROJECT: Upper Berryessa Flood Protection Project **DATE:** July 20th, 2016

SUBJECT: Channel Stability & Geomorphologic Characteristics

PREPARED: Jack Xu, PE, CFM

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1. PURPOSE

The purpose of this report is to summarize current Upper Berryessa channel geomorphology and its potential impacts to the current proposed project.

2. EXISTING CREEK MORPHOLOGY

To determine the existing geomorphology of Upper Berryessa, several analyses were performed:

- Review of existing literature.
- Field visit to characterize the current creek state.
- Historical comparison of channel geometry.

These analyses will focus in general on sedimentation and degradation issues, since any plan form movement of the creek has not been allowed in recent history due to urbanization and right of way constraints, and is also not applicable to the project.

LITERATURE REVIEW

In 2009, Colorado State University completed a geomorphic assessment[1] of Berryessa Creek. This study stopped upstream of I-680, which is just upstream of the Upper Berryessa Flood Control Project reach (Figure 1).

In the study, Jordan compared historical construction drawings from the District[2], as well as from the US Army Corps[3], with a 2004 survey of the channel profile. The findings show a generally degradational trend for the creek from the 1960's to the mid 2000's for Berryessa Creek reaches upstream of I-680 (Figure 2).

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[1] B.A. Jordan, W.K. Annable, and C.C. Watson. Colorado State University. An Urban Geomorphic Assessment of the Berryessa and Upper Penitencia Creek Watersheds in San Jose, California. April 30, 2009.

[2] Santa Clara County Flood Control and Water District (SCCFCWD) (1967). Report on Channel Improvements on Berryessa and Tularcitos Creeks, Zone E-1, Projects 40017 and 40040.

[3] United States Army Corps of Engineers (USACE) (1993). Coyote and Berryessa Creeks, California Berryessa Creek General Design Memorandum.

Figure 1: Upper Berryessa Creek Project Location Map

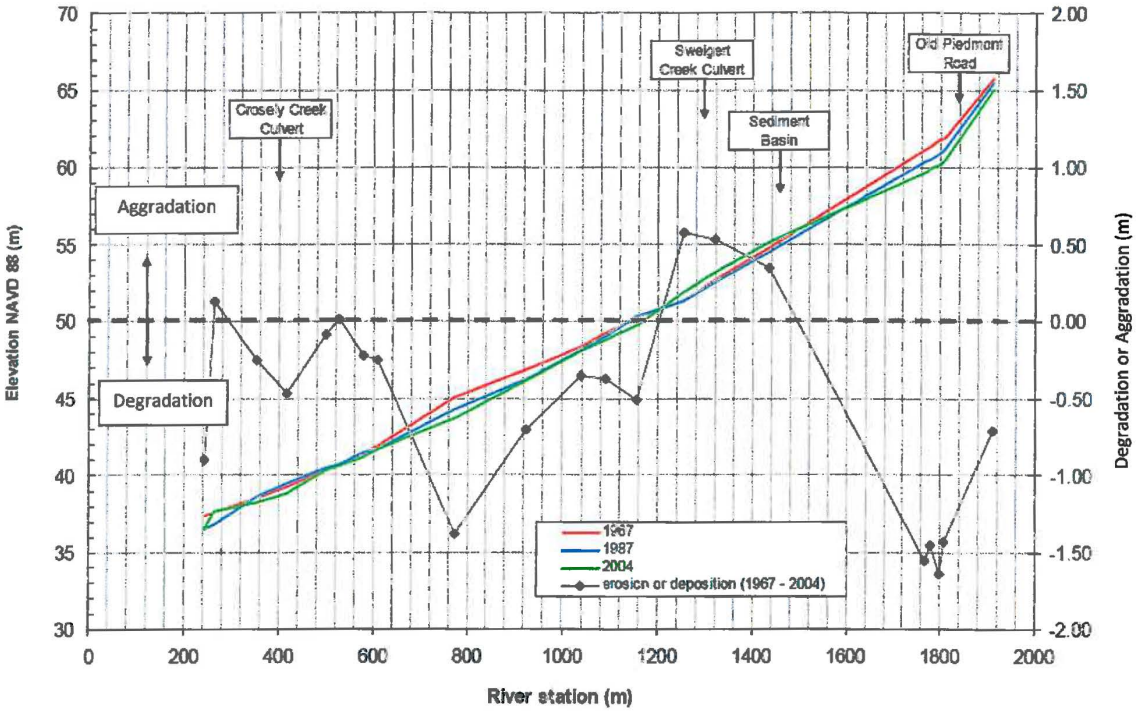

Figure 2: Berryessa Historical Longitudinal Profile (Piedmont to I-680 from Jordan 2009)

FIELD VISIT

District staff visited the Upper Berryessa project reach in the summer of 2016 to collect field observations on existing creek behavior. The following observations overwhelmingly point to a channel that has incised. Figures 3A and 3B show local erosion attributed to incision.

Figure 3A: Bank erosion upstream of Montague Expressway

Figure 3B: A deep and narrow low flow channel near Piedmont Creek

Figures 4A, 4B, and 4C are storm sewer outfalls. 4A and 4B are located upstream of Los Coches Street. The lighter sackcrete (newer) outfall seems to tie in properly with the channel, indicating at least some length of stability. The darker sackrete (older) outfalls to a high bench and has a 3' drop where there is no sackcrete reinforcement, indicating that the channel has incised over this time. Figure 4C is upstream of Montague Expressway, and it is evident the entire outfall structure has collapsed from its original location due to the channel bed dropping.

Figures 4A, 4B, and 4C (left to right): Storm Sewer Outfalls

Figures 5A and 5B depict the end of a 90 degree bend in Berryessa Creek just upstream of Montague Expressway. This bend is a concrete trapezoid channel, which then drops into the current natural channel that has incised up to this point. The concrete bottom acts as a grade control structure, preventing the head cut from progressing upstream.

Figure 5A: 2.5' Drop upstream of Montague Expressway

Figure 5B: View of drop upstream of Montague Expressway

Figures 6A and 6B show the creek just upstream of the Los Coches Street crossing. It is evident that there is significant channel erosion and down cutting occurring in the vicinity of the bridge, around, and under the concrete apron (Figure 7A). This erosion does not appear to be caused by local obstruction, since the channel thalweg ties in well both upstream and downstream. Instead, the erosion is a product of channel incision.

Figure 6A: Erosion upstream of Los Coches Street

Figure 6B: View of erosion upstream of Los Coches Street

Further analysis of the Los Coches Street Bridge seems to indicate that the apron is an artifact of an old bridge crossing. In Figure 7A, looking upstream, it is evident that the apron is aligned with the channel geometry. The western wing wall in Figure 7B (looking downstream) was left in place, while the eastern wing wall was removed to accommodate the pier for the newer bridge. Using the apron as an approximation for the historic bed, it is evident that the creek has incised in this area, moving around the concrete obstruction (Figure 6B).

Figure 7A: Los Coches Street looking Upstream

Figure 7B: Los Coches Street looking Downstream

HISTORICAL COMPARISON

Historic data was reviewed to plot against the current existing conditions model from the Upper Berryessa Project to further ascertain the creek's behavior.

- Typical sections from a 1955 engineer's report[4] for proposed improvements downstream of Los Coches Creek. It was determined that this design was never constructed. However, the existing typical section provides insight to the condition of the channel in 1955 and is shown on Figure 8A.
- A plan set dated in 1973 was found, but upon further review, it was also determined that this design was never actually constructed. This plan set was for the design of the 1967 design report mentioned next.
- The 1967 design report that was used by the Jordan study was utilized. The existing profile was used, but the actual design was very similar to the 1973 plans, which were not constructed. Datum was not explicitly stated in the study and may not be NGVD29, and may not be accurate. Datum was assumed by Jordan to be NGVD29.
- HEC-2 models[5] from Flood Insurance Studies done in the late 1970's.

The comparison between all the profiles indicates a degradational trend from 1960's to the present in the upper and lower project reaches, while the middle project reach has reached relative stability. This is consistent with Jordan's findings of a mainly degradational channel (Figure 2). Figures 8A, 8B, and 8C show cross sectional change, while Figure 9 shows the channel bed change from 1988. Channel thalweg and cross sections from the 90% proposed project design were also included as reference.

[4] Santa Clara County Flood Control and Water Conservation District. Engineer's report on the proposed improvements of Los Coches Creek and Berryessa-Los Coches Diversion Channel in the Milpitas area of zone E-1 of the Santa Clara County Flood Control and Water Conservation District.1955.

[5] George Nolte and Associates 1988 Flood Insurance Study HEC-2 Hydraulic Model.

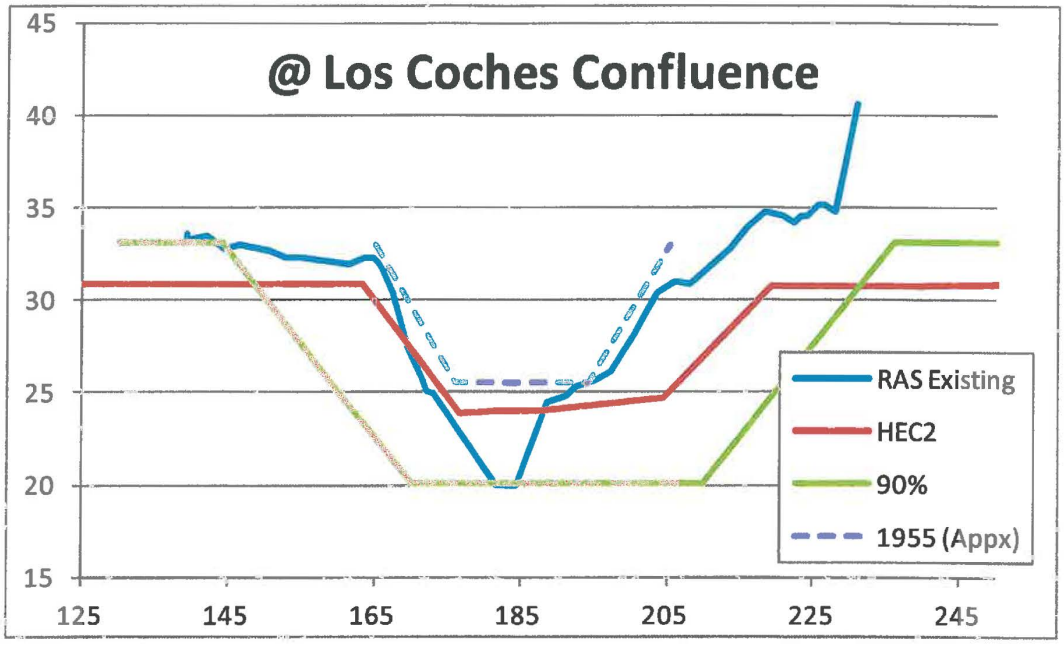

Figure 8A: Berryessa Historical Cross Section Comparison @ Los Coches Creek (Project Reach)

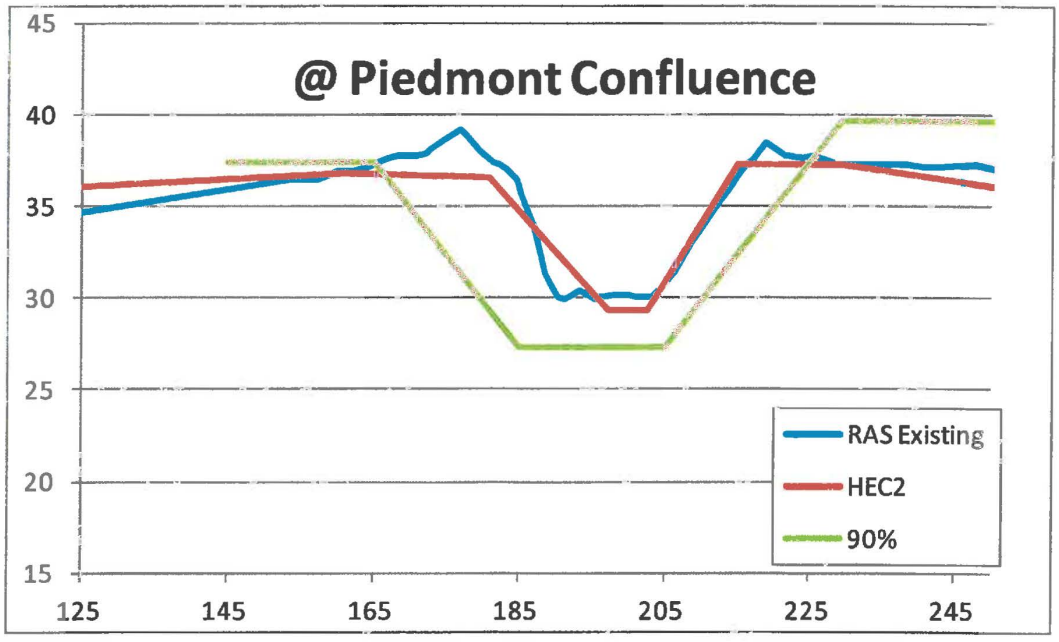

Figure 8B: Berryessa Historical Cross Section Comparison @ Piedmont Creek (Project Reach)

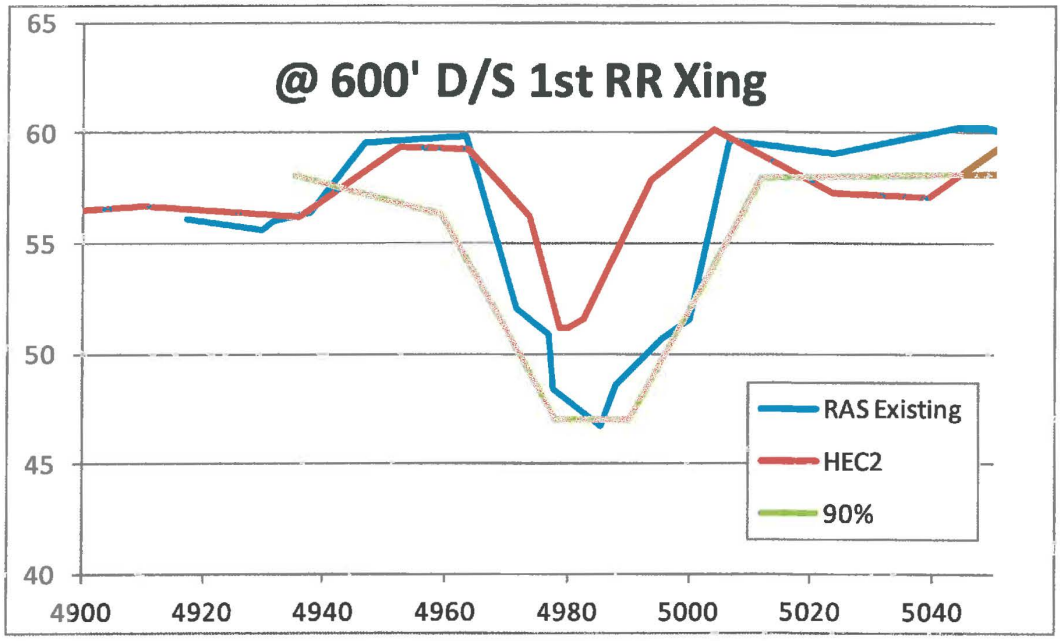

Figure 8C: Berryessa Historical Cross Section Comparison 600' Downstream of First UPRR Crossing (Project Reach)

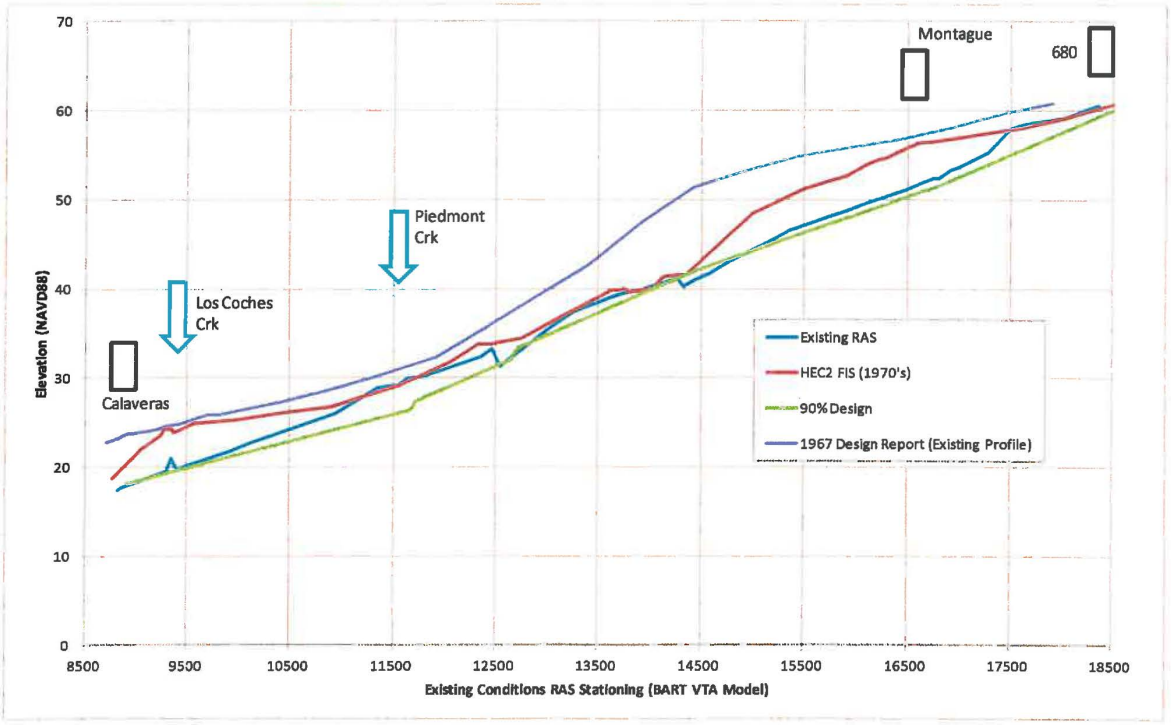

Figure 9: Berryessa Historical Longitudinal Profile (Project Reach)

3. PROPOSED PROJECT DISCUSSION

Evidence presented previously in this study show that the channel has mostly a degradational trend, with a section that appears to be in equilibrium. The proposed project will stabilize the channel banks and in most cases increase the cross sectional area of the creek (see Figures 8A, 8B, and 8C), while keeping the channel roughness and slope relatively the same. This should reduce shear stresses and move the channel away from degradation and towards equilibrium and/or possibly aggradation.

There is a section between STA 145+00 and STA 115+00 that appears to have stayed stable. This is anecdotally supported as well from the field visit, since none of the photos supporting incision were taken in this area.

A sediment transport analysis on the proposed condition was performed by Tetra Tech[6] using the HEC-RAS sediment transport module. The study concluded that, in general, there are areas with slight depositional tendencies during a large flood event. Overall, there was not significant bed changes in large flood events for the proposed design reach.

A separate study[7] was done by the District utilizing the same Tetra Tech model, but with a long term sediment transport analysis done on the proposed condition for over 50 years. The results indicate that over the long term, the channel will continue to be degradational.

If, in fact, portions of the channel continue to be degradational after the project, a small low flow channel would be carved out by the channel below the current invert and a bankfull channel would form, if the bed is erodible. In some locations, there is rip rap revetment on the channel bed, which would prevent any incision.

However, it is also possible that sections of the creek would be near equilibrium or even possibly aggradational after the project in some locations, given some increases in cross sectional area. In this case, the creek would form small benches at the height of bankfull depth, which can be seen at a previous project upstream of Montague Expressway at the 90-degree bend, where a widened concrete channel has sediment deposition (Figure 10). This would not be reflected in the sediment transport analysis done by both Tetra Tech and the District since the model used is in 1D.

To determine possible impacts to flood conveyance of the proposed project due to the creek depositing material to create a bankfull channel, the current bankfull geometry will be mimicked and imbued into the proposed 90% design model.

[6] Stefanovich, Dragi. Tetra Tech. Upper Berryessa Sediment Transport Technical Memo. 7/14/15.
[7] Xu, Jack. SCVWD Technical Memorandum. Upper Berryessa Flood Control Project, Long Term Sediment Transport Analysis for O&M.

4. UPPER BERRYESSA BANKFULL CHANNEL

Existing literature and field visits were utilized to determine the current bankfull channel for use to determine potential impacts to the proposed projects if the channel deposited sediment and creates a bankfull channel.

The 2009 Jordan report characterized the Berryessa Creek bankfull channel characteristics upstream of I-680 for three continuous years and averaged the results. The average bankfull area was between 1.5 to 2 square meters (16 to 21 square feet), with a channel slope of 0.017. In the project reach, the channel slope is closer to 0.005, and has a larger drainage area. Therefore, we would expect the bankfull cross section to be larger.

Bankfull indicators along the project reach were very difficult to determine due to the degradational nature of the urban creek. However, upstream of Montague Expressway, by the 90-degree bend, sediment deposition along the concrete trapezoidal channel was observed due to a widened cross section (Figure 10). This cross section was about 12' wide nominally, with a 10' wide bottom, and 1.5' to 2' deep, giving a cross sectional area of 18 to 24 square feet. However, this area is lined in concrete and should experience faster velocities when comparing to natural channels. In addition, sediment in this area was removed in 2009, according to the Upper Berryessa maintenance records, which means that the true bankfull channel might be slightly larger.

Both reference locations are upstream or at the upstream end of the project reach, and it is expected that the bankfull sections in the project reach, especially downstream the Los Coches and Piedmont tributaries, will be larger.

Figure 10: Bankfull Channel upstream Montague Expressway

5. IMPACTS TO PROPOSED PROJECT

MODEL SETUP

Using the previous analysis, the following bankfull cross sections were selected for use. These sections will be used as the assumption over the entire reach in the existing 90% model to determine impacts to the project for the design flow in the Design Documentation Report (DDR) [8]. This is conservatively on the smaller end for what would be the expected bankfull geometry for Berryessa Creek in this location. A smaller section would produce more sedimentation to create benches on the channel bottom.

- 24 sq ft for upstream of Piedmont Creek (STA 115+00). 2' deep, 1:1 side slopes, assuming a 14' top width and 10' bottom width that was normalized to a consistent 12'.
- 32 sq ft for downstream of Piedmont Creek. 2' deep, 1.5:1 side slopes, assuming an 18' top width and 12' bottom width that was normalized to a consistent 15'.
- Proposed cross sections with a bottom width of 12' were left as is except transition areas near bridges where bottom width exceeded 12'. This occurred at both UPRR crossings and Yosemite Drive. Ames Street did not have any transitions.

To model the bankfull cross sections, channel obstructions will be used. A typical obstructed cross sections can be seen below in Figure 11.

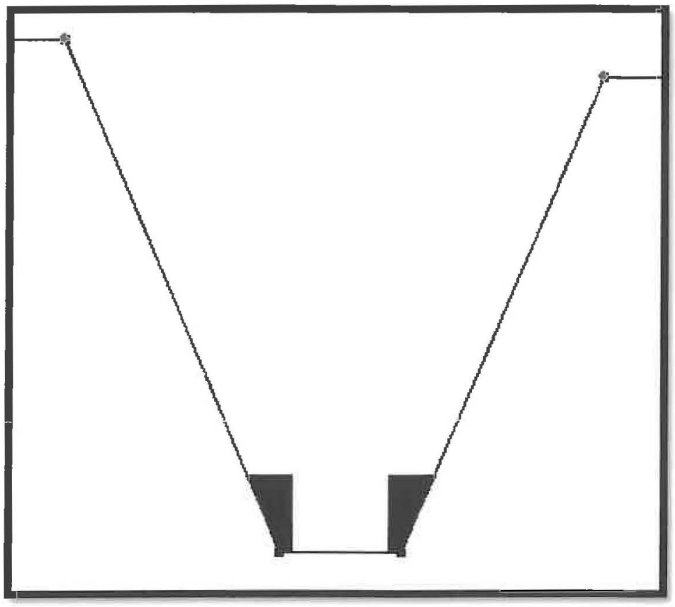

Figure 11: Typical Obstructed Cross Section

[8] USACE, Tetra Tech, Noble Consultants. Upper Berryessa Creek Flood Risk Management Project. Milpitas, California. Design Documentation Report. 90% Final Submittal. January 2016.

Table 2 below details the model parameters for obstructions. No other parameters were changed and backwater effects from possible aggradation from the Lower Berryessa project downstream of Calaveras were not considered. A summary profile of the output is on Figure 13.

Table 2: Bankfull Accretion Table for Modeling

Stations	Bottom Width	Bankfull Width	Bankfull Area	Bankfull Depth
114+73 to 87+20	40	15	32	2
124+53 to 115+00	20	12	24	2
141+08 to 125+19	12	n/a	n/a	0
143+00 to141+60	30 - 40	12	24	2
160+50 to 143+42	12	n/a	n/a	0
191+00 to 161+46	16	12	24	2

RESULTS

The results indicate that approximately 200' from STA 100+80 to STA 99+00 will experience overtopping. The water surface at this section will vary between 31.9' to 31.7', spilling over the right bank. The rest of the creek can handle the additional loss in cross sectional area and will not experience any overtopping.

This weak spot is documented in the 90% DDR as index point 5[9], where there was only 0.87' of freeboard without the bankfull accretion, which did not meet the Corp's non-exceedance criteria. In the DDR, the surrounding topography was analyzed, and determined that the area subject to possible flooding was a localized depression within the UPRR spruce line tracts. The impact to this area would be negligible if flood waters entered, and the decision was to accept a lower non-exceedance probability for this location.

When additional sediment was added, it was very probable that this location would overtop. The topography in this location was analyzed under the current situation and it is determined that the overflow would be limited to this location as well, causing little to no damage to life and property. Figure 12 shows the depression footprint that is lower than 32'.

From STA 105+00 to STA 100+80, the water surface is very close to the top of right bank. The topography in this area is generally flat while sloping upwards away from the creek. If any water breaks out from this location, it would also be localized behind the large warehouse.

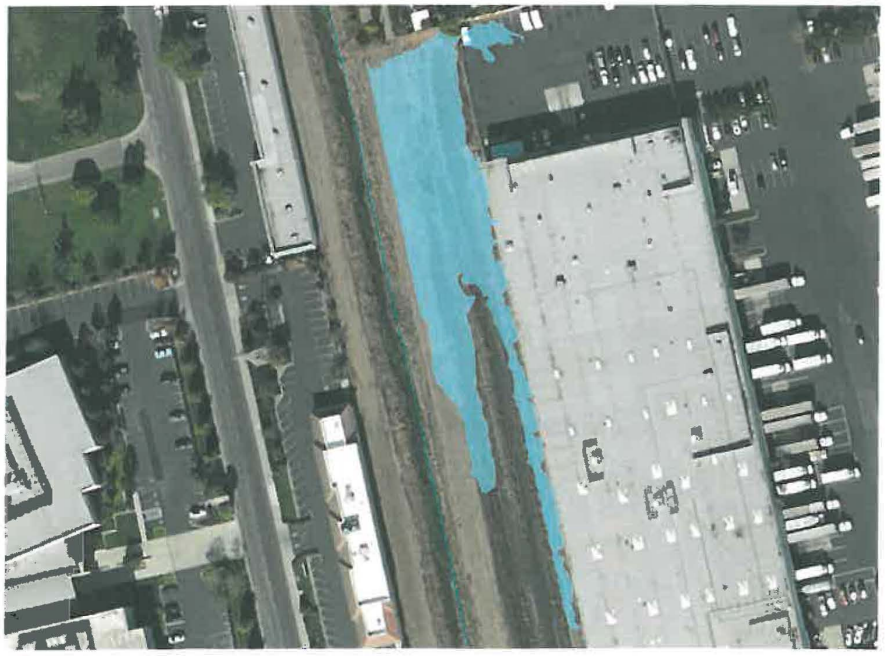

Figure 12: Potential Flood Impact near STA 100+00

[9] Corps 90% DDR, Section 5.55, Table 5.14.

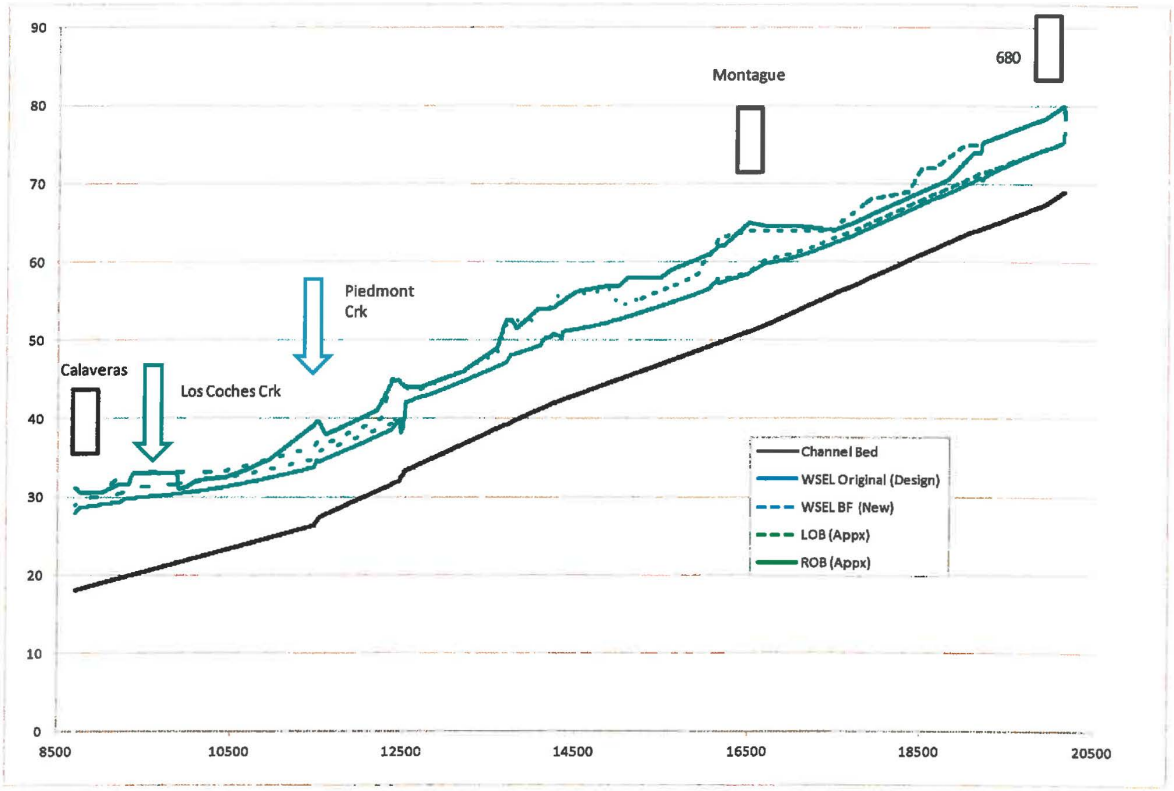

Figure 13: Modeled Results - Water Surface Profile

POSSIBLE FUTURE SEDIMENTATION ISSUES

Analysis has shown that with the bankfull benches, the design flood conveyance would be maintained without much issue. This means that any sedimentation that would be expected to occur would be left in the channel.

Most of the project reach is in a degradational state, and increasing the channel width should improve the stability of the channel. No sedimentation is expected to occur in most of the project reach, and is confirmed by sediment transport modeling.

For the stable section upstream of Piedmont Creek, there is a chance that the project will induce aggradation. The invert in the stable section identified in Figure 9 between STA 115+00 and STA 145+00 will be dropped in the new design, with the width in section from STA 115+00 to STA 125+00 will be increased (Figure 8B). The project will preserve the same channel slope throughout this reach, which should keep the stream power within the STA 125+00 to STA 145+00 the same (Figure 8C). For the wider section, there is a possibility of decreased stream power and possible aggradation. However, the sediment transport analyses by the District and Tetra Tech do not show aggradation.

Therefore, the District's conclusion is that minimal sediment removal maintenance would need to be performed on the proposed project. Possible locations where maintenance would be between STA 115+00 to 125+00, and localized maintenance around bridges and culverts. However, there the evidence is not conclusive for these locations that aggradation would occur.

Santa Clara Valley Water District

TECHNICAL MEMORANDUM
EXHIBIT 2

PROJECT: Upper Berryessa Flood Protection Project **DATE:** September 12th, 2016

SUBJECT: Responses to RWQCB Memo for Project Team

PREPARED: Jack Xu, PE, CFM

PURPOSE

The Upper Berryessa project team has asked the Hydraulics Unit to review the Regional Water Quality Control Board (RWQCB) document[1] and to provide input and responses on the RCQCB's reasoning and conclusion. This document will attempt to address the comments raised by the RWQCB one at a time.

COMMENT RESPONSES

1. ***THE USACE EIS INCORRECTLY ADDRESSES HOW THE PROJECT WILL HANDLE THE SEDIMENT INPUT***

   The original design by the US Army Corps (USACE) included an upstream improvement including addition of bypass from Greenbelt Area, which is no longer part of current design. The District retained Tetra Tech to perform a sediment transport analysis[2] with the current proposed project geometry, excluding any upstream improvements. The results of the study found that the channel had localized areas of both erosion and deposition, as expected, during storm events. However, it did not show overall aggradation over the project reach. It also indicated that thalweg was relatively insensitive to changes in incoming sediment load, selected transport function, and flow. In other words, an area that experienced erosion would experience relatively the same amount of erosion with or without the upstream improvement.

2. ***THE SEDIMENT MODELING DOES NOT MODEL BANK EROSION AND THE ASSUMPTION THAT SEDIMENT LOAD WILL BE REDUCED BY STABILIZING STREAM BANKS IS NOT DEFENSIBLE***

   The District Hydraulics Unit agrees that the model does not account for channel bank erosion and that the model cannot provide details on channel bank erosion supply. Recent

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[1] Riley, A.L., Frucht, Setenay Bozkurt. San Francisco Bay Regional Water Quality Control Board. Geomorphic Indications for Long-Term Depositional Environment on Berryessa Creek in the Upper Berryessa Creek Flood Risk Management Project. April 12th, 2016.

[2] Tetra Tech. Draft Sediment Transport Technical Memo including Sensitivity Analysis. May 12th, 2015.

field observations show that the channel banks do provide a source of sediment into the system from gully erosion, but the quantity is difficult to ascertain. Upstream of the project reach, Jordan[3] performed a geomorphic analysis and concluded that localized channel instability within the valley readily supplies sediment to the downstream reaches (which includes the project reach). It is quoted below:

> *"On Berryessa Creek, the bedload supply coefficient decreases 58% and the suspended-load supply coefficient only decreases 3% from the upstream gaging station to the downstream gaging station. This occurs in spite of the presence of a sedimentation basin between the two locations. The sediment basin traps mainly bedload, possibly explaining the larger decrease of this coefficient in comparison to the suspended-load coefficient. The lack of a decrease in the supply coefficient indicates that localized channel instability within the valley readily supplies sediment to the downstream reaches, particularly in the finer grained suspended-load fraction. This supply likely comes from failing stream banks because overland sources are minimal within the urbanized valley portion of the stream" (pg 107-108).*

Further in depth analysis of local sediment input for the existing condition was not performed because the District sees the current channel condition to be degradational. The proposed project will stabilize the banks and the addition of the local bank sediment will not be an issue. It is the District Hydraulic Unit's position that current observations seem to suggest that stabilizing the banks should reduce the sediment input load to some degree.

3. ***IN THE ABSENCE OF AN O&M MANUAL, USACE HAS NOT FULLY ADDRESSED SEDIMENT MAINTENANCE NEEDS IN THE PROJECT DESIGN***

USACE utilized the District's sediment transport modeling results to refine the final project design to reduce future sediment removal requirements during operation. In conformance, with the USACE project implementation process, USACE will prepare an O&M manual prior to handover of the project to the District.

4. ***UPPER BERRYESSA CREEK EXHIBITS DEPOSITIONAL FEATURES AND IS AGGRADATIONAL IN NATURE***

From field observations, the current project reach is degradational and incising. Field visits documented in a District tech memo[4] highlight concrete evidence for incision. For example, historically constructed storm sewer outfalls have bank protection that is higher than the channel invert, with some of the protection falling into the creek. Other exampies, at bridges and concrete transitions, show man-made structures that are higher than the current creek level. Los Coches street is the most extreme example.

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[3] Jordan, B.A., et al. Colorado State University. An Urban Geomorphic Assessment of the Berryessa and Upper Penitencia Creek Watersheds in San Jose, California. April 30th, 2009.

[4,5] Xu, Jack. SCVWD. Upper Berryessa Project – Channel Stability Tech Memo. July 20th, 2016.

5. ***COMPARISON OF UPPER BERRYESSA CREEK 1973 AS-BUILT SURVEYS SHOW THAT THE CREEK WILL BE DEPOSITIONAL IN THE FUTURE***

The 1973 dataset provided to the RWQCB were not as-built surveys, but proposed design plans that were never built. Analysis of data from the 1950's, 1970's, and current surveys are documented in the tech memo[5]; that analysis shows a degradational trend, with the channel incising over time. This is backed up by field observations, where a 'bench' in the channel that corresponds well to the old channel bottom.

6. ***HISTORICAL SEDIMENT REMOVAL BY THE DISTRICT SHOW THAT THE CREEK IS DEPOSITIONAL***

The 20,000 cubic yards of sediment removal that was performed since the early 1980's is believed to be a result of local deposition and bank failures, mentioned in the previous response, rather than attributed to channel aggradation, due to the overwhelming evidence of channel incision referenced in the other responses.

7. ***WIDENING THE CHANNEL REDUCES SHEAR STRESSES AND INDUCES DEPOSITION***

The District agrees with this statement. However, since we see the current conditions to be degradational with an incising channel, a reduced shear stress is favorable. The sediment transport modeling performed by Tetra Tech for the District show a relatively stable profile with no deposition for the proposed project geometry, which gives the District confidence that the completed project will not be depositional in nature.

The District understands that it is possible that the bottom width of the design may be wider than the current bankfull channel. This does not imply aggradation in the channel invert, which is not expected to occur from the sediment modeling results, but merely deposits forming geomorphic features such as point bars. When comparing current bankfull cross sections near and in the project reach, there is evidence that small benches might deposit in the proposed design cross section. This phenomenon has been observed in previous District channel improvement projects where the cross section was widened. The District modeled[6] the impacts of these small benches on flood conveyance and determined the effects to be minor. Therefore, if bankfull benches formed inside the proposed channel, the District would perform very limited to no sediment removal according to the current analysis.

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[6] Xu, Jack. SCVWD. Upper Berryessa Project – Channel Stability Tech Memo. July 20th, 2016.

EXHIBIT 9

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

REVISED TENTATIVE ORDER NO. R2-2016-XXXX

WASTE DISCHARGE REQUIREMENTS AND WATER QUALITY CERTIFICATION for:

SANTA CLARA VALLEY WATER DISTRICT AND U.S. ARMY CORPS OF ENGINEERS, UPPER BERRYESSA CREEK FLOOD RISK MANAGEMENT PROJECT, SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (Water Board), finds that:

1. The Santa Clara Valley Water District (District) delivers water and is responsible for flood protection and stream stewardship in Santa Clara County (County). The District is charged with providing local flood protection within five major watersheds in the County, including the 322-square mile Coyote Creek watershed, which drains from the southeastern hills of the County to Lower San Francisco Bay.

2. Berryessa Creek is in the Coyote Creek watershed in Santa Clara County~~,~~ and drains from the undeveloped Diablo Range hills east of San Jose, through urbanized areas in San Jose and Milpitas, then discharges to Lower Penitencia Creek, which is tributary to Coyote Creek. Under existing conditions, Berryessa Creek overtops its banks about once every ~~every~~ 10 to 20 ~~four to 25~~ years in the 2.2-mile-long reach from Calaveras Boulevard in Milpitas upstream to Interstate 680 (I-680) in San Jose (Upper Berryessa Creek) (Attachment A, Figure 1).

3. **Local-Federal Partnership.** The District is partnering with the U.S. Army Corps of Engineers (Corps) for the Upper Berryessa Creek Flood Risk Management Project (Project) to increase flood protection in the surrounding community. Construction of the Project was authorized by Congress in the Water Resources Development Act (WRDA) of 1990, Public Law 101-640, section 101(a)(5). The District and Corps are each funding Project costs, and between the two sponsors, are dividing and/or sharing various roles and responsibilities, such as ~~carrying out~~ design, construction, and post-construction ~~roles and responsibilities~~operations, in accordance with the Project Partnership Agreement signed by the Corps and District on May 17, 2016. Regarding cost-sharing, the Project Partnership Agreement stipulates that the District will contribute 25 to 50 percent of the total Project cost, in accordance with the WRDA of 1986, Public Law 99-662, as amended (United States Code, title 33, section 2213). ~~federal Water Resources Development Act (WRDA) of 1990, and the revised 1996 WRDA, with the following cost-sharing schedule for the non-federal, local sponsor:~~The cost-sharing schedule specifically requires the Corps to conduct (and/or oversee) construction contracting and activities, and the District to provide all lands, easements, rights-of-way, relocations, and disposal areas (LERRD). The WRDA also requires the Corps to prepare an operations and maintenance manual for the Project (see Finding 16-Maintenance).

While the WRDA and the Project Partnership Agreement stipulate cost-sharing criteria between the Corps and District, construction management and implementation to the Corps, and LERRD to the District, this Order specifically requires the development and implementation of additional plans, which are described in more detail in this Order:

a. Adaptive Management Plan (Finding 17; Provision ~~14~~19);

b. Mitigation and Monitoring Plan for compensatory mitigation (Finding 21; Provision ~~15~~20);

c. Post-construction Stormwater Management Plan (Finding 20 (Impacts); Provision ~~11~~17).

Our understanding is that the District will be responsible for these three plans because the District owns the Project and is responsible for post-construction operations and maintenance. In addition, we understand that certain aspects of the construction activities are the responsibility of the Corps (see Findings 8, 9, and 10).

- ~~Provide a cash contribution equal to 5 percent of structural flood control features.~~
- ~~Provide all lands, easements, rights-of-way, relocations, and disposal areas (LERRD).~~
- ~~If the sum of the above two items is less than 35 percent of the costs assigned to flood control, non-federal sponsors will pay the difference in cash.~~
- ~~If it is greater than 35 percent, total non-federal costs shall not exceed 50 percent of total project costs assigned to flood control.~~
- ~~Contributions in excess of 50 percent will be reimbursed by the federal government to the non-federal sponsor.~~

4. **Dischargers**. The Water Board is issuing this Order to the District and Corps, collectively referred to as the "Discharger," because the Project activities will cause or contribute to a discharge of waste that will ~~could~~ affect the quality of w~~W~~aters of the State and the United States. By the nature of WRDA projects, the partnership between the Corps and District is inextricable, and the Project could not occur without each sponsor. Therefore, the Water Board is naming the District and Corps, the two Project co-sponsors, as Dischargers. As appropriate, this Order notes which Discharger has agreed to be responsible for certain requirements based on WRDA requirements, as well as our understanding of the agreements the Corps and District have made with each other (see Finding 3).

~~4.~~5. **Rescission of Existing Water Quality Certification.** The Water Board previously issued water quality certification for the Project pursuant to Clean Water Act (CWA) section 401 to the Corps on March 14, 2016, (Certification) to facilitate the Corps' timely contracting for the Project (see Finding 23). The Certification required the Corps to construct the Project consistent with the then-current design plans and the Corps' water quality certification

application dated September 25, 2015 (Application). This Order rescinds and supersedes the previously-issued water quality certification with waste discharge requirements and a reissued water quality certification. The Water Board is authorized to issue waste discharge requirements and water quality certification for the Project in accordance with California Water Code (CWC) section 13263(a) and CWA section 401(d) to both the Corps and the District as the Dischargers.

5.6. **Project Purpose**. The Project is intended to provide flood protection in Upper Berryessa Creek from the one percent exceedance probability flood event (also known as the one-percent-annual-chance flood event, or the 100-year flood event) for an estimated 650 land parcels~~,~~ and contribute to reduced flood risks for an unquantified number of additional parcels where flow from Upper Berryessa Creek combines with other flood waters. The Project will also modify 210 linear feet of Los Coches Creek and 60 linear feet of Piedmont Creek, which are tributary to Upper Berryessa Creek. The completed Project will meet Federal Emergency Management Administration (FEMA) Certification standards.

The area being protected encompasses the new Milpitas Bay Area Rapid Transit (BART) station and rail line infrastructure, part of a $2.3 billion (including $900 million in federal funding) BART expansion project to extend BART service from Fremont through Milpitas to San Jose. ~~The Project construction activities are expected to begin in October 2016 and to be completed in approximately nine months. The Project is located just upstream of the "Lower Berryessa Creek and Lower Calera Creek Flood Protection Improvements Project" (Lower Berryessa-Calera Project) currently under construction by the District, as authorized by the Water Board in October, 2015. Both the~~ Project construction began in early October 2016 and is scheduled to be completed in early December 2017, with the intent to be complete before the planned opening of the Milpitas BART station in late 2017. ~~. and Lower Berryessa-Calera Project are intended to be complete before the planned opening of the new Milpitas BART station in late 2017~~ The Project is located just upstream of the Lower Berryessa Creek and Lower Calera Creek Flood Protection Improvements Project currently under construction by the District, as authorized by the Water Board in October 2015, which has a planned completion date of October 2018.~~(the Lower Berryessa-Calera Project is planned to be completed in October, 2018).~~

6.7. ~~**Project Elements and**~~ **Coverage of this Order.** This Order covers Project construction activities (see construction elements listed below), as well as ~~the~~planned operations and maintenance activities after the Project is constructed (~~i.e., s~~ee Finding 16 for additional information about maintenance). This Order also covers the mitigation and monitoring requirements necessary for ~~the~~ compliance with federal and State regulations (~~i.e.,~~ e.g., see Findings 19~~21~~ through 28~~30~~).

The Project's major construction features include: (1) enlarging the Upper Berryessa Creek channel; (2) armoring the channel beds and banks with rock riprap to be covered with 4 inches of soil and to be hydroseeded; and (3) constructing concrete box culverts and concrete

transition structures, floodwalls, and access ramps.

The Project construction elements have the following details below and are shown in Attachment A, Figures 2 and 3; and the fill and excavation information is presented in Table 1:

a. Widen, deepen, and contour Upper Berryessa Creek to create a trapezoidal channel cross section with a bed width varying from 12 to 40 feet, depth varying from 8 to 14 feet, and banks with a 2-to-1 horizontal-to-vertical (2:1) slope. The channel footprint from top of bank to top of bank in Upper Berryessa Creek will increase from 9.7 to 17.2 acres.

b. Build ~~three~~ two new pre-cast (or cast-in-place) concrete box culverts (where currently none exist), consisting of a box culvert at both the Los Coches Creek and Piedmont Creek mouths~~,~~ and a double-barrel box culvert to replace the existing Union Pacific Railroad (UPRR) wooden trestle bridge downstream of Montague Expressway, and the associated cast-in-place concrete wingwalls and concrete or grouted rock riprap transition structures;

c. Armor the channel bed and banks with rock riprap, covered by 4 inches of soil and hydroseeded for erosion protection, with the following details:

   i. Total area of 9.81 acres (10,072 linear feet ~~(ft)~~) of rock riprap, including 9.71 acres in Upper Berryessa Creek (9,831 linear feet), 0.09 acres in Los Coches Creek (221 linear feet), and less than 0.01 acres in Piedmont Creek (20 linear feet);

   ii. Rock riprap (9 to 24 inches thick) in channel beds and banks extending up to the 2.5- to 10-year water surface elevation (7,547 linear feet);

   iii. Rock riprap in banks (additional 2,525 linear feet in Upper Berryessa Creek) extending from 5 feet below the channel invert elevation up to the 2.5- to 10-year water surface elevation;

   iv. A 4-inch layer of native soil covering channel bed and bank riprap (10,072 linear feet), covered by biodegradable coconut fiber mats from the toe to top of banks, with hydroseed in beds and banks to promote herbaceous native vegetation growth and erosion protection; and

   v. Grouted rock riprap (24 inches thick) at the Piedmont Creek confluence and beneath the existing Yosemite Drive bridge crossing.

d. Construct concrete floodwalls of 1,123- feet long by up to 2- feet high on the left bank (looking downstream) of Upper Berryessa Creek, between Los Coches Street and Piedmont Creek at the top of bank, and 450- feet long by 3- feet deep, to be buried on the left bank upstream of Montague Expressway to reinforce an existing retaining wall;

e. Construct ~~three~~ two concrete access ramps on ~~, one each on~~ the right ~~and left~~ bank~~s~~ (looking downstream), one located about 1,000 feet upstream of Montague Expressway, and ~~a single concrete ramp on the right bank~~ the other just downstream of I-680; and a concrete access road to the new UPRR culvert;

f. Construct concrete and rock riprap transition structures at the upstream face of the existing Calaveras Boulevard Bridge;

g. Build 4.33 acres and 10,865 linear feet of new maintenance roads and redevelop 2.47 acres and 5,978 linear feet of existing maintenance roads, with a width of 18 feet on the right bank and a width of 15 to 18 feet ~~wide~~ on the left bank~~s~~, except in certain ~~two~~ sections downstream of ~~areas that lack space on the left bank for a road, downstream of~~ Montague Expressway and ~~downstream of~~ I-680 that lack space for a road;

h. Remove an unspecified volume of sediment and vegetation from about 200 linear feet of a concrete-lined reach of Upper Berryessa Creek just downstream of I-680; and

i. Replace and realign ~~existing~~ selected utilities within the Project right-of-way according to the 100 percent design plans dated August 4, 2016. ~~(see Finding 12, below, for additional information).~~

Table 1. Fill and Excavation Quantities

Project Element	Material	Excavation (cubic yards)	Fill (cubic yards)	Length (linear feet)	Area (acres)
Enlarge and contour channel	Soil	148,400	33,600 native soil	10,453	17.2
Riprap in beds and banks	Imported rock (9 to 24-inch diameter)	--	15,233	10,072	9.23
Grouted riprap in beds and banks	Imported rock (24-inch diameter)	--	1,882	319	0.58
Pre-cast concrete culverts	Concrete	--	675	284	0.11
Cast-in-place wingwalls and transition structures	Concrete	--	37	100	<0.01
Access ramps	Concrete	--	~~144~~101	~~215~~200	~~0.01~~0.10
Access road (10-ft wide) to new UPRR culvert	Concrete	--	15	15	0.01
Floodwalls	Concrete	--	424	1,573	0.04
Concrete channel lining	Concrete	290	---	262	0.36
Maintenance roads	Aggregate base material	--	5,654	16,843[1]	6.8

Notes:

- - – Not applicable; UPRR – Union Pacific Railroad

[1] This length is the total for roads on both sides of the channel. Roughly 10,400 linear feet of Upper Berryessa Creek will have maintenance roads on at least one side of the channel. The area of new road is 4.33 acres, and the area of redeveloped road is 2.47 acres.

~~7.~~8. **Staging, Stockpiling, and Hauling.** Two areas outside of the Project right-of-way will be used for staging and sediment stockpiling (Attachment A, Figures 2 and 3). Access to and from the Project site and the staging areas will occur along existing paved roads via Calaveras Boulevard, Los Coches Street, Yosemite Drive, Ames Avenue, and Montague Expressway. Our understanding is that the Corps is implementing the staging, stockpiling, and hauling tasks associated with the construction of the Project.

~~8.~~9. **Reuse or Dispose of Exported Material.** The Discharger will haul about 114,800 cubic yards of sediment from the Project site in addition to demolition debris such as concrete and utility components. Soil and demolition debris will be reused or recycled to the extent feasible. Disposal of any demolished material and debris will be in accordance with all applicable local, State, and federal regulations. The soil to be transported off-site is suitable

for non-hazardous landfill disposal, according to the Project Environmental Impact Report (Project EIR) (State Clearinghouse No. 2001104013). Our understanding is that the Corps is implementing the soil reuse and disposal tasks relevant to this Finding.

9.10. **Construction General Permit.** The Discharger is required to seek coverage under and comply with, or oversee that its contractors seek coverage and comply with, the NPDES General Permit for Discharges of Storm Water Associated with Construction Activities (Order No. DWQ-2009-0009, as amended by Order Nos. 2010-0014-DWQ and 2012-006-DWQ) (Construction ~~Stormwater~~ General Permit) (Provision 10 ~~5~~). The Corps has contracted with its consultants to meet the requirements of the Construction General Permit.

~~10. As of the date of adoption of this Order, the items listed below either have been submitted to the Water Board and are not complete or otherwise not yet acceptable to the Board, or have not been submitted. ThWhile the WRDA and Project Partnership Agreement stipulate cost-sharing criteria between the Corps and District, construction management and implementation to the Corps, and LERRD to the District, this Order specifically requires the District to development and implementation of additional plans, which are described in more detail in additional findings as referenced:is Order requires the Discharger to submit the following plans and reports that meet or exceed the criteria and standards outlined in this Order, and are acceptable to the Executive Officer, before the beginning of construction:~~

~~a. Narrative of differences between the 100 percent Design Plans received by Water Board on August 11, 2016 (including Planting Plan) and previous design plans;~~

~~b. Utilities Plan (Finding 12; Provision 8);~~

~~c. Dewatering Plan (Finding 14; Provision 9);~~

~~d. Groundwater Management Plan (Finding 15; Provision 10);~~

~~e. Adaptive Management Plan (Finding 17; Provision 15);~~

~~Mitigation and Monitoring Plan (including a plan for off-site mitigation (Finding 21; Provision 16);~~

~~f. and~~

~~g. Post-construction Stormwater Management Plan (Finding 20; Provision 12).~~

11. **Final 100 Percent Design Plans.** The Water Board received final 100 percent design plans and specifications dated August 4, 2016, and the final 100 percent Planting Plan dated April 1, 2016. Effective October 3, 2016, the Project is under construction.~~based in accordance with these plans~~. ~~The Water Board received 100 percent design plans and specifications on August 11, 2016, and a 100 percent Planting Plan (dated April 1, 2016) and specifications on July 21, 2016. For purposes of this Order, the Planting Plan is part of the Design Plans~~

~~because the removing selected trees and grading others must be incorporated in the construction design plans. The Water Board requires the 100 percent plans to include: (a) 100 percent complete drawings including those addressing project construction phasing, and which incorporate all comments by individuals and agencies and requirements of this Order; (b) a revised Design Documentation Report with narrative to highlight changes between the 90 and 100 percent plans; (c) final specifications with narrative to highlight the changes that have been incorporated since the 90 percent plans Design Plans and 95 percent Planting Plan; and (d) revisions in the Planting Plan for monitoring duration of plantings within the Project right-of-way of no less than five years for herbaceous hydroseed plantings, and no less than ten years for shrubs and trees, consistent with the guidelines in Attachment C.~~

12. **Replace and Realign ~~Existing~~ Selected Utilities Infrastructure.** Multiple utility lines are in the Project right-of-way, including sanitary sewer, stormwater, irrigation, cable, electrical, telephone, fiber optic, and gas lines. The locations of some utilities are estimated and will be confirmed during Project construction activities. ~~To date~~Consistent with the 100 percent design plans, the utility ~~lines~~ infrastructure planned for replacement and/or realignment ~~are~~is sanitary sewer, stormwater lines and outlets, a water irrigation line, an electric line, and two electric utility vaults. In addition, two groundwater monitoring wells and a gauging port will be relocated. In addition, the Application states that all utility work will be implemented by cut and fill procedures with no directional drilling. ~~This Order requires the Discharger to prepare a Utilities Plan to identify any utility lines, including any protective caps and supporting infrastructure, that are located immediately above or within five feet below a creek bank or channel bottom within the Project site. The plan must describe whether each of those utility lines has the potential to impede flow or constrict natural movement of the creek, and include a workplan to relocate any utility line with such potential.~~

13. **Rain Event Action Plan.** The Discharger shall develop and implement a Rain Event Action Plan (REAP), as required by the Construction General Permit, designed to protect all exposed portions of the~~ir~~ S~~s~~ite~~s~~ within 48 hours prior to any likely precipitation event. The REAP requirement is designed to ensure that the D~~d~~ischarger has adequate materials, staff, and time to implement erosion and sediment control measures that are intended to reduce the amount of sediment and other pollutants generated from the active site. A REAP must be developed when there is likely a forecast of 50 percent or greater probability of substantial precipitation in the P~~p~~roject area.

~~13.~~14. **Dewatering.** Dewatering of surface water or groundwater that accumulates at excavated areas will likely be necessary. ~~. The Project areas where dewatering is most likely to be necessary are in Piedmont Creek and downstream of its confluence, where surface water flow is more persistent, and in Upper Berryessa Creek in the area downstream of Montague Expressway; between Piedmont Creek and upstream of Ames Avenue, where Water Board staff observed water in the creek in each site inspection; and where deep excavations for the replacement of the UPRR trestle bridge are more likely to encounter groundwater. The depth to groundwater in the vicinity of the UPRR trestle bridge is about 9.3 to 13.4 feet below grade, and excavation depth will exceed the maximum groundwater depth.~~

The Project EIR includes a mitigation measure for creek dewatering (WAQ-B, "Prepare and Implement a Dewatering Plan"). The Corps' consultant, Aquifer Sciences, Inc., submitted a Dewatering Plan to the Water Board on October 21, 2016. The existing plan addresses groundwater at the Project site from station 87 through 156, where groundwater will likely be encountered during construction. In areas upstream of station 156, where the Corps does not anticipate encountering groundwater, the Corps plans to track groundwater elevations using temporary piezometers. The plan does not yet address surface water flows. Water Board staff notified the Corps and its consultant on October 26, 2016, that in order for the plan to be acceptable to the Executive Officer, the following revisions are necessary:

a. Include appropriate measures to address surface water flows throughout the Project site, should they be present;

b. Explain how coffer dams, dissipation devices, and other dewatering equipment and infrastructure will be inspected and maintained while in use to appropriately protect water quality;

c. Include appropriate measures, including sedimentation and erosion control measures, to protect water quality when placing and removing coffer dams, dissipation devices, and other dewatering equipment and infrastructure; and

d. Recognize that the Discharger will complete measures already proposed in the October 21, 2016, plan for areas of Project dewatering needed outside stations 87 through 156, should there be a need for dewatering in those other areas.

~~14.~~

~~15. The Corps submitted a Groundwater Management Plan for groundwater discharges in the area impacted by the groundwater contamination plume from the former JCI Jones Chemical Facility. Because the Groundwater Management Plan only addresses a portion of the Project area, and does not address surface water, this Order prohibits dewatering before the Discharger submits and implements a complete Dewatering Plan that meets the minimum criteria outlined in Provision 9, acceptable to the Executive Officer.~~

~~16.~~15. **Groundwater Management.** The Project is within the footprint of a past solvent release from the former Jones Chemical, Inc., chemical plant. The Water Board requires the Discharger to capture and treat all groundwater encountered from within the potential extent of the toxic waste plume as demarcated in the ~~90~~ 100 percent design plans (Plume). Any such groundwater must meet the standards of the NPDES General Permit for the Discharge or Reuse of Extracted and Treated Groundwater Resulting from the Cleanup of Groundwater Polluted by Volatile Organic Compounds (VOC), Fuel Leaks and Other Related Wastes (Water Board Order No. R2-2012-0012; NPDES Permit No. CAG912002) (VOC and Fuel General Permit), as stipulated in a letter to the ~~Discharger~~ Corps dated August 14, 2015 ~~(see Attachment B)~~. The Corps submitted a Groundwater Management Plan dated January 26, 2016, for groundwater discharges in the area impacted by the groundwater contamination

plume from the former Jones Chemical facility. Water Board staff notified Corps staff on March 8, 2016, that the plan is acceptable.

~~17.~~16. **Maintenance**. The Project EIR states that regular maintenance, such as sediment and vegetation removal in Upper Berryessa Creek, will be necessary after the Project is constructed. The District will be responsible for maintenance for the life of the Project, which is anticipated to be approximately 50 years. As part of the federal-local partnership, and in accordance with the WRDA of 1990 (Finding 3), the Corps will develop an Operations and Maintenance Manual (O&M Manual) to guide maintenance, such as sediment removal.

The O&M Manual will be completed after the Local Cost Agreement is completed between the Corps and the District. However, the schedule for this has not been identified by the Corps. According to the Project Environmental Impact Statement/General Reauthorization Report (EIS/GRR), the Corps plans to conduct cross-sectional and longitudinal monitoring after construction is completed to inform development of the O&M Manual (Revised Final EIS/GRR, March 2014; specifically in the Corps' responses to comments from the Peer Review Panel (Batelle Memorial Institute, 2013)).

The Project EIR also states that the Project will result in less sediment accumulation and less volume than existing conditions~~,~~ and, specifically, that sediment will accumulate only at the UPRR trestle bridge replacement site and the other UPRR culvert upstream of Ames Avenue. These conclusions are based on the Project sediment transport modeling results.

However, Water Board~~-~~ staff's review of the sediment transport model and other Project documents ~~best professional judgement~~ indicates that the Project reach will continue to be depositional, despite the banks being stabilized, because there is ample sediment supply to the Project reach both from upstream and its tributaries and because, ~~a different interpretation of the modeling results~~ as stated in the Project EIR, the Project design will increase the cross-sectional area, which will result in reduced shear stresses during storm flows and lower sediment transport capacity. Further, the Project site is in an alluvial fan, which by its very nature tends toward deposition. ~~For example, shear stress will be reduced by the Project. The lower shear stress, along with other~~ All lines of geomorphic evidence including lower shear stresses, field observations, comparison of historic and current cross sections, and maintenance records~~,~~ indicate the Project will result in a more-depositional system than existing conditions (Water Board Staff Memos, October 21, 2016[1] and April 12, 2016[2]).

[1] Setenay Bozkurt Frucht, 2016. Response to SCVWD Comments on the Upper Berryessa Creek Tentative Order. Internal Staff Memorandum from S. Bozkurt Frucht to Keith Lichten, Chief, Watershed Management Division, San Francisco Bay Regional Water Quality Control Board. Available from Water Board staff upon request.

[2] Riley, Ann L., and Setenay Bozkurt Frucht, 2016. Projected Future Maintenance on the Upper Berryessa Creek Flood Risk Management Project. Internal Staff Memorandum from A. Riley and S. Bozkurt Frucht to Keith Lichten, Chief, Watershed Management Division, San Francisco Bay Regional Water Quality Control Board. Available online at http://www.waterboards.ca.gov/sanfranciscobay/water_issues/hot_topics/Berryessa.shtml.

In addition, an independent peer review panel[3] found that sedimentation can occur at various locations in the Project reach. Although the peer review panel did not elaborate on whether its members concur or disagree with the Discharger's findings that sediment will only accumulate at the two UPRR sites, the panel expressed significant concern about "…the lack of details on the operation and maintenance (O&M) plan and has identified the need for a detailed O&M plan to ensure the design assumptions concerning sedimentation are valid." The Water Board shares these concerns and, accordingly, requires the following steps to address sediment maintenance in the Project. These steps will occur in tandem with the Corps' process to develop an O&M Manual for the Project:

~~As part of the federal-local partnership, and in accordance with the WRDA of 1990 (Finding 3), an Operations and Maintenance Manual (O&M Manual) will be developed to guide maintenance, such as sediment removal, for the life of the Project, which is approximately 50 years. The completion of the O&M Manual will be timed after the Local Cost Agreement is completed between the Corps and the District. This Order requires the following criteria and processes in development and implementation of the O&M Manual:~~

a. **Santa Clara Valley Water District Stream Maintenance Program**. The timing of the Local Cost Agreement to occur, and for the transfer of the Project from the Corps to the District, is uncertain, and the O&M Manual may not be available immediately after the Project is constructed. Although the EIS/GRR states the O&M Manual will be developed during the pre-construction design and engineering phase, the Corps will instead develop it after the Project is constructed based on an interagency agreement (January 4, 2016, meeting with Water Board, Corps, and District staffs). Therefore, while the O&M Manual is being developed, this Order authorizes the District to conduct maintenance consistent with the District's existing Stream Maintenance Program (SMP) (Provision 18 ~~14~~(Maintenance)), authorized under Water Board Order No. R2-2014-0015 (SMP Order), and any future revisions. In the event there is a conflict between the SMP Order, the O&M Manual, and this Order, the requirements of this Order will govern. ~~To the extent there are any inconsistencies between the future O&M Manual, this Order, and/or the SMP, compliance with this Order will be determined by compliance with the terms of this Order.~~

b. **Multiagency Collaboration**. Development of the O&M Manual will be accomplished through a collaboration of the Water Board and other appropriate regional, S~~s~~tate, and federal agencies. This is necessary to ensure the planning and implementation of maintenance are consistent with the SMP~~,~~ and, accordingly, will minimize environmental impacts. Additionally, it is consistent with the SMP approach, which includes a multi-agency collaborative process to determine maintenance needs, based on avoiding and minimizing impacts in waters to the extent practicable.

[3] Batelle Memorial Institute, 2013. Final Independent External Peer Review Report Berryessa Creek, Santa Clara County, California, General Reevaluation Study (GRS) Draft General Reevaluation Report and Environmental Impact Statement/Environmental Impact Report. Department of the Army U.S. Army Corps of Engineers Flood Risk Management Planning Center of Expertise for the Baltimore District. Batelle, Columbus, OH.

c. **Maintenance Action Thresholds**. The O&M Manual will set maintenance action thresholds based on channel capacities and a performance standard based on protecting 50 percent of the project design freeboard, consistent with the maximum tolerance applied by the Corps in flood control projects it co-sponsors. The ~~plan~~Manual will include using a combination of vegetation and/or sediment management to meet flood risk objectives while minimizing environmental impacts. Using maintenance action thresholds is consistent with the District's SMP Manual process for developing reach- and creek-specific maintenance guidelines. Maintenance action thresholds will be revised iteratively, if needed, based on data to be collected under the Adaptive Management Plan described in the next finding.

d. **Five-Year Assessments for Adaptive Management~~,~~ and Previously-Mitigated Areas**. The O&M Manual will be evaluated at least every five years to incorporate the findings under the activities required in the next finding to prepare and implement an Adaptive Management Plan.

e. **Authority to Conduct Maintenance in the Project Site**. Maintenance in the Project site, after construction is completed, is authorized under this Order until such time that the ~~Water Board~~ Executive Officer determines the S~~s~~ite may be folded into the District's SMP. This is necessary because the monitoring necessary to verify sediment transport processes cannot be maintained under the SMP procedures for priority project budgeting and implementation.

~~18.~~17. **Adaptive Management Plan.** This Order requires the Discharger to submit an Adaptive Management Plan, acceptable to the Executive Officer, pursuant to Provision 19~~15~~. The Adaptive Management Plan will describe channel dimension and flow data to be collected, which the Discharger will use to understand how the Project is performing after construction (e.g., stage-discharge relationships)~~;~~ and to generate quantifiable channel capacity flood protection objectives (e.g., acceptable freeboard at bridge crossings) to guide future maintenance activities. The objectives shall be revised iteratively as new data are collected under post-construction conditions, and shall inform the O&M five-year assessments. Adaptive management is consistent with the District's SMP, which requires development of channel and reach-specific triggers for maintenance (i.e., maintenance guidelines) that minimize disturbance of the creek channel vegetation and substrate. This approach informs sediment and vegetation removal based on field observations of channel processes and performance, rather than solely using design criteria. Further, at least part of the data to be collected is consistent with the Corps' plans to collect longitudinal and cross-sectional data to calibrate sediment transport model results, specified in the Corps' responses to comments from the peer review panel (Batelle Memorial Institute, 2013).

~~19.~~18. **Waters of the U.S. and of the State.** Based on a jurisdictional wetland delineation (Tetra Tech, 2014), the Project has 4.18 acres of waters of the U.S. as creek waters (other waters). The waters of the U.S. are also waters of the State. An additional area of ~~5.92~~ 5.63 acres from the ordinary high water mark elevation to the tops of banks constitutes waters of the State (but not waters of the U.S.), for a total area of 10.1 acres of waters of the State. This

elevation difference, i.e., the vertical distance from ordinary high water mark to the top of bank, ranges from zero to 6 feet. The linear extent of the Project activities in waters of the U.S. and of the State is approximately 10,072 linear feet of other waters.

No jurisdictional wetlands, as defined by the Corps' 1987 manual for wetland delineation, are in the Project area. However, significant portions of the creek, inset floodplain, and riparian habitat from top of bank to top of bank are riverine wetlands that are waters of the State (see Finding 26).

Tthe wetland delineation identified patches of wetland vegetation fringing the margins of the Upper Berryessa Creek active channel, with a combined area estimated at less than 0.5 acres, and an earlier assessment ~~. An early assessment~~ found an area of 0.39 acres of fringing wetland vegetation. ~~The difference between these two surveys are likely due to variations in the extent of vegetation colonizing and growing from year to year until a high pulse flow washes out the vegetation.~~ For purposes of this Order, about 0.45 acres of fringing wetland vegetation is in the Project downstream of the Piedmont Creek confluence, where flow is most likely to be present year round and support wetland vegetation.

19. **Rare and Endangered Species.** The Project site does not presently support any rare or endangered species. It provides potential habitat for such species.

20. **Impacts.** The Project will result in impacts to 4.18 acres of waters of the U.S. (classified as "other waters") that are also waters of the State, and an additional 5.63 acres of waters of the State, for a total of 9.81 acres of waters of the State in Upper Berryessa Creek, Los Coches Creek, and Piedmont Creek. The impacts extend along 10,072 linear feet of creek channel. No jurisdictional wetlands based on the Corps 1987 manual definition for "wetland" exist within the ~~Project s~~Site.

The "other waters" the Project will impact are wetlands that are waters of the State (see Finding 26); ~~ will be impacted;~~ specifically, significant portions of the creek channels in Upper Berryessa Creek, Los Coches Creek, and Piedmont Creek are riverine wetlands. The impacts associated with the various Project elements are shown in Table 2.

The Project will temporarily impact waters of the State and the U.S. during the excavation, grading, and construction of the Upper Berryessa Creek channel and other Project elements. The Project will also temporarily impact native vegetation, consisting of woody species throughout the ~~Project~~ Site's top of banks~~,~~ and about 0.45 acres of wetland vegetation fringing the active channel downstream of the Piedmont Creek tributary.

In addition, the waters of the State and the U.S. will be permanently impacted by the Project design, which includes new concrete surfaces and grouted rock riprap in the creek bed of Upper Berryessa Creek~~,~~ and rock riprap ~~buried~~ covered by a 4-inch layer of soil in the creek beds and banks of Upper Berryessa Creek, Los Coches Creek, and Piedmont Creek. The concrete features, grouted riprap surfaces, and rock riprap armor will restrict natural processes that occur in channels with earthen bed and banks, including the types of

vegetation that can thrive, channel movement, and sediment transport processes. Consequently, the Pproject design will significantly restrict the beneficial uses that could be supported by the creek, and which are supported in the creek reaches immediately upstream and downstream of the Project.

Specifically, any attempts to establish native vegetation as dominant cover at the Site (see next finding-Mitigation) will be severely restricted due to the lack of soil on the creek banks and bed. Of the six native plant species in the upland and wetland hydroseed mixes being used in the Project, the minimum root depth requirement in soil ranges from 5.1 to 20.5 inches (Cal Flora database, http://www.calflora.org/. Accessed September 26, 2016). Further, the existing soft-earthen bed and banks being replaced by rock riprap will result in less habitat for the benthic and other lower-trophic organisms living in the creek, including, but not limited to, algae, worms, diatoms, micro- and macroinvertebrates, and fish larvae. The lack of lower trophic organisms will restrict the WARM and WILD beneficial uses, which will, in turn, adversely affect the REC-2 beneficial use.

The water quality of Upper Berryessa Creek, Los Coches Creek, and Piedmont Creek could be impacted by accidental releases of soil and debris during the excavation, grading, fill installation, and creek dewatering activities, as well as by the accidental release of hazardous materials and contaminants used or encountered during construction. These releases could cause violations of the water quality objectives proscribed in Chapter 3 of the Basin Plan, including, but not limited to, water quality objectives for the following parameters: bacteria, dissolved oxygen, floating material, oil and grease, pH, sediment, settleable material, suspended material, temperature, toxicity, turbidity, and specific chemical constituents.

Impervious Surfaces - Furthermore, impervious surfaces created and/or replaced by the Project may also collect and concentrate stormwater runoff and pollutants that are subsequently discharged to Upper Berryessa Creek. The Project will result in the construction of 6.84 acres of new or redeveloped maintenance roads with impervious aggregate base (AB) material, and an additional 0.11 0.10 acres of impervious maintenance ramps. This Order requires the Discharger to submit and implement a Post-Construction Stormwater Management Plan sufficient to demonstrate it is complying with the post-construction best management practice (BMP) requirements in the NPDES *Municipal Regional Stormwater Permit* (MRP) (Water Board Order No. R2-2015-0049; NPDES Permit No. CAS612008) by using appropriately designed and installed pervious material or by constructing post-construction stormwater BMPs to capture, detain, retain, and treat stormwater runoff from the Project's impervious surfaces or from an equivalent or greater amount of impervious surfaces offsite. The Discharger will be responsible for operation and maintenance of roads and any associated BMPs. Our understanding is that the District will be responsible for the submittal and implementation of the Post-Construction Stormwater Management Plan.

Table 2: Impacts on Creek Habitat
Upper Berryessa Flood Risk Management Project

Project Elements	Permanent Impacts[1]		Temporary Impacts[1]	
	Acres	Linear ft	Acres	Linear ft
Creek dewatering	--	--	9.81	10,453
Creek excavation and grading	--	--	9.81	10,072
Rock riprap in channel beds and banks[2]	9.81	10,072	--	--
Grouted riprap	0.58	319	--	--
Net new concrete surfaces from culverts, wingwalls, transition structures, ramps, driveway[3]	0.20	861	--	--
Remove wetland vegetation	--	--	0.45	--
Concrete floodwalls[4]	--	1,123	--	450
Remove native shrubs and trees	--	--	53 native shrubs and trees to be removed	
Impacts from future O&M activities	To be tracked during post-project O&M activities			

Notes:

ft – feet; O&M – operations and maintenance; "- -" – not applicable

1 The areal and linear extents of impacts are overlapping, so they are not summed.

2 This area is based on the existing creek dimensions from top of bank to top of bank; post-project area will be 17.2 acres (see Table 1).

3 The net area and linear feet account for removal of 0.37 acres in 290 linear feet of concrete bed and banks in Upper Berryessa Creek between Montague Expressway and I-680.

4 The 1,123 foot long floodwall is a permanent impact because it will be on the top of the bank obstructing flow. A 450 long floodwall, upstream of Montague Expressway, will be buried to reinforce an existing retaining wall, and therefore will not result in new impacts to waters of the U.S. or the State.

21. **Mitigation.** The Application states the Discharger will replace any native trees and shrubs that will be removed and maintain them for five years. The locations for native tree and shrub species to be planted at the Site are shown in the 100 percent Planting Plan dated April 1, 2016. The Discharger will seed the creek channel beds with wetland species to serve as a seed bank to restore the 0.45 acres of wetland vegetation to be removed by the Project. The Discharger will also seed the banks with native grass species. The wetland and grass species palettes are listed in the 100 percent Planting Plan specifications (section 32 92 19).

    The Water Board requires additional mitigation to compensate for temporary and permanent losses of functions and values resulting from the Project design. The Discharger has stated that compensatory mitigation is not feasible within the Project site. Therefore, compensatory mitigation will be offsite. This Order requires the Discharger to submit a Mitigation and

Monitoring Plan (MMP), acceptable to the Executive Officer, by June 30, 2017, consistent with the District's schedule to adopt its 5-year capital improvement projects~~before beginning Project construction (Provision 16)~~, and to timely implement the MMP. The Water Board will notify the public upon receipt of the required MMP and consider public comments before the Executive Officer accepts it. The MMP must propose mitigation such that the Project and mitigation, taken together, meet the California Wetlands Conservation Policy (Executive Order W-59-93), known as the "No Net Loss Policy," as described in Section 4.23.4 of the Basin Plan (see Finding~~s~~ 27~~28 and 30~~). Mitigation shall preferentially occur at the impacted site, which is referred to as "on-site" mitigation (i.e., within the Project right-of-way), and shall recreate the same type of waters as the impacted waters, which is referred to as "in-kind" mitigation.

This Order requires that permanently-affected waters of the U.S. and of the State will be mitigated at a minimum mitigation-to-effect ratio of 2:1. As such, the mitigation package for habitat shall provide a minimum restoration of approximately twice the 10.1-acre area and 10,072-linear-foot length feet of creek habitat area, or the equivalent, as compared to the area and linear feet in which rock riprap and concrete will be installed. Restoration of temporarily-affected habitat will be mitigated at a minimum mitigation-to-effect ratio of 1.5:1. The minimum ratio of 2:1 for permanent impacts and 1.5:1 for temporary impacts will apply as long as construction of a mitigation activity is completed within 12 months of the date when the associated impact first occurs. An additional 10 percent mitigation per year, on an areal basis, will be required for the portion of mitigation not completed within the required 12-month period.

In addition, the Water Board may require a higher amount of mitigation than those amounts stated above, depending on the type (i.e., in-kind or out-of-kind) and proximity (i.e., on-site or off-site) of proposed mitigation relative to the impacted creeks in the Project. For example, the following situations warrant additional mitigation:

- The placement of off-site mitigation waters or the creation of out-of-kind mitigation (created or restored waters that are different habitat types than the impacted waters), though this can be allowed where it is demonstrated that an overall net gain will occur;

- Mitigation project has uncertainty of the success associated with the construction or restoration of mitigation wetlands and/or waters; and

- Delays in the construction or restoration of mitigation wetlands and/or waters, relative to when the Project's impacts occur.

When determining whether to accept out-of-kind mitigation, the Water Board may consider such sources as the *Baylands Ecosystem Habitat Goals* (1999), ~~and~~ the *Baylands Ecosystem Species and Community Profiles* (2000), and the *Baylands Ecosystem Habitat Goals Science Update* (2015) (referred to collectively as the "Habitat Goals Reports"), the San Francisco Estuary Project's *Comprehensive Conservation and Management Plan (1993 and its 2016*

revision), or other plans specific to the District's flood protection and stream stewardship goals that would result in project with a "long-term net gain in the quantity, quality, and permanence of wetlands acreage and values ..." consistent with the Basin Plan, section 4.23.4. Examples of potentially acceptable mitigation projects include dam removal, increasing salmonid habitat complexity in another creek, replacing a concrete channel with restored riverine wetland habitat, and preparing a watershed management plan and implementing specified projects sufficient to meet the Order's mitigation requirements.

The MMP must include performance and success criteria appropriate for the type of project. For vegetation in mitigation sites, herbaceous plantings must be monitored for no less than five years, and shrubs and trees must be monitored for no less than ten years, consistent with Vegetation Performance and Success Criteria in Attachment ~~C~~B, or standards of equivalent or better effectiveness.

22. **Monitoring and Technical Reports.** All monitoring and technical reports required in this Order are required pursuant to CWC section 13267. The burden of preparing these reports, including costs, bear a reasonable relationship to the benefits to be obtained from the reports and monitoring. Specifically, the monitoring and technical reports will demonstrate protection of beneficial uses during construction and maintenance projects, as well as verify the success of efforts to mitigate impacts as described in Findings 20 (i.e., impacts) and 21 (i.e., mitigation requirements). The monitoring reports will log the progress of revegetation over time, and verify the success of mitigation plantings and/or other project features in the MMP, consistent with the minimum success and performance standards in the MMP. In addition, the technical reports will document the Project design and inform the Adaptive Management Plan and implementation.

23. **Water Quality Certification.** The Project will result in discharge of dredge and fill materials into waters of the U.S. and of the State. The CWA (33 U.S.C. §§ 1251-1387) was enacted "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." (33 U.S.C. § 1251(a).) Section 401 of the CWA (33 U.S.C. §1341) requires every applicant for a federal license or permit that may result in a discharge into navigable waters to provide the licensing or permitting federal agency with certification that the project will be in compliance with specified provisions of the CWA, including water quality standards and implementation plans promulgated pursuant to CWA section 303 (33 U.S.C. § 1313). CWA section 401 directs the agency responsible for certification to prescribe effluent limitations and other limitations necessary to ensure compliance with the CWA and with any other appropriate requirement of state law. CWA section 401 further provides that state certification conditions shall become conditions of any federal license or permit for the project.

As the federal administrating agency for regulating the discharge of dredge and fill materials to waters of the U.S. pursuant to section 404 of the ~~Clean Water Act (~~CWA~~)~~ (33 U.S.C., section 1344), the Corps signed the Record of Decision dated May 29, 2015, stating that the Project meets all environmental statutes. On March 14, 2016, the Water Board issued ~~Water Quality~~the Certification pursuant to ~~the Clean Water Act,~~ CWA ~~-~~section 401 ~~(Certification)~~

to the Corps for the Project. The Certification states that the Water Board would consider waste discharge requirements (WDRs) for the Project to address the future operations and maintenance activities, vegetation monitoring for construction mitigation plantings, and an off-site mitigation plan for impacts due to the Project's design. This Order rescinds and supersedes the previously-issued water quality certification and replaces it with WDRs and a new water quality certification.

24. **Waste Discharge Requirements.** Pursuant to section 13263 of the ~~California Water Code (~~CWC~~)~~ and Title 23, section 3857 of the California Code of Regulations (CCR), the Water Board is issuing WDRs to regulate the proposed discharge of excavation, dredge, and fill materials into waters of the State. The Water Board considers WDRs necessary to adequately address impacts and mitigation to beneficial uses of waters of the State from the Project, to meet the objectives of the California Wetlands Conservation Policy (Executive Order W-59-93), and to accommodate and require appropriate changes over the life of the Project, including during its construction. In accordance with CWC, sections 13263(a) and 13241, the Water Board, after considering this matter at a public hearing, has prescribed requirements as to the nature of the proposed discharge. These requirements implement the Water Board's relevant water quality control plans and policies~~,~~ and take into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, and the need to prevent nuisance.

25. **California Environmental Quality Act (CEQA).** CEQA requires all discretionary projects approved by public agencies to be in full compliance with CEQA, and requires a lead agency to prepare an appropriate environmental document for such projects. The Discharger, as the lead agency, certified an Environmental Impact Report (EIR) for the Project on February 9, 2016. The EIR found several significant impacts that are under the purview and jurisdiction of the Water Board. These included significant impacts to: (1) biological resources; (2) soil or topsoil resources; (3) hazardous materials; (4) utility and service systems; and (5) hydrology and water quality. The EIR also found that the mitigation measures proposed therein would mitigate all of these impacts to less than significant levels. The EIR identified the following mitigation measures to mitigate these impacts to less than significant levels:

    - Using seeds or cuttings collected at or near the P~~p~~roject area, or higher in the watershed if on-site collection is not feasible, replace the 53 native tree and shrubs removed at the following rates:
        - Native tree up to 8 inches diameter at breast height (dbh): plant 1 native tree for each tree removed;
        - Native trees up to 20 inches dbh: plant 2 native trees for each tree removed;
        - Native trees greater than 20 inches dbh: plant 3 native trees for each native tree removed; and
        - Native shrubs: plant 2 native shrubs for each native shrub removed.

- Maintaining a buffer zone around those riparian trees that will be protected in place during construction;

- Replacing non-native and ruderal vegetation with native grass and forbs by hydroseeding disturbed areas;

- Conducting pre-construction nesting bird surveys and establishing appropriate buffers, reducing impacts to nesting residential bird species; ~~aquatic life and wildlife surveys; protecting nesting birds; and relocating wildlife and aquatic life as necessary during construction activities; and conducting pre-construction awareness training for detection and avoidance of wildlife and aquatic species.~~

- Preventing soil erosion or loss of topsoil by preparing and implementing ~~Rain Event Action Plans~~REAPs;

- Collecting and treating potentially contaminated groundwater encountered during project excavation in the ~~JCI~~ Jones Chemical groundwater plume area to comply~~ing~~ with ~~the~~ VOC and Fuels General Permit standards before discharging the groundwater to the environment; and

- During construction, removing hazardous materials and wastes from the creek channel prior to substantial rain so that water flowing in the creek does not to entrain hazardous substances.

The Water Board, as a responsible agency under CEQA, has considered the EIR and finds that in combination with the requirements of this Order, impacts during the construction of the Project that are within the Water Board's purview and jurisdiction have been identified and will be mitigated to less-than-significant levels. This Order includes conditions and mitigation measures that will substantially lessen or avoid the Project's impacts on the environment. The need for compensation of impacts from the Project design is addressed in this Order (see Finding 21).

~~26. CEQA states that a Responsible Agency "shall not approve the project as proposed if the agency finds any feasible alternative or feasible mitigation measures within its powers that would substantially lessen or avoid any significant effect the project would have on the environment." The Water Board, as a responsible agency under CEQA, has considered the EIR and finds that impacts during the construction of the Project that are within the Water Board's purview and jurisdiction have been identified and will be mitigated to less-than-significant levels through a combination of mitigation measures identified in the EIR and the requirements of this Order. This Order includes conditions and mitigation measures that will substantially lessen or avoid the Project's impacts on the environment. The need for compensation of impacts from the Project design is addressed in this Order (see Finding 21).~~

~~The District prepared and certified a Stream Maintenance Program Update Final Subsequent Environmental Impact Report (FSEIR) on February 14, 2012, State Clearinghouse No. 2000 102 055. The FSEIR found significant impacts that are under the purview and jurisdiction of the Regional Water Board: 1) aquatic species including habitat for special status species; 2) water quality; and 3) hazardous materials. The FSEIR also found that the mitigation measures would mitigate all of these impacts to less than significant levels. The mitigation measures specified in the FSEIR include compensatory mitigation to mitigate for any temporary disturbance or loss of aquatic habitat and specific BMPs to avoid and minimize maintenance activity-related impacts. The impacts of this project related to stream maintenance (O&M implementation) are expected to be equivalent to the impacts discussion in the FSEIR. This Order includes conditions and mitigation measures that will substantially lessen or avoid the Project's impacts on the environment related to stream maintenance (O&M implementation) both during and after construction. The need for compensation of impacts from stream maintenance (O&M implementation) is addressed in this Order (see Finding 16).~~

~~27.~~26. **Water Quality Control Plans.** The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) was duly adopted by the Water Board and approved by the State Water Resources Control Board (State Water Board), U.S. Environmental Protection Agency (U.S. EPA), and the Office of Administrative Law where required. The Basin Plan is the Water Board's master water quality control planning document. It designates beneficial uses of receiving waters, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed by the Plan. Section 2.2.1 of the Basin Plan indicates that the beneficial uses of any specifically identified water body generally apply to its tributary streams. Existing and potential beneficial uses of waters at the Project include the following:

- **Upper Berryessa Creek:** Warm Freshwater Habitat (WARM), Wildlife Habitat (WILD), Water Contact Recreation (REC-1), and Noncontact Water Recreation (REC-2)
- **Los Coches Creek:** Preservation of rare and endangered species (RARE), WARM, WILD, REC-1, and REC-2.
- **Piedmont Creek:** WARM, WILD, REC-1, and REC-2

Upper Berryessa Creek is tributary to Lower Penitencia Creek, Calera Creek, and Tularcitos Creek. The Basin Plan designates WARM, WILD, REC-1, REC-2, and Navigation (NAV) to these creeks. These creeks, in turn, flow into Coyote Creek, a tributary to San Francisco Bay. The beneficial uses of Lower Penitencia Creek are the same as for Upper Berryessa Creek. Some of the beneficial uses of Coyote Creek, which also apply to Upper Berryessa Creek by the Tributary Rule, include migration habitat (MIGR), spawning habitat (SPWN), preservation of rare and endangered species (RARE), and cold water habitat (COLD).

In addition, ~~section 2.2.3 of the Basin Plan recognizes the multiple beneficial uses provided by wetlands, and Table 1-3 of the Basin Plan lists beneficial uses associated with wetland types. Existing and potential beneficial uses for wetlands at the Project site were established as indicated in section 4.23 of the Basin Plan by (1) referencing information in the Project materials to identify wetland types at the Project site, (2) using Table 1-3 of the Basin Plan to identify examples of beneficial uses associated with these wetland types, and (3) referencing site-specific information provided in the EIR and Project materials to refine the list of example beneficial uses into a list of existing and potential beneficial uses for wetlands at the Project site.~~ Section 2.2.3 of the Basin Plan indicates that the Water Board will rely on naming conventions of the National Wetlands Inventory for mapping wetlands. Under these naming conventions, significant portions of Upper Berryessa Creek are riverine wetlands, and, as such, Table 2-3 of the Basin Plan lists examples of existing and potential beneficial uses for riverine wetlands. Therefore, Upper Berryessa Creek is a type of wetland under the Water Board's regulations. Moreover, Section 2.2.3 of the Basin Plan provides a list of aquatic features that the Water Board recognizes as wetlands, some of which would not be recognized as wetlands by the Corps. Some of the features listed that occur at the Project site include unvegetated ponded areas, the inset floodplain within the current channel, and riparian habitat within the Project and are wetlands that are waters of the State. Moreover, the EIR states that there is in-channel wetland vegetation and riparian habitat on site and acknowledges that the riparian habitat is waters of the State, although it was not waters of the U.S. The Corps disclaimed federal wetland jurisdiction over the fringing wetland vegetation because it did not have wetland soils. Section 4.23.4 of the Basin Plan states that "The Water Board may choose to exercise its independent authority under the Water Code in situations where there is a conflict between the state and the Corps, such as over a jurisdictional determination …." Wetlands and waters impacted in the ~~Project~~ S~~s~~ite are ~~creek habitat~~ riverine wetlands. The beneficial uses associated with riverine wetlands at the ~~Project~~ S~~s~~ite include WARM, WILD, REC-1, REC-2, and RARE. However, rare or endangered species do not presently inhabit the ~~Project s~~Site.

Requirements of this Order implement the Basin Plan.

~~28.~~27. **Basin Plan Wetland Fill Policy.** The Basin Plan Wetland Fill Policy (Fill Policy) establishes that there is to be no net loss of wetland acreage and no net loss of wetland value when a project and any proposed mitigation are evaluated together, and that mitigation for wetland fill projects is to be located in the same area of the region, whenever possible, as the project. The Fill Policy further establishes that wetland disturbance should be avoided whenever possible, and if not possible, should be minimized, and only after avoidance and minimization of impacts should mitigation for lost wetlands be considered. The Water Board applies the Fill Policy to waters that are creeks. Requirements of this Order implement the Fill Policy.

~~To minimize temporal losses in functions associated with the Project's unavoidable temporary impacts, the Discharger will return temporarily impacted waters of the State to a condition similar to their original condition upon completion of the Project by hydroseeding~~

~~native wetland species in the channel bed and native grass species on creek banks in Upper Berryessa Creek, Los Coches Creek, and Piedmont Creek.~~

~~29.~~28. **California Wetlands Conservation Policy.** The goals of the California Wetlands Conservation Policy (Executive Order W-59-93, signed August 23, 1993) include ensuring "no overall loss" and achieving a "…long-term net gain in the quantity, quality, and permanence of wetland acreage and values…." The California Wetlands Conservation Policy also calls for a "development of means to provide flexibility in the regulatory process … for allowing public agencies, water districts, and landowners to establish wetlands on their property consistent with the primary purpose of the property."

Senate Concurrent Resolution No. 28 states that "[i]t is the intent of the legislature to preserve, protect, restore, and enhance California's wetlands and the multiple resources which depend on them for benefit of the people of the State." Section 13142.5 of the CWC requires that the "highest priority shall be given to improving or eliminating discharges that adversely affect…wetlands, estuaries, and other biologically sensitive areas."

The ~~State~~ Water Board applies the California Wetlands Conservation Policy to waters that are creeks because significant portions of creeks are riverine wetlands. Requirements of this Order implement the California Wetlands Conservation Policy.

~~30.~~29. **California EcoAtlas.** It has been determined through regional, S~~s~~tate, and national studies that tracking of mitigation/restoration projects must be improved to better assess the performance of these projects, following monitoring periods that last several years. In addition, to effectively carry out the ~~State's~~ California Wetlands Conservation Policy ~~of no net loss to wetlands~~, the State needs to closely track both wetland losses and mitigation/restoration project success. Therefore, we require that the ~~Applicant~~ Discharger use the California Wetlands Form to provide Project information related to impacts and mitigation/restoration measures. An electronic copy of the form and instructions can be downloaded at: http://www.waterboards.ca.gov/sanfranciscobay/certs.shtml. Project information concerning impacts and mitigation/restoration will be made available at the web link: http://ecoatlas.org/regions/ecoregion/bay-delta/projects.

~~31.~~30. **Endangered Species Act.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). The Discharger is responsible for meeting all requirements of the applicable Endangered Species Acts. As applicable, the Discharger shall utilize the appropriate protocols, as approved by the U.S. Fish and Wildlife Service (USFWS) and stated in the USFWS Coordination Act Report, to ensure that Project activities do not adversely impact water quality or the beneficial uses of Upper Berryessa Creek, Los Coches Creek, and Piedmont Creek, or other beneficial uses of waters downstream of the Project as referenced in Finding 26.

~~32.~~31. **Notification of Interested Parties.** The Water Board has notified interested parties, including the Corps, U.S. EPA, ~~U.S. Fish and Wildlife Service~~USFWS, the California Department of Fish and Wildlife, the Guadalupe-Coyote Resource Conservation District, and the Citizens Committee to Complete the Refuge, the City of Milpitas, Valley Transportation Authority, BART, ~~-~~Santa Clara County Parks and Recreation Department, and California Department of Transportation-District 4, of its intent to prescribe WDRs for this discharge.

~~33.~~32. **Consideration of Public Comment.** The Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.

~~34.~~33. **Records Management.** This Project file is maintained at the Water Board under CIWQS Place No. 818597, and Regulatory Measure No. 403119.

34. **Fees for Dredge and Fill Projects.** The fee amount for the WDRs shall be in accordance with the current fee schedule, per California Code of Regulations (CCR), Title 23, Division 3, Chapter 9, Article 1, section 2200(a)(3).

35. Pursuant to 23 CCR sections 3857 and 3859, the ~~Regional~~ Water Board is issuing WDRs and Water Quality Certification for the activities proposed in this Order.

It Is Hereby Ordered that the water quality certification pursuant to the CWA section 401, dated March 14, 2016, issued to the Corps, is rescinded upon the effective date of this Order, except for enforcement purposes. The Water Board hereby issues this modified certification for the Project, updating the March 14, 2016, certification to reflect current Project conditions, and certifying that any discharge from the Project will comply with the applicable provisions of CWA sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 303 (Water Quality Standards and Implementation Plans), 306 (National Standards of Performance), and 307 (Toxic and Pretreatment Effluent Standards) and with other applicable requirements of State law. ~~p~~Pursuant to the provisions of CWA 401 and Division 7 of the CWC, related regulations and guidelines adopted thereunder, ~~that~~ the Discharger, its agents, successors, and assigns shall comply with the following pursuant to authority under CWC sections 13263 and 13267:

A. Discharge Prohibitions

1. The discharge of wastes, including debris, rubbish, refuse, or other solid wastes into surface waters or at any place where they would contact or where they would be eventually transported to surface waters, including floodplains, is prohibited.

2. The discharge of floating oil or other floating materials from any activity in quantities sufficient to cause deleterious bottom deposits, turbidity, or discoloration in surface waters is prohibited.

3. The discharge of silt, sand, clay, or other earthen materials from any activity in quantities sufficient to cause deleterious bottom deposits, turbidity, or discoloration in surface waters is prohibited.

4. The fill activities in waters of the State subject to these requirements shall not cause a nuisance as defined in CWC section 13050(m).

5. The groundwater in the vicinity of the Project shall not be degraded as a result of the Project activities or placement of fill for the Project.

6. The discharge of materials, which are not otherwise regulated by a separate NPDES permit or allowed by this Order, to waters of the U.S. and State is prohibited.

7. The use of imported soil in the Project is prohibited unless the Executive Officer grants an exception to this under the requirements of Provision 1813. Under such circumstances, the Discharger shall submit the report required in Provision 1813 to provide justification for the use of imported soil fill with resulting in impacts in to the waters of the State.

8. Directional drilling in the Project is prohibited.

9. This The use of bank stabilization methods and materials other than the methods and materials in the 90 100 percent design plans and specifications isare not authorized under this Order.

10. This Order prohibits any creek dewatering, diversion, or discharge before the Executive Officer provides approvalaccepts, in writing (including via electronic mail), of a Dewatering Plan that meets the requirements of the Discharger shall prepare submit, consistent with Provision 13 9.

10.11. This Order prohibits the alignment of any utilities, or maintaining existing utility lines in the Project, in such a manner that will create an obstacle to flow or destabilize the creek channel.

B. Provisions

1. The Discharger shall comply with all Prohibitions and requirements of this Order immediately upon adoption of this Order or as otherwise provided below. The Discharger shall fully implement all requirements of this Order, including all plans accepted by the Water Board or Executive Officer. The Discharger shall notify the Executive Officer in writing should the Discharger need to significantly alter the Project. If the Water Board is not notified of a significant alteration to the Project, the Applicant Discharger will be considered in violation of this Order and may be subject to Water Board enforcement actions.

2. All plans and reports required under this Order shall be submitted and acceptable to the Executive Officer.

3. The Project shall be constructed in conformance with the 100 percent Design Plans dated August 4, 2016, consistent with Finding 11 and Provision 12 7, and be acceptable to the Executive Officer.

~~3.~~4. All work performed within waters of the State shall be completed in a manner that minimizes impacts to beneficial uses and habitat. Measures shall be employed to minimize disturbances that will adversely impact the water quality of waters of the State. Disturbance or removal of vegetation shall not exceed the minimum necessary to complete Project implementation.

~~4.~~5. Disturbance or removal of vegetation shall be minimized. The Site shall be stabilized through incorporation of appropriate BMPs, including the successful establishment of native grass vegetation, to compensate for impacts to wildlife habitat values and to prevent and control erosion and sedimentation. The Discharger shall revegetate the Project based on the 100 percent Planting Plan and Specifications for trees and shrubs dated April 1, 2016, and the 100 percent Conformed Drawings dated August 4, 2016, for native wetland and grass species. The Discharger shall maintain trees and shrubs for five years as stated in the Application.

~~5.~~6. There shall be no violation of any water quality standard for receiving waters adopted by the Water Board or the State Water Board. Creek dewatering discharges, accumulated groundwater or stormwater removed during dewatering of excavations, and diverted creek and stormwater flows shall not be discharged to waters of the State without meeting the receiving water objectives in the Basin Plan.

~~6.~~7. Dredging, excavation, and fill in Upper Berryessa Creek, Piedmont Creek, and Los Coches Creek shall not cause the turbidity in the receiving water (i.e., water in these creeks and in waters to which they discharge) to increase by more than 10 percent if the ambient turbidity of the receiving water is greater than 50 NTU, or by more than 5 NTU if the ambient turbidity of the receiving water is less than or equal to 50 NTU.

~~7.~~8. No equipment shall be operated in stream channels or other waters where there is flowing or standing water. No fueling, cleaning, or maintenance of vehicles or equipment shall take place within any areas where an accidental discharge to waters of the State may occur.

~~8.~~9. Concrete used in the Project shall be allowed to completely cure (a minimum of 28 days) or be treated with a California Department of Fish and Wildlife-approved sealant before it comes into contact with flowing water.

~~9.~~10. **Construction General Permit**. The Discharger shall seek coverage under and comply with, or oversee that its contractors seek coverage and comply with, the NPDES General Permit for Discharges of Storm Water Associated with Construction Activities (Order No. DWQ-2009-0009, as amended by Order Nos. 2010-0014-DWQ and 2012-006-DWQ) (Construction ~~Stormwater~~ General Permit). All work performed within waters of the State shall be completed in a manner that minimizes impacts to water quality and the beneficial uses of Upper Berryessa Creek, Los Coches Creek, and Piedmont Creek and waters downstream of these creeks.

~~10.~~11. **Rain Event Action Plan.** The Discharger shall develop and implement a Rain Event Action Plan (REAP), as required by the Construction General Permit, designed to protect all exposed portions of the S~~eir s~~ites~~s~~ within 48 hours prior to any likely precipitation event. The REAP requirement is designed to ensure that the D~~d~~ischarger has adequate materials, staff, and time to implement erosion and sediment control measures that are intended to reduce the amount of sediment and other pollutants generated from the active site. A REAP must be developed when there is likely a forecast of 50 percent ~~%~~ or greater probability of precipitation in the P~~p~~roject area.

~~11.~~ **Final Design Plans.** The Project shall be constructed consistent with the 100 percent design plans dated August 4, 2016, and the 100 percent Planting Plan dated April 1, 2016. ~~Final 100 Percent Design Plans. The Water Board received 100 percent design plans and specifications on August 11, 2016, and a 100 percent Planting Plan (dated April 1, 2016) and specifications on July 21, 2016. For purposes of this Order, the Planting Plan is part of the Design Plans because the removing selected trees and grading others must be incorporated in the construction design plans. The Water Board requires the 100 percent plans to include:~~
~~(a) 100 percent complete drawings including those addressing project construction phasing, and which incorporate all comments by individuals and agencies and requirements of this Order; (b) a revised Design Documentation Report with narrative to highlight changes between the 90 and 100 percent plans; (c) final specifications with narrative to highlight the changes that have been incorporated since the 90 percent plans Design Plans and 95 percent Planting Plan; and (d) revisions in the Planting Plan for monitoring duration of plantings within the Project right-of-way of no less than five years for herbaceous hydroseed plantings, and no less than ten years for shrubs and trees, consistent with the guidelines in Attachment C.~~

~~12. **Utilities Plan.** Before starting construction, the Discharger shall prepare and submit a Utilities Plan, acceptable to the Executive Officer. The Utilities Plan shall consist of the following report and plans for utilities in the Project right-of-way:~~

~~a. A technical report that identifies any protective caps and supporting infrastructure, located immediately above the creek or within 5 feet below the creek banks or channel bottom and analyzes whether they could constrain the creek channel in the future (e.g., by requiring placement of a cap or related hard structure to protect them from creek flow or erosion; precluding creek migration, including downcutting; or otherwise requiring modification of the creek to protect them). Where such a potential exists, the Plan shall include a workplan, including appropriately-detailed plans and a schedule, to relocate the utilities and associated infrastructure such that they will be unlikely to affect the creek;~~

~~b. Drawings and maps with narrative, as appropriate, sufficient to describe measures to prevent impacts during relocation; and~~

~~c.~~a. ~~Maps and drawings showing the locations, elevations, type, size, associated infrastructure (e.g., caps), and all other information, as appropriate, of live and abandoned utilities.~~

~~13.~~ **Dewatering Plan.** The Discharger shall develop and implement, or ensure that its contractor develops and implements, a Dewatering Plan that is acceptable to the Executive Officer, and is consistent with Finding 14 and the discharge requirements in Provision 15, for surface and groundwater flows throughout the Project site, excluding the groundwater flow within the Jones Chemical, Inc., potential zone of influence which is regulated under Provision 14. ~~Not later than 30 days prior to the commencement of dewatering activities, the Discharger shall submit a Dewatering Plan, acceptable to the Executive Officer. The Dewatering Plan shall include plans (i.e., diagrams or drawings; maps showing locations of activities and structure; and other design details as appropriate) for, and appropriate discussion about, all dewatering system components, such as diversion pipes, water storage, and water quality monitoring, and shall address the following specific methods and procedures:~~

~~a. Identify an appropriate discharge point for the proposed dewatering flows downstream of the lower coffer dam;~~

~~b. Procedures and methods for maintaining natural flow upstream and downstream of the Project area and for avoiding and preventing sedimentation and erosion upstream and downstream of the dewatered Project area;~~

~~c. Procedures and methods to meet discharge and receiving water quality objectives in the Basin Plan and sufficient to avoid exceedances of the applicable receiving water quality objectives, including, but not limited to, turbidity, pH, temperature, dissolved sulfide, and dissolved oxygen in accordance with the Basin Plan water quality and specified in Provision 1110;~~

~~d. Methods for installing, maintaining, inspecting, and removing coffer dams with minimal or no impacts to the Creek; and~~

~~e.~~a. ~~How the Creek will be restored when a coffer dam is are removed.~~

~~14.~~12. **Groundwater Management Plan.** The Discharger shall implement the~~a~~ Groundwater Management Plan dated January 26, 2016, and ~~,~~accepted by ~~able to~~ the Executive Officer on March 8, 2016, to meet the standards of the VOC and Fuel General Permit, consistent with Finding 15, and discharge requirements in the next Provision.~~;~~ ~~Attachment B).~~

~~15.~~13. **Discharge and Receiving Water Objectives.** Creek dewatering discharges, accumulated groundwater or stormwater removed during dewatering of excavations, and diverted creek and stormwater flows shall not be discharged to waters of the State without meeting the following discharge and receiving water limitations herein. All

monitoring records at the Project site shall be maintained at a location to be designated in the Dewatering Plan, and shall be made available upon request by Water Board staff.

a. pH - the instantaneous discharge pH shall be in the range of 6.5 to 8.5, and controllable water quality factors shall not cause changes greater than 0.5 units in the receiving water pH levels.

b. Discharge Dissolved Oxygen - the discharge dissolved oxygen concentration shall be no less than 5.0 milligrams per liter (mg/L) (hourly average).

c. Discharge Dissolved Sulfide - the discharge dissolved sulfide shall not be greater than 0.1 mg/L.

d. Receiving Water Turbidity - the receiving water turbidity measured as nephelometric turbidity units (NTU) shall not be greater than 10 percent of natural conditions in areas where natural turbidity is greater than 50 NTU (daily average). All Project discharge plans shall identify an acceptable location or locations at which to measure background turbidity. The Discharger shall monitor receiving water and discharge turbidity at least one time every 8 hours on days when discharges from excavations or any other dewatering processes may occur.

e. Receiving Water Temperature – the receiving water shall not be increased by more than 5°F (2.8°C) above natural receiving water temperature.

f. Nutrients - the receiving waters shall not contain biostimulatory substances in concentration that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.

~~16.~~14. **Post-Construction Stormwater Management Plan.** No later than ~~60~~ 90 days ~~prior to construction~~from the date this Order is adopted, the Discharger shall submit a Post-Construction Stormwater Management Plan consistent with the Water Board's Municipal Regional Stormwater Permit (NPDES Municipal Regional Stormwater Permit (MRP) (Water Board Order No. R2-2015-0049; NPDES Permit No. CAS612008) requirements for post-construction stormwater management for new or replacement impervious surfaces. The plan shall identify construction materials, designs, treatment controls, a proposed operation and maintenance plan, and all other information, as appropriate, sufficient to ensure the appropriate treatment of runoff from 6.8~~4~~ acres of maintenance roads and 0.1 acres of concrete access roads and ramps, either on-site or at an alternative off-site location, and a trash management plan for public access areas.

~~17.~~15. **Fill Quality Report**. No later than 30 days prior to placing any imported soil fill material at the Project area, including all placement of fill in areas below the top of bank, on levees, and at any other location where the fill is a discharge to or has the potential to discharge to any waters of the State in the Project, the Discharger shall submit a technical report, acceptable to the Executive Officer, that the chemical concentrations in the

imported fill soil are in compliance with the protocols specified in the following documents:

a. The Dredged Material Management Office (DMMO) guidance document *Guidelines for Implementing the Inland Testing Manual in the San Francisco Bay Region* (Discharger Public Notice 01-01, or most current version) (Inland Testing Manual) with the exception that the water column bioassay simulating in-bay unconfined aquatic disposal shall be replaced with the modified effluent elutriate test, as described in Appendix B of the Inland Testing Manual, for both water column toxicity and chemistry (DMMO suite of metals only); and,

b. The Water Board May 2000 staff report *Beneficial Reuse of Dredged Materials: Sediment Screening and Testing Guidelines*, or the most current revised version. Water Board staff shall review and approve data characterizing the quality of all material proposed for use as fill prior to placement of fill at any of the levee, marsh, or channel areas at the Project site. Modifications to these procedures may be approved by the Executive Officer on a case-by-case basis, pending the Discharger's ability to demonstrate that the imported fill material is unlikely to adversely impact beneficial uses.

~~18.~~16. **Maintenance.** Maintenance activities shall be consistent with the District's ~~Stream Maintenance Program~~ SMP as described in Finding 16, and consistent with the Adaptive Management Plan ~~(Finding 17)~~ this Order requires pursuant to Provision 18~~15~~ (Finding 17). In addition, the mitigation required due to impacts from maintenance activities shall be consistent with the District's ~~Stream Maintenance Program~~SMP. ~~The Discharger shall prepare a lessons learned report, consistent with the next provision, as described in Finding 16.~~

~~19.~~17. **Adaptive Management Plan.** No later than ~~6 months~~180 days after the date this Order is adopted, the Discharger shall submit an Adaptive Management Plan that is consistent with Finding 17. The Adaptive Management Plan shall identify the Project's performance with respect to sediment deposition and accumulation, and develop ways of reducing the need and frequency of maintenance activities and maximizing habitat acreage, values, and functions. The Adaptive Management Plan shall be implemented immediately upon Project channel construction completion. For the purposes of this Order, Project channel construction completion is defined as the first business day after construction contractors are no longer within the Project right-of-way, except for any contractor present solely for the purposes of vegetation planting, monitoring, and/or management. The Adaptive Management Plan shall include, but not be limited to, the following elements:

~~f.~~b. A workplan to periodically conduct cross-sectional and longitudinal profile surveys, and stage-discharge recordings, including high water stages and velocities, after the Project is constructed. The ~~date~~ data collected shall inform the Geomorphology Report ~~five-year report~~ described below in section (~~e~~f).

g.c. A decision-making process to avoid sediment and/or vegetation removal before analyzing channel capacity based on field survey data to be collected in accordance with (a) above.

h.d. Identification of a maintenance trigger based a stated freeboard; and other appropriate maintenance trigger(s).

i.e. Identification of stream gage locations necessary to implement the monitoring requirements for the Adaptive Management Plan, installation of gage(s), and data acquisition and analysis of stream flow gage(s) to implement the monitoring requirements of the Adaptive Management Plan.

j.f. A collaborative process comparable to the District's Notification of Proposed Work process under the ~~Stream Maintenance Program~~SMP (see Finding 16) to convene a team, including Discharger staff and Water Board staff, to jointly develop Project-specific maintenance work plan, acceptable to the Executive Officer, for any bank stabilization, sediment, and/or vegetation maintenance activities that may be necessary in the event that a maintenance trigger (or multiple triggers) occurs.

k.g. **Geomorphology Report.** A report submitted after 5 measurable flood events at or exceeding the estimated 2 year flood event, and one event at or exceeding the estimated 10 year flood event, to analyze data collected over the first -years of Adaptive Management Plan implementation to evaluate channel performance and address the uncertainty in sediment transport processes (see Finding 16~~,~~ and Staff Memo). The ~~geomorphology~~ Geomorphology ~~report~~ Report will evaluate:

i. whether flow events have occurred that will enable the evaluation of sediment deposition processes in the Project;

ii. whether sediment deposition rates have increased or decreased compared to the existing conditions;

iii. whether sediment only accumulates at the two UPRRR culverts as stated in the Project EIR; and

iv. a comparison of stage-discharge relationships based on collected field data and the model projections.

In addition, the Geomorphology Report ~~geomorphology report~~ shall be the basis for the following possible steps to determine whether the District will continue implementing the Adaptive Management Plan:

v. The Executive Officer shall authorize the Project to be transferred to the District's ~~Stream Maintenance Program (SMP)~~SMP if results ~~of~~ in the ~~year~~ report indicate sediment deposition has decreased or is similar to existing conditions. The maintenance guidelines developed with the Adaptive Management Plan shall be

incorporated into the District's SMP and implemented for future maintenance activities under the SMP.

vi. The District shall continue implementing the Adaptive Management Plan if the Geomorphology Report findings indicate the sediment transport issues have not been resolved, either because not enough rainfall has occurred to generate flows in the creeks to verify sediment transport processes, and/or, because, the data are inconclusive.

~~vii. If sediment deposition increases and/or is in various areas other than those predicted (e.g., at the UPRR culverts), the District shall submit a lessons learned report to document actual performance of the Project, rather than the design performance, and compare maintenance activities conducted to date with the previously mitigated activities (Finding 16). The lessons learned report shall include (but not be limited to):~~

~~a. A refined the sediment transport model; and~~

~~b. A project re-design report that identifies opportunities to address sediment accumulation and other Project performance issues such as alternative management approaches, which may include (but are not limited to) modifying sediment maintenance upstream of the Project.~~

Mitigation Requirements

~~20.~~18. **Mitigation and Monitoring Plan.** No ~~less than six months~~ later than June 30, 2017~~from the date this Order is adopted~~, the Discharger shall submit a final Mitigation and Monitoring Plan (MMP), acceptable to the Executive Officer. The Mitigation and Monitoring Plan shall include the following performance criteria by addressing~~,~~ ~~including, but not limited to,~~ the following elements and/or comparable criteria appropriate for the case-specific plan:

a. The MMP shall include a proposal, workplan, monitoring plan, performance standards, and all other information, as appropriate, sufficient to ensure the mitigation of permanently-affected waters of the State at a minimum mitigation-to-effect ratio of 2:1 and mitigation of temporarily affected habitat at a minimum mitigation-to-effect ratio of 1.5:1 to ensure the Project results in no net loss and a long-term net gain in wetland and waters area, function, and value, consistent with Finding 21. Thus, the mitigation package (i.e., the MMP) shall provide a minimum restoration of approximately twice the 10.1-acre area and 10,072-linear-foot length feet of creek waters, or the equivalent, as compared to the area and linear feet in which rock riprap and concrete will be placed. The Water Board may require additional area and/or linear feet based on the type and proximity of the mitigation project. Thus, the size and scope of the mitigation project shall be appropriate for the Project's impacts based on variations of the ratios above, as described in Finding 21.

b. The MMP shall include (but not be limited to) the vegetation performance standards and success criteria, or comparable standards, as those in Attachment B~~C~~. If the offsite mitigation plan includes vegetation plantings and/or hydroseeding, the vegetation ~~The mitigation plantings~~ shall be monitored annually for success, health, and vigor as specified in Attachment B~~C~~, Tables 1 and 2.

c. Plantings in the offsite mitigation area(s) shall be monitored for a minimum period of five years for grasses, forbs, and shrubs, and ten years for trees, until the success criteria in the MMP are achieved.

d. The Discharger shall maintain invasive plant species in the Project site at a maximum cover of no more than 10 percent based on the percent cover of, specifically, "highly" invasive plant species as defined by the California Invasive Plant Council. In addition, the Discharger shall apply the guidance in Attachment B ~~C~~, or comparable standards, for revegetation of on-site grasses, shrubs and trees specified in the Planting Plan.

~~d.~~e. In addition to performance standards and success criteria for vegetation, the MMP shall identify other appropriate performance standards and success criteria based on the mitigation plan, habitat features, and other factors, as appropriate to the proposed mitigation project(s).

~~e.~~f. The MMP shall incorporate the reporting requirements stipulated in Provisions 27 through 30.

~~f. The Discharger shall apply the guidance in Attachment C, or comparable standards, for revegetation of on-site grasses, shrubs and trees specified in the Planting Plan.~~

~~g. **Mitigation Reporting Requirements.** The MMP shall incorporate the reporting requirements stipulated in Provisions 24 through 27.~~

~~21.~~19. **EIR Mitigation Measures.** To mitigate the significant impacts identified in the EIR over which the Water Board has authority, the Discharger shall implement those mitigation measures, which are summarized below and described in Finding 25:

- Replacing any native trees and shrubs of certain sizes the Project will remove during construction;
- Maintaining a buffer zone around riparian trees during construction;
- Replacing non-native and ruderal vegetation with native grass and forbs;
- Conducting pre-construction aquatic life and wildlife surveys; protecting nesting birds; and relocating wildlife and aquatic life as necessary during construction activities; and conducting pre-construction awareness training for detection and avoidance of wildlife and aquatic species;

- Preparing and implementing Rain Event Action Plans;
- Preparing and implementing a creek dewatering plan;
- Collecting and treating potentially contaminated groundwater encountered to meet the VOC and Fuels General Permit standards; and
- Preventing hazardous materials and wastes from being entrained in creek flow.

~~22.~~20. **~~Notification and~~ Log for Impacts.** The Discharger ~~shall notify the Water Board prior to the commencement of ground disturbing activities, with details regarding the construction schedule, in order to allow staff the opportunity to be present onsite during construction, and to answer any public inquiries that may arise regarding the Project. In addition, the Discharger~~ shall maintain an Impacts Log to track Project activities including the start dates of impacts to waters of the State and the associated mitigation activities. The Discharger shall make the Impacts Log available for review by the Executive Officer upon request. The calendar shall include, but not be limited to, the start dates of the following Project milestones:

a. Channel excavation and grading;

b. Creek dewatering;

c. Groundwater management;

d. Hydroseeding;

e. Tree and shrub planting; and

f. Offsite mitigation construction elements (as described in the MMP requirements (Finding 21; Provision 15~~17~~)).

Reporting Requirements

~~23.~~21. All reports pursuant to these Provisions shall be prepared under the supervision of suitable professionals registered in the State of California.

~~24.~~22. The Discharger shall report any water quality monitoring data that are not in compliance with Provision 15 ~~11~~ (a non-compliance event) to the Water Board within 24 hours via telephone and shall follow up with a written report within 14 days. The written report shall provide the following:

a. Discharge and receiving water measurements for the water quality parameter(s) collected during the non-compliance event;

b. The location, duration, and likely cause of the non-compliance event;

c. All actions taken to remedy non-compliance immediately after identifying the non-compliance event and to mitigate for any adverse impacts caused or contributed to by the non-compliance event; and

d. All actions taken to prevent a non-compliance event in the future.

~~25.~~23. **Geomorphology Report**. The Discharger shall submit a report pursuant to Provision ~~15~~19, by January 31 after the fifth of five measurable flood events at or exceeding the estimated 2 year flood event, and, at least one flood event at or exceeding the estimated 10 year flood event, occurs. If a ten year event does not occur within ten ~~years~~ water years (i.e., October 1 through September 30) after construction is completed, the Discharger shall submit the Geomorphology Report, due by January 31 of the eleventh water year, based on data available at the end of the tenth water year.

~~26.~~24. **California EcoAtlas**. The Discharger shall use the standard California Wetlands Form to provide Project information describing impacts and restoration measures no later than 14 days from the date of the final MMP approved pursuant to Provision 29~~16~~. An electronic copy of the form can be downloaded at: http://www.waterboards.ca.gov/sanfranciscobay/certs.shtml. The completed form shall be submitted electronically to habitatdata@waterboards.ca.gov or shall be submitted as a hard copy to both (1) the Regional Water Board (see the address on the letterhead), to the attention of EcoAtlas, and (2) the San Francisco Estuary Institute, 4911 Central Avenue, Richmond, CA 94804, to the attention of EcoAtlas.

~~27.~~25. **Mitigation Monitoring Reports**. The Discharger shall submit annual reports, no later than January 31 following each year in which mitigation is monitored, during each year of the first five years of the initial ten year monitoring period. After the first five years, the Discharger shall submit reports in years seven, nine, and ten. The reports shall summarize each year's monitoring results, including the need for any remedial actions (e.g., re-planting or bank stabilization). The annual report shall compare data to previous years and describe progress towards meeting final success criteria. The final year's report (e.g., the year ~~ten~~ 10 report if the MMP spans 10 years) shall consist of the annual data from the final year (e.g., from year 10 for an MMP that spans 10 years), in addition to a comprehensive final report. Annual reports and the comprehensive final report shall include photographs from the photo-documentation points specified in Provision 30~~29~~. The final report shall document whether the Project site and offsite mitigation area(s) meet the final performance criteria of the MMP. If the criteria are not met, the report shall identify remedial measures to be undertaken, including extension of the monitoring period until the criteria are met.

Success of the mitigation program shall be determined by the Executive Officer after all the minimum success criteria in MMP are achieved. All Annual Reports shall include photographs, special-status species monitoring, and all other information, as appropriate.

~~28.~~26. The Discharger shall continue to submit Annual Reports after the designated monitoring period in the MMP as necessary (e.g., after the first ten years if the MMP spans 10 years), ~~as necessary ,~~ until the sites have met their performance standards and final success criteria, and the Executive Officer has accepted a notice of mitigation completion (see Provision 29~~27~~) for each mitigation site.

~~29.~~27. **EIR Mitigation Measure Implementation**. The Discharger shall submit annual reports to report on implementation of EIR mitigation measures pursuant to Provision 29~~18~~. The Discharger shall submit the first annual report no later than January 31 following initiation of construction, and shall continue annual reporting until one year after completion of channel construction. Annual reporting to meet this requirement may be a section within the MMP annual reports required under Provision 27, with clearly-defined section headings to identify the EIR mitigation annual data and information.

28. **Notice of Mitigation Completion**. When the Discharger has determined that a mitigation area achieved the performance standards and final success criteria specified in the MMP, it shall submit a notice of mitigation completion. This notice shall include a status report on the implementation of the long-term maintenance and management portion of the MMP and a description of the status of the mitigation component that has been determined to be successful. After acceptance of the notice of mitigation completion in writing by the Executive Officer, the Discharger's submittal of mitigation monitoring reports for that mitigation component is no longer required.

~~30.~~29. **Photo-documentation Report**. To document channel and bank conditions immediately upstream and downstream of the Project site, as well as the Project site itself, the Discharger shall establish a minimum of 12 photo-documentation sites at the Project site, and additional sites sufficient to document each bridge crossing in the Project. These photo-documentation sites shall be selected to document channel and bank conditions immediately upstream and downstream of each site, as well as the Project reach. The Discharger shall prepare site maps with the photo-documentation points clearly marked. Prior to implementing the Project, the Discharger shall photographically document the condition of each site. Following implementation of the Project, the Discharger shall photographically document the immediate post-construction condition of the sites and submit a report to the Water Board including the pre-construction photographs, the post-construction photographs, and the map with the locations of the photo-documentation points. This report shall be submitted to the Water Board along with the as-built plans (Provision 31~~28~~).

~~31.~~30. **As-built Plans.** Within 180 days of construction completion in the Project site, the Discharger shall submit an as-built report of the Project in both digital format and hard copy of at least 11-inches by 17-inches to the Water Board. The as-built report shall be submitted either by email to staff or by uploading it to the Water Board's FTP internet site. Instructions for uploading documents to the FTP internet site are available at http://www.waterboards.ca.gov/sanfranciscobay/publications_forms/documents/FTP_Discharger_Guide-12-2010.pdf. If the as-built report is submitted by uploading it to the FTP

internet site, the Applicant shall notify the Water Board case manager via email. For purposes of this Order, the definition for construction completion shall be the final date when construction contractors (excluding contractors for revegetation activities) are in the Project site. ~~Within 8 weeks of completing Project construction activities, including restoration and replanting of the temporarily impacted locations, the Discharger shall submit an as-built report and plan to the Water Board by either uploading it to the California Wetlands Portal website at http://www.californiawetlands.net/tracker/ba/list or via mail. The report shall provide a revised Project plan clearly identifying and illustrating the location of temporary impacts in waters of the State.~~

~~32. **Photo-documentation Report**. To document channel and bank conditions immediately upstream and downstream of the Project site, as well as the Project site itself, the Discharger shall establish a minimum of 12 photo-documentation sites at the Project site, and additional sites sufficient to document each bridge crossing in the Project. These photo-documentation sites shall be selected to document channel and bank conditions immediately upstream and downstream of each site, as well as the Project reach. The Discharger shall prepare site maps with the photo-documentation points clearly marked. Prior to implementing the Project, the Discharger shall photographically document the condition of each site. Following implementation of the Project, the Discharger shall photographically document the immediate post-construction condition of the sites and submit a report to the Water Board including the pre-construction photographs, the post-construction photographs, and the map with the locations of the photo-documentation points. This report shall be submitted to the Water Board along with the as-built plans (Provision 28).~~

~~33.~~31. **Project Completion Report**. The Discharger shall notify the Water Board by electronic mail or by hard copy of Project completion upon transfer of the Project to the local sponsor. This notification, known as a Project Completion Report, shall consist of the following information: (a) the CIWQS Place ID for this Project (i.e., CWIQS Place ID 818597); (b) the date Project construction activities were completed; and (c) the completion date of mitigation plantings. Project construction activities for the purpose of this condition are defined as activities associated with construction of the Project, establishing native grass vegetation on the banks, and planting trees and shrubs as per the Planting Plan. The Project Completion Report shall be submitted to Susan Glendening at Susan.Glendening@waterboards.ca.gov, or the current Water Board staff member assigned to the Project.

~~34.~~32. **Final Operations and Maintenance Manual**. The Applicant shall submit the final Project Operations and Maintenance Manual, as referenced in Finding 16, to the Water Board upon transfer of the Project to the local sponsor.

Other Requirements

~~35.~~33. The Discharger shall immediately notify the Water Board by telephone whenever an adverse condition occurs as a result of this discharge. Such a condition includes, but is not limited to, a violation of the provisions of this Order, a significant spill of petroleum

products or toxic chemicals, or damage to control facilities that would cause noncompliance. A written notification of the adverse condition shall be submitted to the Water Board within two weeks of occurrence. The written notification shall identify the adverse condition, describe the actions necessary to remedy the condition, and specify a timetable, subject to the modifications of the Water Board, for the remedial actions. The Discharger shall notify the Water Board in writing or via electronic mail, at least 30 days prior to actual start dates for each Project component (i.e., prior to the start of grading or other construction activity for any Project component, including the creek mitigation components).

34. The Discharger shall at all times fully comply with the engineering plans, specifications, and technical reports submitted with the Project materials for the Corps' CWA section 401 Water Quality Certification application and the plans and reports required by this Order (e.g., Provisions 12, 13, 14, 16, 19, and 20), which, together, serve as the basis for the Project description this Order covers.

Please be advised that failure to implement the Project as proposed is a violation of this Certification. Failure to comply with any condition of this Certification shall constitute a violation of the CWA. Any such Certification previously granted shall immediately be revoked and any or all discharges shall cease. The Applicant and/or Discharger may then be subject to injunctive release, including stop work and/or restoration orders.

~~36.~~35. The Discharger shall be responsible for work conducted by its consultants, contractors, and subcontractors.

~~37.~~36. The Discharger is considered to have full responsibility for correcting any and all problems that arise in the event of a failure that results in an unauthorized release of waste or wastewater. The discharge of any hazardous, designated or non-hazardous waste as defined in Title 23, Division 3, Chapter 15 of the California Administrative Code, shall be disposed of in accordance with applicable State and federal regulations.

~~38.~~37. The Discharger shall remove and relocate any wastes that are discharged at any sites in violation of this Order.

~~39.~~38. The Discharger shall maintain a copy of this Order at the Project site at all times during construction of the Project and made available to Water Board staff upon request. All foremen and other employees responsible for overseeing that construction of the Project complies with permitting requirements shall have access to and be familiar with the Order requirements.~~so as to be available at all times to site operating personnel and agencies.~~

~~40.~~39. The Discharger shall permit the Water Board or its authorized representatives at all times, upon presentation of credentials:

a. Entry onto Project premises, including all areas on which wetland or waters fill or mitigation of waters of the State, is located or in which records are kept.

b. Access to copy any records required to be kept under the terms and provisions of this Order.

c. Inspection of any treatment equipment, monitoring equipment, or monitoring method required by this Order.

d. Sampling of any discharge or surface water covered by this Order.

~~41.~~40. This Order does not authorize commission of any act causing injury to the property of another or of the public; does not convey any property rights; does not remove liability under federal, State, or local laws, regulations or rules of other programs and agencies, nor does this Order authorize the discharge of wastes without appropriate permits from other agencies or organizations.

~~42.~~41. The Discharger shall timely pay all fees associated with this Order. The fee amount for the Waste Discharge Requirements of this Order shall be in accordance with the current fee schedule, per California Code of Regulations, Division 3, Chapter 9, Article 1, section 2200(a)(3). The fee payment shall indicate the Order number, the CIWQS Place ID no. 818597, the Regulatory Measure ID no. 403119, and the applicable season. The Water Board understands, based on our meetings with the Corps and the District, that the District is responsible for the fee.

42. This Order action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to section 13330 of the CWC and 23 CCR section 3867.

43. The Water Board may add to or modify the conditions of this Order, as appropriate, to implement any new or revised water quality standards and implementation plans adopted and approved pursuant to the CWC or CWA section 303 or in response to new information concerning the conditions of the Project. Additionally, the Water Board reserves the right to suspend, cancel, or modify and reissue this Certification, after providing notice to the Corps, if the Water Board determines that the Project fails to comply with any of the conditions of this Certification, or when necessary to implement any new or revised water quality standards and implementation plans adopted or approved pursuant to the CWC or CWA section 303 (33 U.S.C. § 1313).

44. This Order action is not intended and shall not be construed to apply to any discharge from any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent Order Project materials was filed pursuant to 23 CCR subsection 3855(b) and that Project materials specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.

45. The Water Board may consider rescission of this Order upon Project completion and the Executive Officer's acceptance of notices of completion of mitigation for all mitigation,

creation, and enhancement projects required or otherwise permitted now or subsequently under this Order.

This Order applies to the Project as proposed in the Project materials. Failure to implement the Project as proposed and as authorized herein is a violation of this Order. Violation or threatened violation of the Provisions of this Order is subject to any remedies, penalties, process or sanctions as provided for under applicable State or federal law, including administrative civil liability pursuant to CWC section 13350. Failure to meet any Provision of this Order may subject the Discharger to civil liability imposed by the Water Board to a maximum of $5,000 per day of violation or $10 for each gallon of waste discharged in violation of the Order. Also, any requirement for a report made as a Provision to this Order (e.g., Provisions 24 through 27, and 29 through 34) or technical or monitoring reports the Water Board requests in response to a suspected violation of the s of this Order, is a formal requirement pursuant to CWC Section 13267, and failure to submit, late or inadequate submittal, or falsification of such technical report(s) is also subject to civil liability pursuant to CWC Section 13268.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on _____ .

_____
BRUCE H. WOLFE
Executive Officer

ATTACHMENTS:

Attachment A Figures
1 – Upper Berryessa Creek Project Location and Vicinity
2 – Project Elements, Calaveras Boulevard to Ames Avenue
3 – Project Elements, Ames Avenue to Interstate 680

Attachment B ~~Water Board Letter to Corps dated August 14, 2015, Regarding Groundwater Management Plan Requirement~~

~~**Attachment C**~~ Guidelines for Vegetation Performance Standards and Criteria in Mitigation Sites

Attachment A

Figure 1 – Project Location and Vicinity

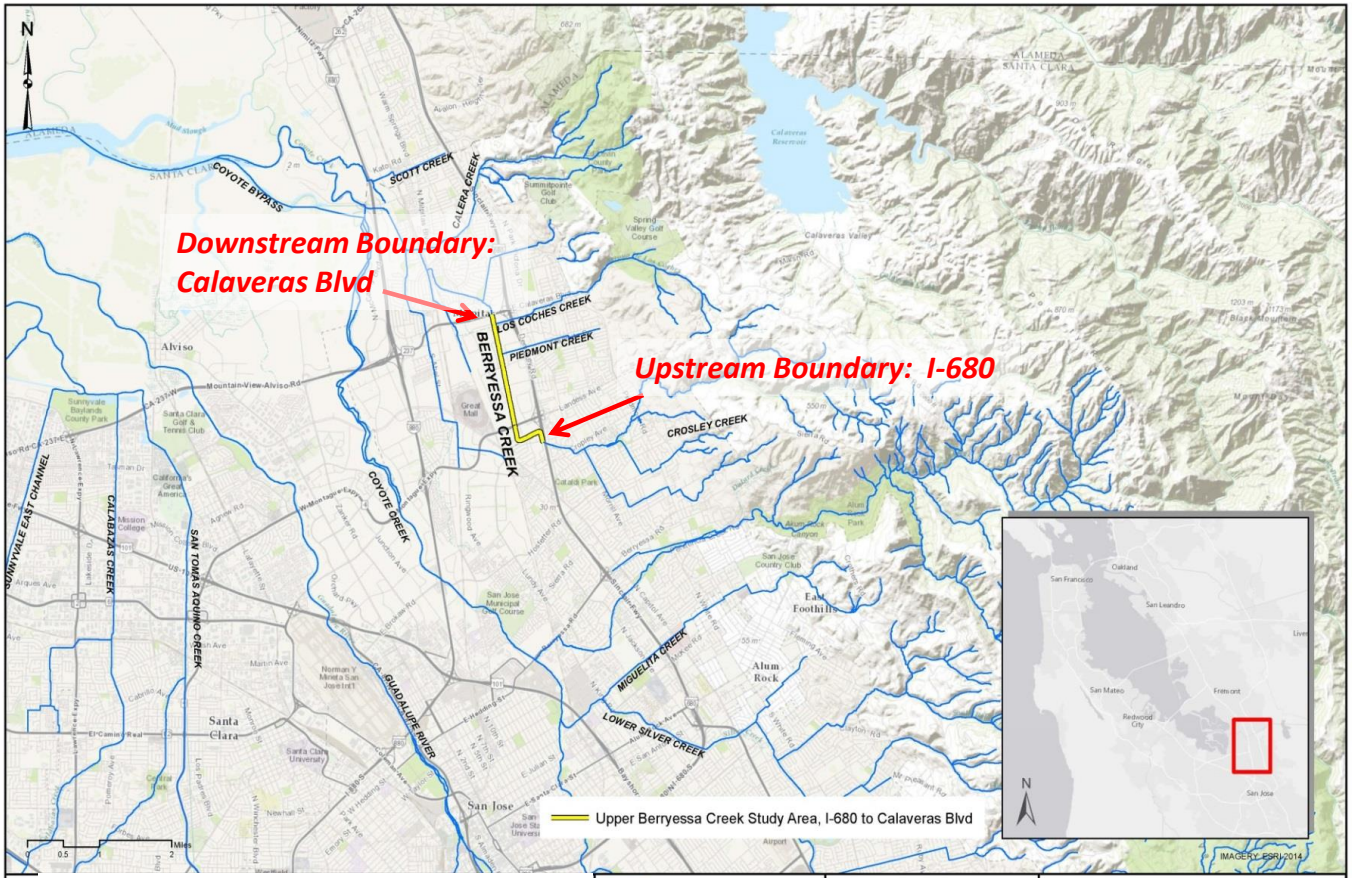


FIGURE 1 –Project Location & Vicinity

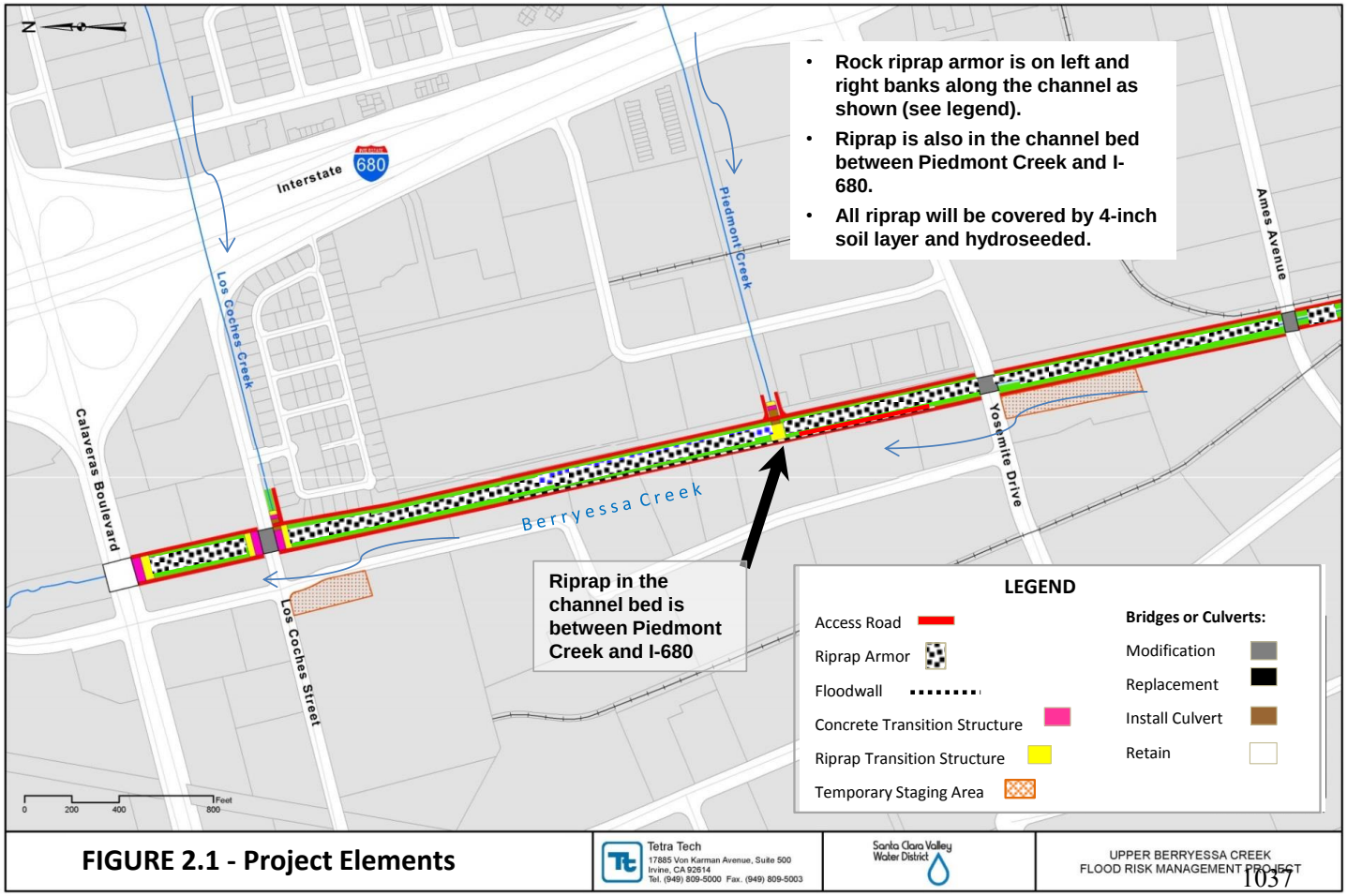
Tetra Tech
17885 Von Karman Avenue, Suite 500
Irvine, CA 92614
Tel. (949) 809-5000 Fax. (949) 809-5003

Santa Clara Valley Water District

UPPER BERRYESSA CREEK
FLOOD RISK MANAGEMENT PROJECT

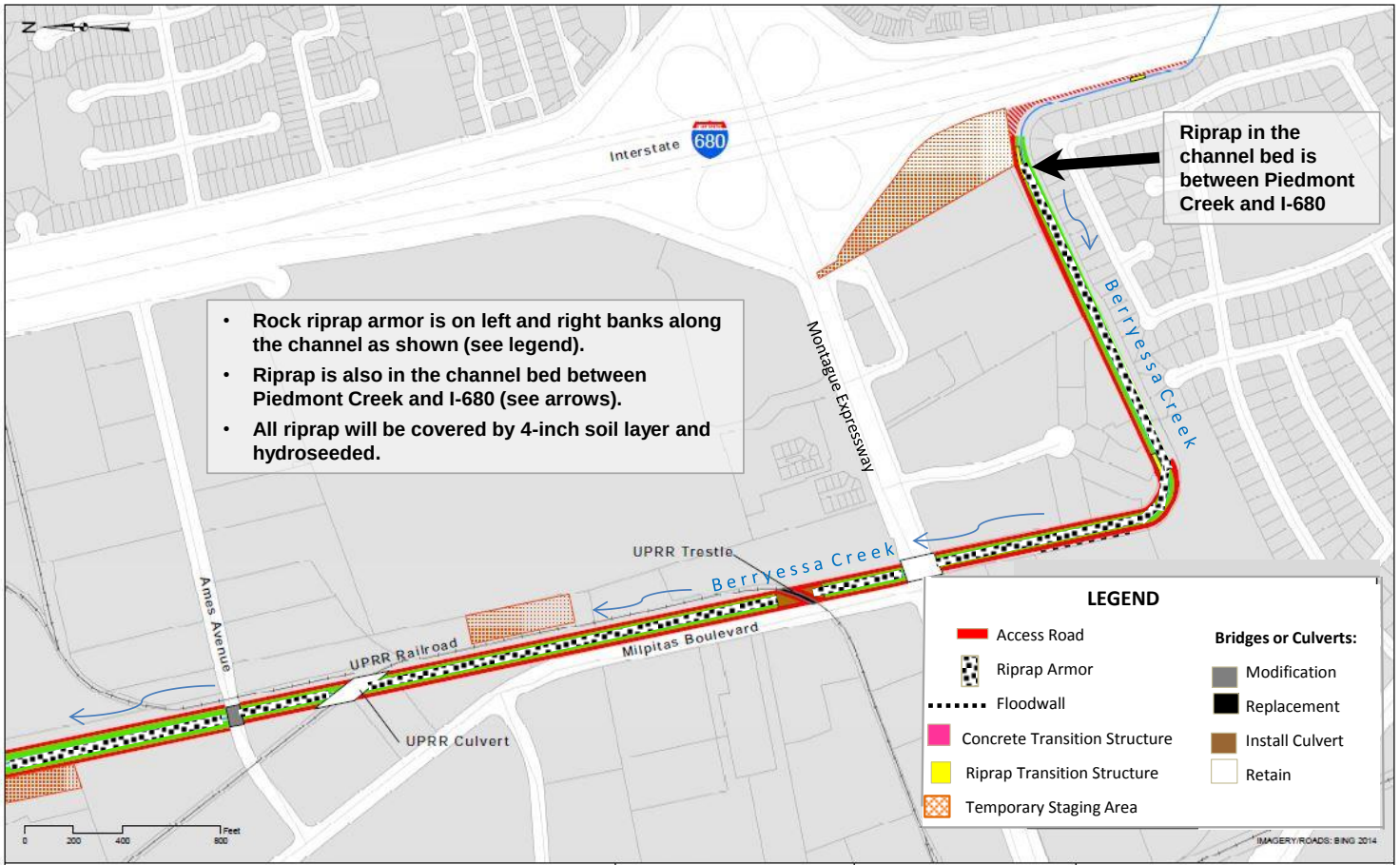
Attachment A

Figure 2 – Project Elements, Calaveras Boulevard to Ames Avenue



Attachment A

Figure 3 – Project Elements, Ames Avenue to Interstate 680



ATTACHMENT ~~C~~ B
Vegetation Performance and Success Criteria

Performance and success criteria for the Project mitigation plantings are outlined in Table 1. The overall health and vigor of all plantings will be evaluated each year in the field using the ratings listed in Table 2. The criteria include annual or semi-annual plant survival success criteria of no less than five years for herbaceous species, and no less than ten years for woody species (i.e. trees and shrubs).

a. A vegetation monitoring plan to track whether the plantings meet success criteria; replanting to replace unsuccessful growth; and other steps to ensure establishment, vigor, and health in mitigation plantings and mitigation success.

b. The mitigation for tree and shrub removals shall be consistent with the tree removal ordinances or similar requirements in the County of Santa Clara and cities of Milpitas and San Jose, at a minimum; and shall meet the requirements of the U.S. Fish and Wildlife Service Coordination Act Report for the Project dated April 26, 2013.

c. The Discharger shall water all riparian and wetland plantings for a minimum of 3 years. The Discharger shall continue to water all plantings during all projected dry water years (defined as 75 percent of average annual rainfall) that occur during the first 10 years after construction. Any replacement plants (see (e) above) shall be watered for a minimum of 3 years.

d. The Discharger shall follow the best management practices for preventing introduction and spreading of plant pathogens in mitigation areas, in accordance with the Planting Plan.

Table 1. Performance and Minimum Success Criteria ~~for On-site and~~ Off-site Mitigation Plantings Habitat Type

Habitat Type	Criteria
Native ~~grass hydroseeded areas; and riparian~~ herbaceous and forbs communities – percent cover native species and non-native species	Year 1: 50 percent cover Year 3: 75 percent cover Year 5: 85 percent cover • Post-planting shall meet 85 percent cover after five years • Invasive plant species at a maximum cover of no more than 10% based on, specifically, "highly" invasive plant species as defined by the California Invasive Plant Council. • Health and vigor monitoring pursuant to Table ~~5~~ 2.
~~Wetland hydroseed plant mix in Upper Berryessa Creek between Calaveras Boulevard and Piedmont Creek total~~	~~Year 3: Total area no less than 0.25 acres~~ ~~Year 5: Total area no less than 0.0.68 acres Annual health and vigor monitoring pursuant to Table 5.~~

Riparian plantings including trees and shrubs – canopy cover success criteria	• Performance standards and success criteria shall be consistent with the District's Stream Maintenance Program Manual, July 21, 2014, section 11.3.2. • In addition, shrubs and trees shall be monitored for an additional 5 years beyond the first 5 years following initial planting. Monitoring shall be conducted in years 6 through 10, but annual reporting shall only be in years 7, 9, and 10. Each annual report shall cover the monitoring for the previous year or two years of monitoring conducted, in addition to the cumulative monitoring results at each monitoring milestone. • Annual health and vigor monitoring pursuant to Table ~~5~~ 2.
Seasonal wetland communities (applicable the off-site mitigation area includes seasonal wetland habitat)	Year 1: 5 percent or greater absolute cover of planted and natural recruitment of wetland species. No more than 5 percent absolute cover of target invasive plants. No large unvegetated bare spots (greater than 25 percent) or erosional areas, no evidence of oversaturation or permanent inundation. Year 2: 20 percent or greater absolute cover of planted and natural recruitment of wetland species. No more than 5 percent absolute cover of target invasive plants. No large unvegetated bare spots (greater than 25 percent) or erosional areas, no evidence of oversaturation or permanent inundation. Year 3: 45percent or greater absolute cover of planted and natural recruitment of wetland species. No more than 5 percent absolute cover of target invasive plants. No large unvegetated bare spots (greater than 25 percent) or erosional areas, no evidence of oversaturation or permanent inundation. Year 4: 60 percent or greater absolute cover of planted and natural recruitment of wetland species. No more than 5 percent absolute cover of target invasive plants. No large unvegetated bare spots (greater than 25 percent) or erosional areas, no evidence of oversaturation or permanent inundation. Year 5: 70 percent or greater absolute cover of planted and natural recruitment of wetland species. • Invasive plant species at a maximum cover of no more than 10% based on, specifically, "highly" invasive plant species as defined by the California Invasive Plant Council. • ~~No more than 5 percent absolute cover of target invasive plants.~~

	• No large unvegetated bare spots (greater than 20 percent) or erosional areas, no evidence of oversaturation or permanent inundation. • Annual health and vigor monitoring pursuant to Table ~~5~~ 2.

Table 2. Health and Vigor Ratings

5	Excellent – less than 5% of the quadrat affected by mortality or cumulative symptoms of poor health, for example, disease, insect damage, mechanical damage, and poor Excellent – less than 5% of the quadrat affected by mortality or cumulative;
4	Very good – 5 to 25% of quadrat affected by mortality or cumulative symptoms of poor health;
3	Good – 25 to 50% of quadrat affected;
2	Fair – 50 to 75% of quadrat affected;
1	Poor – greater than 75% of quadrat affected; or
0	Dead – no living plants in quadrat

EXHIBIT 10

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

RESPONSE TO COMMENTS

on the Tentative Orders for the
Upper Berryessa Creek Flood Risk Management Project
U.S. Army Corps of Engineers and Santa Clara Valley Water District
Milpitas and San Jose, Santa Clara County

The Water Board received written comments from the following parties on the tentative order circulated for public comment on August 19, 2016:

1. U.S. Army Corps of Engineers (Corps)
2. Santa Clara Valley Water District (District)
3. Guadalupe-Coyote Resource Conservation District (GCRCD)
4. Citizens Committee to Complete the Refuge (C), Audubon Society (A), and San Francisco Bay Keeper (B) (collectively CAB)

In response to the comments received, we revised the tentative order and circulated the revision on November 2, 2016. Water Board staff solicited comments on *only* the revisions in the revised tentative order and received comments from the following parties:

1. U.S. Army Corps of Engineers (Corps)
2. Santa Clara Valley Water District (District)
3. Citizens Committee to Complete the Refuge (C), Audubon Society (A), and San Francisco Bay Keeper (B) (collectively CAB)

Introduction

This Response to Comments uses a table, which consists of a summary of each comment and Water Board staff's response, to address specific comments received during both public comment periods. Note that comments received during the second comment period start with "RTO" (for "revised tentative order"). In addition, below is a summary of recurring concerns and overarching themes raised in the comments and our general responses to them.

Overall, the Revised Tentative Order's (RTO's) requirements are well-founded in the Water Board's mandate to protect water quality, in California Water Code requirements, and in associated policy. The RTO is consistent with the Water Board's mandate to protect existing and potential beneficial uses of State waters; accordingly, it is also consistent with the State's anti-degradation policy, while also ensuring no net loss and a long-term net gain in the functions, values, and extent of wetlands, which includes riverine wetlands of the type being impacted by the Upper Berryessa Creek Flood Risk Management Project (Project). The RTO is also consistent with existing Water Board orders for similar flood control projects co-sponsored by the Corps and a local, non-federal sponsor, including the District's Upper Guadalupe Flood Control Project and the Napa River Flood Control Project.

Summary

General Comment 1: Regulatory Authorities for Waste Discharge Requirements

The Corps and District raised a series of regulatory concerns, including whether the tentative order is necessary, noting that the Executive Officer had previously issued water quality certification for the Project to the Corps on March 14, 2016 (Certification). They questioned the Water Board's requirement to name both parties as the discharger in the order, and whether the Board has the authority to consider the order or require compensatory mitigation for Project impacts. The Corps also contends that the waste discharge requirements (WDRs) are not applicable to the Corps because Congress has not waived the federal government's sovereign immunity for compliance with State regulations such as the State's Porter-Cologne Water Quality Control Act.

Response: We issued the Certification solely to the Corps in March 2016 specifically to facilitate the Project's tight construction schedule to meet the flood risk management criteria necessary for the scheduled public opening of the new $2.3-billion BART expansion project in December 2017. The Water Board's adoption of the RTO would be the second part of a two-phase permitting approach that we developed collaboratively with the Corps and District in late 2015 to ensure that the Corps could meet the Project's tight construction schedule. The first part was issuance of the Certification. In the Response to Comments, we provide extensive information to show the WDRs are necessary and appropriate for regulating the Project and its impacts, including descriptions of the Project's impacts to about 9.8 acres of State waters, due to the Project's discharges of dredge and fill materials in State waters and the Project's permanent impacts that will restrict the existing and potential beneficial uses of these waters.

It is not typical for the Water Board to use a two-phase permitting approach, where Certification is issued followed by the Board's consideration of more-detailed WDRs. However, the Board initially used that approach in 2001 to allow an important public safety project, the Eastern Span of the Bay Bridge seismic safety project, to proceed with contracting and to meet a tight construction schedule while certain project details were being finalized. For the Upper Berryessa Project, the time necessary for development of WDRs would have stalled the construction start date if we had not first issued the Certification.

In response to comments received during the first public comment period, we modified the initial tentative order to include a reissued Certification for the Project in addition to providing WDRs. This is intended to provide an efficient single-permit approach that avoids confusion about potentially similar requirements in separate Certification and WDRs orders, while recognizing the Corps' and District's joint responsibility for the Project. We also added information to clarify our understanding of which of the two dischargers is responsible for different tasks under the RTO.

Combining the Certification and WDRs into a single Board order also addresses the Corps' concerns about sovereign immunity. In the Response to Comments, we point out specific regulations, as well as the plain language of the federal Clean Water Act, that require the Corps to comply with local water quality standards including those of the Clean Water Act, the State's Porter-Cologne Act, and this Water Board's Basin Plan.

General Comment 2: Compensatory Mitigation Requirement

a. California Environmental Quality Act (CEQA) Mitigation Measures. *The District commented that the impacts identified in the Environmental Impact Report (EIR) pursuant to CEQA are either less-than-significant or have been reduced to less-than-significant levels through mitigation measures in the EIR, thereby making the WDRs' requirements for compensatory mitigation unnecessary. Similarly, the Corps commented that the Environmental Impact Statement pursuant to the federal National Environmental Protection Act found the project would not have lasting impacts in the aquatic habitat.*

Response: The Response to Comments describes the Project's impacts in detail, presents the reasons why the EIR mitigation measures are not adequate, and provides the regulations authorizing the Water Board to require additional mitigation under CEQA. We note that based on our discussions with the Corps and District over the past year, any compensatory mitigation will need to occur offsite due to constraints imposed by the Corps within the Project reach.

b. Mitigation Plan is Not Yet Developed. *In general, GCRCD and CAB expressed concern about the Project's impacts and supported the order's requirement for compensatory mitigation. However, they requested that the order incorporate additional detail regarding mitigation requirements.*

Response: We have not yet received a compensatory mitigation proposal from the District, although one would be required by the RTO due to the Project's temporary and permanent impacts. These permanent impacts include lining of more than 10,000 linear feet of Upper Berryessa Creek with rock riprap under a thin layer of soil. Because we have not received a specific plan, the RTO retains the requirement to submit and implement a mitigation and monitoring plan that achieves certain amounts of mitigation within a specified timeframe. Our intent is to continue to work with the District, including by considering watershed and creek restoration projects that it is already planning, to identify work that would satisfy mitigation requirements in the RTO while, ideally, also meeting the District's stewardship and restoration goals. In addition, the public will have opportunity to comment on a draft plan before the Executive Officer accepts the plan.

c. Jurisdictional Wetlands. *The Corps and District commented that the Project does not include jurisdictional wetlands, so the State No Net Loss Policy and Basin Plan's Wetland Fill Policy are not applicable to the Project, and the Water Board's assertion that mitigation is required for the Project's impacts to wetlands is invalid.*

Response: The Corps and District have applied a limited definition of wetlands, based on the Corps' 1987 manual for defining a wetland. In the Response to Comments, we explain that creek waters are riverine wetlands that are subject to the two policies. Further, mitigation for impacts to waters of the State is required to comply with the State's anti-degradation policy regardless of whether the waters are classified as wetlands or not. Accordingly, the Water Board is authorized to require compensatory mitigation.

General Comment 3: Adoption of the WDRs Would Jeopardize Completion of the Project

The Corps and District commented on potential practical effects of adopting the order, such as that it could delay Project construction, that certain timelines were impractical, and that the order did not clearly identify whether the District or Corps was responsible for a particular Project element. They also identified areas where additional information had been submitted that was not necessarily reflected in the order.

Response: In discussions with District and Corps staff subsequent to receiving their comment letters, neither we nor District or Corps staff have been able to identify aspects of the RTO that would significantly delay the construction timeline. The Project is now under construction, with an anticipated completion date in December 2017. The intent of the two-phase permitting approach, mentioned under General Comment 1, has been to facilitate timely construction of this important public safety project while ensuring compliance with State water quality standards. The RTO has been updated to remove requirements for plans and information that has been submitted since issuance of the Certification in March 2016 and to revise submittal dates consistent with information submitted by the Corps and District.

General Comment 4: The WDR is an Unfunded Mandate

The District commented that the WDRs are an unfunded mandate, and it is not responsible for any fees for the WDRs.

Response: In the Response to Comments, we explain that the RTO's requirements implement the federal Clean Water Act, so it is not an unfunded mandate. Further, in our discussions with the District, we have expressed our ability to be flexible in accepting a compensatory mitigation project that is already part of the District's capital improvement plans, which may not require the District to budget additional funds. The District is responsible under the Water Code to pay fees due under the RTO.

General Comment 5: CEQA Process for Mitigation Would be the Water Board's Responsibility

The District commented that the Water Board would be responsible for any CEQA requirements stemming from the compensatory mitigation requirements in the order.

Response: A discussion about environmental review for compensatory mitigation is premature since a mitigation project has not yet been proposed. Further, the District is already serving as lead agency on projects that the Water Board may be able to accept as compensatory mitigation. These projects are already part of the District's capital improvement plans or will be considered for the District's One Water Plan. It is likely the Water Board's CEQA role for such projects would be as a responsible agency.

General Comment 6: Sediment Transport

The Corps and District assert that the rock armoring of channel beds and banks is justified due to their assessment of a high erosion potential of the creek bed and banks within the project reach. Sediment transport processes in the reach are a significant issue because one of the Corps' stated design goals for the project is to reduce sedimentation and reduce maintenance needs for sedimentation.

Response: Water Board staff has interpreted the geomorphologic processes in the Project reach differently from the Corps and District design team. We assert that the Project is a net depositional system, meaning that it is one where sediment tends to deposit over time. Further, we assert that sediment deposition will increase as compared to the current channel because the Project will create a wider channel cross section with relatively slower flows, which have less ability to convey sediment. It is our understanding that the Corps' operation and maintenance (O&M) guidelines will require aggraded sediment to be removed once it reaches a specified depth. This is likely to result in repeated disturbance of and continual impacts to the creek over the Project's life. It is our intention to validate the understanding of sediment transport processes within the Project through the RTO's requirement to develop and implement an Adaptive Management Plan. That plan will guide decisions about future O&M because the design data alone are insufficient to fully inform O&M. The RTO's requirement for an Adaptive Management Plan includes monitoring to inform how to conduct O&M activities with the least amount of impacts to the creek, which is consistent with the process in the District's Stream Maintenance Program to develop maintenance guidelines for a creek. In addition, the RTO requires the O&M manual to be developed in an open process with interagency collaboration and opportunities for public comment. An interagency review process for a flood control project's O&M manual is not a novel idea, as Water Board staff and other agencies are currently participating in the development of the O&M manual for the Napa River flood control project.

Comments on Revised Tentative Order

General Comment 7: Rescission of the Existing Water Quality Certification in Revised Tentative Order

Corps staff disputed the Water Board's authority to rescind the existing Certification and replace it with the WDRs and a reissued Certification. They stated that there have been no changes in the circumstances, standards, or plans for the Project, thus the triggers for rescission under either the Clean Water Act codified under U.S. Code, section 1341(a)(2)), or the Porter-Cologne Act, section 13381, have not occurred.

Response: The RTO would rescind the Certification, and reissue it as a joint certification and WDRs order, in response to the Corps' and District's comments on the initial tentative order that separate WDRs and water quality certification would result in duplicative permit coverage for the same project. However, Corps and District management had previously agreed to a two-phase permitting process that included issuance of the separate approvals. Thus, the circumstances under which we issued the Certification to the Corps have changed.

In December 2015, the Water Board was urged by the Corps and District to issue a Certification for the Project as quickly as possible to prevent any delay in the Project's construction. We agreed to issue the Certification as the first part of a two-phase permitting approach that we developed together with the Corps and District to resolve the permitting impasse in effect until December 2015

(see General Comment 1). Now that the Certification is in place and construction underway, Corps and District staff are opposing the second part of the two-phase permitting approach. However, the issuance of the Certification would not have been feasible without the corresponding step of issuance of WDRs for the Project, as indicated several times in the Certification itself.

General Comment 8: Sediment Transport

District and Water Board staffs have had a series of discussions regarding sediment transport through the project reach, including via the exchange of technical memoranda Water Board staff believes the reach is depositional. By contrast, District staff contends that the Project reach is net erosional.

Response: This issue is significant because the Corps' future operation and maintenance requirements for the Project are likely to require removal of sediment that has accumulated to a certain depth, and restoration of the original design cross section, in order to maintain flood transport capacity over time. The greater the rate of sediment deposition and accumulation in the Project reach, the more frequent the need for sediment removal, along with its concomitant impacts to water quality and beneficial uses. Water Board staff evaluated four lines of evidence and found that the Project's design is likely to increase existing rates of sedimentation in the Project reach by widening the channel. This channel widening will reduce flow velocities and reduce associated transport of sediment from upstream of the Project reach through it. Revisions to the Project's design (e.g., with a low flow channel and associated floodplain benches) could have helped address this issue, but the Corps determined such revisions were not feasible under the constraints of the Corps' project planning process. As a result, the effects will be evaluated and addressed through the RTO's requirements for an Adaptive Management Plan and compensatory mitigation plan.

Staff-Initiated Changes

Water Board staff made the following changes in the RTO to more accurately describe the Project or clarify the RTO's requirements. We also made minor editorial changes in wording, punctuation, and formatting, though such edits are not itemized in the list below:

Staff-Initiated Change 1: In Finding 2, we corrected the flooding frequency of the creek's flow overtopping the banks from "…every four to 25 years" to "… once every 10 to 20 years." This change reflects information in the EIR, section 2.3.

Staff-Initiated Change 2: The enumeration in the publically-noticed RTO was incorrect due to an editing error made in response to comments on the initial tentative order. We re-numbered the provisions accordingly.

Staff-Initiated Change 3: We deleted Provision 12 (Final 100 Percent Design Plans) because it is no longer necessary since the Corps submitted 100 percent design plans dated August 4, 2016, and a final Planting Plan dated April 1, 2016. In addition, this provision required the Discharger to construct the Project in conformance with the 100 percent Design Plans. This requirement is already stipulated in Provision 3, making Provision 12 redundant and unnecessary. We re-numbered the provisions accordingly.

Staff-Initiated Change 4: We removed the letter in Attachment B, "Water Board Letter to Corps dated August 14, 2015, Regarding Groundwater Management Plan Requirement", because the Corps submitted an acceptable Groundwater Management Plan to the Water Board in early 2016.

As such, we moved the “Guidelines for Vegetation Performance Standards and Criteria in Mitigation Sites” from Attachment C to Attachment B, and Attachment C now contains the comments on the RTO and responses to these comments.

Response to Comments on Initial Tentative Order

ID#	Source	Comment	Response
C-01	Corps	The United States Army Corps of Engineers (Corps), San Francisco District, appreciates the opportunity to officially comment on the final tentative order for waste discharge requirements (WDR) for the Upper Berryessa Creek Flood Risk Management Project.	Comment noted.
C-02	Corps	The Corps strongly disagrees with the waste discharge requirements because the Corps has already awarded a construction contract based on the Clean Water Act, section 401 water quality certification issued to the Corps on March 14, 2016. In addition, the Corps disagrees that the Water Board is authorized to name the Corps as a discharger, noting that Congress has not waived sovereign immunity for federal agencies to comply with the Porter-Cologne Act.	We disagree. The Water Board recognizes the important flood management and public safety role the Project is intended to play. In part for that reason, as noted by the commenter, the Board issued Clean Water Act (CWA) section 401 water quality certification (Certification) for the Project on March 14, 2016. Issuing the Certification was part one of the two-stage permitting approach described in detail in response to Comment C-03. Further, we are authorized under CWA section 401(d) in conjunction with Water Code section 13263(a) to name both co-sponsors in the Certification/WDRs. Naming the Corps and the local sponsor in combined Certification/WDRs is a standard Board practice. For example, the following list is a sample of projects for which the Corps and a local, non-federal sponsor are co-permittees in Board orders for water resources projects (the first two of which are co-sponsored by the Corps and the District and are currently under construction): • Guadalupe River Project/Guadalupe Creek Restoration Project (Water Board Order No. 01-036) • Upper Guadalupe Flood Reduction Project (Water Board Order No. R2-2002-0089) • Napa River Flood Control Project (Water Board Order No. 99-074, co-sponsor is the Napa County Flood Control District) • San Timoteo Creek Reach 3B Flood Control Project (Santa Ana Regional Water Board Order No. 01-75; co-sponsor is the San Bernardino County Flood Control District) • Vegetation Clearing in the San Luis Rey River Flood Control Project (Project No. R9-2015-0161, San Diego Regional Water Board, water quality certification; co-sponsor is the City of Oceanside) To address the Corps' concern regarding sovereign immunity, we have revised the tentative order to (1) incorporate the Certification, so that the revised tentative order combines Certification and WDRs in one order, and (2) clarify the Board's understanding of which discharger(s) is (are) responsible for completing the tasks in the revised tentative order. Regarding (1), we revised the order by adding a new finding as Finding 5, stating the order rescinds the previous Certification. Finding 5 reads: "…This Order rescinds and supersedes the previously-issued water quality certification with waste discharge requirements and a reissued water quality certification."

			Regarding (2), we modified Finding 3 in the revised tentative order to clarify the Board's understanding, as explained by the District and Corps, of which discharger is responsible for the various tasks in the order, including our understanding that the District will fund required compensatory mitigation (see response to Comment C-32 for details of changes to Finding 3). We deleted Finding 10, then moved the requirements for the Adaptive Management Plan, Mitigation and Monitoring Plan, and Post-Construction Stormwater Management Plan to Finding 3. The other requirements previously under Finding 10 are either deleted (narrative of differences between the 90 percent and 100 percent design plans; and Utilities Plan), or, as explained in the response to Comment C-32, are addressed in separate findings (i.e., Dewatering Plan and Groundwater Management Plan). We also noted that our understanding is that the Corps is responsible for Staging, Stockpiling, and Hauling (Finding 8; formerly Finding 7), Reuse or Dispose of Exported Material (Finding 9; formerly Finding 8), and Construction General Permit coverage and compliance (Finding 10; formerly Finding 9). Those revisions are intended to help clarify that the order is not an additional, duplicative, layer of permitting, but rather a more-detailed approval that is well-coordinated with the initial Certification. Regarding the Corps' sovereign immunity, the CWA's plain language states that the Corps is governed and must abide by the CWA. When the Corps is "engaged in any activity resulting, or which may result, in the discharge or runoff of pollutants, [it] shall be subject to, and comply with, all Federal, State, interstate, and local requirements, administrative authority, and process and sanctions respecting the control and abatement of water pollution in the same manner, and to the same extent as any nongovernmental entity." (33 U.S.C. § 1323(a).) The Senate Report regarding the adoption of CWA amendments in 1977 reflects Congress's disapprobation of the Corps' prior attempts to avoid adherence to the CWA as in *EPA v. California ex rei. State Water Resources Control Board*, 426 U.S. 200 (1976): "The Corps, like other federal agencies, should be bound by the same requirements as any other discharger into public waters." (S. Rep. No. 95-370, 95th Cong., 1st Sess. 68 (1977).) The Corps and other federal agencies are routinely named in WDRs where there are impacts to waters of the State, such as the examples listed above in this response. To address the Corps' concerns about "double regulation," sovereign immunity, or the potential for inconsistent regulation under two separate orders, we have revised the tentative order to be a combined Certification/WDR order issued jointly to both the Corps and the District.
C-03	Corps	The Corps noted that it has closely coordinated with the Water Board for this project since 2012, culminating in the Water Board's issuance of the Certification on March 14, 2016. The Corps questioned the purpose of a WDR because the Certification states that the project would meet State water quality standards and would "…comply with the applicable provisions of sections 1311, 1312, 1313, 1316, and 1317 of [the CWA]. "	Comment noted. Issuance of the Certification was dependent upon development of subsequent WDRs (the revised tentative order) as a basis for finding that the Project complied with CWA requirements. (See Certification, p. 2.) Board staff have been coordinating with Corps and District staff on this Project since the early 2000s and remain committed to a collaborative effort to resolve concerns. The findings in the Certification that the Project complies with the CWA explicitly contemplate the adoption of WDRs to supplement the Certification and address certain issues, such as post-construction stormwater control and mitigation. Adoption of the revised tentative order would be the second phase of the two-phase permitting approach we developed with the Corps and the District during our collaboration on this project in late 2015 and early 2016 and which we finalized in our meeting of January 4, 2016. (The meeting of January 4, 2016, was an outcome of an interagency meeting on December 14, 2015, when Corps, District, and Board management made the agreement to meet "… in early January to develop a mitigation plan for the project" (meeting summary sent by email of December 16, 2015, from Susan Glendening to Amanda Cruz, John Morrow, Traci Clever, Shareen Barry, Neil Hedgecock, Melanie Richardson, Christopher Hakes, Judy Nam, James Manitakos, Bruce Wolfe, Keith Lichten, A.L. Riley, and Bill

			Hurley, and copied to Tamarin Austin, Jay Kinberger, and Dyan Whyte). The first phase of the agreed-upon permitting approach was for the Board to expeditiously issue Certification to the Corps, which allowed the Corps to timely initiate its contracting procedures to meet the Project's construction deadlines, which are related to planned 2017 completion of the BART extension and station. Subsequent to issuance of the Certification on March 14, 2016, the Corps completed necessary contracting and has begun project construction. Adoption of the revised tentative order would complete the second phase of the two-phase permitting approach, as noted in the Certification. Adoption of the revised tentative order is necessary to ensure project impacts to jurisdictional waters are fully and appropriately addressed. Once the two-phase permitting approach was finalized during the meeting of January 4, 2016, Water Board Division Chief Keith Lichten followed up with District Operating Officer Melanie Richardson by email dated January 21, 2016: > Subsequent to that and likely later this spring, we expect to bring Waste Discharge Requirements for the project before our Board for its consideration. Similar to our approach on past projects, such as the Bay Bridge, where we issued a fairly quick cert to facilitate contracting and then issued a separate WDR, the WDRs are likely to address aspects of the project in greater detail, including post-construction monitoring, alternate mitigation to address the project design issues, and potentially operation and maintenance, to the extent O&M isn't covered under the District's Stream Maintenance Program WDRs. At this point, our intention is to name both the District and the Corps… After the January 4, 2016, meeting, Board staff worked expeditiously to develop the Certification to facilitate the Corps' timely contracting procedure. Through meetings on February 29 and March 8, 2016, and numerous email and telephone calls between January 4 and March 14, 2016 (issuance date of the Certification), Board staff tailored the Certification (a process entailing two complete administrative drafts distributed to both the Corps and the District, the first on February 11, 2016, and the second on March 2, 2016), to meet the Corps' needs with the understanding that WDRs would be adopted soon thereafter, according to the two-phase permitting approach. The Certification, at page 2 (second full paragraph), also reflects that the subsequent adoption of WDRs addressing mitigation would be necessary to comply with the CWA: > This Certification is being issued to facilitate the Applicant's contracting and construction schedule for the Project, which is intended to result in the completion of Project construction prior to the planned opening of the Milpitas Bay Area Rapid Transit (BART) station in late 2017. Subsequent to issuance of this Certification, the Water Board will consider adoption of Waste Discharge Requirements (WDRs) with the District named as the permittee for the Project. The following is a partial list of items the WDR will address:

			• Future operation and maintenance; • Requirements for monitoring of vegetation reestablishment and channel cross and longitudinal sections to inform future maintenance guidelines under the District's Stream Maintenance Program; • A plan to compensate for the capital project's impacts; • Requirements for post-construction stormwater treatment from newly-constructed or replaced impervious surface; and • Plans for future site uses. Both the Corps and the District are dischargers, because, as authorized by Congress, the Project could not occur without the participation of either co-sponsor. Both are responsible for key components of the project that will result in discharges to waters of the State and United States. Section 221 of the Flood Control Act of 1970, Public Law 91-611, as amended (42 U.S.C. 1962d-5b), and Section 103(j) of the Water Resources Development Act of 1986, Public Law 99-662, as amended (33 U.S.C. 2213(j)), provide that "the Secretary of the Army shall not commence construction of any water resources project, or separable element thereof, until each non-Federal interest has entered into a written agreement to furnish its required cooperation for the project or separable element." The "agreement" referred to is the Project Partnership Agreement, which the Corps and District signed on May 17, 2016 (Agreement). The Agreement further stipulates division of costs and responsibilities to construct the Project: the Corps is responsible for the construction contractor, while the District is responsible for the lands, easements, rights-of-way, relocations, and any improvements required on lands, easements, and rights-of-way to enable the disposal of dredged or excavated material. After construction, the District is required, under Article VII.A of the Agreement Project Partnership Agreement, to operate and maintain the Project, which involves additional discharges from dredge/fill activities into waters of the U.S. The Corps and District are also inextricably involved in post-construction activities. The Agreement, Article II.A stipulates that the non-federal sponsor must follow the O&M manual that the Corps will prepare, and Article VII.B stipulates that the Corps participates in the long-term for inspection and, if necessary, other O&M and replacement of the project. According to Corps staffer Craig Conner (Conner, C. May 19, 2016. Email to Susan Glendening and Thomas Kendall): "The Corps flood risk management projects are authorized in perpetuity by Congress until they are de-authorized. It is a partnership between the Corps and the local Non-Federal Sponsor, but it remains a Federal project throughout its life. If the local Non-Federal Sponsor does not fulfill their O&M obligations, the Corps has as one of its options to take over the O & M, and possibly try to recoup costs from the local Non-Federal Sponsor." We note that, in working with the Corps staff prior to issuance of the Certification, Board staff removed, at the Corps' request, several items from the administrative draft Certification, with the mutual understanding that those same items would be included in subsequent WDRs as part of the second phase of the two-phase permitting approach. The revised tentative order recognizes that the Corps and District have an agreement concerning who is responsible for the various portions of the Project, and adoption of the

			order would do nothing to alter that agreement. The two administrative draft Certifications issued on February 11, and March 2, 2016, were significantly tailored before the final Certification was issued on March 14, 2016, based on the Corps' requests and our mutual understanding that adoption of WDRs would be necessary to complete the two-phase permitting approach all parties agreed to at the January 4, 2016, meeting. We noted that the Corps had considered self-certifying the Project pursuant to Clean Water Act section 404(r), as announced on October 9, 2015, in the Federal Register (Federal Register, Vol. 80, No. 196; 80 FR 61187), but later notified Board management in early December 2015 that it would not invoke the CWA section 404(r) waiver. Corps, District, and Board management met on December 14, 2015, to agree to develop a strategy (including a mitigation plan) for the Board to certify the Project. Recognizing the Project's important public safety goals, Board staff worked with Corps and District staffs to identify a path forward that would allow issuance of the Certification while ensuring the Project, as authorized by both the Certification and the WDRs, ultimately complies with State water quality standards, as explained above. While our preference would have been to regulate the Project with a single permitting action at the outset, the revised tentative order is consistent with the approach the Board took for construction of the new Eastern Span of the San Francisco-Oakland Bay Bridge, under which the Board first issued Certification to Caltrans for that project to allow contracting to go forward and later issued WDRs to Caltrans with more-detailed requirements to ensure the Bay Bridge project fully complied with State water quality standards. See also response to Comment C-02.
C-04-a	Corps	The Corps is concerned that implementation of the WDRs would delay the project and jeopardize timely flood protection for the new Milpitas Bay Area Rapid Transit (BART) station and rail line, part of a $2.3-billion BART expansion project with $900-million of federal funding.	We disagree. See response to Comment C-03 pertaining to the two-stage permitting approach the Water Board, Corps, and District developed specifically to avoid a Project delay. As the Corps and District have explained the division of responsibilities for various aspects of the Project, nothing in the revised tentative order would affect the ongoing construction or change that division of responsibilities. In addition, we recognize the issue of mitigation was the subject of significant discussion with the Corps and District prior to issuance of the Certification. For example, we discussed the opportunity for the District to internally disassociate the Project from the compensatory mitigation obligation by funding mitigation through a source separate from the Project funding source. This was a significant part of the overarching two-phase permitting approach that the Corps, District, and Board agreed to at our January 4, 2016, meeting as a path forward to allow the Board to timely certify that the Project would meet State water quality standards.
C-04-b	Corps	The Corps stated that the mitigation requirements are unwarranted, and, the cost of mitigation would adversely impact the benefit cost ratio, thereby leading the Corps	We disagree that the mitigation requirements are unwarranted. See responses to Comment C-13-a for description of impacts on beneficial uses and significance determinations under CEQA that the revised tentative order would mitigate, as well as Comments RCD-10, S-04, S-07, S-24, and S-44 pertaining to development of appropriate mitigation measures. See responses to Comments C-02 and C-03 regarding the two-phase permitting approach that we developed together with the Corps

		to cancel the project.	and the District to resolve the impasse that was in effect until December 2015, including the agreement to develop a mitigation plan. Additionally, it is unclear what practical effect issuance of an amended Certification and WDRs would have on the Corps' participation in the project, which the Corps has already budgeted for and is now constructing in partnership with the District, with construction is expected to be completed within the next year.
C-04-c	Corps	The Corps is concerned that the Water Board Executive Officer's review to accept the plans and specifications, as required in the WDR, would potentially compel the Corps to either stop work or terminate the project if the Executive Officer were to require significant changes.	We disagree. The proposed requirements to submit additional information acceptable to the Executive Officer are an efficient mechanism for allowing the Project to progress while recognizing that it was not timely to prepare or finalize that information prior to the Certification's initial issuance. The requirements in the revised tentative order are not wholesale review of, and would not result in significant changes to, the Project design. We consistently require the Executive Officer's review of project plans for projects of this size to ensure the project will meet applicable water quality objectives. Additionally, based on conversations with Corps staff in October 2016, the Corps' contract includes a 20 percent contingency for unforeseen costs, and the District has the ability to budget for such costs as well. As a result, it is unlikely that modest potential additional costs necessary to ensure the Project complies with State water quality standards would result in a stop work order or termination of Project construction. See response to Comments C-32 regarding our requirements for certain plans and the scope of our review for them. This approach has been offered as a streamlined approach where plans necessary for the Board to find that the project complies with State water quality standards have not yet been finalized. In the alternative, the plans could be brought before the Board for its review and approval in a public hearing, but, as the expectations for the plans are clearly set forth in the revised tentative order, that approach could result in unnecessary Project delays (based on the typical lead time of about three months necessary for the public hearing process). Additionally, the requirement to submit plans does not limit the Corps' contracting ability. Rather, it is an efficient means of ensuring that the Project's final designs are consistent with earlier designs provided to the Board. A similar requirement in a previous Certification/WDRs issued by the Water Board to the Corps and its local sponsor played an important role for that project: the Corps' Napa River Flood Control Project. There, we were able to accommodate unanticipated post-permit design changes for a new kayak launch.
C-05	Corps	The Corps had the understanding that the WDR would be issued to only the District, and that any regulatory compliance required of the Corps is covered in the Certification.	We disagree. Throughout the Project review and permitting process, we have worked to maintain open communication via our many meetings, telephone calls, emails, and other communications. Please see response to Comments C-02 and C-03. In the weeks leading up to the issuance of the Certification, we removed, upon request by Corps staff, several items from an administrative draft Certification, with the mutual understanding that those same items would be placed in the planned WDRs. At that time, a decision regarding whether to issue the WDRs to the District alone, or to the Corps and the District, had not yet been made. As noted elsewhere in this Response to Comments, and partly in response to comments from the Corps, we have revised the tentative order to be a combined Certification/WDR order issued jointly to both the Corps and the District. This is consistent with the Board's permitting approach to other federal Water Resources Development Act (WRDA)-funded flood control projects in the region, such as the Napa River Flood Control Project and the District's flood control projects on the Guadalupe River.

C-06	Corps	The Corps stated that the Water Board is not authorized to regulate the Corps through State regulatory requirements when the project is already covered under a Certification, even though a limited waiver of sovereign immunity is provided under the Clean Water Act, section 401.	We disagree. See responses to Comments C-02 and C-03.
C-07	Corps	The Corps stated that the WDR conflicts with the Certification, and challenged the Water Board's authority to issue a WDR for the project when it is already covered by a Certification, citing case law holding that federal projects are "subject to state regulation only when and to the extent that congressional authorization is clear and unambiguous." (*EPA v. California ex rel. State Water Resources Control Board*, 426 U.S. 200 (1976).) Further, the Corps is concerned that the WDR will result in double-regulation and needless expenditure of public resources.	We disagree that there are conflicts between the Certification and the WDRs or that the project is being "double regulated." However, to ensure we have addressed this concern, the tentative order has been revised to combine the Certification with the WDRs for the Project. See response to Comment C-02 for the details of these revisions.
C-08	Corps	The Corps stated that the Water Board missed the opportunity to comment on the project during the draft Environmental Impact Statement (EIS) public comment period in 2014. The Corps pointed out that the EIS identified the following aspects deemed as positive benefits of the project : (1) reducing flood risk and the potential for contamination impacts associated with said flooding; (2) providing bank stabilization to prevent sedimentation and improve water quality; and (3) removing invasive vegetation and replacing it with native species.	Comment noted. Regarding the EIS, our records indicate a draft EIS was never received by the Water Board, which explains why Board staff did not submit comments on the draft EIS. In addition, after discovering the "Final EIS" dated December 2013, was revised in March 2014 ("Revised Final EIS"), it took 5 months of requests by Board staff to receive a hard copy of the Revised Final EIS, and we initially only received Volume 1 of three volumes. We ultimately received the complete electronic files in May 2015, although the Final Revised EIS is still not fully available on the Corps' website, despite several inquiries to post it online for public access (http://www.spk.Corps.army.mil/Portals/12/documents/Corps_project_public_notices/Berryessa_Creek_FinalGRR-EIS_Dec2013.pdf. Accessed October 3, 2016. (We note that only Volume 1 is posted.)). Regarding point number 1, we agree that the Project will reduce flood risk and associated contamination impacts. We disagree with point number 2 that the Project will prevent sedimentation and improve water quality by stabilizing the creek banks. We are surprised to see this issue raised again by the Corps after Board staff and the District's consultant, Tetra Tech, have reiterated during interagency meetings with the Corps (December 28, 2015; January 4, 2016) that the HEC-RAS sediment transport

			model does not quantify bank erosion but estimates streambed scour (see also Board staff memoranda: S. Bozkurt-Frucht, October 21, 2016; and A. Riley and S. Bozkurt-Frucht, April 12, 2016). As noted in the March 2014 Revised Final EIS, the Project's design does not appropriately address the design goal of efficient sediment transport. The Revised Final EIS addressed this issue by stating that the Corps will conduct monitoring after the Project is constructed. While this issue did not appear in the December 2013 Final EIS, the Revised Final EIS responded to the Peer Review Report (Batelle Memorial Institute, 2013. *"Final Independent External Peer Review Report Berryessa Creek, Santa Clara County, California, General Reevaluation Study (GRS) Draft General Reevaluation Report and Environmental Impact Statement/Environmental Impact Report." Prepared for Department of the Army, U.S. Army Corps of Engineers Flood Risk Management Planning, Center of Expertise for the Baltimore District. Contract No. W912HQ-10-D-0002, Task Order: 0030)* that identified serious flaws in the Project's design due to anticipated sediment transport processes. See also our response to Comment C-13-a regarding the impacts of the Project and the need for mitigation and comment S-26 pertaining to sediment transport in the Project. Regarding point number 3, we agree with the concept that replacing non-native vegetation with native species would provide a benefit. However, given the Project design, we question whether this goal is attainable with only 4 inches of soil being placed over rock riprap. The Project will not fully support the intended diversity and cover by native wetland and upland species being hydroseeded due to the Project design of rock riprap, underlain with geotextile fabric, and covered with only 4 inches of soil. Native grasses and forbs, in general, have deep roots that enables them to survive a long dry season and withstand stronger flow forces. Five of the six native species in the wetland and hydroseed mixes have a minimum soil depth ranging from 5.1 to 20.5 inches (Source: *Cal Flora Database*, accessed September 26, 2016, and available online at: http://www.calflora.org.). We agree that the upland species may establish at the higher elevation areas that will not have riprap. However, the success of native vegetation lower down the banks and in the channel armored with rock riprap, is questionable, which opens up those areas for competition by non-native species. The likelihood of establishing natives will be further reduced because the Project plans to reuse soil onsite, which may spread and further help invasives to reestablish. The unintended proliferation of non-natives will create the continuous need for vegetation maintenance to maintain any natives that manage to thrive in the areas without riprap. We therefore do not agree with the assertion that the Project will provide benefits with respect to replacing non-native vegetation with native vegetation due to the questionable likelihood of success of the natives.

C-09	Corps	The Corps submitted detailed comments to address the following overarching themes: (1) the Corps believes there is no scientific basis for the need for mitigation; (2) the Corps believes it should not be named as a discharger in the WDR because the Congress has only waived limited sovereign immunity under the Clean Water Act, section 401; (3) the Corps believes various required plans are arbitrary and infeasible; and (4) the Corps has pointed out some technical errors in the WDR.	Comment noted. We disagree and provide complete responses in the following: 1) For mitigation requirements and the science behind the requirements, see responses to Comments C-13-a, C-14, S-39,and S-44; 2) For the Water Board's authority to name the Corps as a discharger, see responses to Comments C-02 and C-03; 3) Regarding the Corps' assertion that certain requirements are arbitrary and infeasible, see responses to Comment C-13-a, C-18, and C-32; and 4) For corrections of certain technical errors, or revisions based on new data the Corps or District has submitted since issuance of the tentative order (released on August 19, 2016), see responses to Comments C-32, C-41, C-44, C-45, and C-47.
C-10	Corps	The Corps incorporated by reference its comments on the Administrative Draft Order of May 6, 2016 (letter from Corps to Water Board, May 13, 2016).	Comment noted. We reviewed the Corps' letter of May 13, 2016, and verified that the Corps' comments on the tentative order included those comments made in the May 13 letter. As such, the May 13, 2016, letter is not responded to separately herein.
C-11	Corps	The Corps is concerned that it has already finalized the project plans, specifications, and a construction contract based on the existing 401 Certification, but the WDR would impose new requirements, such as mitigation, which, the Corps asserts, are not applicable to the Corps and for which the Water Board is not authorized to require.	We disagree. See responses to Comments C-02 and C-03 regarding the two-phase permitting approach developed collaboratively with Corps and District management to facilitate the Corps' timely commencement of construction contracting procedures and construction implementation; and Comments C-13-a, C-14, C-23, C-24, and S-44 pertaining to the need and regulatory authority for mitigation, including the Water Board's obligation under CEQA.
C-12-a	Corps	The Corps stated that the project will not impact Berryessa Creek's beneficial uses.	We disagree that the Project will not impact the existing or potential beneficial uses of Berryessa Creek. See responses to Comments C-13-a and S-44 pertaining to the impacts on beneficial uses from the Project. See response to Comment C-03, regarding the two-stage permitting approach that we developed together with the Corps and the District to resolve the permitting impasse that was in effect until December 2015 and the agreement to develop a mitigation plan for the Project to meet State water quality standards.
C-12-b		The Corps stated its hopes to coordinate early for future projects to avoid this situation of the current project.	We look forward to continuing to work with the Corps on future projects, including identifying funding and project design approaches that can avoid or limit the kinds of project impacts in the current Project and, instead, result in projects that provide necessary flood protection while also achieving significant net improvements to beneficial uses, including supporting urban creek restoration and stewardship.

C-13-a	Corps	The Corps believes the WDR's mitigation requirements are arbitrary and capricious, and not based on science.	We disagree. The revised tentative order's requirements reflect those needed to ensure the Project complies with State water quality standards. They were developed based on a thorough and detailed analysis of the Project's potential impacts, are consistent with applicable law and policy, including the Water Code and San Francisco Bay Basin Water Quality Control Plan (Basin Plan), and are consistent with current Water Board requirements for projects with similar impacts, including those relating to compensatory mitigation. They are also consistent with the Corps' internal guidelines that require the Corps to minimize adverse effects on the Aquatic Ecosystem and mitigate for impacts (404(b)(1) Guidelines): [T]he district engineer will issue an individual section 404 permit only upon a determination that the proposed discharge complies with applicable provisions of 40 CFR part 230, including those which require the permit applicant to take all appropriate and practicable steps to avoid and minimize adverse impacts to waters of the U.S. Practicable means available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes. Compensatory mitigation for unavoidable impacts may be required to ensure that an activity requiring a section 404 permit complies with the Section 404(b)(1) Guidelines." (40 C.F.R. § 230.91.) In addition, CWA section 401(d) requires that: 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 301 or 302 of this title, standard of performance under section 306 of this title, or prohibition, effluent standard, or pretreatment standard under section 307 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 license or permit subject to the provisions of this section. Water Code section 13263(a) requires the Water Board to "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." Similarly, CEQA Guideline 15096(g) provides that a responsible agency "shall not approve the project as proposed if the agency finds any feasible alternative or feasible mitigation measures within its powers that would substantially lessen or avoid any significant effect the project would have on the environment." While the regulations provide the legal basis for requiring mitigation, we rely upon science to evaluate lost water quality functions and values and appropriate compensation. The WDRs recognize Berryessa Creek's beneficial uses in context of its hydrologic and geomorphic setting. While the Project will result in a relatively modest amount of permanent fill of waters (e.g., for footings), it is likely to have significant adverse impacts to beneficial uses due to the rip-rapping of the creek bed and banks and modification of the creek's cross section. Such features will restrict and reduce the complexity of the aquatic ecosystem by altering the hydrology,

			sediment transport, food web, and trophic interactions (i.e., energy transfer between different classes of organisms). The beneficial uses of Berryessa Creek and its tributaries within the Project site (Piedmont Creek and Los Coches Creek) are WARM, WILD, REC-1, and REC-2, and Los Coches Creek also has the RARE beneficial use. The United States Fish and Wildlife Service (USFWS) Coordination Act Report (CAR) documents that the creek's habitat supports California roach, mosquito fish, and egret. During a field inspection on September 4, 2015, at the peak of a severe drought, Board staff observed egrets and ducks in the creek at multiple locations. A typical creek ecosystem capable of supporting these consumers (i.e., California roach, egret, and ducks) has a variety of biota including algae (e.g., phytoplankton and filamentous algae), benthic macro-invertebrates, zooplankton, insect and fish larvae, and many other micro- and macro-biotic elements as important components involved in ecological processes for organic matter and energy transfer and cycling from bacteria to upper trophic consumers in the food web (e.g., fish and birds). The Project will alter the creek's hydrology, despite the USFWS CAR statement that the creek's hydrology will not be altered. We assume the USFWS was referring to the more general hydrologic regime characteristic of creeks in areas with a Mediterranean climate including the Bay Area, with flashy peak flows during the wet season and very low flow, or in the case of the upper one-half to two-third of the Project site, no flow, during the dry season. The expanded channel cross-section included in the Project's design, which will be increased from (varying by station) 5 to 20 feet wide to 12 to 40 feet wide, will cause the existing dry season flow (estimated at less than 1 cubic foot per second) to spread out and ultimately infiltrate into the substrate. The diminished dry season flow will alter the creek's existing food web, including the potential for local extirpation of California roach and mosquito fish. The post-project diminished flow may also reduce diversity and abundance in lower trophic species, including benthic invertebrate, micro- and macro crustaceans, diatoms, phytoplankton, and filamentous algae. Such lower trophic species were not characterized in the Project's supporting documents, including the Environmental Impact Report (EIR) (except noting the absence of special status species such as the Conservancy fairy shrimp). With these effects on the lower trophic organisms, the food source for fish larvae, fish, and birds will be diminished or eliminated. Thus, both the WARM and WILD beneficial uses will be adversely affected by the Project. As a result of the adverse impacts on the WARM and WILD beneficial uses, the existing and potential REC-2 beneficial use will also be degraded due to a reduction in species diversity and complexity. Further, a study of bioengineering techniques for stabilizing banks in urban creeks has found that increases in species biomass and species including "shredders", which are important biota for decomposition of organic material, are directly correlated with the quantity of root and wood habitat created on channel banks (Sudduth and Meyer, 2006. Effects of Bioengineering on Streambank Macroinvertebrates. Environmental Management Vol. 38, No. 2, pp. 218–226). As mentioned in response to Comment C-08, the Project's design, i.e., the riprap/soil/hydroseed treatment, will restrict native plant growth in the creek's channel bed and banks. In addition, the Corps' stated intention to develop an Operation and Maintenance Plan that will prohibit development of significant woody riparian vegetation along the Project's length will further degrade the ecosystem for the long term.

			The Project's rock riprap, which will result in reduced root structure complexity, will also affect the potential for nutrient cycling, such as nitrogen sequestration and carbon (organic matter) cycling in the creek habitat. With lower potential for nutrient cycling, water quality in the Project site will be degraded (e.g., see Mayar et al., 2005. "Riparian Buffer Width, Vegetative Cover, and Nitrogen Removal Effectiveness: A Review of Current Science and Regulations." U.S. EPA Office of Research and Development, National Risk Management Research Laboratory. EPA/600/R-05/118. Ada, Oklahoma. October 2005). The planned restrictions on woody riparian vegetation or even larger herbaceous vegetation, which could provide shade, are likely to result in warmer water temperatures than could otherwise be achieved, limiting habitat and reducing the Project's potential to serve as a corridor between the high-quality reaches of Berryessa Creek upstream and downstream of the Project. The Project, thus, is likely to have reduced support for the existing WARM beneficial use and to permanently reduce the potential WARM beneficial use, as well as to result in reductions in the related existing and potential beneficial uses in the higher-quality creek reaches upstream and downstream of the Project reach. Because placement of fill for the Project will adversely impact the existing and potential WARM, WILD, and REC-2 beneficial uses, both in and near the Project site, there is the need for compensatory mitigation under the No Net Loss Policy and California Wetlands Conservation Policy, as well as the State's Anti-Degradation Policy, which have been incorporated into the Basin Plan. As such, the Certification documented the need for mitigation. (Certification, p. 2.) During our work with the Corps and District on the Project, we identified changes in the Project's design that could avoid and minimize these expected impacts to beneficial uses, including: development of a low-flow channel that could more efficiently transport sediment; planting of woody vegetation to increase shade, thereby reducing temperatures and the need to remove vegetation such as cattails that can trap sediment; and changes to the channel cross section by removing unnecessary Project elements, such as one maintenance road for those reaches where maintenance roads have been placed on each side of the channel. This last option would have allowed significantly greater flexibility in channel design and post-project vegetation, by allowing design elements like floodplain benches within the Project's existing planned right-of-way. The Corps and District did not incorporate any of these changes into the Project. Having worked with the Corps and District to avoid and minimize project impacts to the maximum extent practicable, consistent with federal guidelines, as incorporated into the Basin Plan, we appropriately identified the need for compensatory mitigation to address the Project's remaining impacts. While we requested that the Corps or District propose a compensatory mitigation project or projects to be incorporated into the Certification and WDRs, none was proposed. As a result, we have included in the revised tentative order criteria for what would constitute acceptable mitigation. Those criteria are consistent with mitigation requirements imposed by the Board for projects with similar impacts, and follow applicable policy. The following projects include the types of features we suggested for this Project to reduce impacts and include compensatory

			mitigation for unavoidable impacts: (1) Guadalupe River Project/Guadalupe Creek Restoration Project Water Board Order No. 01-036 Co-sponsors: Corps and District; Permittees named in Order: Corps and District The need for additional mitigation was identified after this project's construction started. An offsite restoration project in Guadalupe Creek to improve salmonid habitat was implemented for mitigation of the project. (2) Upper Guadalupe River Flood Control Project Water Board Order No. R2-2003-0115 Co-sponsors: Corps and District; Permittees named in Order: Corps and District The mitigation plan for this project has a strong focus on preserving existing, and creating new, shady riverine aquatic habitat and riparian vegetation. In addition, the Order requires maximizing the use of vegetated floodplain in the project design, subject to approval by the Board's Executive Officer; i.e., the approach to incorporate vegetated floodplains is required for the design, not a mitigation requirement. (3) Lower Silver Creek Water Board Order No. R2-2002-0012 Sponsor: District; Permittee named in Order: District This project has vegetated floodplains and a low flow channel. Specifically, Order No. R2-2002-0012 states: "Where right-of-way is sufficient, the constructed channel cross-section will include a sediment transport channel that is designed to transport discharge and sediment of channel forming flows that are expected to occur at approximately 1.5-year intervals. The sediment transport channel design emulates natural active channel cross-sectional geometry and is expected to reduce erosion and sedimentation, and resulting maintenance activities of the existing channel. Cross-sectional dimension and sinuosity of the low-flow channel will be allowed to form naturally within the sediment transport channel. A single maintenance road of pervious material will be located in the channel floodplain, above the sediment transport channel." (4) Lower Berryessa Creek-Lower Calera Creek Flood Protection Improvements Project CWA section 401 Water Quality Certification issued on July 26, 2011 Sponsor: District This project includes constructing instream riparian vegetated floodplains, a lowered maintenance road at approximately the two-year flood flow elevation, and reducing the maintenance roads from four to two along 8,000 linear feet of the creek. Further, the Water Board, as a responsible agency under CEQA, has the responsibility to require additional mitigation if it finds, after reviewing a project's plans and details after an EIR is adopted, that the proposed mitigation does not adequately meet the requirements that are under its jurisdiction. This Project's EIR indicates that there are potential impacts to waters based on criteria WAQ-1 "Violate any water quality standard or waste-discharge requirement," and WAQ-6 "Otherwise substantially degrade water

			quality." For operations, that is, post-construction conditions, the EIR states that the impact is: "... non-consumptive in terms of water needs, other than needs to irrigate vegetation during a 2-year establishment period. Ongoing maintenance and operations actions would continue after construction, but actions associated with sediment removal and erosion control would be reduced due to a more efficient channel design. Newly required maintenance actions, including inspection of the floodwall, culverts, and access roads, would not require excavation or dewatering, so operational impacts associated with dewatering or groundwater extraction would not occur." The EIR identifies further potential impacts under criteria WAQ-1 and WAQ-6: "Significant water quality impacts from spills of hazardous materials, contaminated groundwater, and creek dewatering," and the impacts are partially due to "[w]idening of channel bed and top of banks via excavation and grading of earthen material," and "[e]xcavation of channel bed and side slopes for placement of rock revetment" (EIR, page 3-198). As discussed in the response to Comment C-08, the EIR identifies impacts from erosion and siltation associated with alterations in drainage patterns by the Project (significance criterion WAQ-3), impacts to riparian habitat or other sensitive natural community (significance criterion BIO-2), impacts to jurisdictional waters (significance criterion BIO-3), and impacts to a native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors (BIO-4). Specifically, in Reaches 1-3, the EIR identified permanent impacts to 5 acres of annual grassland habitat, trees and shrubs at the top of bank, and a 0.28 acre increase in hardscape within waters of the U.S. In addition, the entire 3.06 acres of Waters of the U.S./State within Reaches 1-3, including nearly 0.5 acres of fringing wetland vegetation, would be temporarily impacted by the Project during construction. In Reach 4, the EIR identified permanent impacts to 0.58 acre of waters of the State from increased hardscape, potential impacts to 0.18 acre of riparian from ground excavation in the root zone, and impacts from removal of four coast live oaks, three Fremont cottonwoods, and one arroyo willow thereby requiring the replacement of removed native trees and shrubs of 2-inch diameter at breast height or greater (Mitigation Measure Bio-B) and requiring a buffer around riparian trees (Mitigation Measure Bio-D). The EIR also identified impacts to a native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors (BIO-4). Specifically, the California Roach and Monarch butterfly would potentially be impacted, and migratory birds would be impacted by destruction of nests thereby requiring pre-construction nesting bird surveys and establishment of appropriate buffers (Mitigation Measure Bio-A). CWA section 401(d) requires that: > [a]ny 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 301 or 302 of this title, standard of performance under section 306 of this title, or prohibition, effluent standard, or pretreatment standard under section 307 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 license or permit subject to the provisions of this section.

			Water Code section 13263(a) requires the Water Board to: (i)mplement 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." Similarly, CEQA guideline 15096(g) provides that a responsible agency "shall not approve the project as proposed if the agency finds any feasible alternative or feasible mitigation measures within its powers that would substantially lessen or avoid any significant effect the project would have on the environment." The preceding paragraphs present the significance determinations that the Board's revised tentative order would mitigate. The revised tentative order's compensatory mitigation requirements are consistent with Basin Plan requirements that the mitigation preferentially be located onsite, or as close to the impact site as possible, and that it be in-kind, and completed in a time frame similar to that of impacts. The revised tentative order sets reasonable deadlines for the identification and completion of compensatory mitigation, while allowing appropriate flexibility and imposing a requirement to complete additional mitigation (10% per year) if there is a significant delay. As such, the requirements were developed in a thoughtful manner consistent with applicable policy and past practice and appropriately taking into account the particulars of this Project. They are also consistent with the CWA section 401(b)(1) guidelines (see above), because the Project will have adverse effects, will degrade the existing aquatic ecosystem including fish, and the Corps rejected Board staff's suggestions to incorporate measures to minimize potential harm (40 C.F.R. § 230.12 (a).) See responses to Comments RCD-10, S-04, S-07, S-24, and S-44 pertaining to development of appropriate mitigation measures; Comments C-13-a, C-14, and S-44 for the Project's impacts and why mitigation is required; and Comments C-23 and C-24 for the regulatory authorities requiring mitigation.

C-13-b	Corps	The Corps is concerned that the WDR includes maintenance measures that were not part of the Certification. In addition, the Corps stated that the maintenance requirements are unfounded because the project area contains no jurisdictional wetlands and only low-quality habitat consisting of a manmade channel aligned two miles north of its historic alignment. The Corps further points out that the U.S. Fish and Wildlife Service's (USFWS) Coordination Report (April 26, 2013) conceded that "[t]he highly impacted nature of the creek provides little habitat or diversity for fish and wildlife species in its current state." Further, the Corps stated that the EIS identified the following environmental constraints inhibiting the development of environmental benefits to the creek: (1) Adjacent urban development and potential soil contamination; (2) Poor water quality; (3) Limited flows in long reaches of the channel; (4) Lack of riparian zone; (5) Limited establishment of aquatic vegetation/habitat due to lack of water availability and sediment movement in the system; (6) Almost complete disconnection from the floodplain; (7) Uniform aquatic habitat in trapezoidal or rectangular channels; (8) Fish passage barriers; (9) Poor aesthetic and recreational conditions for human use.	We disagree. First, the Certification clearly contemplated the need for maintenance measures in the future WDRs, such as the following sections: • Certification page 2, second paragraph: Subsequent to issuance of this certification, the Water Board will consider adoption of Waste Discharge Requirements (WDRs) with the District named as the permittee for the project. The following is a partial list of items the WDR will address: Future operation and maintenance; Requirements for monitoring of vegetation reestablishment and channel cross and longitudinal sections to inform future maintenance guidelines under the District's Stream Maintenance Program; A plan to compensate for the capital project's impacts; Requirements for post-construction stormwater treatment from newly-constructed or replaced impervious surface; and Plans for future site uses. • Certification Finding H (where "Applicant" refers to the Corps): Operations and Maintenance. The Application states that the District, as the project's local sponsor, will be responsible for post-project operations and maintenance (O&M) of the channel. As such, the Applicant is not proposing to complete O&M activities under this Certification, and O&M activities are not covered by it. Rather, such activities will be considered for permitting as a part of the WDRs for the project to be brought before the Water Board later this year. The project's EIR states that sediment removal maintenance activities have been pre-mitigated under the District's existing Stream Maintenance Program. However, capital projects such as the project are not covered by the Stream Maintenance Program, in accordance with the Stream Maintenance Program Manual, which the Water Board adopted with Water Quality Certification and Waste Discharge Requirements for Santa Clara Valley Water District Stream Maintenance Program (Water Board Order No. R2-2014-0015). Mitigation necessary for future O&M activities is intended to be considered as a part of the WDRs for the project to be brought before the Water Board later this year. In addition, the WDRs are intended to address the process to transition the project into the Stream Maintenance Program. This will be facilitated by the District's collection of information on project performance during the first five years after project completion. (Note that the "five year report" is no longer included in the revised tentative order; rather, we require a report after certain stage-discharge events have occurred.) • Finding I, end of fifth paragraph: The O&M Manual this Certification requires will need to include O&M of the maintenance roads and any associated BMPs to ensure compliance with the MRP for the life of the project.

			• Condition 22: The Applicant shall submit the final project Operations and Maintenance Manual ... to the Water Board upon transfer of the project to the local sponsor. Second, the revised tentative order would require maintenance measures commensurate with the existing and potential beneficial uses at the Project site. The order includes targeted and reasonable requirements, limited in scope and intended to ensure beneficial uses at the Project site are protected, in part by minimizing the need for and frequency of future maintenance within the constraints of the Project's design. In addition, the Adaptive Management Plan is necessary to address uncertainties about post-project performance, which are documented in the Peer Review Report (Batelle Memorial Institute, 2013) and in Board staff memoranda (S. Bozkurt-Frucht, October 21, 2016; and A. Riley and S. Bozkurt-Frucht, April 12, 2016). Further, the maintenance measures requirement is comparable to the District's existing Stream Maintenance Program, as noted in the order, which demonstrates that the order's maintenance requirements are not extraordinary or atypical. In addition, we note that the Project's design does not meet best engineering practices of either the District's design manual (Santa Clara Valley Water District, Hydraulic Engineering Unit , June 2009. *Design Manual-Open Channel Hydraulics and Sediment Transport*) or the Corps' own design manuals (e.g., *Channel Stability Assessment for Flood Control projects. Engineer Manual (EM) 1110-2-1418*. October 31, 1994; and *Hydraulic and Design of Flood Control Channels. EM 1110-2-1601*. 1 July 1991/30 June 1994) and is expected to result in unnecessarily inefficient sediment transport. The future sediment maintenance needs are, thus, likely to result in unnecessarily frequent impacts to the creek due to the need to remove sediment. According to the Peer Review Report (Batelle Memorial Institute, 2013), the Project's long term O&M costs were not fully considered in the Corps' cost-benefit analysis. The order's requirements to review Project performance and for an adaptive management plan are appropriate given the Project's design, uncertainty about future Project performance, and opportunities to reduce both the frequency of future maintenance and the cost to the public associated with that maintenance. We agree that Upper Berryessa Creek has been modified from its historic characteristics and is in some regards constrained in a manner similar to many urban creeks, but it is also located between and serves as a corridor between two high quality reaches of Berryessa Creek. In issuing a Certification/WDRs, CWA section 401 requires the Board to include: (a)ny 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 301 or 302 of this title, standard of performance under section 306 of this title, or prohibition, effluent standard, or pretreatment standard under section 307 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 license or permit subject to the

			provisions of this section. Water Code section 13263(a) similarly requires that the Water Board adopt requirements in WDRs that: (i)mplement 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." Under both authorities, the Board must take into account and protect existing and potential beneficial uses. The revised tentative order appropriately applies applicable law and policy consistent with the Board's past actions on similarly-impacting projects. Regarding the beneficial uses of the creeks in the Project and the need for compensatory mitigation, see responses to Comments C-13-a, C-14, S-30, and S-44.
C-14	Corps	The Corps pointed out that the only fish species likely to be found in the project area are the mosquitofish and California roach, neither of which are special status species. The Corps described the creek hydrology as being intermittent, with perennial flow at only areas upstream to Piedmont Creek, and summer flows with poor water quality due to low dissolved oxygen levels and high temperature that would not support salmonids. Further, the Corps stated that vegetation is patchy, in part due to the District's required maintenance activities of herbicide spraying and mowing to maintain hydraulic capacity and fire safety.	Comment noted. The Board's mandate to protect and enhance waters of the State is not limited solely to the highest quality waters. Through historical impacts like urbanization and channelization, and ongoing impacts like herbicide spraying and mowing of vegetation, many waters in our Region have been degraded. Additionally, the Region's Mediterranean climate and corresponding summer drought are natural characteristics to which many native species have adapted. Creek flows are necessarily viewed in the context of local climate; the lack of perennial flow, by itself, is not indicative of a degraded water. The California roach and mosquito fish are integral parts of the creek's ecosystem even though they are not federal- or State-listed species. As described in response to Comment C-13-a, waters at the Project site support a range of beneficial uses, and the Project will result in permanent impacts to both existing and potential beneficial uses. While the Project's EIR focuses on special status species, the revised tentative order, including its requirement for compensatory mitigation, appropriately addresses Project impacts and is consistent with the Corps' own regulations, which require that the proposed discharge "take all appropriate and practicable steps to avoid and minimize adverse impacts to waters of the U.S." To the extent a project proponent seeks to implement a project with greater impacts to beneficial uses, more mitigation is necessary to counter those impacts. Examples of such approaches are listed our response to Comment C-13-a (see end of response).
C-15	Corps	The Corps stated that endangered species are not known to be present in the creek, and that the use of the creek by steelhead is not possible due the lack of continuous flows of suitable depth (at least seven inches) for adult steelhead passage, which only occurred in two to five days during the two-year flow	We disagree. Los Coches Creek (called Arroyo de los Coches in the Basin Plan) has the RARE beneficial use due to the presence of California red-legged frog (CRLF) in upper reaches of the creek. In addition, breeding colonies of CRLF in ponds near Berryessa Creek upstream of I-680 were a factor contributing to the decision not to complete a flood control project design presented in the early 2000s that could have had potential impacts to those CRLF (though we note Berryessa Creek is not formally designated as supporting the RARE beneficial use designation). CRLF could be flushed into or travel across the Project area from upper reaches of Los Coches and Berryessa creeks. As such, the creeks provide potential habitat for special status species. We note they would face a

		monitoring study.	challenging environment since the Project's design will result in impacts to habitat diversity and quality. The USFWS CAR states: The highly impacted nature of the creek provides little habitat or diversity of fish and wildlife species in its current state. Designs focused on alternatives which provide benefits to fish and wildlife through the creation of a more natural stream profile should be completed. The creation of vegetated floodplain benches is a step in this direction and could significantly improve the utility of the creek for fish and wildlife as well as provide an appropriate level of flood protection. As we presented in response to Comment C-13-a, the Project's EIR found impacts on State water quality standards, which include beneficial uses, based on the WAQ-1, WAQ-6, and BIO-4 significance criteria, but the proposed mitigation is only for the short-term construction activities. We agree that the Project site is not currently suitable as steelhead habitat.
C-16	Corps	The Corps stated that the Water Board's contention that the project will significantly restrict the beneficial uses of Upper Berryessa Creek is unfounded, noting that (1) the USFWS CAR stated cattails will return in one to three years after construction and (2) the riprap will be buried and hydroseeded with native vegetation which will improve the aquatic habitat, as mentioned in the WDR, Finding 29. Further, the Corps stated that the EIS found that no permanent impacts would occur, so it contends that mitigation is not necessary.	We disagree. See response to Comments C-13-a and S-44 regarding the Project's impacts on beneficial uses, the impacts identified in the EIR, and the need for mitigation. As noted in the comment, the order appropriately recognizes aspects of the Project's design that are intended to reduce expected impacts to existing and potential beneficial uses, and those were considered as part of developing the order's compensatory mitigation requirements.
C-17	Corps	The Corps stated there is no legal requirement for the Corps to account and mitigate for impacts in waters of the State that are not waters of the U.S.	We disagree. See response to Comments C-03 and C-13-a.

C-18	Corps	The Corps stated that 20.2 acres of mitigation land within the Berryessa watershed does not exist, making the mitigation requirement infeasible.	We disagree that the compensatory mitigation requirement is infeasible. While, under the Basin Plan's policy, the ideal mitigation project would be onsite, or as close to onsite as possible, the order appropriately addresses potential logistical constraints, consistent with the Basin Plan, by allowing a compensatory mitigation project that is outside the local watershed. The District is currently considering a range of such projects, including creek enhancement, fish barrier removal, and related projects that could be part of an acceptable compensatory mitigation proposal. See response to Comment S-11.
C-19	Corps	The Corps requested that the Water Board remove the mitigation requirements from the tentative order, other than those specified in the Certification.	We disagree. See response to Comment C-13-a.
C-20	Corps	The Corps requested the Water Board to edit Finding 20 to credit the terms of the Certification (including various BMPs) as fully controlling and mitigating for the project's water quality impacts.	We disagree. See responses to Comments C-13-a, which addresses the need for compensatory mitigation, and C-16, addressing our consideration of Project features intended to mitigate for the impacts.
C-21	Corps	The Corps requested the Water Board delete references to "jurisdictional wetlands" because the Corps contends the project site does not include wetlands.	We disagree and did not make the suggested change. See responses to Comments C-23, C-24, and S-44.
C-22	Corps	The Corps is concerned that the Water Board does not recognize that the Corps has not waived sovereign immunity for State regulations, although the Clean Water Act, section 401 authorizes a limited waiver of sovereign immunity, and that the Water Board seeks to regulate the Corps through the WDR, even though project (and the Corps) is already regulated under the Certification. (The Corps cited case law: *Hancock v. Train, 426 U.S. 167*, 178-179 (1976).)	Comment noted. See responses to Comments C-02 and C-03 pertaining to the Board's authority to issue WDRs to the Corps. In addition, see response to Comment C-13-a where we present the Corps' own regulation requiring the Corps to mitigate for impacts.
C-23	Corps	The Corps challenged the relevancy of the Governor's Executive Order W-59-93 (August 23, 1993), incorporated in the Basin	We disagree. The referenced policy, Executive Order W-59-93, is commonly known as the "no net loss" policy. We disagree that the Board lacks the authority to impose a requirement for compensatory mitigation for the Project's identified impacts to beneficial uses from the placement of fill. See responses to Comments C-02 and C-03 regarding the Board's authority to regulate the Corps.

		Plan, section 4.23, and disagrees this policy justifies the WDR mitigation requirements. Further, the Corps stated that the policy goals should "be achieved through the voluntary participation of landowners ... [and are] not meant to be achieved on a permit-by-permit basis."	Moreover, we note that the Corps' own regulations require the Corps to mitigate for impacts, including the requirement that "[N]o discharge shall be permitted unless appropriate and practicable steps have been taken which will minimize potential adverse impacts of the discharge on the aquatic ecosystem." (40 C.F.R. § 230.10 (d).). Further, the requirement is consistent with the "no net loss" policy, which has been mischaracterized by the commenter. It states: "The goal of the California Wetlands Conservation Policy is to establish a policy framework and strategy that will: Ensure no overall net loss and achieve a long-term net gain in the quantity, quality, and permanence of wetlands acreage and values in California... . Encourage partnerships to make landowner incentive programs and cooperative planning efforts the primary focus of wetlands conservation and restoration." The particular sentence cited by the commenter appears under the heading "Identify regional and Statewide restoration and enhancement goals." The full section states: STATEWIDE INITIATIVES - 1. Wetlands Inventory and Goals (...) - B. Identify regional and Statewide restoration and enhancement goals. - Using information derived from the inventory, the State will identify regional and Statewide goals for conserving, restoring, and enhancing wetlands. Achievement of these goals will emphasize maintaining economic uses (e.g., agriculture) of restored and enhanced lands and be achieved through the voluntary participation of landowners. These goals are not meant to be achieved on a permit-by-permit basis." Thus, this section is regarding a process to establish statewide and regional restoration and enhancement goals. It recognizes implicitly that additional resources may be needed to achieve these goals, such as landowner incentives and enhanced coordination of State, federal, and private voluntary acquisition, restoration, management, and enhancement programs. However, the Policy neither limits the Board's ability to require appropriate compensatory mitigation, nor precludes the Board from requiring appropriate project-specific compensatory mitigation. See responses to Comments C-13-a and C-24 for additional details for the Water Board's authority to require mitigation.
C-24	Corps	The Corps continued to question the applicability of the No Net Loss Policy to the project, because the Corps contends the project does not include wetlands.	We disagree. While the wetland delineation results did not find the Project contains wetlands as defined by the Corps 1987 manual criteria (Wetland Training Institute, Inc., 1995. *Field Guide for Wetland Delineation; 1987 Corps of Engineers Manual.* Glenwood, NM. WTI 02-1)), the Project does contain wetlands as defined in the Water Board's Basin Plan, and the order recognizes the Project's impacts will include degradation of existing and potential beneficial uses of waters of the State and U.S. through the placement of fill into about 10 acres of State waters. Rather than "bring the environment to its original state," as the Corps states, the Project will permanently place rock riprap in a reshaped trapezoidal channel and that design will reduce and limit existing and potential beneficial uses at the site and areas adjacent to it. Further, Section 2.2.3 of the Basin Plan indicates that the Board will rely on the naming conventions of the National Wetlands Inventory for mapping wetlands (Federal Geographic Data Committee. 2013. Classification of wetlands and deep water habitats of the U.S. FGDC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington, DC). Under this naming convention, significant portions of Berryessa Creek are riverine wetlands. Table 2-3 of the Basin Plan lists examples of existing and potential beneficial uses for riverine wetlands. Section 2.2.3 of the Basin

			Plan provides a list of aquatic features that the Board recognizes as wetlands, some of which would not be recognized as wetlands by the Corps. Some of the listed waterbody types that occur at the Project site including unvegetated seasonal ponded areas, the inset flood plain within the current channel, and riparian habitat, are considered riparian wetlands. The Wetlands Fill Policy and the California Wetlands Conservation Policy apply to waters of the State, including wetland and other waters including creeks such as Berryessa Creek. As stated in the Basin Plan (italic and bold font added for emphasis): "The Water Board has independent authority under the Water Code to regulate discharges of waste to wetlands ***(waters of the State)*** that would adversely affect the beneficial uses of those wetlands through waste discharge requirements or other orders." Moreover, the Project's EIR indicated that there is existing in-channel wetland vegetation and riparian habitat and acknowledged that the riparian habitat was waters of the State although it was not waters of the U.S. The Corps disclaimed the fringing wetland vegetation as wetlands because it did not have wetland soils. However, the State's authority to protect waters is focused on the protection of beneficial uses and is broader than the Corps' authority. See also response to Comment C-13-a pertaining to the Project's impacts on beneficial uses and EIR impacts findings.
C-25	Corps	The Corps speculated that the project complies with the No Net Policy if the policy were indeed applicable.	We disagree. See responses to Comments C-13-a, C-23, and C-24, and S-49 for additional details on the Project's impacts, the need for mitigation under CEQA, and the regulatory authorities for the Board to require mitigation.
C-26	Corps	The Corps requested the following changes:	Each item is addressed in individual responses.
C-27	Corps	The Corps reiterated the request to not be named as a discharger in the WDR.	See responses to Comments C-02 and C-03.
C-28	Corps	The Corps requested to remove the mitigation requirements for waters of the State.	See responses to Comments C-13-a, C-23, C-24, and S-43 pertaining to the Project's impacts, the need for mitigation, and the regulatory authority for the Board to require mitigation.
C-29	Corps	The Corp requested to remove the requirement to follow CEQA.	It is unclear which requirement the commenter is requesting be removed. However, we do not agree to remove or revise the order's language regarding CEQA, because it reflects applicable provisions of the CEQA guidelines, which require that agencies making a discretionary decision to approve a project ensure the project complies with CEQA. The Project is a project under CEQA, as recognized by the District through its completion of an EIR for the Project, and the Board, in considering the revised tentative order, will be making a discretionary decision regarding the Project. See response to Comment S-25.
C-30	Corps	The Corps requested the Water Board delete references that the project causes a net loss in wetlands.	See responses to Comments, C-23, C-24, and S-43.

C-31	Corps	The Corps requested the Water Board delete the fee provision. In addition, the Corps noted that Congress has not waived sovereign immunity with regard to fines under the CWA, and cited *Energy v. Ohio,* 503 U.S. 607 (1992). The Corps also stated it lacks authority to pay them and will not pay them.	To address this comment, we revised Finding 34 in the tentative order stating the Board's understanding of how the Corps and District are likely to divide responsibility for the order's various tasks. From a practical perspective, if fees are due under the order and the Corps does not pay them, then that responsibility would fall to the District. We have revised Finding 34 with the following edit regarding our understanding that the District would pay the fee (in the revised tentative order provided for public review we made this edit to Provision 41, though we meant to include it in Finding 34). We have deleted the following text (see underline font) from Provision 41 and added it to Finding 34. **Fees for Dredge and Fill projects.** The fee amount for the WDRs shall be in accordance with the current fee schedule, per California Code of Regulations (CCR), Title 23, Division 3, Chapter 9, Article 1, section 2200(a)(3). <u>The Water Board understands, based on information from the Corps and the District, that the District is responsible for the fee.</u>
C-32	Corps	The Corps stated that the requirements in the following findings are not necessary, and are arbitrary and infeasible: Findings 10, 11, 12, 14, 22, 26, and Provisions 7, 9, 12, 14, 22, and 28).	We disagree that the requirements cited in this comment are arbitrary or infeasible. Specifically, we are authorized to require them under the following federal and State regulations: Clean Water Act section 401(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 301 or 302 of this title, standard of performance under section 306 of this title, or prohibition, effluent standard, or pretreatment standard under section 307 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 license or permit subject to the provisions of this section. Water Code section 13263(a): 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. However, it is no longer necessary to require some of the items listed in the findings, and we transferred the remaining plans and reports that were formerly listed under Finding 10 to Finding 3. In addition, we have deleted Finding 10. Finding 3 now reads: **Local-Federal Partnership.** The District is partnering with the U.S. Army Corps of Engineers (Corps) for the Upper Berryessa Creek Flood Risk Management project (Project) to increase flood protection in the surrounding community. Construction of the Project was authorized by Congress in the Water Resources Development Act (WRDA) of 1990, Public Law 101-640, section 101(a)(5). The District and Corps are each funding Project costs, and, between the two sponsors, are dividing and/or sharing the various roles and responsibilities, such as design,

			construction, and post-construction operations, in accordance the Project Partnership Agreement signed by the Corps and District on May 17, 2016. Regarding cost-sharing, the Project Partnership Agreement stipulates that the District will contribute 25 to 50 percent of the total Project cost, in accordance with the WRDA of 1986, Public Law 99-662, as amended (United States Code, Title 33, section 2213). The cost-sharing schedule specifically requires the Corps to conduct (and/or oversee) construction contracting and activities, and the District to provide all lands, easements, rights-of-way, relocations, and disposal areas (LERRD). The WRDA also requires the Corps to prepare an operations and maintenance manual for the Project (see Finding 16-Maintenance). While the WRDA and Project Partnership Agreement stipulate cost-sharing criteria between the Corps and District, construction management and implementation to the Corps, and LERRD to the District, this Order specifically requires the development and implementation of additional plans, which are described in more detail in this Order: a. Adaptive Management Plan (Finding 17; Provision 18); b. Mitigation and Monitoring Plan for compensatory mitigation (Finding 21; Provision 19); c. Post-construction Stormwater Management Plan (Finding 20 (Impacts); Provision 16). The Water Board's understanding is that the District will be responsible for these three plans because the District owns the Project and is responsible for post-construction operations and maintenance. In addition, the Water Board understands that certain aspects of the construction activities are the responsibility of the Corps (see Findings 8, 9, and 10). Note that the Finding and Provision numbers listed above are those in the revised tentative order published in January 2017. We assert that the revised tentative order's requirements are reasonable and are based on the application materials and a large number of meetings held with and communications between Board staff and Corps and District staffs. See responses to Comments S-47 for reporting requirements, and S-25 for the Certification rescission. The following sections address each of the other items listed in the comment: Finding 11 - Final 100 percent Design Plans: We deleted the last sentence because we no longer require the Corps to revise the Planting Plan with an additional five years of monitoring the growth of tree plantings in the Project site. We now require monitoring requirements to be addressed in the Mitigation and Monitoring Plan. In addition, we revised this finding to reflect receipt of the Plans dated August 4, 2016.

			Finding 12 - Utilities Plan: Given that we are now more familiar with the details of the Project, we will no longer require a Utilities Plan. Thus, we deleted the last two sentences in Finding 12. We also clarified which utilities would be realigned or replaced by removing the ambiguous language implying all utilities in the right-of-way would be realigned or replaced. In addition, we have deleted Provision 8 that required a Utilities Plan. Finding 12 now reads: **Replace and Realign Selected Utilities Infrastructure.** Multiple utility lines are in the Project right-of-way, including sanitary sewer, stormwater, irrigation, cable, electrical, telephone, fiber optic, and gas lines. The locations of some utilities are estimated and will be confirmed during Project construction activities. Consistent with the 100 percent design plans, the utility infrastructure planned for replacement and/or realignment are sanitary sewer, stormwater lines and outlets, a water irrigation line, an electric line, and two electric utility vaults. In addition, the Application states that all utility work will be implemented by cut and fill procedures with no directional drilling. Finding 14 (and Provision 12) - Dewatering Plan: We revised this finding based on the current status of the Corps' Dewatering Plan. Finding 14 now reads, with underlined text being new since the posting of the November 2, 2016, revised tentative order: Dewatering of surface water or groundwater that accumulates at excavated areas will likely be necessary. The Project EIR includes a mitigation measure for creek dewatering (WAQ-B, "Prepare and Implement a Dewatering Plan"). The Corps' consultant, Aquifer Sciences, Inc., submitted a Dewatering Plan to the Water Board on October 21, 2016. The existing plan addresses groundwater at the Project site from station 87 through 156, where groundwater will likely be encountered during construction. In areas upstream of station 156, where the Corps does not anticipate encountering groundwater, the Corps plans to track groundwater elevations using temporary piezometers. The plan does not yet address surface water flows. Water Board staff notified the Corps and its consultant on October 26, 2016, that in order for the plan to be acceptable to the Executive Officer, the following revisions are necessary: a. Include appropriate measures to address surface water flows throughout the Project site, should they be present; b. Explain how coffer dams, dissipation devices, and other dewatering equipment and infrastructure will be inspected and maintained while in use to appropriately protect water quality; c. Include appropriate measures, including sedimentation and erosion control measures, to protect water quality when placing and removing coffer dams, dissipation devices, and other dewatering equipment and infrastructure; d. Recognize that the Discharger will complete measures already proposed in the October 21, 2016, plan for areas of Project dewatering needed outside stations 87 through 156, should there be a need for dewatering in those other areas. <u>The consultant has submitted two revisions since December 8, 2016, and is working closely with Water Board staff to complete</u>

			a final plan that meets the Water Board's requirements. Finding 22 - Monitoring and Technical Reports: Finding 22 is not arbitrary, it is based on CWA section 401, which requires the inclusion of "monitoring requirements necessary to assure that any applicant for a Federal license or permit will comply with any applicable effluent limitations and other limitations," and Water Code section 13267, which authorizes the Board to require monitoring and reporting of monitoring for dredge and fill projects. As explained in Finding 22, "the monitoring and technical reports will demonstrate protection of beneficial uses during construction and maintenance projects as well as verify the success of efforts to mitigate impacts … and will inform the Adaptive Management Plan and its implementation." Finding 26 (now 25) - CEQA Responsible Party: Finding 25 is not arbitrary, as it points out the Board's authority to require mitigation through a combination of mitigation measures identified in the EIR and the requirements of the order. See responses to Comments C-13-a, S-18, S-19, S-20, and S-21 regarding CEQA findings and the need for additional mitigation. Provision 12 (now 15) - Post-Construction Stormwater Management Plan: We require this plan for the discharger to demonstrate that the design of the Project with impervious surfaces will not adversely impact the creek, and that the discharger will incorporate, or is collaborating with the local municipal stormwater agencies to ensure that, trash reduction measures will be established at the site. See response to Comment S-56. Provision 14 (now 17) - Maintenance: The provision references Finding 16, which describes how maintenance activities will be consistent with the District's existing Stream Maintenance Program. In Provision 17, we have removed the Lessons Learned report because this will already be covered under the Adaptive Management Plan. The following text has been deleted from Provision 17: "The discharger shall prepare a lessons learned report, consistent with the next provision, as described in Finding 16." Provision 22 - Geomorphology Report: This provision was redundant with the reporting requirement under the Adaptive Management Plan (Provision 18(f)). Provision 22 has been deleted. See response to comment C-40 for the explanation for the Geomorphology Report requirement under Provision 18(f). Provision 28 (now 30) - As-built Plans: Provision 30 requires the discharger to submit electronic as-built plans to the Water Board. This is a standard requirement for all flood control projects to document the final constructed project and that project's impacts in jurisdictional waters from fill and excavation at a site. However, we have revised the due date for this report to 180 days (6 months) versus 8 weeks from the date the construction of the Project is completed.

C-33	Corps	The Corps requested the Water Board remove the requirements for the Executive Officer to review project plans and reports because it believes the Water Board is not authorized to negotiate with the Corps and influence the Corps' work or its contracting specifications.	We do not agree and have not made the requested change. See response to Comment C-04-c pertaining to the Executive Officer's review and acceptance of plans and reports.
C-34	Corps	The Corps requested the Water Board remove the requirement for a Utilities Plan; the Utilities Plan is superfluous and a waste of public resources.	We have removed the requirement for a Utilities Plan in the revised tentative order, previously part of the tentative order in Finding 12 and Provision 8. See response to Comment C-32.
C-35	Corps	The Corps pointed out that the tentative order does not recognize the Corps' Groundwater Management Plan submitted on January 26, 2016, and that that Water Board has not responded to the submittal yet.	Comment noted. We revised Finding 15 to acknowledge the submittal of the January 26, 2016, Groundwater Management Plan and the Executive Officer's acceptance of the plan (email dated March 8, 2016, from Susan Glendening (Board staff) to Amanda Cruz (Corps staff)). There are two plans intended to address potential water quality impacts from dewatering at the Project. The first is the submitted Groundwater Management Plan, which addresses potential impacts from a limited area related to the Jones Chemical Plant contamination plume. The second requirement is a project-wide Dewatering Plan to address potential discharges of sediment and turbidity that may occur from dewatering in other Project areas and is consistent with Board requirements for projects with similar potential activities and impacts. We revised Finding 14 to address the need for a project-wide dewatering plan that may include project-wide groundwater dewatering other than the area within the potential influence of the identified contamination plume, which is addressed in Finding 15. For revised language in Finding 14 for a project-wide Dewatering Plan requirement, see response to Comment C-32.
C-36	Corps	The Corps requested the Water Board remove the due dates for the following plans, which are currently set at "before construction begins": Mitigation and Monitoring Plan, the Post-Construction Stormwater Management Plan, and the Operations and Maintenance Manual. The Corps pointed out that construction started on October 3, 2016, so the deadline has already passed. In addition, the O&M Manual cannot be completed until after construction is	Comment noted. We have relied upon the Corps' and District's representations in revising the tentative order to state the Board's understanding of which of the order's various required tasks are likely to be completed by which discharger(s) and to revise due dates to allow sufficient time for Plan preparation. The Board agreed during the interagency meeting of January 4, 2016, that the O&M Manual due date would be the date the Corps signs the Project over to the District. Board staff has participated on an interdisciplinary team with the Corps and other agencies to develop the Napa River flood control project O&M manuals, and it is our intent to participate in a similar interagency working group for this Project. We recognize that the O&M Manual may change if the Project's design changes. That is appropriate, as the O&M Manual should appropriately reflect the as-built Project design. The O&M Manual is addressed in Finding 16 (now Finding 17) (and Provision 18 - Adaptive Management Plan). Since the Corps will develop the O&M Manual in accordance with the Water Resources Development Act of 1990, the order does not require the development of the O&M Manual. Instead, the order requires the O&M Manual to be developed in a public process including the Board and other interested parties and public resource agencies. In addition, the order requires the

		completed so that it may include any changes that occur during construction.	O&M Manual to incorporate the Adaptive Management Plan standards and criteria. Regarding the Mitigation and Monitoring Plan, we revised the due date to align with planned District deadlines for adoption of capital implementation project budgeting for creek restoration and enhancement projects (see response to Comment S-21). The Post-Construction Stormwater Management Plan is consistent with municipal stormwater NPDES permit requirements to address the impacts of runoff from new and redeveloped impervious surfaces, including discharges of trash, under post-construction conditions (i.e., for the life of the Project). We revised the due date for this plan to be no later than 90 days after adoption of this Order.
C-37	Corps	The Corps requested the Water Board to remove the requirement for the Adaptive Management Plan because the Corps does not have congressional authorization to create an Adaptive Management Plan.	Comment noted. See responses to Comments C-13-b pertaining to the Adaptive Management Plan requirements and C-32 regarding the revised due date and new language in Finding 3 stating that it is our understanding that the District is responsible for development and implementation of the Adaptive Management Plan.
C-38	Corps	The Corps pointed out that the purpose of the Operations and Maintenance Manual is “for the safety and reliability of the functional performance of the flood risk management of the project as approved by Congress.” The Corps further stated that it will not change the manual unless there is a change that requires formal initiation of the process by the District, subject to approval by the Corps, and that the Water Board has no authority to change this process.	Comment noted. We support the manual's intended use to ensure the safety and reliability of the as-built Project and also recognize that, similar to our work with the Corps and the Napa County Flood Control District on the O&M Manual for the Napa River Flood Control Project and other projects listed in our response to Comment C-13-a, there are opportunities to reduce future operation and maintenance impacts, reduce public expenditures for operation and maintenance, and improve Project support of beneficial uses, through coordinating on the manual's preparation, including avoiding potential "cookie cutter" implementation of standard Corps requirements. See responses to Comment C-36 concerning development of the O&M Manual.
C-39	Corps	The Corps requested the Water Board remove the requirement for a narrative description of changes for plans because this was not required in the 401 certification, and the 100 % plans have already been submitted.	We disagree with the request to remove the requirement, which would only apply to future submittals. The narrative of description of changes is for the benefit of the discharger to expedite Board staff's review of new submittals. Otherwise, Board staff would need to comb through every page to find differences between the previous draft and current submittal, which has the potential to result in unnecessary Project delays. See response to Comment C-33.

C-40	Corps	The Corps requested the Water Board remove the requirement for a lessons learned report because the Corps prefers any such analysis to be under its own internal process, if it were to be done at all.	We concur that the Lessons Learned report is not necessary, and we have revised the tentative order to remove this requirement. This is because it would have been duplicative of the Geomorphology Report we require under the Adaptive Management Plan. We note that the Corps is already planning to conduct geomorphology monitoring, as indicated in the Revised Final EIS dated March 2014, which states that the Corps will: ".... investigate [P]ost-sedimentation after the project is constructed as part of project monitoring, and cross-sections will be obtained...." (see response to Comment #1 in U.S. Army Corps of Engineers Response to Independent External Peer Review, March 2014. (Available as hard copy upon request from Board staff)). The order requires development and implementation of an Adaptive Management Plan to not only calibrate and ground-truth the Project's design assumptions and outcomes, which are computer-generated, but to also inform the maintenance guidelines aspects of stream maintenance, which the District is already doing under its Stream Maintenance Program procedures for other creeks. The purpose of developing maintenance guidelines is to identify the maximum tolerances for sediment and vegetation maintenance at the Project site. This is necessary because, as described in the Board staff memo (October 2016), the Project channel is a depositional system, and, given the Project's design, sediment will likely not be transported efficiently through the system. The District is required to prepare an Adaptive Management Plan to capture the details of geomorphology monitoring the Corps plans to conduct, in addition to the monitoring necessary to meet the Board's requirements pursuant to Provision 18. The District will also prepare the Geomorphology Report so that it can be incorporated in the District's maintenance guidelines for the Project site, consistent with the District's Stream Maintenance Program procedures.
C-41		The Corps stated that the following sections are either unclear or incorrect: Table 1; Table 2: Findings 3, 5, 6, 15, 16, 18, 20, 25, 28, and 31; Discharge Prohibitions 9 and 10; Provision 13, 15, 16, 19, 20, 24, 27, and 30; Attachment A, Figure 3; Attachment C, Item b; and Attachment C, Table 1.	Comment noted. The information in the tentative order is based on the materials submitted by the Corps and District and our additional communications with them. In significant part, it was previously reviewed by Corps and District staff as part of their review of an administrative draft of the Certification and modified in response to comments received. Based on this comment, it is unclear what the commenter believes is unclear or inaccurate in the cited items. We have listed each item here for reference and have noted cases where we have prepared a response to a different comment with the same topic: Table 1 - Fill and Excavation Quantities: We revised the area of access ramps from 0.01 to 0.10 acres. Table 2 - Impacts: See responses to Comments C-13-a, S-36, and S-44. Finding 3 – Local-Federal Partnership: See response to Comment C-37. Finding 5 (now 7) - Project Elements: Revised the quantity of ramps from three to two; see responses to Comments C-41 and C-45. Finding 6 (now 8) - Staging, Stockpiling, and Hauling: See response to Comment C-02. Finding 15 (now 16) - Maintenance: We have revised this finding based on the District's revised sediment transport analyses and the incorrect representation of the District's plans submitted as as-built plans.

			Finding 16 - Maintenance: See response to Comment C-36. Finding 18 (now 19) - Rare and Endangered Species: See response to Comment S-36. Finding 20 (now 21) - Mitigation: See response to Comment C-18. Finding 25 - CEQA: See responses to Comments S-18, S-19, S-20, and S-21. Finding 28 (now 27) - Basin Plan Wetland Fill Policy: See responses to Comments C-24, and S-43. Finding 31 (now 29) - California EcoAtlas: See response to Comment C-53. Discharge Prohibition 9 - This provision prohibits the use of bank stabilization methods and materials other than what is specified in the 100 % design plans. We disagree this is poorly defined or technically inaccurate. Discharge Prohibition 10 - Dewatering Plan: We revised this prohibition by replacing the Executive Officer's "approval" with "acceptance" to read as follows: "This Order prohibits any creek dewatering, diversion, or discharge before the Executive Officer accepts, in writing (e.g., electronic mail), a Dewatering Plan that meets the requirements of Provision 12." The prohibition originally required the Executive Officer to "approve" the plan. See responses to Comments C-32 and C-35. Provision 13 (now 16) - Fill Quality Report: See responses to Comments C-55 and S-57. Provision 15 (now 18) - Adaptive Management Plan: See responses to Comments C-32 and C-37. Provision 16 (now 19) - Mitigation and Monitoring Plan: See response to Comment S-53. Provision 16 (now 19) - Mitigation Reporting Requirements: See response to Comment S-47. Provision 19 (now 21) - Log of Impacts: This is for tracking the occurrences of impacts to jurisdictional waters. The mitigation proposal must address temporal impacts, which increase each year the mitigation project has not been completed. Provision 19 (now 21) states: "An additional 10 percent mitigation per year, on an areal basis, will be required for the portion of mitigation not completed within the required 12-month period." Provision 20 (now 23): Requires reporting of a non-compliance event, such as an unauthorized discharge into waters of the U.S. or of the State. Provision 24 (now 26): Requires submittal of annual reports after 10 years of monitoring, if necessary. This is based on the need to report on mitigation monitoring if, during the first 10 years, problems arise resulting in the need for corrective actions, or if the first 10 years of monitoring do not clearly indicate mitigation performance criteria have been met. Provision 27 (now 30) - As-built Plans: See responses to Comments C-32 and S-67. Provision 30 (now 34) - This Provision requires the discharger to follow the plans submitted to the Water Board, including the

			requirements in Provisions 7, 8, 9, 10, 14, 15, 27, and 28 (now Provisions 12, 13, 15, 16, 18, and 19), which are, respectively: 7 - Final Design Plans: see response to Comment C-04-c (regarding Executive Officer's review of plans). 8 - Utilities Plan: see responses to Comments C-32 and S-53. 9 - Dewatering Plan: see response to Comment C-33. 10 - Groundwater Management Plan: see response to Comment C-33. 14 - Maintenance: see response to Comment C-08. 15 - Adaptive Management Plan: see responses to Comments C-32 and C-37. 27 - Notice of Mitigation Completion: see above regarding Provisions 15 and 16. 28 - As-built Plans: see above regarding Provision 27. Figure 3: See response to Comment S-64. Attachment C (now B), item b: See response to Comment S-69. Attachment C (now B), Table 1: See response to Comment S-73.
C-42	Corps	The Corps noted the tentative order's references to the 100percent design plans and planting plans are for plans that are now outdated.	Comment noted. We have updated the tentative order to reflect the current status of submittals received to date.
C-43	Corps	The Corps stated the tentative order, Finding 3, should be corrected with the cost-sharing schedule in the Project Partnership Agreement with the District responsible for 25 to 50 percent. Further, the cost-sharing schedule applies to the total project construction costs, not "structural control features."	We revised the tentative order, Finding 3, to stipulate the cost-sharing figures in the Project Partnership Agreement between the two co-sponsors. See response to Comment C-32 for the full text of Finding 3. The reference to the "structural flood control features" applies to an administrative draft and did not appear in the tentative order.
C-44	Corps	The Corps pointed out the correct construction schedule is construction starting in early October and will be completed by December 31, 2017.	Comment noted. We revised the schedule in Finding 6 (formerly 5) to read: "…project construction began in early October 2016 and is scheduled to be completed in December 2017, with the intent to be complete before the planned opening of the new Milpitas BART station in late 2017."

C-45	Corps	The Corps provided the following new information or corrections for Finding 6: the box culverts may be pre-cast, or cast in place; the right bank will have two, not three, concrete access ramps; and the Corps will only replace or realign utilities where necessary (not all utilities in the right-of-way).	Comment noted. We revised Finding 6 (now 7) as follows to clarify elements to be constructed cited in the comment: • Build three new pre-cast (or cast in place) concrete box culverts • Construct two concrete access ramps on the right bank (looking downstream), one located about 1,000 feet upstream of Montague Expressway, and the other just downstream of I-680; and a concrete access road to the new UPRR culvert • Replace and realign selected utilities within the project right-of-way according to the 100 percent design plans dated August 4, 2016
C-46	Corps	The Corps noted that its 401 Certification application states the Corps would be responsible for monitoring the tree and shrub plantings for only five years (not 10 years), and requested the Water Board revise Finding 11 and Attachment C to reflect this.	Comment noted. See responses to Comments C-32 and S-45.
C-47	Corps	The Corps pointed out errors in the amount of acreage for impacts in State waters that are not waters of the U.S. (5.92 acres), and the associated total (10.1 acres) acreage of impacts in jurisdictional waters.	We will correct the inconsistencies. The correct total area of impact is 9.81 acres, as described in the tentative order, Finding 20, and in Table 2, of which 4.18 acres is waters of the U.S. and the State, and 5.63 acres is waters of the State.
C-48	Corps	The Corps disagrees that the riprapping the creek will permanently impact the creek's beneficial uses.	We disagree. See response to Comment C-13-a.
C-49	Corps	The Corps stated that the subject of Finding 28 does not appear to be related to the WDR and requested the Water Board to remove this finding.	We disagree. Finding 28 describes the Basin Plan Wetland Fill Policy, which does apply to the WDRs. See response to C-24
C-50	Corps	The Corps requested for the tentative order to report the different amounts of new and redeveloped maintenance roads, rather than only reporting the total amount.	Comment noted. We have revised Finding 6 (now 7) to read: "Build 4.33 acres and 10,865 linear feet of new maintenance roads and redevelop 2.47 acres and 5,978 linear feet of existing maintenance roads… ." The revised tentative order appropriately includes requirements to address discharges of pollutants from both the new and redeveloped areas of impervious surface.

C-51	Corps	The Corps requested the Water Board to edit Finding 20 to state that stormwater areas will be hydroseeded with native grasses to reduce run off and that road runoff will be directed to vegetated channel banks.	We revised Finding 21, where the referenced mitigation requirements are presented in the revised tentative order, to note the existing plan to hydroseed in the construction disturbance areas. The revised text (paragraph 1) reads: "The Discharger will seed the creek channel beds with wetland species to serve as a seed bank to restore the 0.45 acres of wetland vegetation to be removed by the Project. The Discharger will also seed the banks with native grass species. The wetland and grass species palettes are listed in the 100 percent Planting Plan specifications (section 32 92 19)." Please note that Finding 25, where EIR mitigation measures are presented, addresses hydroseeding in disturbed areas (see 3rd bullet in Finding 25). We did not revise the order with the suggested edit as this issue is the subject of the Post-Construction Stormwater Management Plan (Provision 15). See also our response to Comment C-08 and C-13-a pertaining to the questionable likelihood of success for the native vegetation.
C-52	Corps	The Corps requested the Water Board to distinguish between above grade and buried floodwalls since they have different impacts to the environment.	Comment noted. The tentative order includes text explaining this in Table 2, footnote 4.
C-53	Corps	The Corps stated that the EcoAtlas database is not applicable to the project because the Corps contends the project does not include jurisdictional wetlands.	We disagree. EcoAtlas is applicable to the Project because we disagree with the contention that the Project does not include jurisdictional wetlands. Further, the Board requires compensatory mitigation for the Project, which will include monitoring. The impacts tracked in EcoAtlas are not just impacts to jurisdictional wetlands, as defined by the criteria of the 1987 Corps manual. EcoAtlas uses the California Aquatic Resources Inventory (CARI) consisting of, among other wetland types, fluvial channel. See responses to Comments C-49 and S-43 with additional details about scope of the State's wetland protection policies applicable to other waters outside of a wetland that conforms to the Corps' manual.
C-54	Corps	The Corps stated that the Water Board Executive Officer's approval of the Dewatering Plan is not necessary since the Corps will be abiding by the general permit.	We disagree. See the responses to Comments C-04-c and C-35. Further, creek and groundwater dewatering activities within waters of the U.S. and State are specifically prohibited by the statewide Construction General Permit because the Construction General Permit does not regulate activities within jurisdictional waters. The revised tentative order includes a mechanism to allow the activities, with appropriate protections.
C-55	Corps	The Corps requested the Water Board specify that Provision 13 applies to imported fill only, not all fill.	Comment noted. No edit is necessary as Provision 13 (now 16) states in the first line: "….any imported soil fill material…"

CAB-01	CCCR, Audubon, and Baykeeper	The Citizens Committee to Complete the Refuge, Santa Clara Valley Audubon Society, and San Francisco Baykeeper (CAB) appreciate this opportunity to comment on the tentative order (Order) for Waste Discharge Requirements (WDR) for the Upper Berryessa Creek Flood Risk project (project) of the Santa Clara Valley Water District (SCVWD) and the U.S. Army Corps of Engineers (Corps).	Comment noted.
CAB-02	CCCR, Audubon, and Baykeeper	CAB noted that it regrets the project design relies on the trapezoidal channel model, which is out-of-date with current, preferred standards for creek redesign, and has submitted comments to help ensure that other current standards are applied.	Comment noted. See response to Comment C-13-a.
CAB-03	CCCR, Audubon, and Baykeeper	CAB requested the Water Board revise the order to clarify the Water Board's intention for MMP completion and availability, rather than adopting the order before these issues are resolved. CAB is also concerned about the order's due date for the MMP being 30 days before construction.	Comment noted. Water Board staff worked with Corps and District staff for approximately a year to obtain an appropriate compensatory mitigation proposal, but none was submitted. In the absence of an acceptable proposal, the revised tentative order allows a reasonable amount of time for an acceptable plan to be prepared, submitted, and implemented. It also includes appropriate conditions to ensure the plan will mitigate for the Project's impacts. Once a plan has been submitted, we will provide an opportunity for the public to review and comment on it. See also response to Comment RCD-05 pertaining to the MMP submittal due by June 30, 2017.
CAB-04	CCCR, Audubon, and Baykeeper	CAB requested that the order include a requirement for a contingency fund, given that the MMP has not yet been identified or approved.	We are not proposing to revise the order to require such a fund, as both the Corps and District are public entities that will persist into the future, unlike private entities, such as development LLCs, and which have the ability to budget additional money, as needed, to meet order requirements. Further, based on conversations with Corps staff in October 2016, the Corps has a 20 % contingency fund available to address changed/unexpected circumstances during project construction. See also response to Comment CAB-03.

CAB-05	CCCR, Audubon, and Baykeeper	CAB is concerned that the order, specifically Provision 15.f, does not adequately potential adverse impacts from turbid discharges and sediment transport in downstream reaches from the project site.	Comment noted. Provision 15.f (now 18.f) regards the transportation and erosion or deposition of sediment within the channel and not water column turbidity. Our best professional judgement about the Project design is that the Project will result in sediment aggradation. While this indirectly affects creek processes downstream with respect to sediment budgets, the concern in this case is the direct effect of aggradation within the Project site rather than effects from sediment being transported offsite. During construction, we do not expect the Project to cause increased turbidity levels above water quality objectives downstream of the Project site, provided that the Discharger implements an acceptable Dewatering Plan.
CAB-06	CCCR, Audubon, and Baykeeper	CAB is concerned that the order does not adequately address the potential nesting areas within the project footprint.	Comment noted. We have revised the order, Provision 18 (now Provision 20), to require the Discharger to conduct nesting bird surveys following established protocols prior to construction and during the nesting season, which is consistent with the EIR (e.g., Table ES-2, Section 3.5.5 and 3.5.6).
CAB-07	CCCR, Audubon, and Baykeeper	CAB is concerned that because the California Department of Fish and Wildlife did not comment on the project draft EIR and were not part of the permitting process, the State-mandated nesting surveys that are routine for other similar projects are not included in this project.	See response to Comment CAB-06.
CAB-08	CCCR, Audubon, and Baykeeper	CAB noted it is pleased that the order incorporates maintenance measures applicable to post-construction maintenance that are comparable to the District's Stream Maintenance Program (SMP), specifically that timely nesting surveys are performed prior to maintenance actions.	See response to Comment CAB-06.
CAB-09	CCCR, Audubon, and Baykeeper	CAB requested the Water Board revise the order to incorporate State nesting survey actions during construction activities.	See response to Comment CAB-06.

RCD-01	GCRCD	The Guadalupe-Coyote Resource Conservation District (GCRCD) appreciates this opportunity to provide comments regarding the tentative order for Waste Discharge Requirements for Santa Clara Valley Water District and U.S. Army Corps of Engineers, Upper Berryessa Creek Flood Risk Management project, Santa Clara County.	Comment noted.
RCD-02	GCRCD	GCRCD noted that the project does not meet its 2001 Notice of Preparation objectives under the CEQA process. While acknowledging that the original NOP describes a larger project, the Corps' decision to remove the higher-quality watershed area from the project should not reduce its obligation to meet the stated objectives, which include: improve flood protection in the cites of San Jose and Milpitas; reduce sedimentation and maintenance requirements in the creek; provide for recreational amenities; and integrate ecosystem restoration into the project.	This is a CEQA comment for the Lead Agency; the Water Board is not the Lead Agency. We agree that the stated objectives of reduced sedimentation and maintenance in the creek, as well as integrating ecosystem restoration into the Project, are consistent with the Water Board's requirements for mitigation.
RCD-03	GCRCD	The GCRCD stated the project appears to make no attempt to improve the ecological condition of the creek, and focuses on stability, rip rap, vegetation (roughness) maintenance, and sediment routing.	We concur and are requiring mitigation as a result of the Project's impacts to beneficial uses. See response to Comment C-13-a pertaining to the Project's impacts on beneficial uses and the need for compensatory mitigation.
RCD-04	GCRCD	The GCRCD is concerned that the Mitigation and Monitoring Plan is not available to review, and presumes mitigation will occur offsite.	Comment noted. See responses to Comments RCD-09, RCD-11, and S-21. In addition, both the Adaptive Management Plan and O&M Manual will be developed in a public process.

RCD-05	GCRCD	GCRCD stated that the tentative order does not consider the potential for steelhead to adaptively thrive in warmer waters, as evidenced in other areas in the Coyote Creek watershed, nor does it consider other special status species included in the Santa Clara Valley Habitat Plan (e.g., Habitat Plan, Volume 4, pages 4-83, 84).	Comment noted. Regarding steelhead thriving in warmer waters in the Coyote Creek watershed, we concur that the Project design could have provided better water quality and habitat conditions for steelhead. Regarding the other species in Habitat Plan, Chapter 4, pages 83-84, we agree that the Project site could have provided better quality habitat for western pond turtle, California tiger salamander, and California red-legged frog by, at a minimum, serving as a migration corridor to the better-quality habitat downstream and upstream of the Project site (see response to Comment 13-a).
RCD-06	GCRCD	The GCRCD is concerned that the Corps used the baseline conditions, with generally poor quality habitat, as the standard for determining the project design and will perpetuate the existing conditions. The GCRCD cited the following excerpt from the USFWS Coordination Act Report for this point: "A variety of suitable habitats for the western pond turtle, a State-listed species of concern, are present within the Coyote Creek watershed... The stream channel downstream from Los Coches Creek has a small, constant flow throughout the year, and may provide suitable aquatic habitat for the western pond turtle. However, steep channel slopes do not provide suitable nesting habitat for western ponds turtles within the study area. Lower Berryessa and Lower Penitencia creeks do provide some marginal basking habitats within the channel; yet this species has not been documented to occur. The Corps has determined that due to the limitations in suitable habitat, the project would have no effect on State listed species as well (Corps 2013)."	We agree the Project site could have better-quality habitat than existing conditions, and a different project design could have provided suitable habitat for species not currently present, such as the western pond turtle. The USFWS Coordination Act Report noted the existing low-quality habitat, as follows, but also recommended a more natural design to improve habitat quality: The highly impacted nature of the creek provides little habitat or diversity for fish and wildlife species in its current state. Designs focused on alternatives which provide benefits to fish and wildlife through the creation of a more natural stream profile should be completed. The creation of vegetated floodplain benches is a step in this direction and could significantly improve the utility of the creek for fish and wildlife as well as provide an appropriate level of flood protection." Further, the final recommendation in the USFWS Coordination Act Report is for the Corps to: "Continue work with the Service and other resource agencies to quantify project affects and determine mitigation needs as modifications to the selected project alternative develop." Due to the Project's impacts, the Water Board requires compensatory mitigation. The Corps asserts that mitigation onsite is not feasible due to budgeting and scheduling constraints. By default, the mitigation project will need to be offsite. In addition, the requirement for an Adaptive Management Plan in the revised tentative order (Provision 18) is intended to inform sediment and vegetation maintenance activities to minimize future, ongoing impacts to the extent feasible.

RCD-07	GCRCD	The GCRCD is concerned that the Corps has not adequately addressed sedimentation issues within the project area. To make this point, the GCRCD referenced the Peer Review Report (Batelle Institute, 2013) and Water Board staff memo (Riley and Bozkurt-Frucht, 2016) citing the same concerns. Specifically, these references noted that the sediment transport model attributed 50 percent of sediment flux originating from the channel bed and banks, yet this is not supported by empirical or analytical evidence; and that the Operations and Maintenance Manual will be developed after construction is completed, suggesting that the Corps has not fully considered sediment maintenance needs in the project."	See response to Comment S-26.
RCD-08	GCRCD	The GCRCD stated that the District's Stream Maintenance Plan manual is being updated, and in its current or future form, may not address the issues needed for this project, particularly with respect to herbicide application.	The SMP's herbicide application criteria have been approved by agencies including the Water Board, California Department of Fish and Wildlife, and National Marine Fisheries Service. We note that any sediment and vegetation maintenance activities in the Project, including herbicide use, would need to be approved via the Adaptive Management Plan procedures, as stated in Provision 18(b): "A decision-making process to avoid sediment and/or vegetation removal before analyzing channel capacity based on field survey data..." Further, as stated in Finding 16.c of the revised tentative order: "In the event there is a conflict between the SMP Order, the O&M Manual, and this Order, the requirements of this Order will govern."
RCD-09	GCRCD	The GCRCD stated that "Insufficient detail has been provided to evaluate the adequacy of the adaptive management plan. For example, there is a requirement for the geomorphology report to be prepared after 5 measurable flood events, but as has been discussed with the Guadalupe River Flood Control project Adaptive Management Team, details such as which gage is used and what period of record is used, are important to decision-making and determination of	The revised tentative order specifies monitoring and tracking of flow events to evaluate sediment transport potential, channel morphology features, sediment deposition, and a synthesis of field observations compared to design outputs and assumptions. We recognize that the order does not cover every aspect of the plan but we expect that any gaps will be addressed during the development of the Adaptive Management Plan, the process of which will be an open, public process with a public review period.

		whether objectives have been met."	
RCD-10	GCRCD	The GCRCD stated that it is hard to justify moving the project forward without clarity on what that mitigation will be required, and is concerned that the minimum mitigation-to-impact ratio requirement of 2:1 may or may not be adequate.	We concur that a 2:1 ratio in and of itself would be insufficient. As such, the order states the minimum ratios that would be required for permanent and temporary impacts and includes an escalation rate of 10 percent each year when there is a delay in implementing the mitigation. Further, it describes other factors that would increase the ratio, such as uncertainty of success and out-of-kind mitigation. Please note that the order includes examples of conceptual projects that would meet the minimum ratios listed and be appropriate to use as mitigation. Finding 21 states: Examples of potentially acceptable mitigation projects include dam removal, increasing salmonid habitat complexity in another creek, replacing a concrete channel with restored riverine wetland habitat, and preparing a watershed management plan and implementing specified projects … . See response to Comment CAB-03 pertaining to the MMP final due date of June 30, 2017.
RCD-11	GCRCD	The GCRCD requested that the MMP monitoring requirements be developed in sync with the Santa Clara Valley Habitat Plan, pursuant to the following excerpt: "The Implementing Entity will also coordinate and share monitoring and other experimental results with other regional restoration and management programs. A well-coordinated and scalable monitoring program design will enable the Implementing Entity and others to measure and evaluate change in resources and threats in individual reserves, across the entire Plan area, and within the ecoregion. Such coordination requires standardization of protocols, sampling design, and training of personnel, as well integrative data analysis."	Comment noted. Such a coordinated approach would be allowable under the revised tentative order.
RCD-12	GCRCD	The GCRCD stated that the project is not in compliance with the Santa Clara Valley Habitat Plan, even though it falls within its regional planning area. The GCRCD cited the following excerpt in the Habitat Plan, applicable to Berryessa Creek improvements:	Comment noted. A portion of the Project reach, from station 185 to Interstate 680, is within the Habitat Plan area. We concur that construction in this section (from stations 185 to 192, about 700 linear feet) is not consistent with the Habitat Plan and will consider this when evaluating the Mitigation and Monitoring Plan. The goals of the Habitat Plan are consistent with the Water Board's policies.

		"…methods that balance flood protection with protection of streams and natural resources. Examples of these methods include expanding the inchannel flood plain in areas where the existing channel is highly constrained, and installing bypass channels to reduce the quantity of water flowing through natural streams during high flows, thus reducing flooding and scouring potential. These flood-protection technologies help keep streams as natural as possible."	
RCD-13	GCRCD	The GCRCD noted that the project does not conform to the voter-approved purpose of Santa Clara Valley Water District's (SCVWD) Safe, Clean Water & Natural Flood Protection Program. This project has been funded in part by this SCVWD program, which was approved in 2012 by two-thirds of voters. The project does not meet the community's needs and values, as stated on the SCVWD's website: "In November 2012 the voters of Santa Clara County overwhelmingly supported Measure B, the Safe, Clean Water and Natural Flood Protection Program. Developed with input from more than 16,000 residents and stakeholders, this 15-year program was created to match the community's needs and values." "The voters of Santa Clara County clearly recognize the importance of a safe, reliable water supply. They value wildlife habitat, creek restoration and open space. They want to protect our water supply and local dams from the impacts of earthquakes	Comment noted.

		and natural disasters."	
RCD-14	GCRCD	The GCRCD requested the Water Board to postpone its consideration in adopting the order, until the outstanding questions for a mitigation plan have been answered and the missing plans, manuals, etc. have been developed and circulated for public review.	Comment noted. In addition, as noted in responses to Comments RCD-09 and S-21, the Water Board will post for public comment the draft Mitigation and Monitoring Plan for public review.
S-01	SCVWD	The Santa Clara Valley Water District (District) appreciates the opportunity to Comment on the tentative order for waste discharge requirements related to the Upper Berryessa Creek Flood Risk Management project.	Comment noted.
S-02	SCVWD	The District urges the Regional Water Board ***not*** to adopt the tentative order for the reasons described in the letter.	Comment noted. See responses to Comments C-02, C-03, and C-13-a pertaining to why we are bringing the order before the Water Board for its consideration at this time.
S-03	SCVWD	The District stated that the "…tentative order would distract from the watershed-wide planning and habitat enhancements that the District is working on with many agencies including the Water Board…"	We disagree. The Order is consistent with the Project's EIR, which includes objectives to avoid, reduce, or mitigate any significant effect (EIR, page ES-i). It is also consistent with the District's efforts to maximize the beneficial uses supported by its creeks and associated right-of-way. The compensatory mitigation that would be required by the order could consist of creek restoration and/or enhancement projects conducted by the District under its watershed planning and enhancement work. Also, as we identified the need for the order in 2015 and finalized discussions on it at our January 4, 2016, interagency meeting, the District has had the opportunity to incorporate this process into its other work.
S-04	SCVWD	The District stated that the Water Board "…would be responsible, under the California Constitution, for reimbursing the District for the millions of dollars that the District anticipates will cost to comply with the order's conditions."	We disagree. The types of mitigation requirements included in the order are the same that are required of all entities – public or private – who propose to discharge into waters of the State, as is the case here. The circumstances fall well within the unfunded mandates exceptions where the requirement is not unique to local governments. Moreover, the District has the ability to comply with these requirements through charges and fees. (Gov't Code §17556.) In response to this comment, we propose to revise the tentative order to consolidate the Certification and WDRs, tying both more clearly to the requirements of the federal Clean Water Act. (*Id.*)

S-05	SCVWD	The District stated that the Certification issued to the Corps on March 14, 2016 order "…had the effect of certifying that construction of the project, as conditioned in that order, was consistent with all applicable laws and was regulated by pre-existing WDRs."	See response to Comment C-03.
S-06	SCVWD	The tentative order includes numerous factual errors.	See responses to Comments C-32 and C-45.
S-07	SCVWD	Those draft WDRs include an unnecessary new mitigation project (estimated to cost up to $20 million) and new conditions that conflict with the ongoing construction of the project.	We disagree that the mitigation requirement is new, as we have been discussing it with Corps and District staff since as early as June 2015 (Letter dated June 5, 2015, from Keith Lichten, Watershed Management Division Chief, to Amanda Cruz, Corps project manager), and it is required by the existing Certification (Certification, p. 2). As the District has not proposed a compensatory mitigation plan or even suggested a potential project, it is unclear how the estimated mitigation cost of up to $20 million was derived. In our numerous meetings with District staff, we have indicated our desire to be flexible and to coordinate the mitigation requirement with other creek restoration and enhancement projects the District may have already proposed to complete, or may be considering, such as enhancement work at Lake Almaden, Guadalupe Creek channel behind its headquarters, Coyote Creek, or Permanente Creek. There is significant local support for such restoration and enhancement projects, as shown by the two recent large bond issuances approved by votes of the public. We have also discussed with District staff the opportunity to complete smaller scale projects with benefits reaching beyond their immediate construction footprint, such as removal of fish barriers that could allow access to upstream habitat. One example of a project the District has under development is work to reduce the fish barrier and temperature impacts of the water impounded by Lake Almaden, near the District's headquarters. Some designs under consideration could open up to several miles of fish spawning habitat, while reducing a significant temperature and structural barrier to fish passage. While the District has not yet submitted a proposal, so it is not possible to make a determination, this is an example of a project that could comprise or contribute to the required compensatory mitigation under the revised tentative order.
S-08	SCVWD	The District stated the order would "…impose new conditions related to O&M for the project-even though the project construction will not be completed until late 2017 at the earliest, the Corps has not yet	We disagree. Board staff has sought clarification from District staff about what is being referred to as the new conditions related to O&M. District staff clarified that this comment refers to the following six criteria (email from James Manitakos to Susan Glendening, October 31, 2016), listed here with Board staff's responses (we note that items 3, 4, and 6 are not specific to O&M): *1) Identify maintenance through process similar to SMP annual notification* The Project would be subject to the annual notification process whether the Project is under the authority of the order or the

		drafted the O&M Manual for the project, and O&M activities will not occur until many months or years after project construction is completed."	Stream Maintenance Program (SMP). This requirement ensures that annual maintenance activities are subjected to a public review process by notifying the agencies that have regulatory authority for those activities. *2) Lessons learned report required after 5 years of maintenance* We deleted this requirement. See response to Comment C-32. *3) Compensation for impacts to habitat based on mitigation ratios of 1.5:1 for temporary impacts and 2:1 for permanent impacts* See response to Comment C-04-a. While the mitigation requirement is not new, we recognize that the mitigation ratios were not previously discussed with the District and Corps. See response to Comment S-07 pertaining to the Water Board's flexibility in accepting an appropriate mitigation plan. *4) Post-construction stormwater management plan* The Water Board requires this in all projects of this size and type when significant areas will have impervious surfaces. In this project, about 7 acres (40 percent of total project area) will be impervious. *5) Adaptive Management as basis for future creek maintenance* The activities required under the Adaptive Management Plan are largely based on the District's existing activities under its SMP. By maintaining such activities under requirements of the order, rather than the SMP, they would be prioritized under capital improvement program scheduling and budgets. We recognize the Corps' O&M Manual will not be completed until after the Project is transferred to the District. However, as stated in the order, the timing for the transfer is uncertain. The Adaptive Management Plan activities to inform O&M activities will serve in the interim for O&M activities until the Corps' manual is completed and transfers the Project, and the manual, to the District. *6) Offsite mitigation requirements* See item 3 above.
S-09	SCVWD	The District objects to the Water Board's issuance of new WDRs at this time. The District incorporates all its prior objections to the extent those objections have not been fully resolved.	Comment noted. The objections raised in this comment letter incorporate prior objections; the Water Board therefore is not responding separately to prior correspondence. See responses to Comments C-02, C-03, S-03, and S-07.

S-10	SCVWD	The District stated it welcomes the Water Board's input on the District's One Water Plan under development, and requested the Water Board to defer further consideration of the order to facilitate focusing on watershed-wide planning under the One Water Plan. The District believes that development and implementation of the One Water Plan would "…further the mutual goals of the District and the Regional Board to maintain and improve the quality and beneficial uses in the five watershed areas while allowing the District to fulfill its mandate to provide water supply and flood protection services to the communities and act as stewards for the region's streams."	Comment noted. We support the District's work for the One Water Plan, and we expect to continue to participate in the District's One Water Program. Further, we support the District's efforts to do watershed-based planning and identify opportunities to improve the beneficial uses of its system while achieving its other mandated goals. We are disappointed that this Project does not comport with the multi-objective natural flood protection approach the District states in the Plan that it embraces. The order's requirements for compensatory mitigation would complement, rather than conflict with, the intent of the One Water Plan. We have discussed on numerous occasions with District staff, and most recently at our August 15, 2016, meeting with District management, that creek restoration or enhancement implementation projects under the One Water Plan could be proposed as compensatory mitigation for this Project. However, the District has not yet proposed specific implementation tasks under One Water to mitigate for the Project's impacts.
S-11	SCVWD	The District elaborated on the previous comment, citing that the Water Code, section 13263(a) requires waste discharge requirements to "take into consideration ... the provisions of Section 13241," which in turn requires consideration of regional issues, such as the "coordinated control of all factors which affect water quality in the area, "[e]conomic considerations", and "[t]he need for developing housing within the region." Because the tentative order considers none of these things, it does not fully comply with requirements in Sections 13263 and 13241."	The commenter selectively quotes Water Code sections out of context, reading meaning into them that is not present in the context of the Project. Nonetheless, the revised tentative order appropriately considers Water Code section 13263(a), which states: 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. The revised tentative order appropriately includes requirements that consider the conditions in the receiving waters into which the discharge is proposed and, as noted elsewhere in this Response to Comments document, address in detail the relevant water quality control plan (the Basin Plan), identified beneficial uses, relevant water quality objectives, and, to the extent appropriate, the provisions of Water Code section 13241. The Water Board has considered all cost data submitted by the Corps and District.
S-12	SCVWD	The District noted that meeting the requirement of "20.2 acres" of mitigation area referenced in the order would cost	Comment noted. See response to Comment S-07.

		millions of dollars.	
S-13	SCVWD	The District elaborated further on the comment in S-04 about the California Constitution requiring "…state agencies to reimburse local governments for the costs associated with mandates imposed by those state agencies that go beyond whatever mandates federal law imposes. (Cal. Const., art. XIII B, § 6(a).) The California Supreme Court just last month broadly construed this constitutional provision to hold that a Regional Board must reimburse local water agencies for the costs associated with complying with conditions in a waste discharge requirement order because those conditions derived from State, not federal, law. *(Department of Finance v. Commission on State Mandates* (August 29, 2016) 1 Cal.5th, no. S214855.)"	We disagree. See responses to Comment S-04.
S-14	SCVWD	The District stated that because the tentative order has new conditions that go beyond what the Certification requires, or what might be required under federal law, that the Regional Board will be responsible for reimbursing the District for all its costs associated with those new conditions, including all mitigation costs and the fees referred to in Provision 37.	We disagree. We are open to discussing options for the District to use for compensatory mitigation capital improvement projects under the District's One Water Plan, provided that the projects result in a net benefit to water quality. Our understanding is that the District plans to move forward and fund these projects. As such, the mitigation will not be an unfunded mandate. Further, we are exercising our authority under CWA section 401; therefore, the unfunded mandate claim is not applicable. See responses to Comments C-03, S-04, and S-07.

S-15	SCVWD	The District challenged the Water Board's authority to issue waste discharge requirements when the project is already covered under the Certification. The District stated that although the Certification refers to the need for mitigation that would be "considered" in the WDR to be issued in the near future, the Certification does not contain conditions that construction-related WDRs would be issued in the future. The District also challenged the permitting strategy by which the Certification "pre-committed" requirements in a future WDR. The District further stated that the Water Board stated that the Certification is "incomplete" as an explanation for why the Water Board intends to consider WDRs.	We disagree. See response to Comment C-03 regarding the two-stage permitting approach we developed collaboratively with the District, and Corps; Comment S-05 pertaining to the Water Board's authority to issue WDRs for the Project; and Comments C-13-a, C-14, C-23, C-24, and S-44 for the Water Board's authority to issue WDRs and require mitigation for the Project. In addition, we revised the tentative order to add a new finding, Finding 5, stating this Order rescinds the previous Certification. Finding 5 reads: "…This Order rescinds and supersedes the previously-issued water quality certification with waste discharge requirements (WDRs) and a reissued water quality certification."
S-16	SCVWD	The District disagrees with the approach for the Water Board to name the District as a discharger with the Corps because the District is not involved with the construction activities, so views its role as separate from any discharge pursuant to Water Code section 13263.	We disagree. See responses to Comments C-02 and C-03.
S-17	SCVWD	The District contended that as a public agency effectively leasing land to the Corps, another public agency, for construction of the project, the California Water Code, section 13270 prohibits the Water Board from issuing waste discharge requirements to the District for construction of the project on the District's property. The District cited the following excerpt from State Water Board Order WQ 90-3 (*San Diego Unified Port*	We disagree. See response to Comment C-03. To the points the District raised regarding Water Code section 13270 and State Water Board Order WQ 90-3, we disagree. Water Code section 13270 states: > Where a public agency … leases land for waste disposal purposes to any other public agency …, the provisions of Sections 13260, 13263, and 13264 shall not require the lessor public agency to file any waste discharge report for the subject waste disposal, and the regional board … shall not prescribe waste discharge requirements for the lessor public agency as to such land…. The State Board has provided useful guidance on section 13270 in State Water Board Order WQ 90-3 (San Diego Unified Port

		District) to support this contention: “Section 13270 prohibits a Regional Board from requiring a report of waste discharge and from issuing requirements to any lessor public agency which leases land to another public agency ... "	District). In that Order, the State Board considered whether it was appropriate to name the Port District as a discharger on National Pollutant Discharge Elimination System (NPDES) permits held by various ports and boatyards. The State Board first noted that Water Code section 13270 “supports the conclusion that it is appropriate to name non-operating landowners in waste discharge requirements.” (San Diego Unified Port District at 4.) The State Board ultimately remanded the NPDES permits to the Regional Water Board with instructions to more clearly specify that the Port District was not responsible for monitoring or day-to-day operations, “or at most it should be held only secondarily liable for permit obligations.” (Id at 4 and 5.) State Water Board Order No. WQ 90-3, section III.1, states: "The Regional Board has the discretion to name non-operating landowners in waste discharge requirements/NPDES permits because landowners may properly be considered "dischargers" under the Clean Water Act and the Water Code." Under the facts of this Project, the proposed WDRs contemplate terms and conditions pertaining to the capital project (for which both the Corps and the District have some responsibility) and ongoing operations and maintenance (O&M), for which the District is solely responsible. Additionally, the District is playing an active role in the Project by making available to the Corps required right-of-way, committing to be responsible for the permanent operation and maintenance of the completed Project, and providing, through its Clean, Safe Creeks plan, "$38 million to design and construct" the Project, without which the Corps would be unlikely to participate in funding or constructing the Project (quote is from the District's Clean, Safe Creeks brochure for the Upper Berryessa Creek flood protection project, at http://www.valleywater.org/uploadedFiles/Services/FloodProtection/projects/Upper_Berryessa_Creek_Flood_Protection_project/Upperpercent20Berryessapercent20Creekpercent20shell_FINAL_080515(1).pdf?n=442. (Accessed October 21, 2016)). This funding is out of a total reported project cost of $75 million (http://www.valleywater.org/Services/UpperBerryessaFloodProtection.aspx. Accessed October 21, 2016)). This is not a situation, like the Port of San Diego, where there is an entity who only holds title to the land but is not actively involved in the discharge. Based upon the Port of San Diego, however, it would be appropriate to note that the O&M tasks are solely the District’s responsibility, and we have included in the revised tentative order our understanding that the District is responsible for maintenance for the life of the Project (Finding 16). In short, it is appropriate to name both the District and Corps as dischargers. That is also consistent with the Board's approach on previous flood control projects co-sponsored by the Corps and a local sponsor (See response to Comment C-13-a, for a list of projects at the end of the response). See also response to Comment C-12.

S-18	SCVWD	The District stated that the Water Board may not adopt additional mitigation for the Upper Berryessa project for impacts identified in the EIR as less-than-significant without at least taking one of the three actions in California Code of Regulations, section 15096(e) pertaining to the California Environmental Quality Act (CEQA). Otherwise, the Regional Board is deemed to have waived any objection to the EIR's findings about less-than-significant impacts and to the adequacy of the EIR's mitigation measures, and the Water Board cannot impose additional mitigation.	CEQA case law provides that the Water Board may request additional mitigation for a project's design based on agency consultations after the EIR is adopted. We have previously responded to the District's contention that once a CEQA lead agency has adopted an EIR, the responsible agencies are bound by those findings and limited to the mitigation in the EIR. Counsel for the District suggested that *Ogden Environmental Service v. City of San Diego* (S.D. Cal. 1988) 687 F.Supp. 1436, 1450-1452 supports that position. We respectfully disagree. In *Ogden*, the issue was whether or not an EIR was required. The lead agency made the determination that an EIR was not required; a responsible agency (the City) believed that an EIR was necessary and denied approval of the project because there was no EIR. The court construed sections 15096, subdivision (e) and 15162 of the CEQA Guidelines, pertaining to the steps a responsible agency must take to challenge the lead agency's determination where the responsible agency believes the final EIR or negative declaration is not adequate for use by the responsible agency. More on point, the CEQA Guidelines explicitly contemplate that a responsible agency may require additional mitigation and, in fact, imposes a duty to do so upon the responsible agency: • "When considering alternatives and mitigation measures, a responsible agency has responsibility for mitigating or avoiding the direct or indirect environmental effects of those parts of the project which it decides to approve." (Cal. Code Regs., tit. 14, § 15096, subd. (g) (1).) • "When an EIR has been prepared for a project, the Responsible Agency shall not approve the project as proposed if the agency finds any feasible alternative or feasible mitigation measures within its powers that would substantially lessen or avoid any significant effect the project would have on the environment." (Id. at § 15096, subd. (g)(2) [emphasis added].) *Riverwatch v. Olivenhain Mun. Water Dist.* (2009) 170 Cal.App.4th 1186, 1207 reiterates that a responsible agency has an independent duty to review the EIR and "issue its own findings regarding the feasibility of relevant mitigation measures or project alternatives that can substantially lessen or avoid significant environmental effects." (Citing Remy et al., Guide to the Cal. Environmental Quality Act (CEQA) (11th ed.2007) ch. III, subd. (B)(2), p. 53; Pub. Res. Code § 21081; and 1 Kostka & Zischke, Practice Under the Cal. Environmental Quality Act (Cont.Ed.Bar 2d ed.2008), § 3.22, p. 126.) We also disagree with the District's interpretation of *Riverwatch*, which does not "caution responsible agencies against second guessing the findings in the EIR." *Riverwatch* states that a responsible agency "generally" relies on the information in the CEQA document, as the Water Board has done here, but, the critical function of a responsible agency is to adopt feasible alternatives or mitigation measures that will lessen or avoid significant effects (*Riverwatch v. Olivenhain Mun. Water Dist.*(2009) 170 Cal. App.4th 1186, 1202), and the responsible agency must "reach its own conclusions on whether and how to approve the project involved" (*id.*

			at p. 1215.) The Water Board has been extremely vocal in identifying the shortcomings of the EIR as it pertains to biological and hydrological impacts and mitigation. The Water Board sent a 93-page letter identifying deficiencies with the District's Draft EIR. (Letter from William Hurley to Santa Clara Valley Water District (Nov. 12, 2015).) With respect to mitigation, that letter noted: • Inconsistencies related to sediment and vegetation maintenance activities and mitigations. (p. 2) • Mitigation for impacts on waters of the U.S. and waters of the State does not comply with the State and Regional Water Board policies. (p. 2) • [T]he DEIR does not adequately describe the potential post-project impacts or mitigations necessary to address impacts for sediment removal maintenance activities. (p. 2) • Please revise the DEIR to include appropriate mitigation to compensate for both temporal and spatial losses in functions and values of the open water/aquatic vegetation and transitional vegetation. (p. 5) • The details [of the types, numbers, densities, and locations of vegetation plantings, and success criteria] would need to be further developed in a mitigation and monitoring plan. (p. 5) • Please revise the DEIR to recognize the project reach's designated beneficial uses and a plan to appropriately mitigate any unavoidable impacts on the creek habitat, especially the REC-2 and WILD beneficial uses. (p. 5.) • [T]he DEIR does not include any mitigation for this potential impact [of exposing the water table and resultant alterations in the creek's hydrology] on the post-project hydrology. (p. 5) • The DEIR is well-organized, but it does not adequately describe the proposed project's environmental impacts and associated mitigations. (p. 8) This is consistent with the findings in the EIR that determine that mitigation is necessary to reduce impacts (see response to Comment 13-a). As described above, the Water Board "shall not" approve the project as the District has proposed where, as here, the Board has found feasible alternatives or mitigation measures within its powers that will substantially lessen or avoid significant effects. (Cal. Code Regs., tit. 14, § 15096, subd. (g)(2).)

S-19	SCVWD	The District stated that adopting the tentative order without taking any of the steps in Section 15096(e) would violate CEQA. Because the Regional Board has not taken any of the necessary steps to challenge the District's findings about less-than-significant impacts on waters, the Regional Board is deemed to have waived any objection. The District cited case law, Ogden Envt'l Serv. v. City of San Diego (S.D. Cal. 1988) (687 F.Supp. 1436, 1450-1452.), holding that if the responsible agency believes that the lead agency's environmental review was inadequate, the responsible agency "must take the necessary steps to challenge the lead agency's findings or otherwise be deemed to have waived any objection." (/d. at 1451, citing Section 15096(e).)	The District's attorneys have raised this issue in the past, and we responded with the analysis provided in the response to Comment S-18. (See also email from Tamarin Austin, Water Board legal counsel, to Rita Chan, District legal counsel and Peter Prows, District consulting legal counsel, July 13, 2016.) The response to Comment S-18 describes each of the District's own findings in the EIR that determined that mitigation was necessary. We agree with those findings and exercise the Water Board's independent authority as a responsible agency to mitigate and avoid the Project's direct and indirect environmental impacts related to water quality to lessen or avoid significant effects on the environment. The District's logic deprives section 15096, subdivision (g)(2) of all meaning. There is no requirement to sue or take any of the other actions under subdivision (e) before adopting feasible alternatives or mitigation measures under subdivision (g)(2).

S-20	SCVWD	The District cited an additional case to further argue that without taking any of the steps in Section 15096(e), the Water Board would violate CEQA if the Board adopted the WDRs (RiverWatch v. Olvenhain Mun. Water Dist. (2009) 170 Cai.App.4th 1186, 1207.) RiverWatch applied the rule that a responsible agency "must consider the environmental effects of the project as shown in the EIR," and that, before approving the project, the responsible agency must "find either that the project's significant environmental effects identified in the EIR have been avoided or mitigated, or that unmitigated effects are outweighed by the project's benefits." (/d., emphasis added.) RiverWatch does not authorize responsible agencies to second guess the findings in the EIR; rather, RiverWatch effectively cautions responsible agencies, such as the Regional Board, against second guessing the findings in the EIR.	See responses to Comments S-18 and S-19.
S-21	SCVWD	The District is concerned that the required mitigation project will have its own “impacts,” thus triggering the need for additional environmental review and additional mitigation under CEQA. The District cited case law, *Laurel Heights Improvement Assn. v. Regents of Univ. of Cal.* (1988) 47 Cat.3d 376, 401, which holds that "mitigation measures must be discussed in an EIR". The tentative order contains none of these findings required by CEQA, and gives no reason why any exemption or	See responses to Comments S-18 and S-19. We agree that discretionary decisions by a public agency regarding "projects" under CEQA require the agency to ensure that the project complies with CEQA. In this case, a mitigation project has yet to be proposed by the District. The types of mitigation that may be acceptable for the Project have yet to be proposed, and as a result, CEQA analysis would necessarily be speculative. We agree that, depending upon what project the District ultimately proposes, additional environmental review may be necessary. On the other hand, there are many types of mitigation that were contemplated in the EIR or may be subject to a categorical exemption or a finding of no significant impact, which would not necessarily require substantial time or effort by the District to prepare CEQA documentation. The court’s reasoning in Laurel Heights Improvement Assn v. Regents of University of California(1988) 47 Cal.3d 376, noted the chronology of when mitigation measures would ultimately be approved for a specific project: As a matter of logic, the EIR must be prepared before the decision to approve the project. Not until project approval does the agency determine whether to impose any mitigation measures on the project. (§ 21002.1, subd. (b).) One

		exclusion should apply to the required environmental review for impacts and mitigation requirements of the off-site mitigation requirement.	cannot be certain until then what the exact mitigation measures will be, much less whether and to what degree they will minimize environmental effects… . The decision imposing mitigation measures, however, is not made, and cannot be made under CEQA, until after the EIR has been completed. (Id. at pp. 401-402.) In the case of the Upper Berryessa project, the revised tentative order's requirements have continued to unfold through negotiations between Board and District staff; not to mention the Water Board has the ultimate decision of whether to accept the revised tentative order. When the District proposes mitigation measures, the Board will consider the compensatory mitigation project's CEQA compliance. The process for accepting a Mitigation & Monitoring Plan (MMP) will include the necessary public review required by CEQA. The Board will notify the public upon receipt of the MMP and consider public comments received as stated in the revised tentative order, Finding 21, second paragraph, which reads: ...This Order requires the Discharger to submit a Mitigation and Monitoring Plan (MMP), acceptable to the Executive Officer, by June 30, 2017, and to timely implement the MMP. … The Water Board will notify the public upon receipt of the required MMP and consider public comments before the Executive Officer accepts it. In addition, the revised due date of June 30, 2017, for the MMP is now included in Provision 19 in the revised tentative order.
S-22	SCVWD	The District stated that as the lead agency, it has already approved the project as-is, and that the Water Board would be responsible for any additional environmental review that may be necessary to select and construct the required mitigation project. The District cited CEQA Guidelines, section 15162(c), which states that after the lead agency approves a project, "…a subsequent EIR or negative declaration shall only be prepared by the public agency which grants the next discretionary approval."	We disagree. See Title 23 of the California Code of Regulations, sections 3740-3742. In addition, as the District has not yet submitted a proposal for a compensatory mitigation project, it is premature and speculative to discuss which public agency might take the lead agency role. We note that the District has already determined it will serve as the CEQA lead agency for at least one project we have discussed as having the potential to provide compensatory mitigation, its Lake Almaden project by Alamitos Creek, Guadalupe Creek, and the Guadalupe River near District headquarters (http://www.valleywater.org/mercury/almadenlake.aspx). See also responses to Comment S-18 and S-21.
S-23	SCVWD	The District disagrees with the Water Board's finding that the creek channel area from the ordinary high water mark to the tops of bank is waters of the State, and pointed out that the EIR identified identify 4.8 acres of waters of the State, consisting only of the	We disagree. The District is referring to the requirements in Title 14 of the California Code of Regulations, section 15096, subsection (e), concerning the actions a responsible agency must take if the EIR is not "adequate for use." That is not the case here. The EIR identifies about 4.8 acres of affected waters of the State based on the elevation of the ordinary high water mark (OHWM) in the creek channels but omits the additional approximately 5 acres of creek channel above the OHWM as being adversely affected. The amount of 4.8 aces is incorrect and fails to take into account the California Wetland Conservation Policy and, accordingly, ignores USFWS recommendation no. 7 to continue to work with USFWS and other resource agencies to quantify Project affects and

		waters below the ordinary high water mark; the District stated that the Water Board is not authorized to second-guess the EIR findings on this matter. The District pointed out that the Water Code defines "waters of the State" as "any surface water or groundwater" (Water Code § 13050(e), and contends that the statutory phrase "surface water or groundwater" cannot reasonably be interpreted to include *non-wetland* areas above the ordinary high water mark.	determine mitigation needs as modifications to the selected project alternative develop (Coordination Act Report, Recommendation no. 7). That does not necessarily make the EIR “inadequate for use,” but it is incumbent upon the Water Board to use accurate figures when exercising its independent authority as a responsible agency to mitigate and void the direct and indirect environmental effects on water quality. The revised tentative order correctly identifies a reasonable estimate of waters of the State, which, as the commenter notes, consist of "any surface or groundwater." The Project’s design, through its placement of rock riprap and floodwalls to stabilize the creek banks and control flows of water through the creek, assumes that the cited area will be a surface water during relevant flows. That was also found by the flood models used to estimate flows through the Project reach, which estimate that the pre-project tops-of-bank are at the elevation of a ten to twenty-year flow event - the amount of flow that occurs about once every 10 to 20 years (i.e., a fairly frequent event). Indeed, were flows not expected to reach the top of bank, there would have been a greater opportunity for changes in the Project’s design more supportive of existing and beneficial uses, because less rock would have been required. This area, which is 5.63 acres (revised from 5.92 acres based on communications with District staff), is part of the creek's floodplain and thus is part of the waters of the State in the Project, as defined in the Basin Plan, section 2.2.3. The Water Board is authorized under 23 CCR, sections 3830-3869, to exercise independent authority under the Water Code to regulate the discharge of dredge and fill materials in the Project. In addition, Water Code section 13260 requires dischargers of waste "within any region that could affect the quality of waters of the State" to file a report of waste discharge with the Water Board and may be subject to waste discharge requirements under Water Code section 13263, which must implement the applicable Water Quality Control Plan(s), beneficial uses to be protected, the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, etc. See responses to Comments C-13-a and S-47. Finally, we note the commenter does not suggest a basis for the assertion that it is unreasonable to consider a creek's regularly-flooded bed and bank areas to be waters of the State. The basis for why it is reasonable was thoroughly considered as part of preparing the revised tentative order and is laid out in part in this Response to Comments. Further, CWA section 401(d) requires: 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 301 or 302 of this title, standard of performance under section 306 of this title, or prohibition, effluent standard, or pretreatment standard under section 307 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 license or permit subject to the provisions of this section.

S-24	SCVWD	This District contends that there will be no net loss of wetland acreage or function, and that aquatic habitat will be improved, so the project would be consistent with the Basin Plan, section 4.23, which states: "Water Board will evaluate both the project and the proposed mitigation together to ensure that there will be no net loss of wetland acreage and no net loss of wetland function." The District further contends there is no basis for mitigation ratios greater than 1:1.	We disagree. The revised tentative order's requirements are well-founded based on the Project's identified impacts to existing and potential beneficial uses, the achievable timing for implementation of compensatory mitigation (i.e., the potential for temporal loss of functions and values associated with Project impacts taking place before the compensatory mitigation can be completed), and applicable policy, including the Basin Plan directive that mitigation preferentially be located onsite, or as close to onsite as possible, and be in-kind. The requirements are consistent with the Board's compensatory mitigation requirements for other projects with similar impacts. See responses to Comments C-13-a, C-23, and C-24 pertaining to the regulatory bases for mitigation requirements and the Basin Plan definition for wetlands, and C-13-a regarding the Project's impacts. The ratios reflect a similar approach the Corps uses to determine compensatory mitigation (Source: *U.S. Army Corps of Engineers, 12501-SPD Regulatory Program Standard Operating Procedures for Determination of Mitigation Ratios. South Pacific Division*. Posted August 5, 2013. Online: http://www.spd.usace.army.mil/Missions/Regulatory/Public-Notices-and-References/Article/487060/12501-spd/. Accessed October 21, 2016.) The Basin Plan's No Net Loss Policy and California Wetlands Conservation Policy apply to other waters, including creeks, not just wetlands as defined by the 1987 Corps manual criteria.
S-25	SCVWD	The District stated that the requirements for the discharger to submit items to "...include but not be limited to…" certain criteria makes such requirements be open-ended, and lacks "sufficient definiteness that ordinary people can understand…" *(*see case law, *Skilling v. United States* (2010) 561 U.S. 358, 402 (quoting *Kolender v. Lawson* (1983) 461 U.S. 352, 357)), thereby violating due process, and being invalid.	We use the clause "not limited to" and similar qualifiers to avoid being prescriptive. (See Water Code § 13360 [waste discharge requirements may not specify manner of compliance].) We list the main requirements, and the qualifiers allow the Discharger to include additional details that are not listed in the revised tentative order. We regularly and successfully include similar language in WDRs and find that the best way to ensure compliance with these types of provisions is regular communication between the discharger and Board staff, who are willing to vet drafts in advance of deadlines to ensure timely compliance. Given the close working relationship between the District and Board staff on this Project, we anticipate no difficulties with compliance.

S-26	SCVWD	The District disagree with the Water Board's findings that the project will make the system more depositional and thereby cause sedimentation problems (Finding 16). The District contends that its studies and observations strongly suggest that the assumptions in the tentative order about current conditions are flawed in that current conditions are erosional, so making the system more depositional would bring the system closer to equilibrium, which should reduce the need for O&M in the project reach. The District included a staff technical memorandum as Exhibits 1 and 2, explaining these sedimentation issues, and responding to Water Board staff's analysis of this issue.	Board staff has reviewed the District's technical memorandum dated July 20, 2016, attached to the District's comment letter. Based upon Board staff's analysis of the sediment transport modeling (provided last March) and existing studies that the District relied on, and our review of the Final EIS and other sediment transport studies for the Project reach, we conclude that the dominant process in the Project reach is aggradation. Furthermore, we do not agree with the District's primary argument that all sediment along the Project reach is from local sources (i.e., bank erosion). Finding 16 presents Board staff's best professional judgement about the Project site being in a depositional reach, and we anticipate that sediment maintenance will result in repeated impacts to the Project site during its operation over the long term. We respectfully disagree with the District's comment that the information is incorrect, even though the Board staff's analysis was partially based on the District's plan set presented as the as-built plans for the existing channel. The District's comment letter states that the plans submitted as the as-built plans for the existing channel are not as-builts, after all. This, however, does not affect our comparison of the creek's 1973 cross section to the current cross section and the Project's proposed cross section. The previous memorandum supplementing the revised tentative order established that the current baseline cross section is comparable to that of 1973 and that the Project as designed would result in a significant deepening and widening of the channel (as did the 1973 project), which will then be filled again (as it filled in over the last 40 years). In addition, we provided six different lines of geomorphic evidence to show that the Project reach is overall aggradational (Water Board Staff Memo to Keith Lichten from Setenay Bozkurt-Frucht, October 19, 2016). In addition, we have again requested that the District submit the as-built plans of the existing channel (email to Christopher Hakes from Susan Glendening, September 23, 2016). We have prepared a technical memorandum (attached) justifying our basis and responding to District's memorandum. As we explain in the attached memorandum: 1) Berryessa Creek lies within an actively accreting alluvial fan. There are secondary/temporary/limited reaches where erosion may take place; however, as the EIS articulated, "[o]n the Berryessa Creek fan, at some point between the apex of the fan and the Bay, all but the finest sediments will be deposited." That the system may, from time to time and on shorter reaches, experience localized entrenchment or lateral shifting, does not change the primary process of deposition along the alluvial fan; 2) Long-term maintenance records confirm that sediment deposition is a regular, persistent management issue. The District's maintenance records indicate that more than 250,000 cy of sediment has been removed from Berryessa Creek since 1980s; 3) Tributary creeks upstream of the Project reach (Sweigart, Crosley, Sierra, and Piedmont) also contribute sediment and will continue to do so in the future. This is an important sediment source that has contributed to the Project reach from upstream and not from local sources; 4) There are erosional sites and segments along the Project reach that are triggered in response to hydraulic structures, which may cause channel instability (e.g., at the mouths of Los Coches Creek and Piedmont Creek). We have visited the site and believe that, along the Project reach, the bank instabilities do not represent an overall trend and are localized geomorphic

			processes; 5) The District references the Jordan (2009) study to suggest that bank erosion and channel incision are the primary processes acting along the Project reach. However, the Jordan study did not cover the Project reach and included a longitudinal profile comparison of the reach upstream from 1967 and 2004. Our review and interpretation of the data are provided in our memorandum. Regardless, incision trends upstream of the Project reach, as District states, would suggest more sediment contributed to the Project reach from upstream; 6) Board staff still has unanswered questions on model inputs, boundary conditions, choice of sediment transport equations, etc. In the last meeting Board geomorphology staff had with the District's engineering team and sediment transport modeling consultant on March 9, 2016, we had agreed to continue the discussion through a share-screen conference for the team to respond to Board staff's questions, but that meeting did not occur. Neither Tetra Tech (the District's sediment transport consultant) nor the District provided a technical summary outlining their sediment transport analysis, the basis of modeling inputs, results, and their interpretation. We cannot draw the same conclusions based on the most recent model provided to us in March 2016.
S-27	SCVWD	The District stated that because only the Corps will be responsible for project construction, Finding 3 incorrectly states that both the Corps and the District will be responsible for project construction.	We disagree. See our responses to Comments C-02, C-03, and S-17. However, we understand that the Corps is responsible for the construction contract to build the Project. We have modified Finding 3 to convey our understanding of which discharger will complete the various tasks that would be required under the order. We have also clarified, per comments submitted by the District and Corps, which discharger is completing various Project elements.
S-28	SCVWD	The District stated that Finding 4 incorrectly names the District as the "discharger" collectively with the Corps, because the District is not involved in construction, and has not proposed any discharges associated with future operations and maintenance.	We disagree. See responses to Comments C-02, C-03, and S-17 pertaining to naming both the District and Corps as the Discharger and the regulations that authorize the Board to do so.
S-29	SCVWD	The District stated that Finding 5 incorrectly states that construction of the Lower Berryessa Creek and Lower Calera Creek Flood Protection Improvements project will be completed in October 2017; the current schedule shows completion of that project (except for revegetation planting) in October 2018.	Comment noted. See response to Comment C-44 for the correction.

S-30	SCVWD	The District stated that Finding 6 incorrectly states that the mitigation and monitoring requirements are necessary for the compliance with federal and state regulations; there are no federal monitoring requirements, and no additional construction-related mitigation is appropriate.	We disagree that a correction is necessary. Finding 6 (now Finding 7) refers to the mitigation and monitoring requirements referenced in Findings 19 - 30. The cited federal regulations are those for which the Water Board is responsible, flowing out of CWA section 401 and the need to ensure that projects comply with State water quality standards. In addition, see our responses to Comments C-13-a and S-44 regarding the need for mitigation due to the Project's impacts; RCD-09 and S-12 for how we determine the amount of mitigation necessary; and C-03, C-23, C-24, and S-43 regarding the regulatory authorities for mitigation requirements.
S-31	SCVWD	The District stated that Finding 6.e incorrectly states that the project will include a third ramp, downstream of the Montague Expressway crossing. The project will include construction of only two ramps, both located upstream of the Montague Expressway crossing.	Comment noted. We have revised Finding 6 (now Finding 7) as noted in responses to Comments C-32 and C-45.
S-32	SCVWD	The District stated that Finding 6.i could be read to suggest that the project will replace and realign all utilities within the project right-of-way, while only utilities directly affected by construction will be replaced or realigned; that replacement or realignment will be performed by the Corps as part of project construction.	Comment noted. We have revised Finding 6 (now Finding 7). See responses to Comments C-32 and C-45.
S-33	SCVWD	The District stated that Finding 6, Table 1, incorrectly lists the area of ramps as 0.01 acre; the correct area is 0.1 acre.	Comment noted. We have revised Table 1; see response to Comment C-41.
S-34	SCVWD	The District is concerned that since both the Corps and the District are named as the discharger, the tentative order fails to make clear which of the two agencies would be responsible for complying with the conditions, and specifically, findings 7-9 do not state that the Corps will be performing	Comment noted. See responses to Comments C-02 and C-03.

		the tasks in these findings.	
S-35	SCVWD	The District noted discrepancies in the due dates for the submittals required in Findings 10-15, and also noted that Finding 10 fails to mention that the Corps submitted a project groundwater management plan to the Regional Board on or about January 26, 2016.	Comment noted. Regarding Finding 10, please see responses to Comments C-03 and C-32 regarding deletion of this finding and rearranging its contents into Finding 3, etc. In addition, the response to Comment C-32 explains the updated text for Findings 11, 12, 13, 14, and 15, and that we have revised any due dates and documented receipt of current plans to replace references to plans that are now outdated. See response to Comment C-35 for revised language for the Dewatering Plan (Finding 14) and Finding 15 pertaining to receipt of the Groundwater Management Plan dated January 26, 2016. See responses to Comment C-32 and S-53 regarding the due dates for technical reports**.**
S-36	SCVWD	The District stated that Finding 16 makes incorrect statements about sedimentation.	We disagree. See response to Comment S-26.
S-37	SCVWD	The District stated that Finding 16 incorrectly states that development of the O&M Manual will be a "…collaboration of the Water Board and other appropriate state agencies," and stipulated its understanding being that the Corps alone will be developing the O&M Manual. In addition, the District stated that some of the requirements in Finding 16 are premature, and given that the Corps has yet to develop the manual, the District may need to approach the Water Board for modifications to the tentative order depending on the content of the manual. The District also noted that the statement that " ... compliance with this Order will be determined by compliance with the terms of this Order" does not make logical sense.	Comment noted. The intent is for the O&M Manual to be prepared in a collaborative process for this publicly-funded project. Such a collaborative process is already being completed between the Corps, the Water Board, and other agencies for the Napa River flood control project, so this approach is not a novel requirement. If the final O&M Manual warrants the need to amend the order, we would consider that need when it arises. By incorporating requirements into the revised tentative order now, we intend to proactively minimize the need to amend the order later. This is because the adaptive management process allows for modifications as needed based on data and observations. We agree that the statement: "... compliance with this Order will be determined by compliance with the terms of this Order" sounds confusing. We have rephrased this to clarify that we require the Corps to incorporate the requirements of this Order into the O&M Manual. See response to Comment C-38.
S-38	SCVWD	The District pointed out the inconsistencies in the Adaptive Management Plan due date stated in findings 10 and 17, and Provision 15.	Comment noted. See response to Comments C-32. (Finding 17 does not mention the due date.)

S-39	SCVWD	The District stated that the finding that the project site provides potential habitat for rare or endangered species (Finding 19) is speculative and is not supported by any evidence, and that the Water Board ignored the project documents stating that no special species would be affected, or impacts would be less than significant, according to the U.S. Fish and Wildlife Coordination Act Report (CAR), EIR, and EIS.	Finding 19 is not speculative. See response to Comment C-15. As we presented in response to Comment C-13-a, the EIR found impacts on water quality standards, which include beneficial uses, based on the WAQ-1 and WAQ-6 significance criteria, and BIO-4 for impacts to a native resident or migratory fish or wildlife species, but the proposed mitigation is only for the short-term construction activities. See also response to Comment C-13-a.
S-40	SCVWD	The District stated it is not responsible for construction-related impacts, but Finding 20 does not make that distinction, and that the Water Board has no authority to impose conditions on the District related to construction.	We disagree. See responses to Comments C-02, C-03, and S-17.
S-41	SCVWD	The District disagrees with the Water Board's finding that the project will have permanent impacts to waters of the State and waters of the U.S. (Finding 20), noting that this contradicts findings in the EIR and USFWS CAR. Further, the District disagrees that placement of "buried rock riprap in the creek bed" will permanently impact beneficial uses of the creek, and reiterated that the Water Board is not authorized to second-guess the EIR.	We disagree. See responses to Comments C-13-a.
S-42	SCVWD	The District pointed out inconsistencies in the due date for the Mitigation and Monitoring Plan stated in Finding 21 and Provision 16, and reiterated its assertion that the Water Board is not authorized to impose additional construction-related conditions	Comment noted. See response to Comment S-21 on the revised due date for the MMP. In addition we disagree with the assertion that the Water Board is not authorized to impose the waste discharge requirements. See responses to Comments C-13-a, C-23, and S-43 for the regulatory authorities requiring mitigation.

		now.	
S-43	SCVWD	The District stated that the project does not include jurisdictional wetlands based on the project's wetland delineation results and that no wetlands will be impacted in the project, yet the tentative order cites policies for mitigation impacts to jurisdictional wetlands (Finding 21). The District also pointed out that the Certification, Finding I, states: "[n]o jurisdictional wetlands are in the project."	We disagree. The Certification does not provide the entire context. The Certification later states that the Project will not impact any jurisdictional wetlands under the Corps' 1987 manual. The cited policy addresses impacts to wetlands generally, which is a significantly broader category than jurisdictional wetlands, as noted in the policy itself. See responses to Comments C-23, and S-50. In addition, we revised Finding 18, second paragraph, to read as follows: "No jurisdictional wetlands, as defined by the Corps' 1987 manual for wetland delineation, are in the Project area. However, significant portions of the creek, inset floodplain, and riparian habitat from top of bank to top of bank are riverine wetlands that are waters of the State (see Finding 26)." In the original tentative order, the sentence stated there are no jurisdictional wetlands in the Project area, which is inaccurate, since creek channels and floodplains, which the Project includes, are jurisdictional as described in response to Comment C-24, and as defined in the Basin Plan.
S-44	SCVWD	The District stated that the Water Board failed to account for features in the project that the District asserts would offset or mitigate for the project within the project reach (Finding 21), which include: a net increase of 3.18 acres of waters of the U.S. and the State; improved habitat value due to the removal of nonnative and invasive vegetation and the seeding of native species; and an increase of 3 acres of native grassland habitat; preservation of existing upland trees and shrubs wherever possible; and replacement of removed native trees and shrubs with native plantings at an overall ratio of 2:1.	Comment noted. We thoughtfully considered the Project design and its expected impacts, whether positive or negative, in developing the revised tentative order's compensatory mitigation requirements. We noted that the USFWS CAR identifies *emergent* vegetation as the primary target habitat goal based on the egret's habitat needs. As we stated in responses to Comments C-08 and C-13-a, it's unclear how the Project design will fully meet the intended goal of establishing native grass habitat in the creek channel and riparian area within the banks. The USFWS CAR also identified upland grassland mitigation as a less pressing goal, based on red-tail hawk habitat needs. As noted in response to Comment C-13-a, the channel bank and upland areas without riprap have a better chance to succeed since root depth will not be restricted by the Project design. However, assuming the grasses in those non-riprapped areas succeed, their establishment would not be consistent with the mitigation goal to compensate for the loss of function and value in the emergent vegetation. See responses to Comments C-13-a pertaining to the Project's impacts and CEQA findings, and RCD-10, S-04, S-07, and S-24 pertaining to development of the Mitigation and Monitoring Plan.
S-45	SCVWD	The District pointed out that monitoring for the Lower Berryessa Creek and Lower Calera Creek Flood Protection Improvements project (see CJQWS Place no. 768945 (MB), SM 1600-2013-0159-R3) tree plantings is only five years, and noted that the Certification only requires five years.	We acknowledge that the monitoring requirement in the Lower Berryessa-Lower Calera project is only for 5 years. We apply monitoring requirements on a case by case basis. The Lower Berryessa Creek project has willow plantings. Because willows grow quickly, 5 years of monitoring is sufficient. The Upper Berryessa Creek project has slow growing trees and shrubs, including oaks and buckeyes, thus warranting 10 years of monitoring. However, we revised the tentative order to delete the requirement to amend the Planting Plan with additional five years of monitoring, as stated in response to Comment C-32.

S-46	SCVWD	The District stated that the Regional Board does not have authority to impose requirements for off-site mitigation on the District now for construction –related impacts.	We disagree. See responses to Comments C-13-a, C-14, S-36, and S-44 for the Project's impacts and why mitigation is required and responses to Comment C-23, C-24, and S-44 for the regulatory authorities requiring mitigation.
S-47	SCVWD	The District stated that the Water Board is not authorized to impose additional reporting conditions on the District (Finding 22), and that the Finding 22 does not identify which agency is responsible for the required reports.	The reporting requirements are standard requirements we require of all dischargers for projects of this nature and size. As stated in Finding 22, we are authorized under Water Code, section 13267 to require the reports. Finding 22 also identifies the reasons why the reports are necessary. In addition, CWA section 401 requires the inclusion of "monitoring requirements necessary to assure that any applicant for a Federal license or permit will comply with any applicable effluent limitations and other limitations."
S-48	SCVWD	The District stated that Finding 23 incorrectly asserts that the project 401 Certification states that the WDR will address "an off-site mitigation plan," and that the EIR finds that on-site plantings will mitigate for all project impacts to habitat.	We agree on both points. First, we agree that we incorrectly cited the language in the Certification, and we have revised Finding 23 to state: The Certification states that the Water Board would consider WDRs for the Project to address the future operations and maintenance activities, vegetation monitoring for construction mitigation plantings, and an offsite mitigation plan for impacts due to the Project's design. Second, we agree that the EIR has findings that onsite plantings will mitigate for all project impacts to habitat. However, we are obligated to require additional compensatory mitigation due to the lack of soil for native vegetation to establish and thrive at the site, and for impacts to beneficial uses due to bank riprapping and widening of the creek channel. See responses to Comments C-13-a, C-14, and S-44 for the Project's impacts and why mitigation is required and responses to Comment C-23, and S-43 for the regulatory authorities requiring mitigation.
S-49	SCVWD	The District pointed out that Finding 25 incorrectly states that "…pre-construction aquatic life and wildlife surveys" will be conducted in the list of EIR mitigation measures.	See response to Comment CAB-06.
S-50	SCVWD	The District stated that the Basin Plan Wetlands Fill Policy (Finding 28) and California Wetlands Conservation Policy (Finding 30) are not applicable to the project because the District asserts that no	We disagree. See responses to Comments C-23 and C-24, which notes that the entirety of Upper Berryessa Creek is a wetland under Water Board regulations.

		jurisdictional wetlands are present in the project area and the project will not impact wetlands.	
S-51	SCVWD	The District stated that the Water Board is not authorized to impose any provisions related to construction on the District.	We disagree. The Water Board is authorized and obligated to issue WDRs in accordance with the CWA and the Water Code. See responses to Comments C-02, C-13-a, S-05, S-15, and S-17.
S-52	SCVWD	The District noted that Provisions 6, 8, and 9 do not clarify that the Corps will be performing project construction and will be the sole discharger during the project construction phase.	We disagree. See responses to Comments C-02 and C-03 pertaining to naming both the Corps and District in the revised tentative order as the Discharger, C-32 pertaining to revisions in Provisions 11 - Rain Event Action Plan and 12 - Dewatering Plan; and C-35 regarding revisions to Finding 14 -Dewatering Plan. Per Comment C-32, Provision 8 - Utilities Realignment has been deleted.
S-53	SCVWD	The District pointed out the inconsistencies in due dates for the required reports in Finding 10 and Provisions 9, 12, 15 and 16.	Comment noted. See responses to Comments C-02 and C-32 pertaining to consolidating certain plans from Finding 10 into Finding 3, deleting Finding 10, and revising Provisions 9, 12, 15, and 16 (Dewatering Plan, Post-Construction Stormwater Management Plan, Adaptive Management Plan, and Mitigation and Monitoring Plan, respectively).
S-54	SCVWD	The District stated that the Water Board does not have authority to now require a Utilities Plan, in part because this requirement was deleted from the Certification issued to the Corps (Provision 8).	Comment noted. We disagree regarding authority but, given the information submitted for the Project to date regarding utilities, have removed the Utilities Plan requirement in the revised tentative order. See response to Comment C-32.
S-55	SCVWD	The District stated that the Water Board does not have authority to require a dewatering plan (Provision 9).	The requirement for a Dewatering Plan in the original tentative and the revised tentative order is consistent with EIR mitigation measure WAQ-B, which is "prepare and implement a Dewatering Plan." Further, this is a standard requirement for all projects of this size and nature. See response to Comment C-35 for revised language in the order reflecting the current status of the Corps' consultant's Dewatering Plan dated October 21, 2016.
S-56	SCVWD	This District stated that the post-construction stormwater monitoring plan (Provision 12) is due 60 days prior to start of construction. This was not a requirement under the Certification and, construction has already started, making the due date infeasible.	Comment noted. See response to Comment C-36 for the revised due date. Provision 12 (now 15) requires a Post-Construction Stormwater Management Plan because the Project design includes 6.8 acres of impervious surfaces due to 4.33 acres of new maintenance roads to be created in the Project, and 2.47 acres of existing roads to be redeveloped. This amount of impervious surface will make up roughly 40 percent of the Project's total area (i.e., about 6.8 acres of total area of 17.2 acres). Impervious surfaces are known to impact water quality by accumulating and subsequently discharging pollutants in groundwater and altering the hydrograph of creeks. At the Project site, we have observed erosion at the tops of banks that could be attributed to runoff from existing maintenance roads.

			The plan is required to demonstrate how road runoff at the site would not replicate the same erosion that appears to have occurred under existing conditions and to ensure that the expected discharge of other pollutants will be appropriately addressed. We acknowledge that the Board will consider adoption of the revised tentative order after Project construction has begun. Therefore, we have revised the due date of the Post-Construction Stormwater Management Plan accordingly, to be due 90 days after adoption of the order. See response to Comment S-53. Further, the Post-Construction Stormwater Management Plan is necessary to fully mitigate for the impacts of impervious surfaces to alterations in drainage at the site (i.e., EIR significance criterion WAQ-3, "Alteration in Drainage Resulting in Erosion or Siltation." Although mitigation measures WAQ-A and WAQ-B will be implemented during construction, these measures are specific to construction-related activities (WAQ-A is "good housekeeping" procedures for preventing construction materials from entering surface waters and storm drains; and WAQ-B is to prepare and implement a Rain Event Action Plan) and will not address the reasonably foreseeable post-construction adverse impacts of the Project's impervious surfaces. See response to Comment S-53 regarding the revised due date.
S-57	SCVWD	The District stated that the planting soil or soil amendments used during project revegetation will be obtained from commercial sources and will be free of contaminants, consistent with Provision 13.	Comment noted. Under Provision 15 (formerly Provision 17), the Discharger would be required to provide a report consisting of a cover letter and supporting documentation that demonstrates the soil fill material is appropriately free of contaminants.
S-58	SCVWD	The District is concerned that the development of the Adaptive Management Plan and the O&M Manual must dovetail, and the two plans need to be developed together, making the due date for the Adaptive Management Plan infeasible since the Corps has not specified a schedule for developing the O&M Manual.	Comment noted. See responses to Comments C-02 and C-32 pertaining to the revised due date for the Adaptive Management Plan and revised text in Finding 3. The Board would accept an amendment to the Adaptive Management Plan, if needed, to account for unanticipated post-construction conditions, O&M procedures, or other factors that had not been considered in development of the plan.
S-59	SCVWD	The District stated that the Adaptive Management Plan requirements in Provision 15 are based on the incorrect assumptions about sedimentation in Finding 16.	We disagree. See responses to Comments S-26.

S-60	SCVWD	The District noted that the monitoring and reporting requirements in Provision 15, parts (a) and (f) are inconsistent. In addition, the District noted that the geomorphological monitoring for the Lower Silver Creek capital project (Water Board Order No. R2-2002-0012), consists of a relatively downscaled geomorphology report to summarizes how the channel is behaving every few years as to whether the (i.e., is the channel incising/aggrading?).	Comment noted. Part (a) of this provision (now 18) requires the work plan to be developed, while part (f) requires the report to be submitted that meets the criteria listed in part (f). We revised part (a) to delete the reference to the "five year report". Regarding the Lower Silver Creek project, as authorized under Board Order No. R2-2002-0012, this project incorporates best engineering practices for flood control channels, so there is less need for monitoring than for the Upper Berryessa Creek project (Santa Clara Valley Water District, Hydraulic Engineering Unit, June 2009. *Design Manual-Open Channel Hydraulics and Sediment Transport).* The amount of monitoring for the Upper Berryessa Creek project is warranted to compensate for the uncertainties of the Project design with respect to sediment transport processes in the channel (see response to Comment S-26) and success of vegetation establishment in the Project site (see response to Comment and C-13-a).
S-61	SCVWD	The District stated that the monitoring requirements for determining sedimentation rates under 17.F is extremely difficult, and such monitoring assumes that sedimentation will occur and sediment removal can be used as quantitative data, which will not be the case (current or in the future).	We agree sediment transport rates are difficult to quantify. However, sedimentation rates, especially with detailed information on baseline channel topography –as will be the case in the Project reach with as-built surveys, can be estimated. Please refer to Reid and Dunne (1996) for a discussion on channel sediment storage (L. M. Reid and T. Dunne, Rapid Evaluation of Sediment Budgets; Geo-Ecology Texts, Catena Verlag, Reiskirchen, Germany, 164 pp., 1996). Along the Project reach, there are several approaches that would inform sedimentation rates including: 1) cross sectional and longitudinal surveys following channel-forming flow events and/or larger flows (regularly placed cross sections), and 2) volume of sediment removed for maintenance. These approaches would provide an acceptable estimate for sedimentation rates along the Project reach. A geomorphic survey of the reach to delineate channel storage zones in between surveyed cross sections would further refine sedimentation rates in the Project reach. See response to Comment S-26 regarding sediment transport processes in the Project.
S-62	SCVWD	The District stated that the requirements for monitoring of cross-sections, longitudinal profiles, and stage discharge relationships at the UPRR bridges are unnecessary because they are redundant with monitoring being planned already for O&M to inform aggradation and degradation processes.	Comment noted. The required monitoring will complement any existing plans for cross-sectional and longitudinal monitoring the Corps is planning to conduct to inform O&M, and it is not our intent to require duplicative monitoring provided the Corps will make its monitoring data available to inform the Board's monitoring requirements. The monitoring is necessary to verify the Project design assumptions, which have been generated by computer modeling. In addition, monitoring at the UPRR bridge is particularly needed because this area has been identified in the sediment transport model as an aggradation area (EIR, Chapter 7, response to Comment 3-3, citing the sediment transport consultant as follows: Tetra Tech, 2015. Sediment Transport Analysis Report for the Upper Berryessa Creek Flood Risk Management project. Prepared for Santa Clara Valley Water District), so monitoring there would help to validate the existing modeling. Monitoring of stage-discharge relationships at various flow rates has been required in lieu of installing a stream flow gage, although that could be an acceptable, albeit potentially more expensive, alternative. This monitoring is necessary to inform maintenance guidelines for the Project, which is consistent with SMP procedures.

S-63	SCVWD	The District suggested that "Vegetated buried bed and bank rock" more accurately describes the proposed project in Attachment A, Figures 2 and 3.	Comment noted. We have revised Figures 2 and 3 with the edit referencing that the rock riprap is covered by 4 inches of soil and hydroseed.
S-64	SCVWD	The District stated that Attachment A, Figure 3, incorrectly shows the upstream boundary of vegetated and buried bed and bank rock.	Comment noted. We corrected the figure to accurately show the area with riprap.
S-65	SCVWD	The District stated there is no authority or justification for the mitigation requirements in Provisions 16 and 19, because the project will not impact jurisdictional wetlands. The District also stated the Water Board would need to comply with CEQA before committing to such a project.	We disagree that the Board lacks authority to require compensatory mitigation for impacts to wetlands associated with the placement of fill and that the Project will not place fill into wetlands; see responses to Comments C-13-a, C-23, and C-24, and S-44 pertaining to the need for mitigation and the regulatory authorization to require mitigation. We agree that when making a discretionary decision for a "project" under CEQA, the Board must ensure that the Project complies with CEQA. See responses to Comments C-13-a and S-40 regarding the impacts of the Project on the beneficial uses of Berryessa Creek and authorities for mitigation requirements. Regarding CEQA, we addressed this issue previously in an email from Tamarin Austin, Water Board legal counsel, to Rita Chan, District legal counsel, and Peter Prows, District's outside legal counsel, as follows (email, July 13, 2016), and we reiterate it here: > We agree that, depending upon what project the District ultimately proposes, additional environmental review may be necessary. On the other hand, there are many types of mitigation that were contemplated in the EIR or may be subject to a categorical exemption or a finding of no significant impact, which would not necessarily require substantial time or effort by the District to prepare CEQA documentation. … > (i)t is premature to say one way or the other what additional environmental review will be necessary. The court's reasoning in Laurel Heights Improvement Assn v. Regents of University of California (1988) 47 Cal.3d 376, noted the chronology of when mitigation measures would ultimately be approved for a specific project: "As a matter of logic, the EIR must be prepared before the decision to approve the project. Not until project approval does the agency determine whether to impose any mitigation measures on the project. (§ 21002.1, subd. (b).) One cannot be certain until then what the exact mitigation measures will be, much less whether and to what degree they will minimize environmental effects… The decision imposing mitigation measures, however, is not made, and cannot be made under CEQA, until after the EIR has been completed." (Id. at pp. 401-402.) In the case of the Upper Berryessa project, the final project requirements under the WDRs continue to unfold through negotiations between Regional Water Board staff and the District, and may also be informed by the Water Board's consideration of the tentative order. As more details are known about the environmental impacts of any proposed mitigation measures, we will

			certainly revisit this topic.
S-66	SCVWD	The District pointed out that Provision 18 requires pre-construction surveys for aquatic life and wildlife, yet the EIR determined that no significant impacts would result to aquatic life or wildlife, and the Regional Board does not have authority to second-guess that EIR finding. Further, the District stated that construction is also scheduled to begin before the Water Board's consideration of the tentative order so, even if adopted, the condition would be infeasible.	See response to Comment CAB-06.
S-67	SCVWD	The District suggested that more time is needed to provide the as-built drawings than the 8-week time frame in Provision 28, and that the Water Board is not authorized to impose such a schedule on the District.	We revised Provision 28 (now 30) to require the as-built plans no later than 180 days after Project construction is completed.
S-68	SCVWD	The District disagrees with Provision 37 requiring the discharger to pay fees, and does not find the Water Code authorizes the District to pay fees. Further, the District believes the Water Board would be responsible for any fees the District might be required to pay.	The relevant codes give the Water Board the authority to require dischargers, including the District, to pay fees. A discharger is required to pay a fee pursuant to Water Code section 13263 and California Code of Regulations Title 23, section 2200(a)(3). For example, pursuant to these codes, the District has recently paid fees for the following projects: • Lower Berryessa Creek and Lower Calera Creek Flood Improvements Project (California Integrated Water Quality System (CIWQS) ID No. 768945) • Permanente Creek Flood Improvements Project (CIWQS ID No. 393476) • Hale Creek Enhancement Pilot Project Geotechnical Investigation (CIWQS ID No. 403079) • Almaden Dam Project Geotechnical Investigation (CIWQS ID No.820005) • Anderson Reservoir Dam Phase 2 Geotechnical and Geologic Investigations (CIWQS ID No. 816739) • Calero Dam Seismic Retrofit project Geotechnical Investigations (CIWQS ID No. 826511). See responses to Comments S-04, S-13, and S-14 regarding comments about the order being an unfunded mandate.

S-69	SCVWD	The District stated that Attachment C, item b requires plantings "…based on the outdated 2013 U.S. Fish and Wildlife Service Coordination Act Report, yet the EIR Mitigation Measure BlO-B already addresses replacement plantings of native trees and shrubs." Further, the District stated that the Water Board is not authorized to second-guess the EIR.	The revised tentative order includes Attachment C (now B) as a model because an MMP has not yet been proposed. If the mitigation plan has riparian habitat, then the criteria in Attachment B (or comparable, appropriate criteria) for riparian habitat are applicable. The revised tentative order requires the MMP to include appropriate performance standards and criteria. See responses to Comments C-13-a, C-23, C-24, and S-44, which describe the authority supporting the requirement for an MMP with performance standards and criteria.
S-70	SCVWD	The District stated that Attachment C, item c addresses irrigation of wetlands plantings, yet the project does not include wetlands plantings and none are necessary to mitigate project impacts.	Comment noted. We concur the Project site does not include wetland plantings. An acceptable compensatory mitigation project, however, may include wetland plantings where irrigation is necessary for establishment. See response to Comment S-69.
S-71	SCVWD	The District pointed out that the vegetation performance standard in Attachment C, Table 1, exceed the criteria for the Lower Berryessa Creek and Lower Calera Creek Flood Protection Improvements project, which are: Year 1: 40 percent cover; Year 2: 50 percent cover; Year 3: 60 percent cover; Year 4: 70 percent cover; Year 5: 70 percent cover; and to maintain invasive (but not non-native) plants at no more than 10 percent. Further, the District stated that it is not possible to maintain non-native (as opposed to invasive) vegetation to 10 percent in this area where abundant amounts of non-natives are growing in the urbanized areas surrounding the creek and provide continuous input of non-native seeds.	We concur the percent cover criteria are appropriate for the native grasses and forbs to be hydroseeded in the Project site and would likely be appropriate for the offsite mitigation project, with the exception that, for invasive species, we do not concur with the statement that: "…invasives ("but not non-native") plants would be maintained at no less than 10 percent cover." Instead, the order would require that the monitoring goal and success criterion for invasive species categorized as "highly invasive" defined by the California Invasive Plant Council (Cal-IPC, see http://www.cal-ipc.org/ip/inventory/index.php) shall not exceed a maximum of 10 percent cover. We revised this criterion for vegetation performance criteria in the revised tentative order, Attachment B (formerly C).

S-72	SCVWD	The District stated that even though it believes the project will not impact riparian trees/shrubs and does not include riparian planting, the order, Attachment C, Table 1 addresses riparian plantings.	We disagree. As noted by the District in its comment letter (Comment S-69) and in the EIR, the Project *will* adversely impact trees and shrubs in the Project site, including riparian trees and shrubs (BIO-2 significance criterion). As such, the EIR requires mitigation for these impacts. However, the District does not consider the "majority of" (EIR, Appendix F) the affected trees and shrubs as part of the riparian habitat, and, per the project plans, mitigation trees will be planted along the outboard edge of the Project's maintenance roads. We revised the tentative order in Provision 19 to *not* require additional performance standards or success criteria for the tree and shrub plantings within the Project site. Nevertheless, Attachment C's (now B's) standards and criteria are applicable to trees and shrubs for any riparian habitat plantings that may be included in the MMP that has yet to be developed. We are open to considering other appropriate and comparable performance standards and success criteria for riparian plantings and riparian habitat the District may propose with the MMP. See also response to Comment S-69.
S-73	SCVWD	The District stated that the Water Board is not authorized to require offsite mitigation, and that even though the project will not impact jurisdictional wetlands, the order, Attachment C, Table 1, includes criteria for seasonal wetland communities in offsite mitigation areas.	See responses to Comments C-13-a, C-23, and C-24 regarding our authority to require compensatory mitigation, including mitigation that may be completed offsite. Attachment C (now B), Table 1, includes criteria for seasonal wetland communities in case the required compensatory mitigation project(s) include(s) a seasonal wetland component. We included Attachment C (now B) as a model (see response to Comment S-72), and it addresses criteria for seasonal wetland communities, which would be applicable to a mitigation site with seasonal wetland habitat. We are open to considering other, appropriate criteria the District will propose during the District's process to develop the MMP. See response to Comment S-69.
S-74	SCVWD	The District requests that it be given a reasonable amount of time to review and reply to any additional arguments, documents, or evidence, before any hearing.	Comment noted. We will distribute the response to comments and a revised tentative order in advance of the Board's hearing on January 11, 2017. The time for written comment letters has passed, but the District may respond during its presentation at the hearing. We note that we arranged a meeting to discuss various aspects of this Project and the District and Corps declined to attend a meeting until this Response to Comments document was prepared. We subsequently reiterated to the District and Corps our openness to meeting to discuss the project and tentative order, and District staff continued to decline to meet. We ultimately have scheduled a meeting for January 6, 2017, after the planned release of the Response to Comments, and have indicated our willingness to meet additionally prior to that.
S-75	SCVWD	The District requests a hearing on the tentative order, with the right to call witnesses and to cross examination.	Comment noted. The Board is scheduled to consider the revised tentative order at its January 11, 2017, meeting. As a part of that meeting and consistent with the meeting rules, the District may present testimony to the Water Board. The Board's consideration of waste discharge requirements does not typically include witnesses or cross-examination.
S-76	SCVWD	The District asked about how the Water Board plans to implement *ex parte* communication restrictions.	*Ex parte* communication restrictions apply in the adoption of waste discharge requirements for an individual project (as opposed to the adoption of general waste discharge requirements). Communications to Board members in the absence of all parties are prohibited unless there is notice and an opportunity for all parties to comment. A summary of questions and answers pertaining to the *ex parte* rules may be found at http://www.waterboards.ca.gov/laws_regulations/docs/exparte.pdf.

			Separation of functions is only necessary in limited situations when there is a clear need to do so, primarily in the area of enforcement, which is prosecutorial in nature. Board staff evaluate each Board item on a case-by-case basis to determine if it is necessary to have separate staff functions. In this case, Board staff evaluated the following factors and determined there was no need to separate functions: 1) the private interest at stake; 2) the risk of erroneous deprivation of that private interest through the procedure used and the probable value of additional procedural safeguards; and 3) the government's interest, including the burden to the government by affording more process.
S-77	SCVWD	The District requested the Water Board to reject the tentative order based on the various comments it has submitted.	We disagree. See above responses to comments.
S-78	SCVWD	The District believes that the watershed-wide planning approach is a comprehensive and more effective approach for the two agencies to work together collaboratively towards our mutual goal of achieving water quality objectives, and invited the Water Board to participate in the watershed-wide planning underway as part of the District's One Water Program, rather than requiring the WDR.	Comment noted. See also response to Comment S-10.

Response to Comments on Revised Tentative Order

ID#	Source	Comment	Response
RTO-C-01	Corps	The Corps disputes the Water Board's authority to rescind the existing water quality certification (Certification) and replace it with the WDRs and a reissued Certification.	We disagree. This response addresses both the Corps' and the District's comments that the Water Board is not authorized to rescind the existing Certification. The Corps and the District pressed the Water Board to issue Clean Water Act (CWA) section 401 water quality certification for the Project before the Project's mitigation measures were fully designed and evaluated by Board staff, or vetted with the public, because of the Project's time-sensitive nature. Water Board Executive Officer Bruce Wolfe also received a letter and telephone calls from Senator Feinstein's and Congressman Honda's offices requesting that the Board expedite the certification. That urgency is the reason Board staff agreed to the two-phase permitting approach developed collaboratively with Corps and District staff and formally laid out in our meeting of January 4, 2016, as detailed in the responses to Comments C-02 and C-03. Soon thereafter, the District urged the Board to memorialize one of the agreements made during the January 2016 meeting that the Board would expedite the certification as soon as the District completed its CEQA process (emails from Melanie Richardson to Keith Lichten, on January 7 and January 8, 2016). Responding to the emails from Ms. Richardson, Mr. Lichten sent a letter to the Corps and District affirming the Board's intent to expeditiously prepare the certification as soon as CEQA was completed and identified the project to be certified (letter from Keith Lichten to Melanie Richardson, January 15, 2016). In addition, Corps staff asked on numerous occasions for Board staff to provide updates on its progress to complete the certification (for example, email from Amanda Cruz (Corps) to Susan Glendening, January 13, 2016). Immediately after the District certified the Project's EIR on February 9, 2016, Board staff issued an administrative draft certification to the Corps and District for review on February 11, 2016, followed by another draft on March 2, 2016. It is contradictory that the Dischargers now object to the Board's revision of the Certification to fill in the blanks that were left in the Certification at their request. At the time the Certification was issued, the Dischargers neither requested it be amended nor petitioned the State Water Board objecting to its language. That was unsurprising, because the two-phase permitting approach and related issues had been frequently discussed in meetings and emails, included in the administrative draft certifications of February 11 and March 2, 2016, and included in the Certification, issuance of which allowed the Dischargers to commence project construction in October 2016. By now objecting to the revised tentative order, the Dischargers seek to avoid the second part of the two-phase permitting approach we developed with their support, which is described in detail in the response to Comment C-03. In their comment letters concerning the initial tentative order (issued on August 19, 2016), in which we named both the Corps and the District collectively as the Discharger, the Corps and the District both commented that the issuance of WDRs could potentially result in duplicative and/or inconsistent regulation of the Project, when viewed against the requirements of the Certification.

			In response to that comment, we recommended an approach that consolidates the Certification with the WDRs, clarifying which tasks in the Certification have already been completed, and replacing "placeholders" for mitigation in the Certification with specific mitigation tasks. The Corps and the District now assert that the Water Board "lacks authority to rescind the WQC." (Corps letter at p. 1; District letter at p. 2.) Both the Corps' and the District's comments ignore specific "placeholders" in the Certification issued March 14, 2016, which are listed below, which indicated that the Certification was contingent upon additional requirements, including a requirement for compensatory mitigation: • Certification, p. 2, 2nd full paragraph: This Certification is being issued to facilitate the Applicant's contracting and construction schedule for the Project, which is intended to result in the completion of Project construction prior to the planned opening of the Milpitas Bay Area Rapid Transit (BART) station in late 2017. Subsequent to issuance of this Certification, the Water Board will consider adoption of Waste Discharge Requirements (WDRs) with the District named as the permittee for the Project. The following is a partial list of items the WDR will address: … A plan to compensate for the capital project's impacts… • Certification, p. 10, Finding I.K: As noted elsewhere herein, the Water Board will also consider WDRs to address other needs for the Project, including the need to compensate for temporal and permanent losses of functions and values by the Project design and future O&M activities and to monitor vegetation establishment and success. • Certification, p. 6, Finding I.H: Mitigation necessary for future O&M activities is intended to be considered as a part of the WDRs for the Project to be brought before the Water Board later this year. • Certification, p. 10, Finding I.K (this section was repeatedly revised based on the Corps' review and comments for language acceptable to the Corps): The need for compensation of impacts from the Project design and future O&M will be addressed as a part of the WDRs for the Project to be brought before the Water Board later this year.

			As described above, the initial Certification described the additional conditions – mitigation measures – that would be necessary before the Project could be considered in compliance with applicable sections of the Clean Water Act. In other words, the failure to include mitigation would mean that the Project would *not* be in compliance with CWA section 401. It is also possible to modify a water quality certification when the underlying permit or license has been changed and the modifications relate to the changes in the permit/license *(Del Ackels v. USEPA* (9th Cir. 1993) 7 F.3d 862, 867.) Here, the original Certification notes where modifications would be necessary, and the mitigation requirements added to the WDRs fall within those necessary changes. The Corps and District cite to *Keating v. FERC* (D.C. Cir. 1991) 927 F.2d 616, 624[1] to support their claim that the Water Board has not complied with limitations on the ability to revoke or rescind a water quality certification. The facts of this case are different from *Keating*, however, in which the court emphasized that the state certification underlying the Keating project was "final and unqualified." (*Id.* at p. 621.) In contrast, and as described above, the Project's Certification for Upper Berryessa was, on its face, issued explicitly subject to incorporation of future conditions pertaining to mitigation. The Corps and the District also protest that the Water Board failed to meet the 60-day timeline for notifying the Dischargers that "there is no longer reasonable assurance that there will be compliance with the applicable provisions" of the Clean Water Act. (33 U.S.C. § 1341(a)(3).) On the contrary, the original Certification advised the Dischargers that, without appropriate mitigation measures, the Project would not meet CWA compliance, as stated in Finding I.I: > The need for compensation of impacts from the Project design and future O&M will be addressed as a part of the WDRs for the Project to be brought before the Water Board later this year. The requirement for notification has been met. The District claims that the Board may not impose water quality certification on it; the Corps contests the ability of the Board to regulate it with WDRs. We address each of these claims in turn. The District states that it may not be regulated under CWA section 401 because the District has not applied for a federal license or permit. As U.S. EPA explains in the "Clean Water Act Section 401 Water Quality Certification: A Water Quality Protection Tool

[1] The District also cites to *City of Shoreacres v. Tex. Comm'n on Envtl. Quality* (Tex. App. 2005) 166 S.W.3d 825, 834-35 for the same proposition.

			For States and Tribes," (401 Handbook), the Corps does not process a permit for its own dredge and fill activities pursuant to CWA section 404 but will still apply for section 401 water quality certification. (401 Handbook, https://www.epa.gov/sites/production/files/2016-11/documents/cwa_401_handbook_2010.pdf, at p. 4.) This is codified in the Code of Federal Regulations: > Although the Corps does not process and issue permits for its own activities, the Corps authorizes its own discharges of dredged or fill material by applying all applicable substantive legal requirements, including public notice, opportunity for public hearing, and application of the section 404(b)(1) guidelines. > > *** > > The CWA requires the Corps to seek state water quality certification for discharges of dredged or fill material into waters of the U.S. (40 C.F.R. §336, subd. (a)(1).). Pursuant to CWA section 402, the State of California is authorized to administer water quality certification on behalf of U.S. EPA and has promulgated Title 23 of the California Code of Regulations, section 3855, which requires that an "application for water quality certification shall be filed with the regional board executive officer in whose region a discharge may occur." Section 401 must be construed in conjunction with both CWA section 301, prohibiting discharge without a permit, and section 3855, requiring submission of an application for certification before discharging. There is no question that certification is required for the Project, which involves dredge and fill activities that impact waters of the United States. There is also no question that the District is appropriately named as a discharger in a certification for this Project, as described in detail in the responses to Comments C-02 and C-03. We have construed the Corps' application for certification (submitted on September 25, 2015) and the District's EIR (Notice of Determination - February 9, 2016; State Clearinghouse No. 2001104013) to be an application that covers both the District and the Corps. The only alternative interpretation is that the Corps and District have failed to comply with requirements that parties apply for water quality certification for dredge and fill activities. The Corps claims that the Water Board may not issue WDRs because it violates the limited waiver of sovereign immunity under the CWA, and yet the Corps and other federal agencies are identified as dischargers in numerous WDRs this Board has issued. From 1990 to the present, this Board has regulated the Corps' maintenance dredging activities under WDRs, adopting WDRs for the Corps' dredging activities approximately every two to three years. The Board issued the most recent maintenance dredging WDRs to the Corps in May 2015 (Water Board Order No. R2-2015-0023). The Corps did not petition the ability of the Board to issue that permit. The Corps provides no reference to any new provision of law or change in circumstance that would restrict the Board's

			ability to continue to regulate the Corps' dredging activities with WDRs. There is a clear and explicit waiver of sovereignty in this case. The Water Boards' authority is pursuant to the Porter-Cologne Water Quality Control Act. (Wat. Code, § 13000 et seq.) Porter-Cologne applies to federal agencies, "to the extent authorized by federal law." (Wat. Code, § 13050, subd. (c).) Under the Supremacy Clause (U.S. Const., art. VI, cl. 2.) and the doctrine of sovereign immunity, federal agencies and facilities are subject to state law only to the extent authorized by Congress. (*Hancock v. Train* (1976) 426 U.S. 167.) Any such authorization must be "clear and unambiguous" and any waiver must be narrowly construed. (*Goodyear Atomic Corp. v. Miller* (1986) 486 U.S. 174, 180.) Because only Congress may waive sovereign immunity, any such waiver will be found within a federal statute. There are two waivers of sovereign immunity within the federal CWA (33 U.S.C. § 1251 et seq.): CWA § 313 and CWA § 404(t). Both sections contain similar language; however, the former is a more general sovereign immunity waiver applicable to "the discharge or runoff of pollutants," while the latter is more specific and applies to the "discharge of dredge or fill material in any portion of the navigable waters." Both sections require federal agencies to comply with both substantive and procedural requirements set forth by the applicable state. Both the U.S. Supreme Court and the Ninth Circuit Court of Appeals have upheld requirements of state and local governments to obtain permits pursuant to the CWA's waivers of sovereign immunity. (See *Cal. Coastal Com. v. Granite Rock Co*. (1987) 480 U.S. 572; *Friends of the Earth v. U.S. Navy* (9th Cir., 1988) 841 F.2d 927.) However, any such WDRs issued would be limited to CWA requirements. The WDRs in this case are intended to fulfill CWA requirements and are therefore consistent with the waiver of sovereign immunity.
RTO-CAB-01	Complete the Refuge, Audubon Society, and Baykeeper	CAB is concerned that since the Corps plans to construct the project during the rainy season, and requested that the Water Board require the contractor to remove equipment from the channel at the end of each work day.	Comment noted. The contractor does not plan to work in the creek channel until at least March 1, 2017, and, when working in the creek channel, will remove any construction materials and equipment, including dewatering equipment, from the channel if significant rainfall is predicted. We disagree with the suggested change to require the contractor to remove all equipment from the creek channel at the end of each day, rather than using the 48-hour rain forecast to trigger preparation for a rain event, because daily removal is unreasonable given that most days do not have significant rain events that would trigger implementation of a Rain Event Action Plan, and the existing 48-hour lead time should be sufficient to prevent potential impacts from construction activities and dewatering operations.

RTO-CAB-02	Complete the Refuge, Audubon Society, and Baykeeper	CAB is concerned about whether the hydroseed will stabilize the layer of soil on the creek bed and bank riprap, and asked about the basis for the design with only 4 inches of soil.	We agree. Please see the response to Comment C-13-a regarding our concerns about the vegetation and the need for compensatory mitigation. The Design Documentation Report (DDR), section 4.5, states: "Temporary erosion protection will be provided during the first approximately three years after construction through the use of a bio-degradable erosion control fabric (coir roll) that will help to increase the erosion resistance during the establishment period of hydro-seeded native grasses." The DDR does not address the rationale for the 4-inch soil layer. The Water Board will consider the Project's revegetation methods when reviewing mitigation proposals and determining acceptable compensatory mitigation for the Project.
RTO-CAB-03	Complete the Refuge, Audubon Society, and Baykeeper	CAB is concerned that the revised Tentative Order does not stipulate criteria for soil stockpiling duration, and the fate of stockpiled soil is not specified.	Comment noted. Under the statewide Construction General Permit, a permittee may stockpile soils within the construction site and is required to protect the stockpiles from wind and rain. The revised tentative order requires the Discharger to characterize the soil to determine the appropriate disposal or recycling methods. Although the order does not require the Discharger to submit the soil analytical results, Provision 39 provides that the Discharger shall permit the Board or its authorized representative to review the soil sampling and disposal records.
RTO-CAB-04	Complete the Refuge, Audubon Society, and Baykeeper	CAB suggests that the Water Board require a revised Dewatering Plan within 30 days of the Water Board's comments to the contractor, and to reinstate a due date for the final Dewater Plan.	We disagree because this is not necessary. Board staff is reviewing a revised draft plan submitted by the contractor on December 8, 2016. Based on the prompt responses to Board staff from the contractor, there is no need to assign a due date in the order.
RTO-CAB-05	Complete the Refuge, Audubon Society, and Baykeeper	CAB questions whether the native vegetation would become established, rather than non-natives, and asked for details of the vegetation success criteria and contingency plan if the native vegetation fails to establish.	Comment noted. The requirements for compensatory mitigation are intended to address the impacts of the Project's design, including the elements for establishment of native vegetation at the Project site. The success of native vegetation establishment for erosion control will be subject to the maintenance and adaptive management evaluations. In addition, we note that the Construction General Permit requires the permittee to ensure that 70 percent of background native vegetation coverage or equivalent stabilization measures have been applied for final soil stabilization of disturbed areas. See responses to Comments C-08 and C-13-a, pertaining to our concerns about the soil root depth requirements of native species to be hydroseeded, and Comment C-08, pertaining to our concerns about the reuse of native soil containing non-native and invasive seeds.
RTO-CAB-06	Complete the Refuge, Audubon Society, and Baykeeper	CAB asks whether impacts have occurred yet based on the planned construction start of October 2016 and suggested that the mitigation-to-impact ratio should be increased because project construction has already started.	Comment noted. Regarding the Commenter's question about whether impacts have occurred in the Project yet, approximately 500 linear feet of the creek were graded and lined with rock riprap in October 2016. Provision 21 in the revised tentative order requires the Discharger to maintain a log of impacts to track the start of impacts and to eventually also track mitigation activities. When evaluating the Discharger's mitigation plan, the Executive Officer will consider whether the impacts to beneficial uses resulting from the delay between Project impacts and completion of compensatory mitigation have been appropriately addressed before the Executive Officer accepts the plan.

RTO-CAB-07	Complete the Refuge, Audubon Society, and Baykeeper	CAB concurs with the Water Board's assessment of the project site being a riverine habitat with beneficial uses. CAB provide photographs of the project site with ducks in the creek; channel flow with and gentle meanders; and inset floodplains.	Comment noted. Board staff have made similar observations of the creek's beneficial functions and values on September 3, 2015, and April 21 and November 21, 2016. See also response to Comment C-13-a.
RTO-CAB-08	Complete the Refuge, Audubon Society, and Baykeeper	CAB suggests the following edits for the highly invasive species criterion: "The Discharger shall ~~maintain~~ ensure invasive plant species in the Project site ~~at a maximum~~ does not exceed cover ~~of no more~~ than 10 percent based on the percent cover of…"	We agree and have revised Provision 19.d to read: "The Discharger shall ensure invasive plant species in the Project site do not exceed cover of more than 10 percent based on the percent cover of… .
RTO-S-01	SCVWD	The District disputes the authority for the Water Board to rescind the CWA section 401 water quality certification already issued to the Corps.	We disagree. See response to Comment RTO-C-01.
RTO-S-02	SCVWD	The District disputes the Water Board's authority to name the District to the project's water quality certification.	We disagree. See response to comment RTO-C-01.
RTO-S-03	SCVWD	The District comments that it has not agreed to be responsible for certain requirements, nor does the Project Partnership Agreement between the Corps and District require the District to be responsible for them.	Comment noted. The District has misinterpreted Finding 3 by suggesting that all of the roles and responsibilities that are divided between the Corps' and the District are stipulated in the Project Partnership Agreement (PPA). Finding 3 states (italics added for emphasis*): "The Water Board's understanding is that the District will be responsible for…."* the Adaptive Management Plan, Mitigation and Monitoring Plan, and Post-Construction Stormwater Management Plan. Finding 3 does not state that these plans are required in the PPA. Board staff understands that these items were not included in the PPA because the Corps did not account for Board requirements in its rigid project planning and budgeting structure. Further, we understand that items not included in the PPA are, by default, the responsibility of the District, as the co-sponsor. We base this understanding on the numerous meetings and email exchanges between Board, Corps, and District staffs, including, but not limited to, the interagency meetings on July 16, August 4, August 11, and

			December 14, 2015, and January 4, February 29, March 2, and October 11, 2016.
RTO-S-04	SCVWD	The District states that using the Cowardin naming convention to describe the jurisdictional waters of the State in the project does not substitute for the Porter-Cologne Act, section 13050(e) definition for state waters, and is not meant to be used to determine State jurisdiction. The District specifically disagrees that the area from the ordinary high water mark to the tops of banks is part of the project's jurisdictional waters of the State, and states that it is not a riverine wetland under the Cowardin system, based on the high water mark as the boundary.	We agree to the District's first and second points that the Cowardin classification system is not a substitute for the definition of waters in the Water Code, section 13505(e) and that it is not intended to determine regulatory jurisdiction for waters of the State. Rather, the Cowardin classification system is the tool that the Board uses for mapping and inventorying wetlands (See Basin Plan Section 2.2.3). In response to the District's and Corps' previous comments that the Project site does not include wetlands, Board staff indicated that the Board uses the Cowardin classification system for determining wetland types to convey the point that the Project's waters of the State are wetlands subject to the State's No Net Loss Policy and Basin Plan Wetland Fill Policy. We disagree with the District's contention that the area from the ordinary high water mark (OHWM) to the tops of banks is not jurisdictional waters of the State subject to the No Net Loss Policy and the Basin Plan Wetland Fill Policy. The diagram the District included with its comment letter for the riverine wetland type being below the "high" water line shows that a creek floodplain is part of both the riverine wetland and palustrine wetland types (Source: Federal Geographic Data Committee (2d ed., 2013). Classification of Wetlands and Deepwater Habitats of the United States, p. 2. Online: https://www.fws.gov/wetlands/Documents/Classification-of-Wetlands-and-Deepwater-Habitats-of-the-United-States-2013.pdf). This is because the "high" water line is the elevation of high flow events. In comparison, the "ordinary high water mark" that forms the boundary of federal jurisdictional waters tends to be closer to the elevation in the diagram labeled as the "average" water line near the bankfull flow, which is "seasonally flooded," or even lower at the "low" water line which is "semi-permanently flooded." The creek beds and banks in the Project, including the upper bank sections, are subject to the wetland protection policies because they clearly serve the functions and values of wetlands (regardless of which Cowardin habitat types may apply) and therefore support the creek's beneficial uses. The Project reach contains flow up to only the 10-year flow event (or 20 years in some sections). Although the creek's full floodplain throughout the Project reach is artificially constrained by channelization and urban development, the tops of banks are an indisputable part of waters of the State that the Project will permanently impact. The effective discharge (also known as the bankfull discharge), which is the channel-forming flow, for ephemeral and intermittent streams in the arid western states is generally the 5- to 10-year event (Lichvar and McColley, 2008. *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States-A Delineation Manual*. ERDC/CRREL TR-08-12. Cold Regions Research and Engineering Laboratory U.S. Army Engineer Research and Development Center. Hanover, NH. Online: http://www.spk.usace.army.mil/Portals/12/documents/regulatory/pdf/Ordinary_High_Watermark_Manual_Aug_2008.pdf. Accessed

			December 7, 2016). This indicates that the channel's entire cross-section up to the tops of banks contributes to the significant channel-forming geomorphological processes in the Project reach, at least in some areas of the Project reach. We recognize that the wetland delineation states that, due to incision, the tops of the creek's banks are at a lower elevation than the physical top of the bank. However, Board staff disagrees with this interpretation and always interprets the top of the bank as being the elevation where the top of the bank actually exists. In the Project reach, the top of the bank ranges from zero to 6 feet above OHWM. This area amounts to about 5.63 acres of waters of the State that are outside the boundary of federal waters and, given that it is flooded fairly regularly – about every 10 years, it is clearly part of the creek and waters of the State. In addition to the hydraulic and geomorphic processes from bank to bank in the Project, the existing soft earthen banks up to the tops of banks are vegetated and contribute to nutrient cycling in the creek, trap and contain sediment and pollutants, and help to stabilize soil in the upper banks. Due to the District's vegetation maintenance activities of mowing and herbicide spraying, natural vegetation types and establishment patterns have been artificially limited in the Project reach. The growth of trees and shrubs in the Lower Berryessa Creek reach, which has a more natural morphology with a wide, relatively undeveloped floodplain, suggest similar growth could occur in the Project reach if the District's maintenance activities did not prevent it. Yet the existing vegetation still contributes to the creek's beneficial uses.
RTO-S-05	SCVWD	The District contends that construction of the project is not a discharge of "waste" so should not be subject to the Porter-Cologne Act.	We disagree. Water Code section 13370 recognizes that the CWA authorizes permits to regulate the discharge of dredged or fill materials, and section 13377 authorizes the Board to regulate discharges of dredge and fill materials with WDRs to protect the beneficial uses of waters of the State: > … 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 … for the protection of beneficial uses … Further, Water Code section 13374 states that the term "waste discharge requirements" refers to the definition of "permits" under the CWA, which means that an order for WDRs for discharges of dredged or fill materials is the same as a discharge permit for dredged or fill materials. WDRs for the Project are necessary because they address standards and criteria necessary to allow the discharge of dredged and fill materials in waters of the State that are outside federal jurisdiction. Water Code sections 13263 and 13377 authorize the Board to issue WDRs for dredge and fill projects.

RTO-S-06	SCVWD	The District asserts that the Water Board staff's analysis of sediment transport information is flawed. The District included a staff technical memorandum dated December 2, 2016, with its comment letter. The memorandum gives examples of processes in other creeks in order to compare them with Upper Berryessa Creek and seeks to rebut some of the points made by Water Board staff in its memorandum of October 21, 2016.	We disagree. The District's new technical memorandum of December 2, 2016, did not present any new analyses or findings, nor any evidence to support the District's claim that the Project will make the existing unstable Berryessa Creek channel a stable channel closer to geomorphic equilibrium with minimal maintenance needed. The Board's in-house experts (geomorphologists, sediment transport analysts, and environmental scientists) analyzed existing environmental assessments and technical reports; reviewed the sediment transport model; performed a comparison of channel cross sections under existing, project, and historical conditions ("as-built" conditions per District's signed and stamped engineering designs); and conducted several field visits to the Project reach. Based on these four different lines of evidence, as well as our experience and knowledge of other channel systems in the Santa Clara Valley, we presented our findings and supporting evidence in the memorandum on October 21, 2016. We found the Project will create a significant disturbance to the channel. As designed, the Project is likely to result in sedimentation in the Project area and unnecessarily frequent sediment maintenance, which will result in repeated impacts over the Project's life. It is our intention to validate sediment transport processes through the monitoring required under the Adaptive Management Plan required by the order to guide decisions about future O&M, because the design data, alone, are insufficient to inform O&M. The Adaptive Management Plan requires that the monitoring and O&M plan development be an open process, similar to the maintenance project review process under the District's existing Stream Maintenance Program.
RTO-S-07	SCVWD	The District requests an edit to clarify the location of one of the access ramps.	We agree and have revised the order. Finding 7.e now states: "…and the other one is 900 feet downstream of I-680."
RTO-S-08	SCVWD	The District disputes the Water Board's contention that establishment of native vegetation will be restricted, pointing out that the roots can grow through the interstitial spaces of the rocks.	We disagree. The rock riprap covered with a thin layer (4 inches) of soil is likely to significantly restrict the establishment of the native vegetation to be hydroseeded, even though some plants may grow with their roots extending through the interstitial spaces of the rocks. By occupying a significant percentage of the underlying soil area within the native plants' rooting depth, the rock will restrict potential growth. In addition, the Project's specifications indicate the use of geotextile fabric beneath the rocks, which will further restrict the root zone. See also the responses to Comments C-08 and C-13-a.
RTO-S-09	SCVWD	The District clarifies that the reference in Finding 21 for a mitigation and monitoring plan "consistent with the District's schedule to adopt its 5-year capital improvements projects" is incorrect.	Comment noted. We revised Finding 21 to reflect that the June 30, 2017, due date for the final mitigation plan coincides with the District's One Water Plan budgeting process based on the information District staff provided in the meeting between Water Board and District staffs on August 15, 2016. Finding 21 now reads: This Order requires the Discharger to submit a Mitigation and Monitoring Plan (MMP), acceptable to the Executive Officer, by June 30, 2017, and to timely implement the MMP. The Water Board's understanding is that this schedule coincides with the District's schedule to adopt the capital improvement project budget for its One Water Plan. However, this Order does not require the District to propose a One Water Plan project as compensatory

			mitigation.
RTO-S-10	SCVWD	The District disputes that the EIR "acknowledges that riparian habitat is waters of the State," as stated in the revised tentative order, Finding 26.	We disagree. EIR section 3.5.2.2 states: A stand of cottonwoods, coastal live oaks, and non-native holly oaks is present, and as they are found on a small bench below the top of the bank, this is considered riparian habitat and is under the jurisdiction of the California Department of Fish and Wildlife (CDFW) and SFBRWQCB.
RTO-S-11	SCVWD	The District comments that it will be difficult to meet the velocity monitoring requirements under Provision 17 because it will require a crew of two to three staff, and the District stated it cannot guarantee the monitoring would be done.	Comment noted. We recognize the monitoring requirements will require staff resources. The use of a stream gage could be an alternative that would reduce reliance on staff. The monitoring is required to evaluate Project performance and to inform Project operation and maintenance, particularly since Board and District staffs disagree on the sediment transport modeling results and interpretations of the results. Some monitoring will be done by the Corps to inform the development of the O&M Manual, which may present an opportunity for the District to partner and collaborate with the Corps for the creek monitoring requirements. In addition, we encourage the District to reach out to watershed groups that may have the capabilities and expertise to help with such monitoring, such as community college and State university groups and non-governmental organizations.

Attachment – 10/21/16 memo

Attachment

Water Board Staff Memorandum on Upper Berryessa Creek Sediment Analysis

9TO: Keith Lichten, Chief
WATERSHED MANAGEMENT DIVISION

FROM: Setenay Bozkurt Frucht
PLANNING and TMDL DIVISION

DATE: October 21, 2016

SUBJECT: **RESPONSE TO SANTA CLARA VALLEY WATER DISTRICT COMMENTS ON THE UPPER BERRYESSA CREEK FLOOD PROTECTION PROJECT TENTATIVE ORDER**

This memorandum includes responses to the Santa Clara Valley Water District's (District's) comments on the sedimentation analysis in the tentative order issued on August 19, 2016, and reiterates our analysis of, and the evidence for, the long-term depositional environment of Upper Berryessa Creek.

1. UPPER BERRYESSA CREEK LIES WITHIN AN ALLUVIAL FAN AND IS PRIMARILY DEPOSITIONAL

   The District states that "studies and observations by the District strongly suggest that the assumptions in the tentative order about current conditions are flawed in that current conditions are erosional, so making the system more depositional would bring the system closer to equilibrium."

   Berryessa Creek lies within an alluvial fan. An alluvial fan, by its very nature, is primarily a depositional environment. Alluvial fans are major sediment storage areas, formed where a stream rapidly loses its transporting ability because of either an abrupt reduction in slope, which decreases stream power, or a sudden change from confined to unconfined status, which leads to flow divergence (Knighton, 1998). Upper Berryessa Creek meets all three conditions that are required for optimal fan development, namely:

   a) A topographic setting where a channel becomes unconfined as it emerges from an upland drainage basin onto flatter land as evidenced by the longitudinal profile (Corps, 2014);

   b) The production of sufficient sediment for fan construction as reported by previous geomorphic studies (NHC, 1993; Corps, 2014). These studies report on the instabilities of Berryessa Creek's "canyon zone" above Old Piedmont Road where active landsliding provides "a plentiful supply of boulders, cobbles, and gravel that are transported downstream." Upper watershed site inspections reported in Corps (2014) note that the canyon reach is striking in the number of large landslides and that there are evidences of debris torrents or flows; and

   c) A climatic environment capable of generating high stream discharges and mass wasting events, which is the case for all of the Bay Area streams with their Mediterranean climate

and active tectonic setting (the Hayward Fault Zone primarily crosses the canyon reach). The flashy hydrologic nature of such a setting dictates highly variable sediment loads and infrequent, but very large sediment pulses.

There may be episodic and temporary erosional processes acting on certain reaches (secondary processes that remobilize previously deposited sediment); however, the overall process along the Berryessa Creek fan is deposition.

That the long-term and larger geomorphic tendency of Upper Berryessa Creek is of deposition has been observed and reported on all the previous sediment studies. An analysis of geomorphology and sediment transport in the project is included in the Environmental Impact Statement (EIS), Appendix B, Part III, in which the Corps (2014, p 3-1) accurately describes the larger geomorphic context of the Project reach:

> "The Berryessa Creek Project Area […] lies within an alluvial fan. Alluvial fans are created by sediment deposition as streams carrying large sediment loads exit the steep confined channel of the uplands and meet the lower gradient unconfined valley. As a result, sediment deposition is an inevitable process on an alluvial fan and any channel improvements must recognize this behavior. On the Berryessa Creek fan, at some point between the apex of the fan and the Bay, all but the fine sediments will be deposited."

2. LONG-TERM MAINTENANCE RECORDS CONFIRM THAT SEDIMENT DEPOSITION IS A REGULAR, PERSISTENT MANAGEMENT ISSUE

The District states "Sedimentation is a major and persistent problem on Berryessa Creek. Large quantities of sediment have been removed from the creek in an ongoing effort to maintain flow capacity in the channel.[…] Locations of historical sediment accumulation and removal are concentrated in three main areas: (1) in the sediment retention basin downstream of Piedmont Road, (2) from Sierra Creek to Cropley Road, and (3) from Interstate 680 to Calaveras Boulevard." (NHC, 2003)

The District's Sediment Removal Maintenance Records indicate that a total of more than 250,000 cubic yards of sediment has been removed from Berryessa Creek since 1980s (Corps, 2014, p.2-19). Of this sediment, approximately 21,400 cubic yards deposited along the project reach between I-680 and Calaveras Boulevard. Sediment deposition is an expected management problem in an alluvial fan reach and is not solely a result of localized bank erosion as the District suggests. An additional 193,227 cy were removed from Berryessa Creek downstream of the Project reach during the same period. Given the reduction in sediment transport capacity under Project conditions, we anticipate that a portion of this load will accumulate along the Project reach rather than being transported downstream.

3. TRIBUTARIES ALSO CONTRIBUTE SEDIMENT TO THE BERRYESSA CREEK

The District's primary argument is that the sediment along the Project reach is solely from local sources via bank erosion. In addition to the upstream watershed, which produces substantial amounts of sediment via mass wasting, tributaries to Berryessa Creek also contribute significant amounts of sediment upstream of the Project reach. An overall estimate of the sediment yield for Berryessa Creek was developed by NHC and was reported in the EIS (2012, p. 2-16). This study estimated that tributaries[1] delivered a total of 5,800 tons (4,300 cubic

[1] Sweigert, Crosley, Sierra, Piedmont, and Arroyo de los Coches Creeks

yards[2]) of sediment to Berryessa Creek every year. Incorporating Berryessa Creek upstream of Old Piedmont Road, a total of 15,700 tons or 11,600 cubic yards of sediment is delivered to the system every year. This 11,600 cy of sediment is delivered to the Project reach from upstream and is not related to other local sources along the Project reach. Therefore, the District's argument that all of the sediment along the Project reach is generated locally from bank erosion is invalid. Therefore, suggesting that the Project will make the system less erosive and thus closer to equilibrium, therefore eliminating the need for maintenance, is also unfounded (it is a *non sequitur*).

4. THERE ARE EROSIONAL SITES OR SEGMENTS WITHIN THE LARGER DEPOSITIONAL ENVIRONMENT

As is the case in any stream channel, there are erosional and depositional sites within the larger geomorphic process domain (in the case of Berryessa Creek, the larger domain is the alluvial fan environment). Along the Berryessa Creek Project area, there are erosional sites where hydraulic structures cause bed or bank instabilities. Jordan, et al. (2009) states that "engineered river infrastructure elements are the primary causes of channel instability." The District provided several examples of instabilities due to or near hydraulic structures in their technical memorandum of July 20, 2016. All of these example sites point to the erosive impacts of hydraulic structures and do not provide evidence for overall trends. Indeed, Water Board staff's observations during field trips on September 4, 2015, and April 21, 2016, did not indicate a significant channel erosion tendency on a reach-scale in the proposed Project area.

The Jordan, et al. (2009) study indicated that drainage area capture and urban land use change increased water yield by 48% and sediment yield up to 61% in the Berryessa Creek watershed. The limited erosional segments along the project reach are either a direct result of in-channel structures or indicators of the hydrologic and sediment impacts of urbanization in the watershed between the 1960s and the 2000s. However, with the recognition of hydrologic impacts of development and adoption of HMP practices, as well as LID practices and constraints on new impervious surfaces, these trends will not be as significant in the future.

As articulated in the EIS (2012), sediment deposition along Berryessa Creek is an inevitable process and at some point between the apex of the fan and the Bay, all but the finest sediments will be deposited. The challenge of the proposed project is anticipate where and how much deposition will take place, develop a comprehensive and well thought-out management plan, and appropriately mitigate for the impacts.

5. DISTRICT'S INTERPRETATION OF EXISTING ANALYSES IS INCONCLUSIVE AND INCOMPATIBLE WITH THE ENVIRONMENTAL IMPACT REVIEW ASSESSMENT

The District's technical memorandum of July 20, 2016, includes a graphic showing the longitudinal profile comparison from 1967 and 2004 (see below) and interprets this graphic as evidence of incision. This graphic's spatial extent is from Old Piedmont Road to the Crosley Creek culvert, which is primarily the section of the creek known as the "Greenbelt Reach." This graphic shows the channel <u>upstream</u> of the Project reach and does not include the proposed Project reach.

[2] Assuming a dry unit weight of 100 Ibs/ft^3 (1.35 tons/cy).

We do not have adequate information to interpret this graphic. We do not know how many points were collected along each profile and whether the perceived differences are merely a function of line interpolation or an actual difference in elevation between surveyed points (assuming both surveys have the same datum and were performed with comparable care and quality). Without knowing anything about the quality of the surveys, one could also interpret this graphic as showing a sediment wave that passed through the upstream part of the reach with incision along the downstream part (again, assuming these lines do actually have enough data points). The upstream, downstream, and middle of the reach (around station 1,200 in Figure 1) have stable elevations. A sediment wave that deposited in the upstream of this reach in 1967 may have spread downstream by 1987. There appears to be another depositional site around station 800; however, because the 400 meter long reach downstream of it stayed at the same elevation for almost 50 years suggests that the reach does not have an incisional trend, rather that the sediment wave likely passed and spread downstream. We would expect to see large sediment pulses that temporarily deposited in this upstream reach considering the large storms of 1962, 1963, and 1967.[3] Without providing any other context and evidence for incision, this graphic is not evidence for incision upstream of the project reach.

Finally, even with all the uncertainty, if this graphic is considered as evidence of incisional trends upstream of the Project reach this would suggest that there has been a significant amount of sediment scoured from the creek bed upstream of the Project reach anddelivered to the Project reach in the last 40 years, invalidating the District's suggestion that sediment along the project reach is locally sourced.

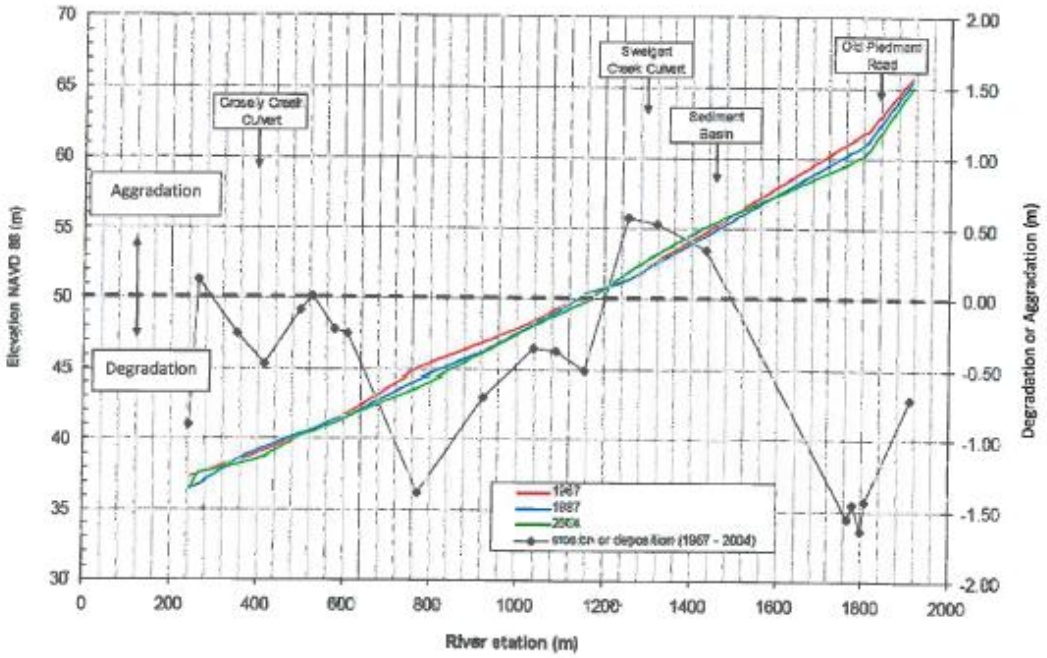


Figure 1. Longitudinal Profile Comparison of primarily the "Greenbelt Reach" (Crosley Creek Culvert to Old Piedmont Road) in 1967, 1987, and 2004.

[3] Goodridge (1996) states that several Santa Clara Valley stations reported 20 inches of precipitation in a 3-day storm in February 1963 and nine station in Santa Clara Valley reported greatest ever 3-day rainfalls in 1960s.

The EIS (Corps, 2014) highlights the stability of the Greenbelt:

> "It contains the only section of channel that is not an excavated section constructed on an engineered alignment. The reach has only minor influences from bridges within its boundaries […] The channel capacity if more representative of a natural stream section in this reach than in other reaches" (p. 2-9)

and further emphasizes the stability of this reach and cautions against any intervention:

> "Changes to the channel in the Greenbelt Reach should be analyzed carefully and kept to a level that does not create problems with the stability of this reach. Potential problems that would have to be mitigated would be reduced stability after disturbing the vegetation on the banks and increased flow confinement if the channel was lowered."

Our field visit also pointed to the same conclusion: that the Greenbelt Reach is mostly in an equilibrium state, with a low-flow channel that formed within the larger channel and with stable and vegetated banks. The active channel ranges between 10 to 20 feet wide and approximately 4 to 6 feet deep. These active channel dimensions are what would be expected from a watershed of this size in the East Bay of approximately 15 mi^2.

6. UNANSWERED QUESTIONS ON THE SEDIMENT TRANSPORT MODELING

Tetra Tech and the Water Board engaged in a review of the HEC-RAS model in March 2016 to resolve questions on sediment transport conditions. The technical rationale for the modeling effort that would provide the basis for the selection of model inputs with respect to the upstream boundary sediment loads, bankfull flow, etc., is needed to evaluate the impacts of any project. TetraTech and the Water Board agreed to set up a meeting to resolve unanswered modeling questions. However, that meeting never happened and our questions about the sediment transport model have never been answered.[4]

A summary of our main unanswered questions is as follows:

- Discrepancy between sediment inputs to the Project reach under existing and Project conditions. The version of the sediment transport model that was provided to the Water Board shows that the upstream boundary conditions were modeled differently for existing and project conditions as detailed in our email of 3/4/2016. While baseline conditions model sediment input to the upstream boundary via a rating curve, Project conditions model boundary conditions as equilibrium load. This results in different sediment inputs to the model, which then results in different sediment inputs to the Project reach, making the comparison invalid.

- Based on the most recent sediment transport model that was made available to us, we summarized, in Table 1, below, sediment inputs to the upstream boundary and sediment erosion/deposition estimates along the project reach under baseline and project conditions. The table shows that: 1) the sediment inputs under baseline and Project conditions are different; 2) two different sediment transport equations chosen (Yang and MPM) result in

[4] The last email exchange on this subject was a series of questions from Setenay Bozkurt Frucht to Dragi Stefanovic on 3/4/2016 (with other Water Board, District, and Corps project participants cc'ed). That email was never answered, nor did any follow-up calls or meetings take place.

greatly different estimates for sediment transport capacity; iii) the Project reach will be more depositional under Project conditions (which we already established with the District and Tetra Tech).

- The District or Tetra Tech did not articulate the basis for the choice of sediment transport equations or the discrepancies between the inputs, nor did they provide a summary of their findings or explain the implications of the modeling. Water Board staff's questions on sediment modeling were never clarified. We cannot confirm that the sediment transport modeling is adequate until we are provided a technical document detailing the modeling effort and the most recent sediment transport model. We currently do not have any documentation that form the basis of the District's statement that the "sediment transport modeling and analysis on the Project design by Tetra Tech shows a system closer to equilibrium after the Project is completed." Therefore, we are not able to accept the conclusion that the Project will reduce the operation and maintenance needs below current levels. Our review of existing studies and Tetra Tech's model indicates the contrary.

Table 1. Comparison of Three Sediment Transport Models: Sediment Input and Deposition Conditions between Baseline and Project Conditions

Model	Sediment Input Boundary Condition (tons)		Erosion(-) / Deposition along Project Reach (tons)		Comments[5]	
	Baseline	Project	Baseline	Project	Baseline Conditions	Project Conditions
100-yr Yang	8,095	8,075	-1289	522	7,068 tons deposit at the most upstream cross section so only 1,027 tons are delivered downstream of Piedmont Rd.	8,075 tons are delivered downstream of Piedmont Rd.
100-yr MPM	8,085	2,046	-997	-642	5,625 tons deposit at the most upstream cross section so only 2,460 tons is delivered downstream of Piedmont Rd.	2,046 tons is delivered downstream of Piedmont Rd.
Dominant Q Yang	15,804	4,895	-2,628	870	14,660 tons deposit at the most upstream cross section so only 1,144 tons is delivered downstream of Piedmont Rd.	4,895 tons is delivered downstream of Piedmont Rd.

7. UNANSWERED QUESTIONS ON THE COMPARISON OF PREVIOUS AS-BUILT PLANS AND PROPOSED PROJECT

[5] Cross section stationing is different under the Baseline and Project Conditions models. I680 Bridge is at XS 14011 and XS 20511 under the Baseline and Project conditions models, respectively. Project reach is between I680 and Calaveras Boulevard.

The District previously sent the Water Board (per our request) the “As-Built Plans” for the Project reach. District staff later informed us that the design plans that were sent were not the actual as-built plans based on post-project surveys, and that they were proposed design drawings. Therefore, we are not including the comparison of 1973 cross sections to current conditions in this analysis as we presented in a previous technical memorandum (May 2016). However, the 1973 design drawings include baseline conditions at the time and show that the channel had a width-to-depth ratio similar to today, suggesting that the channel tends to move toward some “equilibrium” dimensions. We still would like to compare current proposed Project to the previously built project to understand channel evolution in the last 50 years and to anticipate how the system will respond to the proposed modifications. Therefore, we request the as-built surveys, or in the absence of those, 100% design plans of the previous project.

SUMMARY

In summary, all lines of geomorphic evidence, analysis, and existing studies indicate that the Project reach is aggradational in the long-term. Greenbelt Reach, which represents conditions closest to reference conditions in this system, points to the tendency that even after being disturbed due to channel widening and deepening during the construction of the previous flood control project, the channel returns to these quasi-steady equilibrium conditions. The Water Board views these trends as part of natural processes in the watershed, recognizes the stream’s tendency to move toward these equilibrium conditions, and recognizes the environmental benefits and much improved habitat conditions under these equilibrium conditions. Since the District is proposing to significantly modify the channel and will have to continuously intervene in the channel’s natural processes and tendencies, it is critical to develop a management plan based on sound geomorphic analysis and evidence-based adaptive management for the Project reach and to mitigate for the expected impacts of the Project.

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EXHIBIT 11

California Regional Water Quality Control Board
San Francisco Bay Region

January 11, 2017, 9:05 a.m.

Elihu M. Harris Building
1515 Clay Street, Suite 1400
Oakland, CA 94612

Reported by:
Susan Palmer

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Stephen Hill, Division Chief, Toxics Cleanup Division
Susan Glendening, Environmental Scientist, Watershed Management Division
Keith Lichten, Watershed Management Division
Setenay Frucht
Xavier Fernandez, Watershed Management Division
Nicole Fairley, Scientific Aide, Watershed Management Division, North Bay Section
Dale Bowyer, Section Leader, Watershed Management Division
Lily Tu, Scientific Aide, Watershed Management Division
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Skyler Valle, Toxics Cleanup Division
Laurent Meillier, Senior Engineering Geologist, North Bay Section, Toxics Cleanup Division
Sunny Grunloh, Scientific Aide, Toxics Cleanup Division, North Bay Section
Bill Johnson, NPDES Wastewater Enforcement Division
Lena Germanario, Scientific Aide, Wastewater Enforcement Division, Enforcement Section
Robert Schlipf, NPDES Permitting Section
Will Burrell, Water Resource Control Engineer
Jerry Su, Student Engineering Assistant

APPEARANCES (CONT.)

Public Comment

Bill McNicholas, Clean Up Marinwood Plaza NOW Oversight Committee
Robert Graham, Clean Up Marinwood Plaza NOW Oversight Committee
Joseph Sanchez, Santa Clara Building and Construction Trade Council
Tom Kendall, Chief of Planning, San Francisco District, Corps of Engineers
Mary Goodenough, District Counsel, San Francisco District, Corps of Engineers.
Richard Santos, Chair, Santa Clara Water Board
Melanie Richardson, Interim COO, Watersheds for the Santa Clara Water District
Peter Prows, Outside Counsel, Santa Clara Valley Water District
James Manitakos, Enviro Planner, Santa Clara Valley Water District
Jack Xu, PE, CFM, Santa Clara County Valley Water District
Linda Locke, President, Berryessa Citizens Advisory Council
Frank Caneille, President, Berryessa Business Association, Real Estate Broker
Pastor Jethroe Moore, II, President, NAACP, POST Commission
Rita Chan, Assistant District Counsel

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Item 7. Waste Discharge Requirements (WDRs)

Santa Clara Valley Water District and U.S. Army Corps of Engineers, Upper Berryessa Creek Flood Risk Management Project, Santa Clara County.

CHAIR YOUNG: All right, we're going to --

MS. WHYTE: Okay, our next item is Item 7. And these are proposed waste discharge requirements, which also include a water quality certification. And those would be issued to the Army Corps of Engineers and Santa Clara Valley Water District.

And Susan Glendening is going to make the presentation for staff.

CHAIR YOUNG: All right.

MS. WHYTE: I'll also note we have a supplement that Keith is handing out, now, with some minor word changes. And we did receive a comment letter last night, from the Santa Clara Valley Water District. Staff has reviewed the letter. We see nothing new in the letter, that hasn't been put forward already, in comments. But I'll bring that to your attention and we can let the parties explain whether they think there's anything new in there, as well. But staff's

recommendation is not to include the letter at this time.

CHAIR YOUNG: All right.

MS. AUSTIN: And to clarify for the record, there were actually three letters -- it's my understanding that there were three letters have the comment deadline. And Keith can provide us with more information on the three. But two came in some time ago, and the last one, that Dyan's referring to, came in last night, at 4:55.

CHAIR YOUNG: All right. For clarification -- while you're talking about this, I am going to make an announcement. Some time ago, Christie Stopaker (phonetic), from the Governor's Office, called me because the Governor's Office had received a couple of letters about this issue. And they contacted me to say, what's going on? Is this on your radar?

I said, yes, it's on our radar. I let the Governor's Office know that our staff was almost continually reaching out to all the interested parties, and on this subject, to try to see how much resolution they could get, you know, prior to coming to the Board meeting.

My conversation with the Governor's staff

was purely procedural. I let them know that we were -- our staff was working on it. I directed her to information that was already on the website, about the ongoing process. And I also sent an e-mail to Ms. Stopaker, yesterday, to let her know, in case she didn't, that this was going to be on the agenda today.

But, again, all of the communications were procedural, they were not substantive.

Now, shall we discuss the letters that came in after the closure of the comment period?

MR. LICHTEN: Dr. Young, I'm Keith Lichten, Marsh Management Division. I'm aware of just the one letter that came in at 4:55 p.m., from the Water District.

Largely, as Dyan had noted, reiterating comments that had been made previously.

CHAIR YOUNG: And that was 4:55 p.m., yesterday?

MR. LICHTEN: That's right.

CHAIR YOUNG: All right.

MS. AUSTIN: And it's my understanding, and I'm hearing this third-hand from Mr. Wolfe, who isn't here. But it's my understanding there were two other letters that came in after the comment

deadline, and it's my understanding that the substance of those pertained to asking for an additional -- additional time, to bump this off the calendar.

So, that's the limit of my knowledge. But I think staff's recommendation was to exclude all three of those from the administrative record. And that those who would like to comment on the content of those letters are available here, today, and can make those comments.

CHAIR YOUNG: All right, I'm going to accept the staff recommendation. I'm going to exclude all three letters from the record. Again, if you want those issues to be discussed, you have the opportunity to present them today.

My general approach to these matters is that barring some other really, really good reason, I do not like to accept things into evidence when the other interested parties in the matter are -- will be provided insufficient time to react to them. We don't want people to feel blindside in your procedures, and that's why we have deadlines. So, I am going to exclude all three letters.

And with that, are we ready to proceed with the staff presentation? Thank you.

MS. GLENDENING: All right. Testing. Good morning, my name is Susan -- good morning, Chair Young and Board Members. My name is Susan Glendening. And I'm an Environmental Scientist with the Watershed Management Division.

I'm pleased to present Item 7., the Revised Tentative Order for Waste Discharge Requirements and Water Quality Certification for the Upper Berryessa Creek Flood Risk Management Project.

During my presentation, I'll refer to this as the Revised Tentative Order.

This is a capital improvement project to increase flood protection along a portion of the Upper Berryessa Creek. It will protect property, including the new Milpitas BART Station.

For this presentation, I'll begin with the project purpose, then I'll summarize the permitting approach, as I'll explain. We issued a Clean Water Act, Section 401 Water Quality Certification for the project, in March 2016.

That certification allowed contracting and construction to begin expeditiously, so that an improved flood protection could be provided for the anticipated BART Station opening. At that time, we

deferred more detailed permitting for a future date.

The Revised Tentative Order, before you, would complete that more detailed permitting by issuing waste discharge requirements, and rescinding and reissuing the existing -- the initial Water Quality Certification from March.

I will then discuss the resources being impacted by the project, including the existing and potential beneficial uses, and the associated project components that result in the impacts, and the need for mitigation.

Finally, I'll touch on some of the significant comments we received and our responses.

The project is on Berryessa Creek, in the Cities of San Jose and Milpitas, in Santa Clara County. I'll refer you to the map on the upper right, to show you the general location in the San Francisco Bay Area. Shown with the star in the bottom right side of the small map.

The large map on the left shows the project reach as a red line. The project's upstream boundary is in San Jose, at Interstate 680, and the creek flows north into Milpitas, to the project's downstream boundary at Calaveras

Boulevard.

It includes work along the reach and in two tributaries, where they flow into Berryessa Creek. Los Coches Creek, which is in the north, by the northern star. Looking for anything else here. And Piedmont Creek, which is just south of -- it's the southern tributary, just below the purple.

Just one sec. I have a little bit of technology because the lighting's out right here.

This is a 2.2 mile long reach. The project is called the Upper Berryessa Creek Project, to distinguish it from another flood control project immediately downstream, referred to as the Lower Berryessa Creek Project.

The Lower Berryessa Project has been permitted and is currently under construction.

The project purpose is to modify Berryessa Creek to contain the 100-year flood event. Under existing conditions, the Creek overtops its banks about every 10 to 20 years.

On the screen, the project reach is again shown as a red line, with water flowing from upstream, at the bottom of the map, to downstream near the top of the map.

This image is a flood zone map from the

project EIR, showing where flooding would occur during the 100-year flood event, without the project. Flooding is shown by green, blue, and yellow dots, plus a few red dots.

The green dot indicates areas where flooding depth would -- during the 100-year flood event, that would be up to 1-foot deep.

The blue dots represent areas that would flood from 1 to 3 feet deep.

And the yellow dots, which are mainly in the Lower Berryessa Creek Project area, in the northern part of this map, would flood from about 3 to 5 feet deep.

And red dots would flood over 5 feet deep, but they’re pretty rare and they’re difficult to see on this map.

The project will give improved flood protection to over 3,500 homes, businesses, and the associated infrastructure, as well as the Milpitas BART Station. The BART Station is currently under construction and is shown in the west of the project, by the BART Station logo, on the bottom of this map.

The Revised Tentative Order names both the U.S. Army Corps of Engineers and the Santa Clara

Valley Water District as dischargers, because they are the project co-sponsors. The project could not occur without each agency contributing to the project, because the cost sharing and associated collaborative work are required by the project's Congressional authorization.

The order recognizes the division of tasks between the Corps and the District to complete the project. For example, the Corps is responsible for construction, while the District is responsible for providing the project right of way and property acquisition.

The order would implement a two-phase permitting approach, which we developed with the Corps and the District about a year ago. The approach recognizes the important public safety need for the project, while ensuring it meets State Water Quality Standards.

The first phase was to issue water quality certification so that the Corps could begin construction. This was necessary to meet the urgent goal of improved flood protection for the new, Milpitas BART Station, which is part of the multi-billion dollar BART extension to San Jose.

As shown on the earlier map, the Station

is in the existing 100-year flood zone. And it is scheduled to be open to the public in December 2017.

With the certification in hand, in March 2016, the Corps was able to begin its construction process for the project. Including tasks, such as contracting and equipment procurement. This led to breaking ground in October 2016, for project construction. And, now, the project is on track to be completed by December 2017, in time for the BART Station to open.

However, the certification recognized the need for a second approval in order to ensure the project's water quality impacts were fully addressed. As a result, we're now completing phase 2 of this two-phase permitting approach.

Phase 2, which is your consideration of the order, involves addressing the compensatory mitigation requirements for project impacts, as well as incorporates the plans and details that have been finalized subsequent to the certification's issuance, such as construction de-watering.

The project will impact both jurisdictional Waters of the U.S., and additional

Waters of the State that are outside of Federal jurisdiction.

Now, before I describe the project's impacts, I'll go over the beneficial uses provided by the creeks, and associated riparian wetlands that will be impacted by the project.

The creeks provide warm water habitat, wildlife habitat, and water contact and non-contact water recreation beneficial uses.

In addition, Los Coches Creek, a tributary to the project reach, provides habitat for the California Red-legged Frog, and has the preservation of rare and endangered species beneficial use.

To evaluate the beneficial uses, staff inspected the site five times since April 2015, and we observed a thriving creek ecosystem, which I'll show you on the next few slides.

Here is a close up of the photograph on the previous slide, which was taken in September 2015, during the peak of a severe drought. The photo shows wildlife, ducks, and an egret, and an immersion of vegetation in the creek channel.

This photo was taken in November 2016, just a couple months ago. It shows a group of at

least 16 ducks using the creek. The riparian vegetation on the banks not only provides cover from predators, but it also serves as a food source -- it can also serve as a food source.

This is another dry season photo, showing an egret in the channel. During this inspection, in September 2015, we observed ducks and egrets at multiple locations along the length of the creek that is being impacted by the project.

The green, emergent vegetation in the water show that under pre-project conditions there is perennial flow in the creek and, thus, it has habitat functions and values even in the peak of the drought.

This slide shows that the creek channel has developed geomorphic complexity in the form of a meandering, low-flow channel. This improves habitat diversity and support of beneficial uses.

Emergent vegetation is growing across the channel bed, and sediment deposits are likely, periodically shifted as creek flows pick up the sediment and redeposit it downstream.

The project reach now connects higher quality habitats that currently exist upstream and downstream. That connection helps to sustain

access to foraging habitat by fish, birds, and other wildlife.

This slide shows higher quality habitat in the Berryessa Creek's upper watershed, upstream of the project reach. The slide shows that there's diverse riparian vegetation, with multiple species in the canopy, as well as the understory. You know, my mouth is a little touchy right now.

But the picture on the left here shows -- this is the riparian corridor here, with a variety of woody species here.

VICE CHAIR MCGRATH: Just for clarity, is that in the portion of the stream that is proposed for alteration?

MS. GLENDENING: No, this is in the --

VICE CHAIR MCGRATH: That's upstream.

MS. GLENDENING: Upstream of the project reach.

BOARD MEMBER KISSINGER: But your earlier photos --

MS. GLENDENING: Which has higher quality habitat.

BOARD MEMBER KISSINGER: But the earlier photos you showed were --

MS. GLENDENING: Were within the project

reach, yeah.

This one here is in the dry channel bed. It's a sunny patch here, showing a variety of vegetation on the banks.

Here's an example of Lower Berryessa Creek, which is downstream of the project reach. The photo shows a meandering, low-flow channel, and inset flood plain benches, and adjacent woody riparian vegetation. And these features contribute to its higher quality for beneficial uses, including wildlife habitat.

BOARD MEMBER KISSINGER: The Lower Berryessa reach is also subject to the project, as well?

MS. GLENDENING: Not in this project, it's a separate one.

BOARD MEMBER KISSINGER: I understand. But it's currently the subject of some kind of work, as well?

MS. GLENDENING: Yes, it's under construction, now.

BOARD MEMBER KISSINGER: And this is, I take it, before construction? Or, is this what it looks like following the construction that's being done on the Lower Berryessa reach?

MS. GLENDENING: This photo is -- we took this photo in September 2015, so I'm not sure if it got reconstructed from this.

(Off-mic comments.)

MS. GLENDENING: This is pre-construction. It's pre-construction of the project, but it still has higher quality habitat than the existing project reach.

The point is that in -- the point is showing that the project reach has connectivity between the upper watershed and the lower watershed, which is beneficial to the biota and the ecosystem within the project reach.

BOARD MEMBER KISSINGER: I understand. I guess the reason for my question is, one of the criticisms that's latent throughout the materials is the design of the Upper Berryessa reach is that it's -- offers very low habitat value.

And I'm wondering whether the Lower Berryessa reach has got comparably low environmental quality after construction or if it will have some higher quality design aspects?

MS. GLENDENING: I think I'm going to get into -- I might be able to answer your question in a few moments, to actually --

BOARD MEMBER KISSINGER: Okay, go ahead.

VICE CHAIR MCGRATH: Can I augment that? Because one of the issues here is the ability of restrictions on vegetation on the levees. And this system shows mature riparian vegetation that certainly wasn't planted as mitigation. It's pretty old trees. Yet, there's not very much in the current channel, in the area.

So, is a system of this width, and this nature of levee capable of maintaining riparian vegetation or, in fact, are these trees going to be required to be removed under some of the restrictions that occur with Federal money Standards?

MR. LICHTEN: All right. Well, Mr. McGrath, I think you're reading ahead. We do have a picture showing what this part of the project -- or, this other project will look like in the future.

VICE CHAIR MCGRATH: Well, yeah, that's the kind of what we're trying to get to.

BOARD MEMBER KISSINGER: Yeah.

MR. LICHTEN: So, the short answer is, yes, but we'll get to that later in the presentation.

BOARD MEMBER KISSINGER: So, stop getting ahead is the message.

(Laughter.)

CHAIR YOUNG: Yeah, just stop being so smart.

BOARD MEMBER BATTEY: Just to ask a question about this photo, are those bike trails on either -- are those bike or pedestrian trails on either side?

MS. GLENDENING: Yes, this is in a park setting.

Now, I'll describe the project's impacts. Through the Corps planning and budgeting processes, the project was designed as a single-purpose channel to provide flood control.

The design strays from the approach the Board has promoted over the last 20 years for flood control projects. The creek will be lined with rock riprap for nearly two miles, on both the left and right banks.

Three-quarters of the same section, roughly one and a half miles, will have riprap across the channel bed, as well. The riprap will be covered by four inches of soil and hydro seeding. But this will limit future creek

functions and beneficial uses.

The project will increase capacity in the creek by widening the channel. Channel widening will significantly alter the creek's hydrology. This slide shows Station 176, where the cross-section will increase by about 10 feet in width, and 6 feet in depth from the existing conditions. This likely will result in increased sedimentation and reduced dry season flow.

Under existing conditions, during the dry season the creek flow is in the soft portion of the low-flow channel, that has formed naturally from the sediment transporting deposition processes.

This low-flow channel is about 3 to 5 feet wide and about 2 inches deep.

The dischargers acknowledge that this flow is unlikely to persist in the project' wide, flat-bottom channel, effectively removing the warm water habitat, beneficial use during the dry season.

In addition, channel widening will significantly reduce the creek flow velocities, which likely will cause an increased rate of sedimentation.

However, to maintain flood capacity, as the channel fills in, there will be a need to

remove the sediment. This is likely to result in recurring and more frequent sediment removal impacts over time.

This slide shows a project map with the locations for three, new concrete culverts that will be constructed in the project, shown here with the heavy X marks on the map.

The wooden trestle bridge here, at the southernmost X mark, will be replaced by a double-barreled concrete culvert, with wing walls, as shown in the lower right.

The other two concrete culverts are at the confluences of Piedmont and Los Coches Creeks, with the Upper Berryessa Creek.

Although the project will remove about 250 linear feet of concrete lining, there will be a net gain of 850 linear feet of concrete channel surface from these culverts and other concrete structures, such as ramps and transition structures under bridge crossings.

CHAIR YOUNG: Could you go back to the last slide?

MS. GLENDENING: Uh-hum.

CHAIR YOUNG: At the bottom of the schematic, or of the map, there's a -- there are

two 90-degree turns. Can you tell us what's going to happen at those 90-degree turns?

MS. GLENDENING: This is a railway crossing, and it crosses over the creek channel diagonally. And the creek comes in kind of at an angle relative to the crossing, so these are wing walls, which kind of divert the flow, keep the flow in a straight line in the channel.

MR. LICHTEN: And let me add to that.

MS. GLENDENING: Oh, I'm sorry, I didn't mean to --

MR. LICHTEN: Where the channels are taking those two 90-turns, they'll remain in its current alignment.

CHAIR YOUNG: Okay, thank you.

MS. GLENDENING: In addition to these impacts, the project will reduce connectivity between the better quality habitats, I showed you earlier in the upper watershed and lower watershed areas.

BOARD MEMBER KISSINGER: Why?

MS. GLENDENING: Why will it?

BOARD MEMBER KISSINGER: Yes.

MS. GLENDENING: Because the impacts on the beneficial uses will be -- will result in less

quality habitat in the project reach, so there will be less chance for biota to survive or be fit.

MR. FERNANDEZ: In addition, just to add, in the EIR it indicated that during the summer there would be reduction of flow such that fish, and other organisms, would not be able to survive in the project reach. So, that would reduce connectivity significantly during the summertime.

VICE CHAIR MCGRATH: For context, can you give us the design queue and the expected velocities in this channel section?

MS. GLENDENING: I'm sorry, what was the question? The design --

VICE CHAIR MCGRATH: The design flow, the queue and estimated velocities. You did indicate that velocities are going to be reduced. I'd kind of like to know before and after.

MS. GLENDENING: The design flow at the bottom of -- at the most downstream point is about 4,500 cubic feet per second. But it does vary within the project reach.

VICE CHAIR MCGRATH: That's close enough. That's close enough.

MS. GLENDENING: Okay. And velocities, I don't have that data at my fingertips.

VICE CHAIR MCGRATH: I'll give you a --

MS. GLENDENING: But it's stated in the EIR that --

MR. FERNANDEZ: We'll refer to the District on that.

VICE CHAIR MCGRATH: Okay.

CHAIR YOUNG: Just for clarification, your use of the term "connectivity" in this context, I'm used to interpreting the concept of connectivity in its ecological context. Which means that we are concerned with whether riparian zones, with all of their cover and vegetation, in other words the habitat, is contiguous, all the way along.

And what I'm interpreting here is that you're saying that there's a nice habitat upstream, there's going to be a nice habitat downstream. In the middle there's going to be rock riprap. Water's going to be able to flow from one to the other, so it's going to be connected in that sense, and connected in the sense of capacity for water flow during the high flow events.

But in terms of habitat, it's going to be discontinuous, which is important to ecologists.

So, am I interpreting that correctly?

MR. FERNANDEZ: You're interpreting it

correctly. In the summertime, those photos showed egrets currently using the habitat. We saw little minnows, which is probably what the egrets were feeding on. In the summertime, with the flows diminished, according to the EIR, those fish won't be there and there won't be food for the egret. So, there's the loss of habitat according to the EIR.

CHAIR YOUNG: Thank you.

BOARD MEMBER AJAMI: So, this happened because the channel is being sort of deepened and the flow, basically, does not make to the downstream reach.

MR. FERNANDEZ: The EIR indicated that in the summertime there would be a flow reduction within the project reach.

BOARD MEMBER AJAMI: Okay, from original?

MR. FERNANDEZ: From the original.

BOARD MEMBER AJAMI: But is that because of the deepening of the channel.

MR. FERNANDEZ: It's from the widening and deepening.

BOARD MEMBER AJAMI: Okay.

BOARD MEMBER KISSINGER: But I think that there's a -- the way the Board staff sees the

status quo, and the way the District and the Corps sees it are sort of night and day. I mean, the way I read the comments was that during the summer there's no water at all in the reach, that there are no minnows. that there is no water flow at all. It's not perennial, to use the term that you guys used a moment ago. Is that fair? There's a difference of view, not --

MS. WHYTE: Yes. Yeah, I would say that there is. And our view has been recognizing the benefits that are provided by these low flow type of channels. It narrows the way, but from a geomorphic perspective, and also from the perspective of having summer habitat, they do provide value. And that's not something that's been included in this design.

BOARD MEMBER KISSINGER: Yeah, okay.

MS. AUSTIN: Mr. McGrath had asked about stream velocities. And I have the EIR on my computer, so I'm going to hand that to him, as opposed to reading it into the record. Which, if anyone else is interested in stream velocities, we can pass the computer down. But, otherwise, the record should reflect he'll be looking at the charts and information somewhere around page 2-65 -

- sorry, 2-15. It may be 65, I just lost my spot, but in the EIR.

CHAIR YOUNG: Thank you. All right, thanks. Please proceed.

MS. GLENDENING: So, as I mentioned earlier, the project strays from the approach the Board has promoted for flood control projects over the last 20 years.

I'm going to show you a couple of examples of projects that show how the project could have been designed to better support beneficial uses, and minimize the need for mitigation.

This example is in Lower Silver Creek, taken during construction. This is also a District project, which was Board approved in 2001. It shows construction of a low flow channel to efficiently transport sediment downstream, and vegetative flood plains for higher flows to spread out.

The space for the maintenance road, on the right bank, doubles as a flood plain.

We anticipate this project will require a little sediment maintenance, and it will only need periodic vegetation maintenance.

The second example is also a District

project. It's the Lower Berryessa Project, which is just downstream of the Upper Berryessa Project. Like Silver Creek, Lower Berryessa will have a low flow channel and vegetative flood plains.

The project design in Lower Berryessa Creek is intended to help reduce the chronic sediment maintenance needs that this reach has had, while at the same time increasing the creek's habitat functions and values.

We discussed this kind of approach for Upper Berryessa with the District, and the Corps, but they were unable to incorporate it in the project design.

BOARD MEMBER KISSINGER: Has the Corps developed -- constructing this for --

MS. GLENDENING: No, this is not a Corps project.

BOARD MEMBER KISSINGER: Whose project is it?

MS. GLENDENING: Just the Santa Clara Valley Water District is the sponsor.

BOARD MEMBER KISSINGER: Okay. Is that a function of just Congressional authorization?

MS. GLENDENING: No, this is funded through their other funding mechanisms.

BOARD MEMBER AJAMI: So, why can't they implement something like that?

MS. GLENDENING: I'm sorry?

BOARD MEMBER AJAMI: Why can't they do something similar to this?

MS. GLENDENING: I think maybe the District and Corps could speak to that point.

BOARD MEMBER BATTEY: Can I ask when you had the conversations about this design, this alternative?

MS. GLENDENING: We had a few meetings starting around January -- excuse me, June 2015, August 2015, and several meetings since that time.

MR. LICHTEN: And I'll just add to Susan's comments that we had extensive discussions with both the Corps and the Water District on implementing exactly this kind of design and this kind of intervention in the project that's before you now. Due to various constraints, which I think the Corps and the District can speak to, they weren't able to add these.

BOARD MEMBER KISSINGER: When we provided that input to the Corps, was that -- that's post-EIR?

MR. LICHTEN: No, it was provided both in

advance of and during that particular EIR's adoption.

BOARD MEMBER KISSINGER: Did they respond in the EIR why it couldn't be incorporated?

MS. GLENDENING: Yes, they did.

BOARD MEMBER KISSINGER: And what was there -- well, I guess we can -- we'll ask them. Go ahead.

MS. GLENDENING: Okay. The Revised Tentative Order provides water quality certification and waste discharge requirements for the original project design, and recognizes the plans that were submitted after issuance of the initial certification, such as the final design plans and the de-watering plan.

To compensate for the project's unavoidable impacts to beneficial uses and water quality, the Revised Tentative Order requires the dischargers to submit and implement a mitigation and monitoring plan.

The mitigation will be constructed off site and, at the earliest, at least a year from existing resources that have already been impacted.

The mitigation ratios that would be required by the order are consistent with Basin

Plan requirements, and with the mitigation we required for similar impacts on other projects.

The ratios reflect issues included -- the ratios reflect such issues as the offsite nature of the mitigation, the delay in timing, and uncertainty as to the success of mitigation.

In addition, the Revised Tentative Order requires an Adaptive Management Plan to minimize recurring impacts from sediment maintenance activities. This is intended to ensure that maintenance will follow similar procedures for impact avoidance that the District is already implementing, in accordance with the Board-approved, Stream Maintenance Program.

We understand that the Corps is going to develop an operations and maintenance manual, with maintenance guidelines the District will be required to follow.

The Tentative Order requires the monitoring results and conclusions from the Adaptive Management Plan to be incorporated into the operations and maintenance manual.

As such, development of the manual will be a public process that will allow for input from agencies and interested parties.

Further, the Revised Tentative Order is consistent with what we have required in the past on other Corps and District projects.

The Revised Tentative Order, before you today, is the culmination of over a year of collaborating with the dischargers. Though we initially planned to propose the order in late spring of 2016, we postponed the item until now, at the discharger's request.

We put this out for public comment on August 19th, 2016, and we received comments from the Corps, the District, the Guadalupe Resource -- excuse me, Guadalupe-Coyote Resource Conservation District, and a joint letter from the Citizens Committee to Complete the Refuge, Audubon Society, and San Francisco Baykeeper.

We revised the Tentative Order and distributed it for public comment on November 19th, 2016. And we received comments from the same organizations, except for the Resource Conservation District.

In response to comments, we modified the order to rescind the certification and reissue it with waste discharge requirements in the Revised Tentative Order you are considering today.

These revisions have resulted in the Revised Tentative Order being a more streamlined permit that consolidates the certification and waste discharge requirements, together, and clarifies the roles of each discharger.

It also improves clarity about the Board's expectations for avoiding, minimizing, and compensating for project impacts.

Now, I'll discuss some of the key comments we received and our responses.

The dischargers commented that adoption of the Revised Tentative Order would impede the project's construction. However, construction has already started and we don't see the revised order as an impediment. To the contrary, by issuing the certification first, we helped ensure that the project began on time.

Prior to today's Board meeting, we met and spoke with the dischargers several times on this issue, but they were unable to identify why the Order's adoption could stop construction.

The Water Board implemented the same, two-stage permit process in the past, for the Bay Bridge East Span Seismic Safety Project.

Similar to the Upper Berryessa Flood

Control Project, the new Bay Bridge project needed water quality certification to begin the pre-construction procedures to meet the construction schedule, and to avoid a public safety risk from delayed construction.

The dischargers also commented that the project does not have the impacts requiring compensatory mitigation beyond that provided by the project design, itself.

The dischargers assert that by stabilizing erosion hot spots, and covering the rock riprap with a thin layer of soil, the project will provide an overall net benefit.

However, as I've shown in this presentation, the project has a geomorphically complex channel. Altering that channel by excavating and widening it, and placing rock riprap along two miles of it will result in significant impacts.

In addition, habit quality will not be improved by a thin veneer of soil over the placed rock. As a result, the project design will degrade the creek's beneficial uses.

We are obligated, and authorized, under the Clean Water Act, and the Water Code, to require

mitigation to compensate for these impacts.

The dischargers also commented that the Adaptive Management Plan is unnecessary. We disagree with this because the changes in the channel dimensions are likely to result in increased sediment deposition that has the potential to increase maintenance activities, and the associated recurring impacts.

The Adaptive Management Plan will allow a better understanding of these processes and should provide opportunities to minimize the associated impacts.

We also received comments, expressing concerns about the project's design and impacts, from the Guadalupe-Coyote Resource Conservation District and three environmental groups, the Citizens Committee to Complete the Refuge, the Audubon Society, and the San Francisco Baykeeper.

In response to that concern, we included a due date for a final mitigation plan, of June 30th, 2017. And we expect that in the interim staff will continue to collaborate with the dischargers as they develop the plan by that due date.

In summary, we've prepared an efficient permitting vehicle that supports this important

public safety project, and that meets State Water Quality Standards. It recognizes the existing and potential beneficial uses of the creek waters in the project, and appropriately requires compensatory mitigation for project impacts.

And that concludes my presentation, and I'd be happy to answer any questions.

CHAIR YOUNG: All right, do we have additional questions for staff, at this time?

VICE CHAIR MCGRATH: I've got two. Susan, thank you. And at the appropriate point I'll talk a little bit about the velocities and put that on the record.

I had two questions for you. First, in this section which is being modified, and has some larger riparian vegetation, but not a tremendous amount, can riparian vegetation be planted as part of the mitigation system, or does that conflict with the standards that the Corps of Engineers might establish for protection of the levees that are being constructed?

MS. GLENDENING: I'd like to defer that question to the Corps.

VICE CHAIR MCGRATH: Okay, we'll leave that for them.

MR. LICHTEN: But I think we can -- Mr. McGrath, if I can just add, briefly, the short answer is no. That the project consists of both a set of physical interventions and then a set of practices while it's in operation. And those practices would preclude vegetation.

VICE CHAIR MCGRATH: Okay. The levee standards was a very controversial item, it's pretty well known, and this is a Corps project. And I just wanted to make sure that we were all clear in our understanding that there's no potential for adding riparian -- mature riparian vegetation.

The second point, clearly, there's a disagreement about the qualitative amount of the habitat. And while I did a lot of work on streams in hydraulic function and sediment transport, I didn't do a lot of work on habitat evaluation systems.

I know, over the years, that we've developed assessment methods for Title 11 systems, (indiscernible) -- rapid assessment methods.

So, my question to you is, is there an accepted methodology for assessing not simply the acreage, where I think we understand that, but the

qualitative nature and the functions of the riparian resource, both now and projected?

MR. FERNANDEZ: Mr. McGrath, there's actually multiple methods to do this. There's the Corps' hydro geomorphic method. There is a CRAM assessment. There's also some Level 3 monitoring that can be done, like such as pebble counts. You can also do an assessment of just actually measuring vegetation cover, undercut banks.

VICE CHAIR MCGRATH: And have those been done for this project?

MR. FERNANDEZ: No.

VICE CHAIR MCGRATH: All right. And why not?

MR. FERNANDEZ: For the EIR, they did do a qualitative assessment, but it was more of going out to the site and looking at it. It hasn't been, what I would call, a standard methodology applied to it. And I can't answer why it hasn't been done.

VICE CHAIR MCGRATH: I guess one -- well, I see that there is a date for June, where a Mitigation Monitoring Plan is to be submitted. Is there the capacity to -- you know, the question that we have, and there's always a certain amount of uncertainty around wetlands, and that's why we

ended up with mitigation ratios when assessing disturbed habitats. And this is a functioning habitat, but it's disturbed, pretty clear. Is what's the value and what's the level of risk involved with a mitigation measure?

Is it possible to have a little more robust discussion of the qualitative nature of the habitat, before and after, as part of that submittal, that might result in a better understanding of, perhaps, some amount of value of habitat here. Although, I'm not convinced at the moment. Or, what kind of habitat permanent losses we're looking at, that could be reestablished in other systems?

It's not a lot of time, but at least in theory is there the capacity to have more detailed discussions, qualitatively?

MR. LICHTEN: Well, we can certainly have that qualitative discussion. I think that, to a certain degree, that's already incorporated into the Revised Tentative Order's requirements, with the concept of a mitigation to affect ratio.

And, so, what do I mean by that? When we look at mitigation, we're often talking about creation for permanent loss. So, with an acre of

wetland, we create more wetlands somewhere else.

In this case, we're talking about degradation of existing habitat, a reach of creek. And, so, what we've been trying to do is to work with the dischargers to identify places where they can improve other things that are already existing, and a couple of those projects are mentioned in the response to comments. Like, the District is working on, for example, with (inaudible) -- so, I think there are -- just thinking through, okay, what does that mean in terms of what's being degraded and what are the opportunities for improving elsewhere? Well, that's the kind of discussion that we anticipate having as a part of the Order.

CHAIR YOUNG: If I could jump in just a little bit, as the staff has mentioned, there are multiple habitat and ecological quality assessment methodologies. Your Chair developed one of them.

(Laughter.)

CHAIR YOUNG: They all, however, incorporate some fundamentally the same type of approach in terms of looking at both habitat quality, which is kind of -- sometimes is sort of a -- viewed as sort of a snapshot in time, but it's

really not. Because you have to look at the ecological function, nutrient cycling, hydrogen morphology, all of the rest. And those usually are called out in an assessment of habitat.

In this case, I'm quite comfortable with what the -- with the information that the staff has had available. You don't have to get really precise in order to see the kinds of changes that are going to be occurring here, with this project, between the before project and after project designs, as well as looking at the connectivity above and below. So, I'm not arguing against what you asked for, but just trying to provide some additional context to suggest that the kinds of criteria that the staff has been explaining to us are squarely within the realm of every habitat assessment methodology that I have ever studied.

And, in addition to looking at very -- a very small extent of habitat, which might be, you know, just what's within the project reach, from an ecological science viewpoint, it is totally appropriate to look at the more landscape scale effects and look at the effects above and below the project.

Fair enough?

MS. GLENDENING: I agree.

CHAIR YOUNG: All right, thank you.

BOARD MEMBER KISSINGER: Just out of curiosity, were the kinds of geomorphic assessments that you described not being done here, were they done on the Lower Berryessa?

MR. FERNANDEZ: We'll have to defer to the District on that question.

MS. GLENDENING: The Sediment Transport Model covers the Lower Berryessa Project, as well, or accounts for it. In the Corps' Environmental Impact Statement, there's an extensive Sediment Transport Modeling appendix.

BOARD MEMBER KISSINGER: I guess what I'm getting as is the habitat values. Were the kinds of assessments, more detailed assessments, more academic assessments made with regard, in the context of the Lower Berryessa Creek, that were not made in the context of the Upper Berryessa Creek?

I think one of the struggles here is we've got a bunch of snapshots. They tell a story, but they're a snapshot. An analysis wasn't done in a detailed, rigorous way. And I'm curious, is it useful, if a study was done on the Lower Berryessa reach, to use as a baseline to further buttress the

conclusions that are here?

Maybe it's hydrologically distinct because it has more inflows from Los Coches Creek, I don't know. But I'm just curious, it's another data point. When we talk about connectivity, it's obviously connected, as well, so --

BOARD MEMBER AJAMI: Does the District have any data on this creek at all? I mean, I assume there are -- you know --

MS. GLENDENING: Yes, they do have data on the creek. I just want to mention that the Lower Berryessa Project is already certified. And what we're attempting to do is to have waste discharge requirements that are appropriate for this specific project, which will be -- in which the beneficial uses will be impacted.

BOARD MEMBER KISSINGER: So, that --

MS. GLENDENING: And, you know, connectivity is not a beneficial use. However, it is something that we looked at, related to the impacts in beneficial uses of the project.

MR. LICHTEN: It's a good question to ask. If we had more information, would we have a different result here, or more support for the result.

BOARD MEMBER KISSINGER: That's actually what I'm getting at, yes.

MR. LICHTEN: But what I think is the -- what I would say is the design that we see, that's before you today, is really a result of, in part, of the Corps' internal process for a single-purpose flood control channel. Which limits, to a certain degree, I'll say, even what they're allowed to think about as a part of -- or propose as a part of project designs.

BOARD MEMBER KISSINGER: I'm a little bit confused. You have a single stream. The Corps is focused, and I'll ask them when they're up, they're focused on this one reach. Why? Because they're building it, okay. But it's connected to, and it's subject to the same 100-year flood requirement right downstream. And there are lots of houses that are subject to the same issues, and lots of businesses.

And, so, to look at this and say we're just looking at this one stretch of 2.1 miles, but we don't -- don't look downstream, don't have a consistent design. It doesn't make any sense. But, anyway, I'll -- to whoever the Corps person is, you know where I'm going.

BOARD MEMBER BATTEY: So, I might add that I have -- I have two questions. Can I just clarify the wetland habitat, did we see photos of that, already, as part of the stream channel? Is that what you're referring to?

MS. GLENDENING: I'll let Xavier answer that question.

MR. FERNANDEZ: Yes. I mean, they were in the presentation. It's indicative of wetland habitat. We also look at rivers as a wetland, as our interpretation, which is different than the Corps definition of wetland.

BOARD MEMBER BATTEY: But wetland delineations were not done for the project.

MR. FERNANDEZ: Yes, wetland delineation per the Army Corps guidelines was done.

BOARD MEMBER BATTEY: Okay.

MR. FERNANDEZ: For the Federal -- to determine whether there were Federally delineated wetlands.

BOARD MEMBER BATTEY: Okay. And I do --

MR. FERNANDEZ: And we do have questions regarding that, in that the number -- for the length of stream, there were very few soil picks taken, on the order of just a handful, like three,

four. Typically, when we would look at something this long, you would take many more soil picks in order to look for, to see if the hydric soils had developed.

BOARD MEMBER BATTEY: Okay. And am I --

MS. AUSTIN: Pardon me, one second. There's actually that slide on the jurisdiction, Xavier, and I'm wondering if that would actually be helpful to explain, if the Chair will indulge staff?

MS. GLENDENING: I don't -- and I think the bottom line is we're talking about riparian wetlands, which is slightly different and relates to recognize of State Waters, and how we approach beneficial use protection, as opposed to jurisdictional Federal wetlands, which is, basically, a different type of water in this situation.

BOARD MEMBER BATTEY: Okay.

BOARD MEMBER AJAMI: I mean, they are working on the State's Waters, right, if this is --

MS. AUSTIN: Yes, it is State Water.

BOARD MEMBER AJAMI: Doesn't that mean that they need to follow State regulations because of that?

MS. AUSTIN: We would argue yes.

BOARD MEMBER AJAMI: I would think so, too.

MS. AUSTIN: So, you saw something like this last month, in a different hearing, and this is sort of a freshwater stream version of what we talked about last month, as it relates to estuarine waters.

MR. FERNANDEZ: So, the Revised Tentative Order correctly identifies a reasonable estimate of Waters of the State, which consists of any surface or groundwater. Standard practice for Water Board staff, in the field, is to identify the bed and bank of a creek channel, and vegetation overhanging the channel. Because this vegetation could affect the quality of Waters of the State.

Staff then exerts jurisdiction up to the top of the bank of the creek channel, and the areas occupied by vegetation overhanging the channel.

This is justified by the Water Board's authority to issue waste discharge requirements under Water Code 13363, for any waste discharge within any region that could affect the quality of Waters of the State.

Further, Section 2.2.3, of the Basin Plan,

identifies wetlands as frequently including floodplains and riparian woodlands.

Section 2.2.3 also notes that we rely on protocols and naming conventions of the National Wetlands Inventory, prepared by the U.S. Fish and Wildlife Service. This figure was provided to us by the District and is from the National Wetlands Inventory. It shows that riverine and palustrine wetlands occur from the low water mark to the high water mark.

For the Upper Berryessa Creek, the high water mark is approximately at top of bank. Thus, for the Upper Berryessa Creek Flood Control Project, we claim jurisdiction up to the top of the bank.

BOARD MEMBER BATTEY: That's very helpful, thank you. So, my bigger question I think I'm struggling with a little bit is to understand the EIR/what happened on the Federal side, and was there an EIS, or something? And what -- can you talk a little bit about the Board's engagement during that process and communication?

MR. LICHTEN: Well, we were, I mean, obviously, we've been engaged in the process with the Water District and the Corps for a long time,

talking about flood control project design, about protecting beneficial uses. And, to the extent we can, doing both watershed planning and multi-purpose design, not just for public safety protection.

In fact, Bruce reminded us, yesterday, that we're like calling juror number 5 --

(Laughter.)

MR. LICHTEN: He reminded us, yesterday, that he was in a meeting with District managers and Corps managers, talking about watershed planning on this issue, back in 2004. So, there's that context of the broader discussion.

We've also been engaged in this project, at a staff level, since at least 2006. And, then, were in discussions with Paul Amano, as the staff at the time, and then more recently, over the last couple of years, talking with the District prior to their preparation of the EIR, exactly about issues like this.

As noted in the response to comments, the Army Corps of Engineers also prepared an EIS, an Environmental Impact Statement. We didn't comment on that because, as far as we can tell, we never received a copy. We were finally able to get a

copy, after a long period of requesting it.

However, we did submit a lengthy comment letter on the EIR, that was consistent with the discussions we were having with the District at the time.

So, I beg your pardon, I'm not sure where else you wanted to go with your question about it?

BOARD MEMBER BATTEY: No, I just wanted to understand. And, so, your comments on the -- sorry, your comments on the EIR at the time, were reflective of the same conversations we're having today?

MR. LICHTEN: That's right.

CHAIR YOUNG: Other questions of the staff?

All right, I have some more questions. You pointed out that we have used the two-phase permitting approach before. It's my understanding, from reading the responses to comments, that the idea of using the two-phased permitting approach, which would be to first do the certification and then, secondly, do the WDR, was an approach that was agreed upon by upper management from the Corps, and the District, and the Regional Board, specifically on January 4th, 2016. Is that

correct?

Microphone?

MS. WHYTE: Yes.

CHAIR YOUNG: And it's part of my understanding that that is what allowed the Corps to proceed, in a timely fashion, with the construction that is ongoing now, because we got an initial -- sorry, I'm having trouble today -- the initial certification out in March of 2016. So, the two-phased approach was designed to make sure that there was no delay in construction and no delay in protecting the BART Station, and the homes, and the businesses around it. And that worked, as far as I can tell. Is that correct?

MS. WHYTE: Correct.

CHAIR YOUNG: All right, thank you.

By the way, I appreciate staff being willing to come up with ideas that work, like that, and I appreciate the fact that you did that. Even though we're here, today, with people complaining about it.

So, I'm going to leave it at that, with questions for staff, for the moment. Before we take -- I'm sorry, go ahead.

BOARD MEMBER KISSINGER: Actually, I just

have one other question I meant to ask, and I'm going to ask it, just to get it out there, to keen off of what Chair Young raised.

I share the view that working in a way to allow projects to move forward expeditiously, to avoid being in the way of the right approach, and I want to say that I embrace that, as well. I think that's great that the staff is creative. It's not novel, we've done it before, so it's all to the good.

But I guess one thing that I do pause about is the question of kind of the blank check that I'm reading between the lines the District is concerned about. This project went through some cost benefit analysis on the Corps' front. They penciled out on the basis of what they understood the project to be.

It's clear from our certification, in the first instance, there would be more to follow.

But the question is what? And that's the unknown, based on the additional things that have to be submitted.

So, how do we provide comfort beyond trust me that this project won't become, by virtue of the mitigation that's yet to be defined, something that

becomes, to use the Corps' terms, you know, not cost effective relative to the benefits? How do we, as a Board, sign off on that where it is uncertain where the mitigation we may ultimately be requiring is -- more than offsets the benefits that come from it?

MS. WHYTE: Well, I can say that the District, we feel like we've given them ample opportunity to discuss the mitigation options with us and propose mitigation, and we haven't received anything. So, there would be far more certainty if, indeed, that had already taken place. But we haven't been able to get to that point in the dialogue.

When we went into this, in January, we thought we had made it clear that mitigation would be required and the certification, from our perspective, clearly reflects that.

So, there could be more certainty about those costs, except that we haven't received anything to help provide that certainty.

BOARD MEMBER KISSINGER: Is the reason why the mitigation couldn't be made more certain because the O&M manual hasn't been prepared? What is it -- are the things that haven't been done,

that could have been done, that would allow the Mitigation Plan to be crystalized, then?

MS. WHYTE: I think the District might tell you they feel like they don't have to perform any mitigation at all.

BOARD MEMBER KISSINGER: Well, very clearly.

(Laughter.)

BOARD MEMBER KISSINGER: But what would have had to have been done before we could then provide clarity that could have been included in the waste discharge requirements?

MS. WHYTE: Typically, we would get a mitigation proposal and we'd go back and forth with the discharger about the net environmental benefit associated with that, and weight that in terms of the impacts. And that's typically an iterative process.

BOARD MEMBER KISSINGER: But isn't that going to be dependent on the O&M manual that the Corps has to prepare, given the number of things that have to be done?

MS. WHYTE: Mitigation for operation and maintenance is something that we haven't discussed, yet. They currently do that, as part of the Stream

Maintenance Permit, throughout the watershed. And we've been fairly flexible on working with them, with that.

But there is uncertainty because, again, we assert that there will be sediment deposition and need for operation and maintenance, and they disagree. So, in that regard, we'd have to wait until the operation and maintenance activities actually occur. I don't see that as the big ticket item here.

The bigger ticket, really, is the mitigation for the impacts associated with the capital project, not the operation and maintenance.

So, I think we all agreed to deferring that piece down the road, although we have raised flags of caution that we feel that the design, itself, is going to increase those costs because, from our perspective, there will be excessive sediment deposition, and there will be periodic -- more periodic maintenance that's going to be needed.

BOARD MEMBER KISSINGER: So, staff's view is -- yeah. Because if there's a source of the problem, it's from the categorical positions that have been staked out, either mitigation required or

no mitigation required.

MS. WHYTE: Right.

BOARD MEMBER KISSINGER: Okay, thank you.

CHAIR YOUNG: And just to follow that up, just a little bit. When you were discussing, with the District, your view that mitigation would be required, then were there ideas that you threw out as examples of appropriate mitigation projects that would allow the District to have at least an idea of what the requirements would be, prior to this hearing?

MS. WHYTE: We did. From my perspective, I believe we expressed very much a flexibility and willingness to look at other projects that were being done throughout the watershed, other work that was either being contemplated or proposed that would have enhancement to creek systems and riparian systems.

We suggested a few ideas. We meet with them regularly, so we do have a good understanding of what's happening in the watershed. So, yes.

BOARD MEMBER AJAMI: Can I ask a question? So, you had two examples in your presentation today, one was the Lower Silver Creek, and one was on Lower Berryessa. Are those reaches as long as

this project? Do we know the --

MS. GLENDENING: If I recall correctly, the Lower Silver Creek Project is being done in phases, and I think it's about six miles. Is that correct?

BOARD MEMBER AJAMI: So, if they are not --

MS. GLENDENING: Four miles.

BOARD MEMBER AJAMI: -- neither of them are finished. Are they finished, both those two?

MS. GLENDENING: Lower Silver Creek is still under construction and -- they're both still under construction.

BOARD MEMBER AJAMI: Okay.

MS. GLENDENING: So, the Lower Berryessa Project is a little less, two miles.

BOARD MEMBER AJAMI: So, who financed those two projects? Is that a District project?

MS. GLENDENING: Yes.

BOARD MEMBER AJAMI: And they actually had to get a permit. And, then, this one is being financed partly by the Corps?

MS. WHYTE: Yes.

BOARD MEMBER AJAMI: Okay, so the District is putting some money forward and the Corps is

putting some.

MS. WHYTE: And, then, the District takes on responsibility for the project down the road, when the Corps finishes.

BOARD MEMBER AJAMI: So, they will do the operation and maintenance?

MS. WHYTE: Yes, yes.

BOARD MEMBER AJAMI: So, my question is, if they are the same size, sort of, right, those projects and this project, and obviously we have two different parties involved in the process, why can't we just look and see, if those projects ended up costing way more? I mean, I still cannot understand why there's hesitation and resistance toward using that model versus what they already have in place.

So, trying to understand, is this like a funding issue? Is it more like the style issue, or the sort of preference issue? I don't know, like trying -- style, you know, like we like to have this kind or this is the requirement for us to do it this way, right? So, it might be -- so, I'm trying to understand why? And, also, if it's significantly, if it's going to cost more or less? I'm trying to see, also, if we have any examples

for how much it costs for the District to maintain a system similar to what they are implementing in Lower Berryessa and Silver Creek, compared to something that we have already done a billion times, which is what the Corps is doing right now.

MR. LICHTEN: Right. Well, this question gets back -- here, we have three projects and they have many similarities, but somehow the designs are different, and why is that?

BOARD MEMBER AJAMI: Right.

MR. LICHTEN: And, then, as you note, Army Corps of Engineers is involved in the Upper Berryessa Project.

So, Tom Pendleton, of the Corps, is here. I think he's put in a card to speak and he may be able to speak more directly to what the Corps' process is.

But, certainly, so the design happened out of the Corps' Sacramento District. And I think what he might tell you is that they are restricted or constrained by the idea of a single-purpose authorization. That limits what they can consider as benefits.

So, for example, environmental benefits don't help the project to get higher up on the

funding list for a single-purpose authorization.

And, I guess, from my perspective, there's also a timing constraint. So, here, we have a billion dollars in Federal Grant money to fund the BART extension down to San Jose. That is in the process. And, so, here comes the District, how can they meet their mandate of providing flood protection, in a timely manner, along the BART extension?

And, so, one read would be that the Corps' design process moved along at a certain point, at which it was very difficult to make any changes, given the constraints that we have. But, maybe Tom can speak more to that.

BOARD MEMBER AJAMI: Okay. And, so, if the -- so, the goal is to make sure that the BART station is built and it's protected, right. I still cannot sort of put my head around it, and I think I'll probably ask Tom, as well. But I cannot put my head around that why? Would this take a lot longer? If, from the beginning, the design was considering environmental purposes, would this take a lot longer to implement, compared to what they're implementing right now?

MR. LICHTEN: I think the Corps would be

well-positioned to speak to that.

BOARD MEMBER AJAMI: Okay.

BOARD MEMBER BATTEY: I just have to ask one more about the environmental process, the document process. Under both the State and Federal, and you also have to look at cumulative impact. So, was that done to be able to look at this -- I have not used the word connectivity a lot, but cumulative impacts. It seems like all the projects should have been looked at in one picture. Was that done in the environmental documents?

MS. GLENDENING: Yeah, there were cumulative impacts analyses in the EIS and the EIR. But one of the issues is that the beneficial uses in the wildlife, in the project reach, are not entirely recognized as a benefit, as something to protect. So, the --

BOARD MEMBER BATTEY: Or, the wetland habitat, or the --

MS. GLENDENING: The creek habitat, correct.

MR. FERNANDEZ: They're asserting that there are no wetlands on the site. So, that's a difference of opinion that we have with them.

BOARD MEMBER BATTEY: And with the other

reaches, as well, no wetlands?

MR. FERNANDEZ: I don't know whether the upstream or downstream reaches have wetlands.

MS. GLENDENING: The lower reach does have jurisdictional wetlands based on the Federal guidelines for delineating wetlands. The Lower Berryessa Project, that is. The current, the Upper Berryessa Project, does not have wetlands as defined in the 1987 Delineation Manual.

BOARD MEMBER BATTEY: So, I just want to clarify and maybe staff can just make sure I'm thinking about this the right way, that the Corps may have a mandate to, you know, create a flood control channel, and that's their primary mission of the project. But they also have to meet the environmental requirements under NEPA and CEQA. And, so, they still have to look at watershed values and/or riverine values, or whatever environmental values. Yes, that's still part of the project design? It needs to be, yes?

MR. LICHTEN: Yes.

BOARD MEMBER BATTEY: Okay.

VICE CHAIR MCGRATH: I would hope we can advance to the public comment process part of this. But I spent 16 years getting entitlements for very

complicated projects. And when I was really good and my staff was really, really good, we met with all the potential permit agencies ahead of time, and had a pretty good idea of what they wanted and how to analyze it.

But you don't always do that perfectly. And I think we made a good faith effort, and I know the Chair and I, both encouraged the staff to try to accommodate the schedule and recognize, first of all, that this is an altered stream that could be further altered with appropriate mitigation. And, second, to accommodate the schedule.

That cannot be seen as a commitment to give the project free of any mitigation requirements. That would not be a reasonable interpretation of what we tried to do. We tried to accommodate an imperfect pre-project scheduling and scoping, to try to make sure that they understood all the potential hurdles they might run into.

We're still going to have to grapple with whether or not the staff has asked for things which are excessive, given the impacts of the project. And that's what I would like to focus on.

And for that purpose, I would like to ask -- I don't really want to hear any more about

jurisdiction. I read, or spent Friday, Saturday and Sunday not just reading the staff report, but going on the website and looking at the comment letters. I read them all and I read the responses. I don't want to hear about jurisdiction and that you can't do this to us. I mean, you can do that, if you want.

But the question here is what's the appropriate mitigation for the remaining impacts from that? And there's too little discussion in the comment letters on that. There's pretty good responses but -- and it's specific to whether the biological values before and after, and what's the sediment impacts of the project. And these are important issues.

I mean, my specific study field was sediment motion in streams. There are a number of very famous projects, like the San Lorenzo River, where they didn't show estimates for the Federal projects, were two orders of magnitude less than what actually deposited in the channel.

Methods are better, now. But I think these are the relevant questions that we need to get to is what's the -- what's the nature of the habitat resources, and it's more than just

Federally jurisdictional wetlands. What will be changed? And what can be done to make up for that?

CHAIR YOUNG: All right, I actually have one follow-up question, before we keep going here. And that was to follow up on the question that Mr. Kissinger raised about the potential open-endedness of the requirements that might be placed upon the District, and perhaps even the Corps, in dealing with the -- or responding to sedimentation.

So, where we stand now, as I understand it, is that we have models that say one thing about sedimentation, and the Corps and/or the District seem to have models that say another thing about sedimentation, and they don't overlap. You know, the Corps and the District think that there's not going to be any sedimentation and we think that there is going to be.

So, the solution that the staff, or that the proposal that we're discussing today puts forward is a combination of two things. And I'm stating this as a fact, but I'm really wanting to ask this as a question, just to make sure I've got this right. That the Corps has performance standards that it refers to, and triggers that it refers to when -- as to when maintenance is going

to be required, after a certain amount of sedimentation occurs. So, a certain amount of sedimentation occurs, it gets over their number, and they say, okay, got to do something.

The way we have decided to deal with the fact that our models don't agree is that we're just going to let mother nature run the experiment, go out and monitor how much sedimentation is occurring. Refer back to the Corps requirements for how much is acceptable. And then, at that point, determine when and whether the maintenance needs to be done in terms of clearing out the sedimentation.

And that that is all wrapped up in our Adaptive Management Report requirement.

So, is that a fair summary of what's going on here in terms of dealing with the sedimentation question?

MS. FRUCHT: I would just like to clear --

MS. WHYTE: Setenay, introduce yourself.

MS. FRUCHT: Yes. I'm Setenay Frucht. I worked on the sediment assessment for this project. I wouldn't characterize as our model's not overlapping. We did not develop our own models for sediment transport.

We have reviewed the EIS/EIR information provided. We have reviewed other existing documents on the geomorphology of the project reach.

We also have reviewed the sediment transport modeling that was developed by the District's consultant.

We all agree that widening the creek will result in increased sedimentation. However, where we disagree is that they characterize the reach as erosional, or somethings passing sediment to downstream reaches.

Whereas, we say that the records show that there has been sedimentation in the last 40 years, and if we increase it, it will get worse, and you will have to manage the system more than what's going on right now.

We also looked at as-built plans, provided by the District, that they were stamped and signed documents. Which were later clarified that they weren't as the plans.

However, those cross-section information, what the river channel looked like in 1970s, were provided to us. And the 1970s cross-section shows that the creek channel, before the previous

project, looked exactly like what it looks like now. Which indicates that before the 1960s -- '70s projects were constructed the creek channel is where it is now. And the creek, this is the equilibrium condition for the creek, and that it is not erosional at the moment.

There are erosional reaches, localized points. However, we do not think that the creek, overall, is showing any signs of, you know, long reach length erosion or instability.

MR. LICHTEN: Dr. Young, as you point out, the intent is to take a look at the built design and how it's functioning, and to move forward from there.

CHAIR YOUNG: Based on monitoring.

MR. LICHTEN: That's right.

CHAIR YOUNG: Through the course of the project. All right.

MS. GLENDENING: And I wanted to add one more point, is that the Corps' EIS states that they are planning to do some monitoring of the creek channel post-construction, to inform O&M. So, we're piggybacking, so to speak, onto that same monitoring to fold it into the Adaptive Management Plan.

CHAIR YOUNG: Right. Very good. I think that we don't have any more questions. Before we take a break, I would like to further provide anyone on the Board, who wishes to, the opportunity to do what Jim just did, which is to highlight, briefly, any issues that you are hoping that the interested parties will particularly comment on. We do this, hopefully, as a courtesy to the interested parties, so that you can see where our brains are going, and direct your arguments accordingly.

So, is there anyone else who wants to do that, at this point?

BOARD MEMBER AJAMI: So, I just want to again reiterate what I mentioned earlier, which Keith said that Tom, and the rest of the District staff might discuss, which was the comparison between these different projects and how we ended up with such different designs, considering the similarity of these projects. It's just interesting to see why and how.

CHAIR YOUNG: All right.

BOARD MEMBER BATTEY: You know, I wrote a few notes to myself here and, so, just in the interest of maybe being helpful. I think it makes

sense to talk about what's a positive path forward from where we are, so I agree with that.

But I also wrote a note about, just when I look at the photographs, I would think that we would come up with something that looks at least as good a habitat or value, as it is now. Which is not prime habitat, from my look at the photos. But that we, you know, sort of leave things at least as well as we found them.

BOARD MEMBER KISSINGER: And an issue or two, points that have already been made. I'd like to hear from the District and the Corps a little bit more about what they understood was being agreed to when the certification was issued. I mean, in reading the comments, there's a whole series of legal hurdles that have been erected. Once the certification's issued, there's no opportunity to go back and add anything further, what's done is done and this is somehow unfair and wrong.

But it's plain from the materials that there was a robust discussion that went on between all the parties, that there would be waste discharge requirements coming. And I want to understand the extent to which the Corps and the

District made plain, at the time, no, one shot at this. We're going to do this, now, and that's it. I'd like to understand that better.

CHAIR YOUNG: All right.

VICE CHAIR MCGRATH: Since we're going to need to dig into sediment a little bit, I'm going to put on the record what's in the EIR, and the ultimate question. Streams are affected by not just the 100-year flows. But, in fact, it tends to be about the one-in-ten years flow that determines what their morphologic looks like.

And those streams with thick, and resistant vegetation don't erode so much, but a certain amount does.

The District and the Corps have completed an EIR that has really rapid velocities during the 100-year storm for this. They're all over 8 feet per second. Most of them really don't go down appreciably, accordingly. But that's just the 100-year design.

So, I think what we need to do is have some understanding of the value of the stream as it changes in big storms. I mean, if everything washes out in 100-year storms, in the existing condition, in the proposed condition, that's

important to know.

But if it doesn't wash out until you get to a very rare storm, then the interim habitat has real value and real duration.

It's pretty clear to me that post-construction, with the amount of rock in the stream, although the stream's going to rearrange it to some degree, it's not going to have the ability to down cut and create the microtone that generally gives it habitat value, gives it -- so, I'm not going to believe anybody that tells me the stream's going to have the same habitat value. But I do want to understand how you expect it to evolve over time. Velocities only in the 100-year storm don't provide much of an answer about the evolution of the habitat resource over time, and whether or not it might re-evolve into at least some habitat value. So, I'd like to hear some discussion of that, just because I'm a sediment nerd.

(Laughter.)

CHAIR YOUNG: Yes, Ms. Austin?

MS. AUSTIN: I don't have a question. I wanted to mention, while we're on a break, I was going to make available to Mr. McGrath, the portion of the EIR specifically regarding Impact Bio 3,

which identifies significant impacts to mature vegetation. You had a question about that. And then, also identifies the need for mitigation.

And, also, if Ms. Battey is curious or interested in reading more about cumulative impacts, I'm happy to make Section 4 of the EIR available to her.

So, letting folks know that, on the record, if anyone else would like to review any of the EIR, I'm happy to let you have at it.

MS. WHYTE: Counsel for the Water District just brought to my attention that there's one commenter who has to leave fairly soon, and would appreciate the opportunity to speak before the break.

CHAIR YOUNG: Yeah, can you tell me your name?

MR. SANCHEZ: Joseph Sanchez.

CHAIR YOUNG: And you are with -- sorry, we have a number of cards.

MR. SANCHEZ: (Off-mic comment.)

CHAIR YOUNG: Okay. Yes, we're nice people, we'll do this.

(Laughter.)

MR. SANCHEZ: Thank you, Madam Chair, and

the Board, for being considerate.

Hello, my name is Joseph Sanchez. I'm here, representing the Santa Clara Building and Construction Trade Council.

I would like to start off by saying that I urge the Regional Board to authorize the implementation of the Berryessa Project, without the proposed WDR requirements.

Adoption of the Tentative Order could, at a minimum, result in significant delays for the project. And both the jobs and flood protection it would provide lean to long-term waste of the public funds.

This will be not just residents, schools, businesses, and the new BART Station and rail lines vulnerable to flood damages, but also would deprive our community of critical jobs and impact our local and regional economy.

Therefore, workers can't get to their jobs because the BART Station is flooded.

Therefore, we can't afford attaching a Tentative Order for waste discharge requirements for the Milpitas BART, which could undermine the project. Thank you.

CHAIR YOUNG: All right, are there

questions for Mr. Sanchez, from the Board?

Seeing none, all right. Thank you.

We will take a short break. And when we reconvene, we'll try and have a game plan for making sure everyone doesn't starve before we get done with this item. Thank you.

Let's see, let's take at least 10 -- I think it's going to take 15 minutes, so 20 to 12:00 by that clock.

(Off the record at 11:26 a.m.)

(On the record at 11:48 a.m.)

CHAIR YOUNG: Let's proceed, then. Let's let the record show that we are all -- the Board Members are all reassembled and we're going to go ahead with the testimony, now.

Is there anything I need to know before I start calling the first set of cards?

All right. We have a number of cards. We have cards from the Corps, cards from the District, and several cards from interested parties. So, I'm going to go ahead and ask that Tom Kendall, from the Corps of Engineers, who is the first card I have, is he back in the room, yet?

VICE CHAIR MCGRATH: Go Bears.

(Laughter.)

VICE CHAIR MCGRATH: Tom knows.

MR. KENDALL: Hi, I'm going to make my remarks very brief.

CHAIR YOUNG: I assure you, this never affects his judgment on any particular issue.

(Laughter.)

VICE CHAIR MCGRATH: Beyond what it should.

(Laughter.)

MR. KENDALL: No bias, okay.

CHAIR YOUNG: Thank you. Welcome.

MR. KENDALL: Yeah, my name's Tom Kendall. I'm Chief of Planning, with the San Francisco District of the Corps. We currently have the joy of partnering with the Water District on this project.

And I guess I'll just jump into my remarks. Is that how this goes? Okay, so --

CHAIR YOUNG: And you're going to mention that you took the oath?

MR. KENDALL: What?

CHAIR YOUNG: You're going to mention that you took the oath. Right now. Yes?

MR. KENDALL: I'm still missing it.

CHAIR YOUNG: I'm sorry. Did you take the

oath?

MR. KENDALL: Did I?

CHAIR YOUNG: Take the oath?

MR. KENDALL: Oh, I did the hand raise over here, yes. Yes.

CHAIR YOUNG: Perfect.

(Laughter.)

CHAIR YOUNG: Now, you may jump into your remarks.

MR .KENDALL: Okay, thank you. Sorry, I'm just not used to being asked about oaths.

(Laughter.)

MR. KENDALL: Okay. So, yeah, the Corps is thankful that we do have the Water Quality Cert we do. We appreciate the timeliness of the issuance of that, and it is allowing us to proceed with an important flood risk management project in the area we've been talking about.

The Corps does not, though, see itself as a party to the waste discharge requirements that are mentioned in the Tentative Order. Our Legal Counsel, Mary Goodenough, is here, if we really want to have a discussion about the applicability. I'm just going to gloss over it at this point, though, unless there are questions for Mary.

So, we would propose continuing construction per the Water Quality Cert. And, then, if waste discharge requirements are necessary for permitting of the subsequent operation and maintenance of the project, then our sponsor, the Water District, would obtain those in the future.

And, then, independent of seeking a waste discharge requirement, we are supportive, and this is something we talked about with the Board staff, on Friday, of working with the Water District and the Board on a memorandum of understanding that would explore our environmental restoration opportunities that are consistent with our collective goals.

Again, I think you've heard the rest of these bullets before, but I'll just state them for the record. This is an important public infrastructure project, supporting a very substantial Federal -- by very substantial Federal funding.

It would remove 650 parcels from the flood plain, benefitting local residences, businesses, and schools.

And without the project, the damages to the area from a flood event could be as high as

over $500 million.

And, then, of course, the project does protect the $2.3 billion BART Station.

So, that's my statement for the record. And I know there were questions of the Corps that came up during the Board discussion, so do you want me to step into some of that?

CHAIR YOUNG: Please do.

MR. KENDALL: So, the one I noted was, you know, why does some of the Corps projects have more restorative cross-sections than others, in terms of the way the rivers are shown being managed?

And there was a lot of talk about this idea of single purpose. So, this project was done not under my particular watch, but as a single-purpose flood risk management project. Can we do flood risk and ecosystem restoration? Absolutely.

We have different metrics that are used to justify the restoration outputs, when we do those kind of combined projects. And they do take, generally, a little longer to formulate because you're kind of answering to two metrics.

We can take those through a process, recommend them to Congress, and get them authorized.

For reasons that I can't speak to, this one was not done that way. To go back and try to do that now is clearly a time issue. We're already in construction.

And, yeah, so what we would do with single purpose, of course, is make sure that we have either avoided, minimized, or mitigated any impacts. And that's where much of the debate is.

And we're not going to get into that here. We have the NEPA and CEQA processes that somewhat address that up to this point. And I know some of the Water Board presentations will speak more to that.

But as a single-purpose project, the conversation shifts to, you know, what is appropriate avoidance, minimizing or mitigating. Not opportunities to create additional habitat going forward with something more restorative.

We do have a process that, again, but it's not one that was done here.

I don't know if that answers the question on that but --

BOARD MEMBER AJAMI: Chair, can I ask a follow-up question?

CHAIR YOUNG: Yes.

BOARD MEMBER AJAMI: So, and this is just for my understanding, based on what I read, as on your comments. So, we got into this process late; is that correct? So, by the time you got the EIS, it was already done. Am I right or am I sort of off?

MR. LICHTEN: Well, if I think about it this way, you can say was there enough space in the Corps process of getting budgets and approvals to do the project, given the potentially several years it can take to change course, to change the design at the time the Water Board staff got involved in a more detailed way.

So, given the multi-year process that it can take the Corps to do that change, probably not.

BOARD MEMBER AJAMI: So, we did -- so, we were not involved in that earlier process, that's what I'm trying to ask, to tell the Corps what would have been multi-purpose.

MR. LICHTEN: We were not sitting with Corps staff as they were doing the design. We provided input on the project, in a general way, as early as 2006.

BOARD MEMBER AJAMI: Okay. And, unfortunately, you mentioned that you haven't been

involved in the design of this project, so I think maybe it's not fair to ask some of these questions of you.

But I wonder if -- and I assume at this point it's too late. So, I'm wondering like why -- this is a broader question, which is why this coordination has not happened earlier, that we can have that input into the process. That way, we don't end up here having this conversation.

MR. KENDALL: And, again, it was our other office, as far as did that. So, this is secondhand. But what I've told is that distribution did happen on the NEPA document, that was inclusive of the Water Board. So, that's what I've been told. I think our response here's pretty spun up on that. They were part of that.

BOARD MEMBER AJAMI: And just for my information, imagine if we were having this conversation, I don't know, ten years ago, I guess, and the State would have mentioned that this is the requirements to build this reach, or do the flood protection considering ecosystem requirements. Would that be sort of considered as part of the process or not?

MR. KENDALL: So, let me see if I

understand the question. So, had we been approached a decade ago, during the planning process for this study, to do more of a, whatever, set back levees, and meandering channels, and so on, could we have done that?

BOARD MEMBER AJAMI: Right.

MR. KENDALL: And I guess the -- I apologize, but the answer is it depends. We would look at whether we could justify that, either as appropriate mitigation, which is in some ways a bit of the form of the discussion we're still having today. Or, could we justify it as a ecosystem restoration investment, because we have benefits both of the flood risk sort, and the restoration sort. And like I said before, there are metrics associated with those. And if you can show that the benefits exceed the cost, we can make a recommendation to Congress that that be the form of investment that we participate with our sponsor in.

BOARD MEMBER KISSINGER: So, I have a few questions. Let me just pick up a little bit on Board Member Ajami's piece, but I won't belabor it. And just to echo what I said earlier.

I mean, it's probably too late to do anything more and probably, clearly, you've got

guys out there working. The design is what it is. The train has left the station long ago.

But I do find it remarkable that you have one contiguous waterway, for lack of a better word, and two vastly different approaches being undertaken. And I guess I'm curious, and you may not know the answer to it, what, if any, coordination was there made between these two different jurisdictions, doing work on exactly the same waterway, presumably for the same purpose, which ultimately includes flood control?

MR. KENDALL: Yeah, again, I wasn't part of that. But, obviously, you know, a good planner should be looking both upstream and downstream, figure out what's connecting and the best way to do that.

BOARD MEMBER KISSINGER: Yeah.

MR. KENDALL: Just a generic response, sorry. Yeah.

BOARD MEMBER KISSINGER: It's amazing to me, in 2016, that that still happens. But, okay.

Let me go back to the question that I asked, that I'd like to understand better. I'm looking at the 401 Certification, and it says, on the second page, in I guess the second full

paragraph, “Subsequent to issuance of this Certification, the Water Board will consider adoption of waste discharge requirements, and the District named as a permittee for the project.” And, then, it lists a series of things that would be included in the WDR.

You said, at the outset, that the Corps’ position is that it’s not subject to waste discharge requirements. Are you speaking broadly, or only in the context of the Tentative Order here? Which is to say, had there been a singular process at the outset, rather than this two-step process, would the Corps have found itself bound by the WDR then, or is it because of the two-step process that it’s not required or not bound by the WDR?

MR. KENDALL: Yeah, this is where I probably want Mary to maybe step in, as our counsel. But I think it’s both. I think there was, from a process stand point, not an understanding that we would be named in a subsequent WDR. And then, historically, we don’t view those as the appropriate vehicle to regulate us. We have accepted them in the past, simply because the content was somewhat noncontroversial, and we were agreeable to what it was asking us to

do. But we probably would have taken issue with the label on it. We prefer a Water Quality Cert.

So, that's my layman's answer. I don't if, Mary, you want to --

MS. GOODENOUGH: I do just want to mention that -- I'm sorry, for the record, yes, I took the oath.

CHAIR YOUNG: And your full name and position?

MS. GOODENOUGH: And my full name is Mary Goodenough. Just like it sounds, opposite of "Badenough."

(Laughter.)

MS. GOODENOUGH: And I'm the District Counsel for the San Francisco District Corps of Engineers.

And I do appreciate, for the record, what the Water Board has done, because I advise on both sides. It's kind of schizophrenic role. On the one side, I advise our regulators and ensure that they comply with the 404(b)(1) guidelines, and that we promote the no net loss of wetlands, et cetera. And I see how hard they've worked on this.

But on the other side, I also advise our planners, and our builders, and our non-Federal

sponsors as to how we can comply with all the Federal laws, and the waivers of sovereign immunity.

In this -- I have to say, in the 26 years I've been advising the District, I have never seen an instance where we have been so far apart with the Water Board. Usually, I look at them as our partners and we generally resolve everything.

But it seems that we're not agreeing on the law. We're not agreeing on the facts. And we're not agreeing on the policy.

And I just want to repeat something I learned in law school. If we've got bad facts, it makes bad case law. So, let's not get into any litigation here.

But for the record, also, we don't believe we are subject to waste discharge requirements. But if the conditions are reasonable, and in most cases the Water Board has been very reasonable, we accept them. And we say, we agree to disagree.

You call it WDR and I call it 401 Cert. You call it tomato, I call it tomato. But we agree with the principles of what's going on .

But in this case, the reason why we are standing up and saying this time we're not taking a

WDR is because the conditions just do not appear to be reasonable in this instance. But, anyway, any questions of me?

CHAIR YOUNG: Um --

BOARD MEMBER KISSINGER: Go ahead. I'll have more, but go ahead. No, I'm going to take a break for now, I want to think about that.

CHAIR YOUNG: Can you elaborate on which conditions you are particularly concerned about?

MS. GOODENOUGH: We're very concerned about the mitigation. We see no Federal jurisdictional waters, wetlands here. And, therefore, there's no Federal no net loss to be had. That, to me, is very problematic.

Also, from an authority stand point, kind of touching on what Tom was talking about, to propose a $20 million plus mitigation, for a $30 million project, is certainly outside the authority of what Congress has ever contemplated.

We had a similar situation, actually not with the State Resource Agency, but with NMPS (phonetic), on the Russian River. They issued a biological opinion, a few years ago, that was going to require us to create a $30 million plus project, downstream of our Warm Springs Dam. We let them

know, in no uncertain terms, that that would not be a reasonable and prudent measure because it was not something that we're authorized to do.

So, likewise in this case, we can only do what Congress authorizes us to do, and we are authorized to do a single-purpose flood risk management project. And to allow -- to add on a $20 million project, that is just $10 million shy of the total cost of what Congress contemplated, is outside of any scope of authority that we have.

CHAIR YOUNG: Just to follow up on that, the mitigation that is being required, in the discussion that we had after and during the staff presentation, Ms. Whyte was speaking in the context of the District, actually, doing mitigation projects, and rolling it into much of the other work that they do.

And I'm wondering if there is an agreement that you have with the District, that we haven't seen, that says you guys are going to have to pay for the mitigation or --

MS. GOODENOUGH: Well, we're named on the WDR. That's one of the parts that's problematic. Being named on the WDR inures that condition to us, as well, and so it becomes subject --

CHAIR YOUNG: Only if the District does not complete the compensatory mitigation, then you're afraid that you would have to be the backstop. Is that it, am I interpreting your answer correctly?

MS. GOODENOUGH: Well, that's part of it. But the other part of it is, as I said, it's an authority issue. We've been authorized to only construct the project that's already been analyzed in the NEPA document, and in the decision documents. We're too far down the road to be able to reverse what we do under this project.

CHAIR YOUNG: Okay. And you just mentioned a $20 million price tag.

MS. GOODENOUGH: Right.

CHAIR YOUNG: That I think was also mentioned in some comments from the District. I didn't find anywhere else in the record, any documentation of why the $20 million was an estimate. I mean, where that came from?

MS. GOODENOUGH: That's the 20 acres, plus whatever project would be proposed. I can't speak to the details of that. I think, perhaps --

CHAIR YOUNG: So, was that the District's calculation, and now yours?

MS. GOODENOUGH: Yeah, I believe it is. I hope I can be -- yes, that's the District's calculation.

CHAIR YOUNG: Okay. We'll ask them about that, then.

I'm going to have a -- as long as I'm on a roll here, I'm going to go ahead and ask a couple of other questions and then we'll turn it back to the rest of the Board Members.

I noticed on your comment letter, of September 19th, on the first page you -- at the bottom of the page, and these are the comments that our staff has labeled C4B and C4C. I think everyone has a copy of that.

That's where you -- you, the Corps asserts that the -- that if the Board adopts the proposal today, the proposed combined cert and WDR, that you might have to cancel the project right in the middle. And taking your second argument, first, the letter says, "The mandate to review the plans and specifications for a project that is already in construction could result in either a stop work order or termination."

And I looked back to the list, for example in finding 3, of the plans that were -- are being

required, and there's the Adaptive Management Plan. There's the Mitigation and Monitoring Plan. And there's the Post-Construction Stormwater Plan. And, again, these are things that are all very familiar to the District, and something that they would ordinarily not be confused about, if they came to the Water Board for a WDR.

I can't see why any of those three plans would result in a stop work order. I just -- I mean, they're plans for things that are going to happen after construction, so I don't understand why they could stop the project in the middle.

MS. GOODENOUGH: I --

MR. KENDALL: Do you want me to --

MS. GOODENOUGH: Yeah, please, Tom.

MR. KENDALL: I think that might be -- I'm trying to be diplomatic. There might be a little sensationalism with that.

(Laughter.)

MR. KENDALL: If we know that our project has a new debt, shall we say, associated with it, as soon as we identify that, we're supposed to tell the appropriators and all that, that, you know, things have changed. And, so, there is a scenario whereby we'd be told, okay, you shouldn't be

spending that money. You're not, you know, proceeding in good faith.

So, that's kind of what's behind that comment. I think, as you describe it, those are items that probably would not cause that big of an impact. But, again, with the 20 acre number out there, there was fear that that could have been the way it would have played out.

BOARD MEMBER KISSINGER: Notwithstanding the Corps' view that it's not subject --

MR. KENDALL: Well, exactly, right. Yeah, that's a valid point. So, we're proceeding with the idea that we've got a Water Quality Cert. So, there really isn't anything going on in this dialogue that should we reaching in and changing how we've described the cost to finish the project.

BOARD MEMBER KISSINGER: So, it would be fair to say that, having launched the project, it's going to continue through conclusion, regardless of what we do here today?

MR. KENDALL: We view this as a waste discharge requirement function with our sponsor, and we're here to support them.

BOARD MEMBER KISSINGER: The District. Understood.

MR. KENDALL: Yeah.

BOARD MEMBER KISSINGER: I don't know if either of you were participants in the meetings that took place between the Water Board staff, and the Corps, and the District, where this issue was discussed, as I understand it. If you were, and even if you weren't, did the Corps articulate its views about the waste discharge requirements, then? Was it, as has been characterized by the Water Board staff, being -- was the Corps -- were the Corps representatives urging Water Board staff to take this two-step process, or embracing this two-step process in order to meet the timelines associated with the appropriations?

MR. KENDALL: And I wasn't in the actual conversation that you're referring to. I do know that we see -- you have it there, Mary, yeah.

MS. GOODENOUGH: Yeah.

MR. KENDALL: Yeah, so in March -- I think the discussion you're referring to was in January. And as I understand it, the people from the Corps side of that conversation felt that, sure, there was the possibility that, you know, is often is the case, you know, with an O&M, you're going to have a WDR discussion between your sponsor and the Water

Board.

So, I think the thinking was that any WDR type requirements would be kind of consistent with that, and/or whatever -- I mean, maybe there was going to be some side deals between the sponsor and the Water Board. But we were not planning to change a Federally authorized project as a result of some Phase 2.

And, then, yes, we do have, I guess, in the correspondence that came out in March, the statement that the Board will consider, and I emphasize that word, adoption of waste discharge requirements, with the District named as the permittee for the project.

So, that was, you know, when we started seeing some paper trail on that.

BOARD MEMBER KISSINGER: But you're not suggesting -- are you suggesting that that language was such that the Corps had no understanding that the Water Board would, in fact, issue waste discharge requirements? I guess --

MR. KENDALL: I think it was -- my understanding was that we certainly would have anticipated that that was going to happen. But again, our perception would have been that it

wasn't something that would affect the Federal Water Quality Cert.

BOARD MEMBER KISSINGER: Yeah.

MS. GOODENOUGH: Excuse me. And I think, speaking to my subordinate, who is now out of the office for a while, who really was dealing with this case, she did tell me that it was somewhat of a surprise to her that the Water Quality Certification was going to be rescinded. And that's something that we believe is not supported by the case law or by Section 401 of the Clean Water Act.

There are certain conditions that have to be in place for the Water Board to have the authority to rescind a Water Quality Certification. And I think this is the first time, in my 26 years, that a Water Quality Certification has ever been rescinded.

BOARD MEMBER KISSINGER: Yeah. I mean, it's a challenge. I mean, I take your point, it's a challenging issue from a legal perspective. But it's offset by what I understood was the need for speed here, and the need to get this done. Which all of the project sponsor, and the Corps, were pushing for. So, it's a little bit difficult to

make that argument when the goal here was to accomplish this project moving forward. So, I take a little bit of issue on that score.

Ms. Goodenough, I don't know if you're in a position to comment on it, but you raised it, so I'll ask you. Why is there such a black and white difference between the facts on the ground as viewed by the staff and viewed by the Corps. I mean, you were here for the presentation of the photos. You know, they're a snapshot in time, it's a moment.

But you look at these streambeds and they certainty don't look to be the sort of a desiccated, barren, waterways that are identified in the materials that the Corps and the District have submitted.

It's honestly like two different universes out there and I can't make heads or tails of it. Why is there such a difference?

MS. GOODENOUGH: I'm asking myself the same question. I just started on this project on Friday, and I read the comments last night, on the website.

(Laughter.)

MS. GOODENOUGH: And I'm saying, why do we

have Kramer v. Kramer on such a small project.

(Laughter.)

MS. GOODENOUGH: It's baffling to me, as well. And I think maybe the Water District can speak better to the factual disputes, and the science, and whether the pictures were the site that's being constructed versus upstream and downstream. But, I'm sorry, I don't know the answer to that. I'm equally as puzzled.

BOARD MEMBER KISSINGER: Yeah, thank you.

CHAIR YOUNG: I would say you're doing pretty well, as a quick study here.

(Laughter.)

CHAIR YOUNG: We all appreciate your efforts.

I just wanted to clarify one thing that I think I understood from your answer. With respect to the mitigation requirements, your concern is that if you would suddenly become responsible as the Corps, for the mitigation requirements, that you would then have to alert people up the chain.

I can't imagine a situation where, let's say, this Board would adopt the proposal today, we would all carry on and the Water District would come back with a proposal for compensatory

mitigation, either as part of their one water plan, or something that was in the works beforehand, and is going to be enhanced, and the Corps never actually does get put on the spot to be the backup funder for the mitigation.

Under that circumstance, am I correct in assuming that you wouldn't have to trigger a notification up the chain until you actually are on the hook for the money? Or, I mean, until you're actually being asked?

MS. GOODENOUGH: We would probably still have to notify them for full disclosure, because that might change the balance of the benefit cost ratio. And by law, under the Water Resources Development Act of 1986, we are required to keep our benefit cost ratios current, and report it not only to our headquarters, but to Congress.

And, so, for full disclosure, whether we end up on the hook or not, we would need to let them know. Especially, if the non-Federal sponsor comes back to us and says, these are shared project costs. And, oh, by the way, we've got a -- is it 75/25 or is it 60 -- okay, well, anyway, whatever the percentage is, Daddy Warbucks pays most of it and the non-Federal sponsor pays less. But we

could be on a hook for a percentage of the mitigation at the end of the day. There's still a concern.

CHAIR YOUNG: Okay.

MS. GOODENOUGH: And, so, since my friends inside the beltway are so risk adverse, I always make sure I tell them everything so I won't get in trouble later on down the line.

CHAIR YOUNG: I understand your position.

You do have an agreement with the District about who's going to pay what?

MS. GOODENOUGH: Yes, we do.

CHAIR YOUNG: I read, I skimmed, probably not as fast a skimmer as you are. I skimmed that, I believe on the website, that must have been where I found it. And I actually didn't see that you had -- you and the District had talked about who was going to pay for the mitigation, even though the discussions, clearly from our staff, is it's that it's our staff's understanding is that the District is going to be the agent for that.

And I'm trying to figure out why wasn't that part of your memorandum of understanding, or whatever it was, that you had as between your two agencies?

MS. GOODENOUGH: As a matter of expediency, our inside-the-beltway experts craft these contracts almost like adhesion contracts, and they're very broad and general to cover everything.

But there is a section called "Total Project Costs," and there's also a section on how we split costs. If it doesn't have the word "mitigation" in there, I'll bet you, you can find a term in there that somebody could submit a bill to us and say, well, this mitigation was part of the construction and, therefore, should be part of the total construction cost.

I haven't looked at a project partnership agreement for a while, but it's amazing the kind of costs that our non-Federal sponsors try to get out of us.

(Laughter.)

MS. GOODENOUGH: And the way those contracts are written, sometimes they catch us at our own game, and we end up writing the check.

CHAIR YOUNG: Okay, I understand.

All right. Jim, I believe you had a question.

VICE CHAIR MCGRATH: Well, you asked my biggest question, which was the source of the $20

million, and we'll get to that later.

I went back and looked at the response to the question of where, and we have a -- we have a precedential issue, which I think is extremely important, because this is not the only flood control project that will face us, as we begin to deal with sea level rise, and habitat, and implementation of TMDLs. And there are other Federal channels.

And it's an issue that's also raised in the current disagreement between the Corps and the State of California over dredging, which is -- has to do with protection of State resources, as opposed to Federal resources.

The EIR on this project does identify a number of significant impacts that are not recognized, apparently, by the Federal Government, in a single-purpose project. And that would be loss of significant riparian vegetation, mature trees. There's some, certainly some mature trees on this project site.

I reread the section on the Red-Legged Frog. It's not clear to me whether it is on the site or potentially on the site.

But I guess my question to you is, let's

assume for a moment that the Red-Legged Frog was on a site and you were, in fact, had a project that would destroy habitat for the Red-Legged Frog, and would not be amenable to the reemergence of that because of the maintenance needs, and the nature of the hydrologic regime.

Are you taking the position that you have no responsibility for mitigation of significant impacts under the California Environmental Quality Act, and your responsibilities are limited to those that come only out of NEPA?

MS. GOODENOUGH: Well, specific to the -- well, we have responsibility under NEPA. And as a matter of -- the fact that the Magna Carta of environmental law was written very broadly, we do look at all impacts, whether a species is listed or not.

But we do rely on the resource agencies that have that mandate. So, if Cal Fish and Wildlife were to tell us that we need to mitigate for the Red-Legged Frog, or some State listed species, that's not Federally listed, we do take that into consideration.

Sometimes, under NEPA, we will look at other impacts. But we do look to the resource

agency that is responsible for that resource. So, we look to Fish and Wildlife. We look to NMPS. And that's why we, under Section 7, of the Endangered Species Act, we make sure we comply with all the reasonable and prudent measures, and alternatives of the biological opinion. So --

VICE CHAIR MCGRATH: I'm not sure that you're answering my question. If something is identified as a significant impact, which is a term of art under the California Environmental Quality Act, and it entails, for assumption purposes here, a State endangered species, which is not a Federal endangered species, and it's identified clearly enough as a significant impact in the CEQA documents, are you going to recognize it only if the Department of Fish and Wildlife calls your attention to it and asks for mitigation? I don't understand that. But maybe I misunderstood what you said.

MS. GOODENOUGH: I'm sorry if I wasn't clear. By law, we are only required to comply with NEPA. However, what I'm saying, in partnership with our non-Federal sponsors, there are other impacts that we do look at. And if it's within what's been authorized, if we have the wherewithal

to enhance a project within certain dollar limits, we accommodate that and try to do the best that we can to reduce all impacts.

But we are bound by what we're authorized to do.

So, I have yet to find a case, and strictly legally, I have not found a case where we were charged with violating CEQA, or a State Endangered Species Act. So, there is not the same risk with State species, as there is with Federal species.

And because we have to be judicious with the funds that are authorized by Congress, we are careful. We pick and choose the impacts that we can mitigate for, even if it is State. But it really is not something that we're legally bound to do. But we have accommodated it, and we try to work the best we can with the State, when they are concerned.

I know we've bought mitigation credits for compensating for State species on some of our dredging projects, for example, when it wasn't a Federally listed species. But it was within our budget and we could make a justification to do it.

So, on a case-by-case basis, we do spend

Federal funds complying with State laws, where we are able to do so.

MS. AUSTIN: I wonder, Madam Chair, if I could interject that might be helpful for Mr. McGrath, which is the recent Army Corps of Engineers Maintenance Dredging Permit, that this Board adopted. Which was, in fact, another EDR/401.

So, and previously to that was only a WDR. It did not have a 401 certification attached to it.

But on the issue of the Department of Fish and Wildlife, this might be helpful. In the case of maintenance dredging, Department of Fish and Wildlife issued a letter to Mr. Wolfe, basically establishing their opinion that the impact of the hopper dredging in the proposed project, the proposed maintenance dredging would cause a significant impact to State listed species, as well as Federal listed species.

The ultimate document, environmental document, which was the combined EA/EIR, so Federal and State document, there was a finding of significant impacts under CEQA, but there was a finding of no significant impacts under NEPA.

And, so, we can take this same

information, the same data, letter from Department of Fish and Wildlife, which was taken into consideration but, ultimately, NEPA had a different threshold for significance.

And, so, I think that may be the distinction that Ms. Goodenough is talking about, where we're coming up with a more stringent requirement or set of mitigation requirements based upon what CEQA requires.

Whereas, NEPA would not necessarily require the same outcome.

So, hopefully, that's a helpful example.

VICE CHAIR MCGRATH: Right. But, equally, would not CEQA -- because when a significant impact is identified under CEQA, those entities bound by it, which I believe would include the District, and this Board, are committed to mitigate either below a significance threshold, or to the extent feasible, and to articulate a rationale and a reasoning on feasibility.

I'm actually with the Corps on the questions of feasibility. I understand there are limitations of feasibility, and we'll get into those when I switch sides.

(Laughter.)

VICE CHAIR MCGRATH: But, you know, the question here is whether or not there is some shared responsibility or State agency controlled responsibility of mitigation of significant impacts, that may be significant under CEQA, but not significant under State. And it is of far more importance than just this project, by far.

MS. AUSTIN: Yes, and I think your correct in that CEQA does direct us to seek out mitigation alternatives that are going to minimize impacts. And, so, the question that we are looking at right now, we are not the lead agency in this case. The District has evaluated the project, they have written the EIR.

The project then comes to us for subsequent discretionary action, which is the Board's approval today.

And, so, we go to the section of CEQA guidelines that deal with the process for a responsible agency. And the directive to this agency is that the responsible agency shall not approve the project as proposed, if the agency finds any feasible alternative, or feasible mitigation measures within its power that would substantially lessen or avoid any significant

effect the project would have on the environment.

You've gone to the next step from there, which is the situation of what if the mitigation simply isn't possible?

And, so, in those particular instances, the responsible agency or the lead agency would make a finding of overriding considerations. In other words we would say, this project is so important to public safety that -- and because the mitigation is simply impossible, that we are making a finding that the project must go forward. And we're really sorry about that.

VICE CHAIR MCGRATH: But a focus --

MS. AUSTIN: But that's not what we have proposed -- or what staff has proposed in this proposed order, but the Board does have the ability to waive all mitigation, and to find -- make a finding of overriding considerations.

VICE CHAIR MCGRATH: That's why, at some point, the question of feasibility, which is not strictly a financial issue, but has strong elements of financial, is an extremely important issue which is -- and the one piece of that is, is there within the budget, and some discretionary elements of the budget, an opportunity for the Federal Government,

or responsibility for the Federal Government to share in some of those costs, if there are feasible mitigations.

CHAIR YOUNG: I want to make sure that you are comfortable with the discussion that Tamarin Austin just provided to us. I kind of assume you are. You're both lawyers, you're both looking at the same books.

(Laughter.)

CHAIR YOUNG: But I just want to make sure we're not --

VICE CHAIR MCGRATH: The lawyers always agree with --

(Laughter.)

CHAIR YOUNG: I can say that because I've been married to a lawyer for 22 years. I have a little tongue in cheek.

You don't have to respond, but I want to make sure you felt comfortable with what was on the record here.

MS. GOODENOUGH: Well, what I heard sounded accurate to me. I've never met her and I didn't realize she was a lawyer, but it sounded reasonable to me.

BOARD MEMBER KISSINGER: She's reading

from the same book, so --

(Laughter.)

CHAIR YOUNG: They do have additional questions on this end of the table.

MR. LICHTEN: Dr. Young, may I --

CHAIR YOUNG: Question, please.

MR. LICHTEN: May I interject, just while Tom is still there, and thinking on the room to move. I know that the Corps EIS for the project looked at a cost, or a benefit cost ratio, and identified that it was about eight to one, if I'm reading my notes correctly.

And, obviously -- and Mary had mentioned, well, in some cases, we try and see, well, what can we do. And the benefit cost ratio is obviously one measure of whether a project can get over the finish line in D.C.

So, some of the "better alternatives" had reduced numbers of, you know, two to one, or three to one. I wonder if you -- so, I just wonder if you had information on how that might play in sort of the D.C. scene of looking at those ratios?

MR. KENDALL: If I understand your question, it's sort of a hypothetical. Had we decided that, when this was being formulated, that

we would want to procure the 20 acres or whatever, and that took the BC ratio to half of its pretty high value --

MR. LICHTEN: Right.

MR. KENDALL: -- would we have been able to proceed? And I guess, hypothetically, as long as the Bs exceed the Cs, the answer's always going to be yes. But there's a lot of devil in the detail as to how we got to those Bs and Cs. And it kind of gets back to the fundamental issue that I know the Water Board -- the Water District, rather, is going to want to get to. Which is, you know, are those appropriate mitigation investments to be made with this project, given the believed impact.

But, yes, if there was, you know, agreement on the impacts, and the way to mitigate those was agreed upon, and it ended up, you know, reducing, but not eliminating the net benefits, you know, then it would still be conceivably a project.

I guess one of the little details to bring out is just having the benefits greater than the costs, by some thin margin, does impact how strong you compete for Federal dollars. So, having a nice one allows you to be higher on that list.

CHAIR YOUNG: All right. Are there other

Board Member questions for --

MR. KENDALL: I'm sorry, one more little footnote on that --

CHAIR YOUNG: Sure.

MR. KENDALL: -- because this does confuse a lot of people, you know, when we say, well, you know, we're trying to figure out who's responsible for what, and the Water District might take on more work as part of how this all plays out. If we're doing our job, as the people who make the Federal investment recommendation, even if somebody volunteers to spend their own money on something, but it's part of the deal we've struck with them, or some third party is impacted in a way that doesn't actually involve a cash transfer, we still have to talk about associated costs. And, so, those are actually in that benefit cost ratio.

So, it's you can't really push some of these things off the books unless it's really being done for a totally separate purpose. Which is, frankly, behind the MOU discussion we were having with staff on Friday, is can we agree to do some nice things that aren't strictly affiliated with this, and then we don't have to get into all this bookkeeping discussion. But, anyhow, that's a --

MR. LICHTEN: Dr. Young, may I --

CHAIR YOUNG: Yes.

MR. LICHTEN: Just on the subject of cost, if I can add a bit of information. And I'd refer to the District and the Corps on the latest costs, but my understanding from the District's project webpage is the project cost is around $75 million. And the District, the Water District shares about $38 million of funding from their Unsafe Creeks Program. And just when we think about what the project cost is.

CHAIR YOUNG: Okay.

BOARD MEMBER KISSINGER: $70 million, did you say.

CHAIR YOUNG: $75 --

MR. LICHTEN: $75 million.

BOARD MEMBER KISSINGER: For the Corps -- I'm sorry, math wasn't my strong suit. So, the Corps share is?

MR. LICHTEN: It was about $37 million.

BOARD MEMBER AJAMI: Yeah, 37 --

MR. LICHTEN: Well, I'm just subtracting, yeah.

BOARD MEMBER AJAMI: Yes.

(Laughter.)

CHAIR YOUNG: Thank you both, very much.

All right, next I would like to call Mr. Richard Santos, with the Water District. And I note that we have six cards for people from the Water District. I have them in a certain order, but if you would like to alter the order, it's okay.

MR. SANTOS: Good afternoon. Because my notes start out with good morning, but we're in the afternoon. So, good afternoon, Madam Chair young, and Vice-Chair McGrath and, of course, Honorable Board Members. Congratulations on your being reelected.

My name is Richard Santos and I'm the Chair of the Santa Clara Valley Water District Board of Directors. I've had the privilege of representing the people of Berryessa and Milpitas communities, who will benefit from this important project.

And, yes, I've taken the oath and approved by 200,000 people.

So, I appreciate the opportunity of appearing before you today, personally, on behalf of the Board, to express our strong concerns with the waste discharge requirements being considered.

This project will protect hundreds of residents, business owners, and schools in the District from more than half-a-million dollars potential flood damages.

It will also protect the long-awaited, regionally significant, new BART Station. Part of the system in which the Federal Government has already invested about $1 billion. And it's thousands of daily riders.

And, of course, you know, when you go in that area, the congestion of traffic is unbelievable. So, this is very, very important, not just for our community, for the whole Santa Clara County.

It is a well-known fact that the disadvantaged communities of concern often reside in flood prone areas. And this area is no exception.

Making this project not just critical to the resolving the flood issue, but also the social justice issue. These folks have waited a long time for this protection, protection that is already provided to those in higher income brackets, who can afford to live outside the flood plain.

Your staff is asking you to impose a new, unnecessary water discharge requirements on this project, including new conditions that conflict with the ongoing construction of this project.

In simple terms, your adoption of this Tentative Order would endanger this entire project, denying the people I serve and the community, as a whole, for their Board protection they need and deserve.

Even worse, the Tentative Order could result in the project's cancellation by our Federal partner, the U.S. Army Corps of Engineers.

That will leave not just my district, but this district, businesses, residents, schools without flood protection at all, and it could jeopardize the new BART Station outright, wasting millions of Federal dollars that would otherwise go to our community.

I come here with a lot of folks that are elected officials, community leaders, regional transportation organizations, industry leaders, labor, business people, and all kinds of folks. And here's the letters of support for this project.

Together, we urge you not to adopt the Tentative Order. Instead, allow this project to

proceed to the benefit of our residents, businesses, and new Regional BART Station, and the thousands of commuters every day.

Give the community, our community, equal treatment by providing the same flood protection already enjoyed by others outside the flood plain.

Just this morning, going by there, and last night, and Saturday and Sunday, my whole district is doing this delayed El Nino that we're having right now. And, yes, we all want water, but not all at one time.

Those creeks and those rivers are full. And I can tell you, as a former soldier, as a former fire captain of the San Jose Fire Department for 33 years, I responded to all kinds of emergencies. I lost my personal home in 1955, as a child, 1958, 1993, lost everything I own. That's why I'm in the position I'm in today, to see if I can do better.

We owe it to these folks. And I've been through all these emergencies and there's nothing worse than a flood. And I've been to Katrina.

We need to protect not just the Regional BART Station, but the enormous Federal investment by keeping this critical project on track.

Please do the right thing. You know, what I don't understand is that this is not just my constituents, this is California. You folks are not a different State. So, we all have the same constituents. We should be together in everything we do, in working and trying to compromise in collaborative fashion to help the people, who pay the tax, and are affected by this wonderful project that's going to be delayed. And we no longer can do that. And I just ask you, and urge you, please, let's work together. Thank you.

BOARD MEMBER KISSINGER: Can I just -- you know, I understand you have a whole series of folks that are going to speak to this point. But can we frame the issue that is really before us today?

Unless I misheard the Corps, this work is going on. It's going to be done. It's not going to be stopped based on the issuance or non-issuance of these waste discharge requirements.

And, so, I want to be -- you know, someone who's just coming to it for the first time today, but reflecting what the Water Board staff has done for years, now, is working with the parties to get this project done.

The whole process of doing the

certification, followed by waste discharge requirements, was premised on being able for this project to move forward. And the project is moving forward. And there are people out there working away, you know, between the clouds right now, probably, to get this job done.

So, this is not a question of whether or not this community is going to get flood protection. It's going to get flood protection.

The question is what has to be done to mitigate the effects of the work.

So, this isn't directed solely at you, but I understand the other folks that are going to come up here and testify, we are not standing in the way of this project. We are just making sure that it gets done right. And it is going to get done. So, the question is making sure it gets done right, or as well as can be done within the design framework that we have.

So, anyway, I just -- this is for the benefit of other people that come up. I don't want to hear about how we're going to be deciding whether to do this project or not. This project is going forward.

MR. SANTOS: Mr. Kissinger, I totally

agree with you. But it's raining now, and in that area, when I was a fire captain, I evacuated those areas in the past, back in 1989 and so on.

But if we have a delay, the people suffer. So, let's don't have a delay. And I agree with you, I think you're on the right track. But it's a collaboration. Again, we're all Californians, let's work together. But we cannot wait six months or a year to get this done.

BOARD MEMBER KISSINGER: But where is the delay? Tell me, what is the delay? I mean, that's the question I asked --

MR. SANTOS: Just cooperate with our staff, in this Tentative Order, and let's not go forward with that, or do something, maybe I don't know about. But, you know, just Monday night, you weren't there, I was there with the City of Milpitas, and those residents were upset because they had a little, partial flood, let along what's coming right now. And it's just not Milpitas. That river, like you said, is just not in one area, it's all the way down to the Penitencia Creek, that affects 200 and something thousand folks. We don't need a delay. We need to work together to solve it now. But the delays only hurts the people who pay

the tax.

Do you know what flood protection is today, for young people trying to get a home? It's out of this world. So, we have to do something because we're in the FEMA flood zone. Very serious.

BOARD MEMBER KISSINGER: Yeah, my only point is issuance of these waste discharge requirements, as I understand it, are not going to occasion any delay. They may cause additional costs, but not additional delay. That's what I heard.

MR. SANTOS: But where do we get the money? Out of the sky? We don't get that money. Right now, we're working on a couple of things right now that we're on the hook for. We pay a lot of taxpayer money. We have a 72 percent rating in getting different tax measures in Santa Clara County, that no other water district has gotten. But we can't keep on going to the well. They expect us to come on time and get this done, and that's our commitment.

BOARD MEMBER KISSINGER: No, that I understand. Thank you very much.

MR. SANTOS: Thank you.

CHAIR YOUNG: All right. Now, I think we have Melanie Richardson from the Water District.

MS. RICHARDSON: Yes, that's correct. Thank you very much. And thank you, Members of the Board, and Chair Young.

My name is Melanie Richardson. I'm the A Room Chief Operating Officer of Watersheds for the Santa Clara Valley Water District.

And you have all heard about the importance and the significance of this project to Santa Clara County, particularly to those most vulnerable to flooding. And I believe that you all understand that, it's become apparent to me.

But I just wanted to explain a little bit about the funding situation and why that is problematic to us. This particular project, as you know, is a joint project with the U.S. Army Corps of Engineers. But our local funding comes from our Safe Clean Water Measure, the one that originally passed in 2000, and then passed, again, in November 2012. It's a special parcel tax. Dollars are specifically allocated for measurables, or deliverables that we have to complete by a time frame. Upper Berryessa is one of those projects. We have a specific amount of money allocated for

that project. And to the extent we use more than that money, we cannot complete another project.

So, we really have to be careful with our taxpayer money, and we have to do what's required by law, do the mitigation that's required, and give the people the flood protection in, your know, a reasonable period of time.

The Water District fundamentally disagrees with the Revised Tentative Order because we do believe that we've gone through the EIS process, we've gone through the EIR process. We have identified significant impacts. We've proposed mitigation that adequately addresses those impacts.

And the Regional Board staff has entered the process fairly late. It's been kind of a late time frame.

Back in the late 1990s is when we first -- this project was first authorized by Congress, and when the Corps first became involved with this.

I was in the room years ago. Mr. Kendall talked about not being involved in original discussions. I was in the room, years ago, when we talked about this project and the need to move forward. And at the time, a decision was made to go with the Corps National Economic Development

Project. They refer to that as an NED, and that's their project that has the highest benefit to cost ratio and it's the project that you can move forward with the quickest.

So, if we were to go with any other alternative, such as one where we did a locally preferred project, it would take extra time. And at the time, we agreed that we needed to move this project forward quickly.

And that's how we ended up where we are today, moving forward with the National Economic Development.

So, I also wanted to address the question that was raised about the two-phase approach. I also was in the meeting where we talked about a two-phase approach to permitting. I do remember that discussion. And, yes, the District did agree, in concept, to a two-phased approach. But I think the details are in the interpretation of that two-phased approach.

What we thought two-phased approach was, was issue a 401 Water Quality Cert to the Corps, who is the constructer of the project, to do the construction. And all related mitigation for the construction would be taken care of with that.

The second phase would be for operations and maintenance, which we clearly know is our responsibility. And we believed that we would come back at the appropriate time, when needed, to apply for a WDR to do O&M.

And one thing I did want to say is we fully agree with the idea of Adaptive Management Plan. I know someone on your Board talked about that. We, too, brought that concept to the Regional Board staff at a meeting, recently. We're fully in agreement with that approach for maintenance.

But the two-phased approach that we believed was workable is not the two-phased approach that's currently being proposed.

The two-phased approach that's currently being proposed is to rescind the existing 401 Cert, that's already been given to the Corps, alone, and to replace that with a joint 401 WDR, with both parties named. And that's fundamentally different than what we thought we were talking about.

One other point. We have met with the Regional Board staff several times. We have talked about mitigation projects. We have talked about other types of projects that the District could do

to, you know, help with moving forward with Upper Berryessa. But the Water District fundamentally disagrees that a mitigation project is required for Upper Berryessa.

However, we are not in disagreement that we want to work with the Regional Board to do great environmental enhancement projects.

VICE CHAIR MCGRATH: Can I stop you there?

MS. RICHARDSON: Sure.

VICE CHAIR MCGRATH: We've seen pictures of what the stream looks like today, and it's not an undisturbed stream. But by you telling me that increased amount of concrete channel, the loss of soft bottom virtually through the entire channel, and the fixing of all channel dynamics is of equivalent value and requires no mitigation. Is that your position?

MS. RICHARDSON: Yes, and we have a speaker, later, that will address this in detail. But we're saying that we have mitigated for all the impacts raised in the --

VICE CHAIR MCGRATH: No, I asked you a different question, which are you saying that it has equivalent value?

MS. RICHARDSON: I am going to defer that

to our environmental staff, who will be up here, speaking, shortly.

VICE CHAIR MCGRATH: We've been talking about procedures, and process, and politics. I really want to know if the District is trying to seriously tell the Water Board to ignore our eyes and decide that the channel, with a riprap bottom, is going to be just as valuable as the existing channel. And I find that an unreasonable proposition.

MS. RICHARDSON: Understood. And we will address that with a subsequent speaker.

CHAIR YOUNG: I think he's the next speaker to come up.

MS. RICHARDSON: Yes, you're right. So, that will be coming very quickly.

So, I will just wrap up, I guess, by saying that we fundamentally, I think, want the same thing the Regional Board staff wants. We want to do projects that are good for the environment. We want to do restoration projects.

And to that end, I think someone did refer to our One Water Plan, that we currently have underway. We are working on that, and the first watershed that we're working on is Coyote, and we

do expect to have that, a draft of that completed this spring.

In addition to that, however, our Board just recently approved accelerating several environmental enhancement projects, primarily fish passage projects in the Coyote Watershed, the same watershed. And they did that because they want to show more environmental presence.

So, we've actually added feasibility studies to remove fish passage at Osier ponds, at Metcalf pond, and also to do some fish passage on Stevens Creek, to our CIP, which went to the Board for the first time last night.

So, we are very serious about that. We want to do this. We just don't feel this project is the right forum to do that.

And, then, lastly, just to sort of discuss what Director Santos talked about, the public really relies on us to get these flood projection projects done in a timely manner. And they expect us to do this within a budget.

And we have spent a significant amount of time, just since this draft order was posted, on dealing with some of the flooding in our County. I mean, I don't know that any of you have experienced

being in the Emergency Operation Center, while flooding is going on, but that is very much a real part of our daily jobs. So, we really care about getting adequate flood protection in for all of the residents in our County.

And we feel that this project is one that we can't afford to delay any longer. And as the Corps told you, it could cause a delay if the mitigation was added to this project.

Our preference is to do separate and independent projects that restore the habitat. And with that, I will step down and let Mr. Manitakos speak.

BOARD MEMBER KISSINGER: Before you --

CHAIR YOUNG: All right, we many have some more questions from the Board.

MS. RICHARDSON: Sure.

BOARD MEMBER KISSINGER: Yeah, before you go, I want to take you back to the conversations that you did participate in, with regard to this two-step process. And I want to make sure I understood you correctly.

What I heard you say was you understood that there may be WDRs sometime down the line for operation and maintenance, and adaptive management,

but that there wouldn't be any mitigation associated with the capital project's impacts or, if there were, that would be the Corps' responsibility. Is that what I heard you say?

MS. RICHARDSON: I said that the understanding we had of the two-phased permitting approach was that the first phase was for construction of the project, with the 401 Water Quality Cert. And the Corps was the only named party on that.

That we, the Water District, would be responsible for the second phase, which is the operations and maintenance, when and if that was needed.

Because as you've heard here today, we're not convinced it is needed. But we're absolutely open to the Adaptive Management Type Plan, because we want to do the right thing. So, that is the understanding that we had.

BOARD MEMBER KISSINGER: So, in the 401 Certification letter that I read from before, it says, "With regard to the prospect that the Water Board will consider adoption of waste discharge requirements with the District named as a permittee for the project."

It goes on to say, “The following is a partial list of items the WDR will address.” And one of them is a plan to compensate for capital project’s impacts.

Right? So, for what the impacts are of the project. Not the adaptive management, not the O&M. These are other items that are listed.

So, did you understand that to be referring to what would be an obligation put on the Corps, because the Corps was the only one that was a named party in the 401? I don’t understand what your point is with regard to how the District might not be subject to WDRs because of the capital project’s impacts, when it’s right there in the 401 Certification.

MS. RICHARDSON: I think we fundamentally disagreed with that from the very beginning. We never agreed that additional impacts for construction were needed, above and beyond what we had proposed, and above and beyond what the original 401 Water Quality Cert was given for.

BOARD MEMBER KISSINGER: And, so, is it the District’s view that the Water Board never said that, at these meetings, or that -- go ahead.

VICE CHAIR MCGRATH: If you --

BOARD MEMBER KISSINGER: Hold on a second, she's consulting. Do you want to amend that at all?

MS. RICHARDSON: No. I'm sorry, could you please repeat that?

BOARD MEMBER KISSINGER: I guess I'm still trying to understand. Was there just a miscommunication and you didn't understand that the Water Board was saying there would be additional mitigation, or there would be mitigation associated with the project impacts?

MS. RICHARDSON: No, we did not, we never did agree to that. We never agreed that there would be additional mitigation required of us.

BOARD MEMBER KISSINGER: Fair enough, you didn't agree to it. But did you understand the Board was telling you there would be, in the waste discharge requirements that were to follow?

MS. RICHARDSON: I understood that they said, used the word "consider," that they would be considering that in a future WDR.

BOARD MEMBER KISSINGER: And did the District say, well, we don't agree?

MS. RICHARDSON: I think we always said we didn't agree. And I think we had a series of

discussions where we talked about perhaps other ways to come to, you know, agreement. Other ways, like working on other efforts or other projects. And it was always our idea that that would be independent from Berryessa. And I think the Regional Board staff would prefer to tie it.

I don't think that we have any agreement that it's we wouldn't like to work with the Regional Board staff to do these other good projects. We just never believed that it should be tied to this particular permit.

BOARD MEMBER KISSINGER: And why is it significant? There's certainly, in the materials that the Water Board has prepared, discussion about the notion that there are projects that the District has ongoing, that could be used as a basis for mitigation.

MS. RICHARDSON: Uh-hum.

BOARD MEMBER KISSINGER: As I understand it, from Board staff, there's been an unwillingness by the District to talk about that. And I think I hear, then, you saying, well, because it's tied. What is the -- what does it matter whether it's tied or not? Why can't the District and the Board have the modus vivendi in the same way that the

Corps has with the District, with the Board, in terms of whether it's WDRs versus a 401 Certification condition? Why don't it matter that it's tied?

MS. RICHARDSON: From our perspective, and I think I did hear the Corps say that any tie to this project could ultimately result in an out-of-balance cost for this project and could, ultimately, impact this project.

From our perspective, we are already doing those projects. I mean, we have already taken steps to do many good environmental projects. And we don't feel that this project is the driver to get us to do those other good projects. We are already motivated to do those projects. We've already taken steps. We've already put them in our CIP, or we've already moved forward with planning efforts for those projects.

And we're willing to, you know, collaborate with the Regional Board on those. We have no problem with that. In fact, we welcome their input into those.

But we don't feel like tying it to this project is necessary.

BOARD MEMBER KISSINGER: Why is it

problematic?

MS. RICHARDSON: I might ask my attorney to answer that question.

BOARD MEMBER KISSINGER: Okay.

MR. PROWS: Peter Prows, outside counsel for the Water District. I have taken the oath.

There are a couple, I think, different answers to that question. One, it may have some effect on the District's ability to fund another project that it's currently planning to do under its Safe Clean Drinking Water Program, if I have -- the Safe Clean Water Program.

If it's called a mitigation project, funding gets harder for the District to apply to a project. So, if it's a mitigation condition, it actually becomes harder for the District to implement.

The other sort of maybe philosophical issue is that -- as you'll hear from the District's engineers and scientists, we don't actually believe that there's a nexus between the impacts that are -- we don't believe that there are impacts here and, so, there's no nexus to require a mitigation project.

I know that there's some, perhaps,

skepticism about that, but you haven't heard our side of that. So, I'd just ask you to, please, keep an open mind.

We are the lead CEQA agency. We did certify an EIR that concluded that all impacts would be mitigated to a less than significant level. The Regional Board didn't take the steps that we believe are required by law to challenge that, if it disagreed. And because it hasn't challenged that, it's actually waived those objections. We don't agree with how Ms. Austin has interpreted those CEQA guidelines. And you'll see some back and forth in the correspondence about that.

And, so, that's, I guess, a taste of some of our concerns about tying mitigation that's required in this proposed order to the projects that the District might be using funds that are earmarked for Safe Clean Water to implement, anyway.

BOARD MEMBER KISSINGER: Let me ask one more question and then I'll stop. And it's to Ms. Richardson, I think.

Were you involved in the environmental permitting around the Lower Berryessa reach?

MR. PROWS: No. Oh, sorry.

(Laughter.)

MS. RICHARDSON: I was somewhat involved in that. I was acting as the Deputy Operating Officer over design and construction, so the staff doing that worked under me. But I probably don't know all the details about that.

I do believe, though, that we have Mr. Manitakos, who was very intimately involved in that permitting, who could probably answer questions on Lower Berryessa.

BOARD MEMBER KISSINGER: Okay, thank you.

VICE CHAIR MCGRATH: I would just like to point out that I think it's a well-established principal that you cannot accept the benefits of the permit, begin construction, and then later challenge conditions.

And it seems to me clear enough that there was a perspective from the Regional Board staff, going back at least two years, that there needed to be some mitigation.

So, you can talk about waiver all you want, but I think having accepted a permit and having gone forward with construction, I'm not convinced.

BOARD MEMBER AJAMI: Yeah, I just have a quick comment. You referred to environmental projects as if you're doing everybody a favor to doing environmental mitigation. And the reality is, these projects are not meant to be a favor to the Water Board. That's meant to protect our environment for the people, the same people you are talking about, for the generations to come.

And I k now we haven't gone through the presentation that your colleague is going to give. But when I look at the picture that he has put in here, we have already done all these concrete, and building these channels, and they're all falling apart because of not concerning the fact that these things erode. And down the line, 20 years, 30 years, 40 years become a problem, rather than the solution.

So, I think, I just want to make sure that you realize it's not like you're doing a Water Board a favor because you're doing a lot of environmental work. You're doing it because it's better for your own watershed, in the long run.

So, I just want to make sure we clarify that point.

MS. RICHARDSON: Understood. I don't --

if it sounded like I think I'm doing the Water Board a favor, or the District is doing the Water Board a favor, that is wrong. We are doing all the people of Santa Clara County, all of our constituents in the community a service that they are asking for.

BOARD MEMBER AJAMI: Right.

MS. RICHARDSON: In addition, they're asking for flood protection in a timely and cost-effective manner. So, we're trying to do it all. We're trying to give them the flood protection they want, we're trying to give the community the environmental enhancement it wants, all with limited funding. So, yeah, we are trying our best to do it all.

CHAIR YOUNG: All right, I have a question, and you're welcome to defer to someone else. But I'm going to repeat my question about where did the $20 million come from, on the estimate. And if someone else is going to address that, then that's fine.

MS. RICHARDSON: I think Mr. Manitakos can address that during his presentation, if that's okay.

CHAIR YOUNG: All right. Then I have one

other, brief question. I was a little concerned, or confused, actually, about the assertion in the District's letter, of September 19th of this year, 2016, that said that the Tentative Order, if we adopted it, it would "distract from the watershed-wide planning and habitat enhancements that the District is working on."

It's hard for me to understand why mitigation for a project would distract from the overall watershed-wide planning effort, particularly when the Tentative Order tries to make its schedule track, and coincide with the adoption of the budget for the One Water Plan.

I mean, again, we're talking about the potential delays. And I just -- I don't see the intersection there.

MS. RICHARDSON: As far as the distraction, I mean, we are spending a lot of time and resources on this particular issue, when we would prefer to just complete the construction, apply for a WDR when it's necessary, do adaptive management, and move on to doing our other, good projects that we are trying to get underway.

So, I think from our perspective, we feel that it's not a good use of our staff -- it's not

the best use of our staff's time to do this.

CHAIR YOUNG: I'm sort of unconvinced that your route takes less time than our route. But I understand your answer, so thank you very much.

MS. RICHARDSON: Thank you.

CHAIR YOUNG: All right, Mr. Manitakos.

MR. MANITAKOS: Hi, I'm Jim Manitakos, an Environmental Planner with the Santa Clara Valley Water District. And I've taken the oath and I will tell the truth, and nothing but the truth.

(Laughter.)

MR. MANITAKOS: Let's see, I think we have some slides here. Oh, yeah. Yeah, the $20 million question, which is a lot of money, obviously, even to agencies like yours and ours.

That's 20 acres of fresh water restoration, enhancement, creation. There are numerous studies and they obviously varies a lot. But a million dollars an acre is a very, very conservative number for that kind of restoration project. And we can show you many projects that have been done in the Bay Area where those kind of costs of a million dollar an acre is not extravagant. In fact, it's probably a low-ball estimate.

So, without having exact project, of course, there's a lot of noise around that $20 million. But that's not a bad starting point for what costs we're talking about.

Okay, I have a rather brief, hopefully brief, presentation here that we can -- okay. Okay, we've already talked about the description of the project. I want to make a couple of points here, about this reach, that weren't brought out in the excellent presentation by the Regional Board staff. I appreciate all that information.

First of all, Upper Berryessa Creek, for the entire project area, is an entirely manmade channel. That's not being modified. There was no channel there until the 1920s, when a farmer dug a ditch along this area. It's been modified, enlarged in the 50s and then, again, I believe in the 70s. But it's an entirely manmade channel. There was no water feature there.

And you can even -- you can look at the USGS maps from the early 1900s, and they'll show you nothing by dry, high land there.

I won't go over these things, I think they've already gone -- but there's a couple of pictures. The picture on the left is a typical

section of it, right around Ames Avenue. And, as you can see, it's a very straight, and very steep-sided channel. It's eroded and the banks cave continuously, and that's one of the big concerns of the project design.

The second picture shows the railroad trestle, the Pacific Railroad tracks that cross the creek. And, actually, they go parallel to the creek for quite a distance, much of the length. And that will become important later, as I talk.

That railroad trestle built, I believe in the early 1930s, with creosote soaked wood, would be removed and replaced with the concrete (indiscernible) -- and that's, by far, the biggest proportion of concrete that would be put in the creek as part of the Corps and District project.

And the third one is just upstream of Montague Avenue, between Montague Avenue and I-680. And that's a picture of the existing concrete lining of the creek that would be removed completely, as part of the project, and replaced with a soft bottom.

We can move on. Okay, we can talk about the existing environmental condition enhancements. There was a lot of talk, questions about impacts.

And I think we need to be very clear about what the impacts are, and something else, the mitigation that is built into the project.

These mitigations are entirely consistent with the Fish and Wildlife Service Corps and Nation Act Report. That report was issued by Fish and Wildlife Service. It was used by the Corps of Engineers, when they prepared their EIS. We also used it in our EIR.

One thing about that, it's clear there are no Red-Legged Frogs in this reach. The Fish and Wildlife Service, and the Red-Legged Frog is a Federally listed species, does not occur in this reach. I think the Regional Water Board staff agrees with that. And the Valley Habitat Plan does not model this reach as Red-Legged Frog habitat.

But to get on to it. One of the most important habitats in the Fish and Wildlife Service, who are experts at this, the most important habitat there is grassland habitat that occurs along the upper banks, and top of bank here. Five acres of that would be removed during construction to enlarge the channel.

But as the channel gets enlarged, you look at a rendition on the right, the banks will be laid

back. And, actually, you'll end up with 6.2 acres of grassland habitat. Not only will it be greater in acreage than what's there, it will also be converted. Because right now it's primarily non-native grass species. It will be converted to native species, as we will be hydro seeding the area, and maintaining it to maintain the native grassland there.

Okay. In terms of the environmental conditions, I remember the pictures that the Regional Board staff put up. They were very interesting.

(Laughter.)

MR. MANITAKOS: If you looked at the pictures, particularly the egret, the pictures of the water in the channel, and what you didn't see were trees. In fact, there are no trees in the lower banks or below ordinary high water in the entire 2.2 mile reach. Not a single tree.

There are some on the very upper banks, top of bank area that would be removed. In fact, 53 native trees and shrubs. We went all the way down to diameter, we said two inches or more, so very even small saplings. And a total of 53 would be removed as part of the project.

To replace them, we plant 134 native trees, 123 native shrubs. So, a mitigation ratio, just on the trees, of well over two to one. And there's a list of the types of trees that would grow in the area, that we will be planting as part of the project, and maintaining and establishing long the riparian corridor.

Okay. Another one is the intermittent open water aquatic habitat, which occurs. There's 14.1 acres within the channel. And that will remain, basically. After the low-flow channel that's there now has established, it establishes over time as a -- it does not pull the entire creek bottom. You can't really see it too well here, in these pictures. But you saw pictures that were earlier. There's a three to five foot wide, low-flow channel, that meanders through.

The hydrology will change, will not change. The amount of water going there during low flows will not change, and that same channel will reestablish itself on the creek bottom.

And we will also improve the habitat along there, the native wetlands vegetation that do grow along the fringing margins of the creek. To help them reestablish, we will be hydro seeding the

bottom with these native plants that are well established, and they'll grow back.

So, you'll end up, after project construction, with the same amount of aquatic emergent vegetation there, and it will be much more native, because we'll be seeding with native. So, we expect the mix will improve from the existing, mostly non-native, to mostly native wetlands vegetation.

And that's the impacts. And all these impacts were brought out in the EIR and the EIS. Okay. All right, I want to go back. Sorry, I -- okay, there we are.

I would also mention that the Regional Board staff had a big concern over the water spreading and disappearing, as it flows through the reconstructed creek channel.

The channel will get wider. It will get wider for high flows. The channel, the low-flow channel on the bottom, that establishes -- that will be the same size. There's no reason to think the water is going to spread out in a millimeter in depth, or something, water doesn't react that way, and then all disappear into the ground. There will be just as much water going through there during

our low-flow season as it is today. And that will support the same habitat as there today, only improved in quality because we'll have a greater amount of native wetland emergent vegetation growing.

Okay. And, so, a big, key concern here is the beneficial uses. And there are about four beneficial uses talked about. The Rec 1, water contact recreation. Although that's -- really, it's very unlikely to see. It's very little used today, as you can look at the pictures of it, there's not people boating and fly fishing in this stream. There is potential for that. That won't change from present.

In fact, it will be easier to because the project includes improvement. Which is the District with the City of Milpitas. We're going to establish a Class 1 pedestrian/bicycle trail along the creek, which does not exist now, for over a mile of the length of the creek. That will be right adjacent to the creek and it will certainly promote the Rec 2 use, non-contact water recreation along it. And that will be open to the public. It will be a maintained trail. It will have amenities in terms of benches, lighting, et cetera. That

we'll work that out with the City of Milpitas. But it will certainly be a big improvement. So, it will improve that beneficial use.

There's warm water habitat. There will be a temporary disruption during construction. But as we said, it will return afterwards. And the warm water habitat will certainly not be any worse than it is now. And it will be better because of the increase in native vegetation.

In terms of wildlife habitat, it's the same story. There is the grassland and the aquatic habitat, which the Fish and Wildlife Service Corps and Nation Act Report pointed out as the two most important habitat types there.

They will be increased in size, in terms of the grassland. The aquatic habitat will be the same acreage. And for both the grassland and the aquatic habitat there will be an increase of quality as we remove non-natives and seed, and establish the native vegetation, which is part of the project.

I'd also like to mention one thing about this. The Regional Board -- the Regional staff treats the buried riprap as the same thing as a concrete bottom. That is a sterile bottom that

nothing can grow in.

Well, actually, it's going to be covered with four inches of soil. That's four inches minimum. The riprap underneath is 9 to 24 inches in diameter, large rocks. Those rocks have substantial voids in them and the soil will be packed beyond those voids. So, many areas, in fact most, much of the surface will have more than four inches of cover, and that vegetation will be able to grow and establish in that soil cover. The roots will be able to get down, into the rocks below that, where soil will be packed. So, it will not be a sterile, hard concrete bottom. In fact, it will be a bottom that will grow emergent vegetation that's, in fact, higher quality than the non-native emergent vegetation that's there now.

And in case you doubt that, we can go back to the picture of Lower Silver Creek. As you'll remember, the Regional Board staff brought up. I think, if we can do this. It's somewhere, sorry.

There we are. It's the Lower Silver Creek. In fact, we have rocks right at the surface and vegetation grows. This isn't even the best picture. We have all kinds of vegetation growing on Lower Silver Creek. I've been there a year

after and it grows right among the rocks. In fact, soil cover, even soil pack beyond the rocks, between rocks is conducive and supports the growth of emergent vegetation. And, so, rocks with four plus inches, probably more like six or seven in most places, can certainly grow emergent vegetation.

And this brings into question the whole 20 acres. Over half that 20 acres is treating this area of riprap, covered with substantial soil, that we know will support native emergent vegetation as a hard bottom. We disagree with Water Board staff that nothing will grow there and it will have no value.

If we were to give that the proper biological value, you would see the project is self-mitigating.

Sorry about switching back and forth, but the pictures from --

BOARD MEMBER KISSINGER: When was that constructed? When was that constructed, your pictures from 2016, when was that constructed?

MR. MANITAKOS: That reach there was constructed, I believe, 2015.

BOARD MEMBER KISSINGER: 2015?

MR. MANITAKOS: Yeah.

BOARD MEMBER KISSINGER: Are the velocities in the channel profile and the slope the same?

MR. MANITAKOS: I wouldn't know. It's pretty similar in size and depth, so I would suspect it is. But I do not have those numbers with me. We can certainly provide those numbers.

In fact, the velocities that you talked -- that were cited, I think, by a member of the Regional Board staff, in the EIR, those are maximum velocities during the one-percent flow, which occurs -- it occurs one day out of every 36,500 days. It will occur, the other 36,499 days velocities will be much lower, we'll have the low flows, and you won't be seeing anything like those velocities. In fact, they would be a small fraction of that.

And from a biological stand point, the 36,499 days are much more important than the one day of the one percent flood, which rises and falls in usually less than a day in this type of a stream.

BOARD MEMBER KISSINGER: What do you make of the Board staff's difference, with the District,

that it's not erosive, but depositional in terms of the sediment. And that frequently you'll have to go through there and remove the sediment. And in the course of doing that, the biota, as well.

MR. MANITAKOS: Yeah, the next speaker we have is a hydrologist, who's done quite a bit of work on looking at this system. And I think he'll answer that question much better than I could.

BOARD MEMBER KISSINGER: Okay.

MR. MANITAKOS: I would defer it.

BOARD MEMBER KISSINGER: Okay.

CHAIR YOUNG: Mr. Manitakos?

MR. MANITAKOS: Yeah, Chair?

CHAIR YOUNG: There are a lot of pages to this presentation. Is this all your presentation?

MR. MANITAKOS: I don't know what you have. I don't think so. I think it's -- much of it's my colleague, Jack Xu, here.

BOARD MEMBER KISSINGER: He's got two more pages.

CHAIR YOUNG: Okay. Then let's go ahead and finish your presentation and then we'll do a time check. Thank you.

MR. MANITAKOS: Well, I appreciate you giving me the time to finish.

And to look at these -- we looked at this slide. I apologize for not -- okay. Okay, I want to bring up a few things.

Okay, we received the staff response to comments just in the last week, and there are over a hundred pages of a lot of great information in there. I've been up late, every night, looking at it and trying to digest it and understand it.

A couple of things. First, the staff did comment on the EIR. There was no mention of either riverine wetlands or nutrient cycling through the system, in their EIR comments.

They brought a lot of new information that we're trying to digest, just in the response to comments in the last week. It would have been useful to get it during the EIR process, but late is better than never.

First, we talked about the existing dry season flow, that it would spread. These systems work. The gradient of the system and the amount of water flowing through there will be unchanged after project construction. A low-flow channel will form, as it does in all of our -- every project I've seen, which is many, many of them, where you construct this. That the low-flow channel will

reform and it will be similar size. That it will spread because the upper banks of the channel are larger, which aren't even touched by the dry water flows, they won't be spreading and disappearing of water, as speculated in the response to comments, by staff.

And, let's see. Okay, another thing I'd like to bring up. There was talk about levees and vegetation management. There are no levees on this creek. This is an existing, no existing levees and no proposed levees. The proposal is for an incised, enlarged channel. Levee management policies are just not relevant to this project, so don't have to worry about those.

Okay. Then the four points, the planned restrictions on woody, riparian vegetation, likely will result in warmer water temperatures, and that will adversely affect warm water habit use. I don't understand.

First of all, there is zero woody vegetation growing in this channel. And as you saw from even the pictures from Regional Water Quality Board, they showed pictures from miles away upstream, miles away downstream of trees, to try to indicate maybe trees are growing here. And the

fact is this artificial channel supports zero trees growing below the ordinary high water mark. As we said, there were 53 trees growing above the high water mark. Most of them are actually outside the channel, at top of bank. So, there is zero shade on this stream right now, and that will not change. So, water temperatures will not be affected by the project.

Let's see, and I'll just -- I think we've already talked about that one. Before I go on to Jack Xu, a couple of comments I would respond to questions.

There was a lot of question about alternatives that were looked at, in both the EIR and the EIS. And was the alternative -- if I can -- okay, yeah, I want to go back to -- okay, I think I can do it. All right, here it is.

We can go back to -- wait -- can we pull this up to full. Nope, that's not working.

CHAIR YOUNG: I have to say the Santa Clara Valley Water District's presentation has gone on already a little bit longer than the staff led me to believe it was going to go on.

MR. MANITAKOS: Okay, I'm very close now.

CHAIR YOUNG: So, if you could wrap up,

that would be great.

MR. MANITAKOS: Yeah, I'm moving as quickly as any of the other speakers. Thank you.

This is the Lower Berryessa Project, and this is a picture, the rendering that Regional Board staff graciously provided. As you can see it has, on the right side here, a very large, concrete flood wall. And some riparian vegetation that's growing in selected areas along benches.

That project, a couple of reasons why we were able to do that at Lower Berryessa Creek is, one, the right-of-way is wider there and gives us more flexibility to do that.

But even with the wider right-of-way, it required this very large -- you can't see it here. This is a 14-foot high, concrete flood wall, which is needed to contain the flows through there.

So, there is a possibility you could plant trees in a channel. They do slow down the water and reduce the flow conveyance capacity. But you have to get a certain amount of water through there, several thousand cfs, in the case of Upper Berryessa Creek.

And that water, the way it can be done is through a large, concrete flood wall.

So, that project was looked as alternative design, like this, with a concrete flood wall to provide the flow conveyance capacity. It was looked at in the EIS, both as Alternative 4, and in the EIR. The concerns were that, you know, the cost of the flood -- the concrete flood wall is an unsightly element. We'd rather not do that, if it can be avoided. It's very costly, many, many millions of dollars.

In fact, doing a design like this would triple the cost, was the EIS estimate in the Corps' EIS, in their playing documents. So, it would triple the cost of the project to do this kind of design. And that was found to be cost infeasible, and it still remains cost infeasible, to this day.

BOARD MEMBER KISSINGER: Just out of curiosity, why was it done on the Lower Berryessa?

MR. MANITAKOS: The Lower Berryessa? Because we -- well, a couple of things. One, because there was a wider right-of-way, we had to only do the flood wall on one side which, obviously, reduced the cost as compared to both sides, which would be required on Upper Berryessa.

And second, the District was willing to pay the extra money to do that, and it was required

as part of our 401 permit, and we were able to do it.

However, the Corps was unwilling to accept those costs, is my -- they didn't. They wouldn't accept those costs, they were excessive. They tried the B -- the B to C, too, and unacceptable. A level at where it would not have been approved.

And if there are any other questions?

VICE CHAIR MCGRATH: I have a couple questions.

CHAIR YOUNG: All right, let's have the lights and questions for Mr. Manitakos.

VICE CHAIR MCGRATH: Even though I am desperately hungry --

(Laughter.)

BOARD MEMBER KISSINGER: What else is new?

VICE CHAIR MCGRATH: What else is new.

BOARD MEMBER AJAMI: How are you surviving?

VICE CHAIR MCGRATH: A couple of questions. You talked about cost. I got the impression that you assumed the purchase of 20 acres of land, is that correct?

MR. MANITAKOS: Actually, I think that's based just on developing the land. I don't -- I

mean, land acquisition costs could be considerable. Yeah, if they're --

VICE CHAIR MCGRATH: Well, just about cost that --

MR. MANITAKOS: But I think the $20 million was based on development, establishing monitoring costs for a per-acre, for a typical wetland.

And, in fact, that's part of the reason why there are no wetland mitigation banks in Santa Clara County because the costs are very prohibitive to Alameda County --

VICE CHAIR MCGRATH: Stop.

MR. MANITAKOS: Okay.

VICE CHAIR MCGRATH: So, in terms of costs, the ability of the District to do this on lands they already owned, in your view, would not reduce that cost?

MR. MANITAKOS: You know, it's a very rough number. Yeah, sure, if we had the lands, land acquisition --

VICE CHAIR MCGRATH: Did you submit that cost estimate as a detailed cost estimate to our staff?

MR. MANITAKOS: Well, if I --

VICE CHAIR MCGRATH: This is a yes or no question.

MR. MANITAKOS: Yes. Once it's identified what the project is, sure. I mean --

VICE CHAIR MCGRATH: You really --

MR. MANITAKOS: -- for a hypothetical project we can provide estimates of similar projects already --

VICE CHAIR MCGRATH: You will, you have, or you did?

MR. MANITAKOS: Excuse me?

VICE CHAIR MCGRATH: You will or you did already?

MR. MANITAKOS: We did not.

VICE CHAIR MCGRATH: Okay, that --

MR. MANITAKOS: We will, if you want us to.

VICE CHAIR MCGRATH: Landscaping plan, you did indicate that there are 53 trees and you're going to replace them?

MR. MANITAKOS: Yes.

VICE CHAIR MCGRATH: Do you have a landscaping plan that's --

MR. MANITAKOS: Yes, that's been submitted and accepted by the Regional Board staff.

VICE CHAIR MCGRATH: And does that show the locations in a place where we could -- so, when we get to discussion, I'd like to be able to see that landscaping plan.

Two more quick questions. And this is an extremely important point on channel morphology, is whether or not a similar channel will develop. And the velocities in flood stage on this are very high. They're well above erosion levels. So, I'm very concerned that four inches of soil will be gone in the first four or five minutes, at 11 feet or 12 feet per second, which is your peak velocity.

So, I'm not at all convinced, at the moment, that your vegetation material will survive the first storm.

On the other hand, I mean, typically, when flood control projects have tried to create a new channel, they've distinguished between the nature of rock across the channel section, to try to reflect the equilibrium profile that was there before construction, and afterwards, and have the capacity of the channel to actually reestablish that.

I don't see that anywhere here. Is that some part of the plan that I've missed/

MR. MANITAKOS: Yeah. So, the gradient of the creek does not change. The project does not deepen it. In fact, it's set by the I-680, there's hard stops besides I-680. At the top, we're not changing that crossing. There's a Calaveras Boulevard bridge and we're not changing that. So, those are gray control structures at the top and the bottom. And several within the creek, so the gradient will not change.

Within the channel gradient, the amount of water going through there won't change. We're not -- praying more rainfall, we're not --

VICE CHAIR MCGRATH: And you don't think that you need to establish some type of more erosive channel to let that channel reestablish and have some dynamism?

MR. MANITAKOS: I think that that's exactly what will happen. It's dynamisms. The water will flow through there, there's sediment through there, there's the soil cover reporting. And it's going to work its way, as I think Susan said, it's two inches deeper in the low flow. It will work its way through there and create a three to five foot wide, small, low-flow channel.

In fact, trying to create a low-flow

channel, and expecting it to stay in place is folly. The water's going to move around. It's going to move the sediment around and it's going to create a channel that's adapted to the morphology dictated by the slope and the amount of water flowing there, and neither of those change.

CHAIR YOUNG: I'm going to interrupt, just a minute, with some housekeeping. I understand that some of the Board Members have provided an order, a lunch order. Are there other lunch orders that need to be given to staff, now, or not? Yes? No?

BOARD MEMBER KISSINGER: What's our plan in terms of --

CHAIR YOUNG: Oh, a plan.

BOARD MEMBER KISSINGER: I mean, we're going to take a break after --

CHAIR YOUNG: We are going to take a break. And at that point, Board members can either go out and scavenge something. Or, if you wanted to put in an order from the menu that was passed down, that's what you need to -- but, you know, air mail right now to the staff.

(Laughter.)

BOARD MEMBER KISSINGER: I'll do staff.

CHAIR YOUNG: Okay, we're going with scavenge.

All right, let's continue with the rest of the questions, then. Jim, were you finished?

VICE CHAIR MCGRATH: Just is there --

CHAIR YOUNG: Well, I know you're not finished. Were you done with these questions?

(Laugher.)

VICE CHAIR MCGRATH: Just is there an estimate of time that you believe it will take for a low-flow channel to redevelop in a similar manner?

MR. MANITAKOS: You know, based on what we've seen in other channels like this, like Lower Silver Creek, within a year there's a pretty well established. We do construction. Generally, we wrap it up in the winter and hydro seed --

BOARD MEMBER KISSINGER: Okay.

MR. MANITAKOS: -- and by next year there's one there.

CHAIR YOUNG: All right. One of our Board Members has to leave. But did you want to make any -- ask any follow-up questions, or have any thoughts before you go?

BOARD MEMBER AJAMI: Yes, I guess --

sorry. I guess my confusion here, a little bit is, and it might just be the problem I'm having with the presentations earlier, by the staff, and now by District. Obviously, I have a feeling that the way they are presenting the work -- I guess there are two questions.

One is, if you already had a concrete, and I mentioned that to the Acting Operating Officer, Chief Operating Officer, if you already had concrete channels that are degrading, why would we fill it up with another concrete channel. So, that was my first question.

So, based on the discussions we had earlier, I was under the impression we are actually creating another sort of concrete channel.

MR. MANITAKOS: Yeah, I think that's not quite correct. The concrete that's there now, there is a section of concrete-lined channel, right at the bend above Montague Expressway, that's about 400 feet long. The project actually removes that.

However, in some other places we are adding concrete. Where we're adding concrete is primarily -- the biggest chunk of concrete is at that railroad bridge, that trestle bridge, where just sound engineering design it makes it a lot --

because it goes across at an angle, you cannot narrow it. It goes across at a very steep angle.

BOARD MEMBER AJAMI: Right.

MR. MANITAKOS: And that makes that structure a couple hundred feet long, I believe. So, it's a very long culvert that's pretty hard to avoid, if you're going to build a modern railroad bridge there.

There are two other places. There are two concrete ramps that are above Montague, that go down into the channel, because there's a lack of maintenance access there. And those are not -- those are just going from the top of bank down to the bank. They're 18-foot wide concrete ramps. They're each about 100 feet long.

And, then, concrete is being added down at the -- for transition at the Calaveras and Los Coches Street bridges.

BOARD MEMBER AJAMI: Can I actually --

MR. MANITAKOS: So, when you talk about the concrete, the amount of concrete, I guess just some numbers --

BOARD MEMBER AJAMI: So, I guess, maybe for me to understand, right now what you have there, what percentage of it is already a degraded

concrete?

MR. MANITAKOS: Right. In terms of concrete, there is about a -- I believe about a half-acre of existing in total.

BOARD MEMBER AJAMI: Out of?

MR. MANITAKOS: What's that?

BOARD MEMBER AJAMI: Half-acre out of --

MR. MANITAKOS: Out of the whole area, of about --

BOARD MEMBER AJAMI: Which is?

MR. MANITAKOS: Ten acres.

BOARD MEMBER AJAMI: Ten acres.

MR. MANITAKOS: Right.

BOARD MEMBER AJAMI: And then, so half-an-acre, out of ten acres, and now you're replacing that with --

MR. MANITAKOS: In terms of concrete --

BOARD MEMBER AJAMI: Percentage-wide.

MR. MANITAKOS: -- I think it's just about an acre. And the stream channel, in total size, increased to, what, 17 acres I think. The widened channel, and about an acre of that is concreted. There is the rock riprap that is buried under another 9 acres, or so, of the channel.

BOARD MEMBER AJAMI: Okay. And that is --

that is correct. I mean, that's your impression of it?

MR. LICHTEN: Yes. Yes.

MS. WHYTE: Yeah, those numbers are clearly identified in the --

BOARD MEMBER AJAMI: Right, yeah. Okay, that was my question.

BOARD MEMBER BATTEY: I have one.

CHAIR YOUNG: Yes.

BOARD MEMBER BATTEY: I have one quick one, I think, maybe. So, I just want to make sure I'm following this correctly, because it's quite a difference of perspective. But your position is, or the District's position is that the mitigation in the EIR is all you need to do, and that you don't need any other requirements?

MR. MANITAKOS: That's correct, and it's the same conclusion as the EIS. The mitigations are all pretty similar between the EIS and EIR.

BOARD MEMBER BATTEY: Okay. So, now additional is required?

MR. MANITAKOS: We believe no additional, yes.

BOARD MEMBER BATTEY: Okay, thank you.

CHAIR YOUNG: Are there other questions

from Board Members, right now?

All right, it is now around quarter to 2:00, on that clock. We're going to come back at 2:30. We are not going to close the room. So, if you want to stay, you can. But that's the plan. Thank you.

MR. MANITAKOS: Thank you.

CHAIR YOUNG: Thank you.

(Off the record at 1:45 p.m.)

(On the record at 2:38 p.m.)

(Board Member Ajami no longer present.)

CHAIR YOUNG: We are now going to reconvene.

I see Mr. Prows, although Mr. Xu is the next card that I have. So, you're in charge.

MR. PROWS: If we could beg the Chair's indulgence, we had three members from the community. One had to leave already, unfortunately. But we have three members of the community who like to just make a brief statement, so they can get back to San Jose, or the San Jose area, and the rest of us would continue with what we had in mind, if that's okay.

CHAIR YOUNG: We can do that. Select your own order, tell us who you are when you get up

here.

MR. PROWS: Thank you.

CHAIR YOUNG: We do like to make it as easy as possible for the members of the public to come in and share their views.

MS. LOCKE: Oh, thanks. Oh, I don't have to stand on my tippy toes? That's good, thank you.

My name is Linda Locke. I'm with the Berryessa Citizens Advisory Council. And my notes this morning -- but, so, now it's good afternoon.

I just wanted to let you know that I heard everything that you said, and we wanted to move things along quickly, now.

So, but I wanted to let you know I've lived in the Berryessa area for 51 years. I've been very active in my community, in all kinds of different ways, and in the church, also.

I know what it's like to have the creeks. We live near a creek. I've taught in the schools, near a creek, it was the Penitencia Creek. And years ago, there was usually, you know, a drip coming through. Rainy days, it would get a little fuller. But one time we had a lot of rain and it came up, went over the banks, across the road, and into our elementary school, and the homes nearby.

So, it was really astonishing and we were all just stunned that it could get that high and go. So, since then it's been all repaired and we have -- you know, the Water District did a lot of things to help us out on that.

So, I'm very aware of the need for these creeks to be well taken care of.

We did send a letter. I don't know if you received it or not, but from the Berryessa Citizens Advisory Council. And we are concerned about getting this done in a timely manner.

And the one issue, that we have another school that's nearby the Berryessa Creek. And we're also very concerned about BART coming in. It's already under construction for the past year or so, so we know there's a lot of things going on. And there's that station right there, which is on Calaveras and -- not Calaveras -- Montague and Capital. I only live around there.

And there's a BART Station in Berryessa, right on Berryessa Road. So, if one BART station was impacted, then we're also going to be impacted at the other one, and it could be very severe for all of our people going to and from work.

So, we're just really concerned about

getting this done in a timely manner, and making sure that we're all working together. Dick Santos does put it very well, I think, that we're all in this together, in the State of California. So, we'd like to show that we're trying to work with you.

Thank you very much for your time and your consideration.

CHAIR YOUNG: All right, thank you.

MR. CANEILLE: Good afternoon, my name is Frank Caneille. I'm am the President of the Berryessa Business Association. I am also a real estate broker and a homeowner.

So, I heard a lot today regarding how this project could be delayed or cause some problems in the future. And I heard a lot of going on about environmental and habitat. One thing that I've not heard, really, is it affects the homeowners in our area. How it impacts the homeowners if there is a flood that happens because the creeks are not being rejuvenated, fixed along the way, and all the problems that come up with it.

One of the things that homeowners have to have, and business owners, is flood insurance, which is a burden on the homeowners. If there is a

flood and the homeowner suffers damage, that's a burden on the homeowners and the business. The impact, the economic impact that is associated with a flood, like we're having right now in some of the areas in Morgan Hill, the homeowners are taking the brunt of all the damages being associated with this flood.

So, it's one of the things that we'd really like the Board, and everyone that's worked on this project, to take also under consideration, the homeowners that live near those creeks that will be affected.

Yes, the BART Station is a big deal and it, you know, will be an impact. It will impact our traffic. Traffic, the way it is, as some of the people already mentioned, it's very congested. If there's a flood, it will be even worse.

But again, the most important thing I would like to make a point of is how it impacts the business owners and homeowners when there's a flood in the vicinity.

And I thank you for the time that you're giving me, Madam Chair, the Board, and the staff to take this under consideration. Thank you.

CHAIR YOUNG: All right, thank you very

much for coming.

REVEREND MOORE: Hello, I am Reverend Moore, President of San Jose Silicon Valley NAACP. And like many of you, I am appointed by the Governor. I'm also appointed on the POST Commission, Peace Officer Standards and Training.

And never in my 34 and a half years have ever seen a Commission, or group of people who represent the Governor, tell me, as a community member, that they really don't have time to listen to me, or that I need to rush this thing through.

Procrastination is still a thief of time. The urgency is now, not tomorrow. The flooding could happen at any moment, any time, any day, not gauged or measured by you. And there does not seem to be any concern of the human capacity and which it's going to affect. There are human beings' lives down here that we're talking about.

We finally get the BART from Oakland to San Jose, that would offer people up here opportunities for jobs, that could flood out and also keep them from coming down there, and you seem to have no concern.

It seems that the attitude that I felt coming in here, feels as though you already had a

decision made. And the way some of you, on the Board, have talked to other people from my community, makes me see why up here, in Oakland, the politics or the radical attitude of the community is such. Because the only way that I believe that you will listen to the community, or the people that this will affect, is if we fill up this room with radicals, and threaten to tear something up or burn it up. That seems to be the politics of this area.

It hurts me that your Board or your people do not come down and interview one member of the community, and ask what the community wanted. You had no concern for what we want, only concern for what you want to do. You don't live down there. you're not going to be affected if this floods out. These aren't your people's jobs. These aren't your people's homes. These are my people. This is my community.

And I'm offended by the fact that you will not take the time to even consider how we might be able to work this plan out. You're not taking, for one minute, is there a place that we can compromise. This seems to be the politics of today.

The rhetoric, because it's this group that brought it, that you're not going to accept it, not that there's some life in it.

Take time to come in with an open mind and consider how we can work on this together, to make it work. Together, how it would best affect to save this community. How, if we change it by two feet or three feet we could move forward today. Because we want this stopped, now. We do not what the WDR as part of this plan. The community doesn't want it. And that is the question you haven't asked.

So, please, consider the human aspects this time. In Santa Clara County, we think of the community first. We think of the people and how it's going to affect it.

And I'm asking you, today, have you thought about the people's lives that you will impact by delaying this project, the cost that it might be on the overrun. The jobs that would be lost. The money that would be pulled back from this.

You have not thought about the human aspect. And you always want to learn about the cost, you come down there and buy a home, and see

how much the land is worth, and see why the prices are so high. And until you take all those into consideration, please, respectfully, my representatives from the Water District, who came down, talk to them with respect. Talk to them as their equal.

Because, like you, I serve on POST, as I said. And I have never talked to anyone that's come before us in a manner in which I saw people talked to today. Thank you.

CHAIR YOUNG: All right. Thank you, Mr. Moore.

I understand that the three of you are probably going to have to leave before we're finished with this business here. I wanted to take this opportunity to let you know, from my perspective, that I echo the comments that Mr. Kissinger made earlier, that there is every concern at this Board, and I think it actually extends to the staff, as well, to be able to provide flood control for the community, for the BART Station, for the surrounding businesses.

That is why the staff took the step earlier of doing the Water Quality Certification on a very short time frame.

That is why we have been trying to ask questions about testimony that has -- that people have given, that there may be delays.

So, I don't want you to leave thinking that we are not concerned with members of the community. I, for one, am. And we have been trying to do what -- I don't want to get myself into trouble here.

But I do want you to feel that we are very concerned about not having delays in this project. And as far as I know, the construction's underway.

And I have to leave it at that, at this point. But I do hope that you felt like you were heard.

Are there other Members of the Board -- okay. Thank you.

VICE CHAIR MCGRATH: Because I'm a civil engineer, I want to make it clear I'm a civil engineer in stream hydrology. Protection of life is my highest priority. Protection of property comes next. But we have to do that in a manner consistent with law, so that's what do here. And we ask questions to try to get to those places.

CHAIR YOUNG: You know, I have one more card from a member of the public.

MR. SANTOS: That person had to leave.

CHAIR YOUNG: He did have to leave, all right.

MR. SANTOS: What was the name?

CHAIR YOUNG: Sorry, it's on the file. Mister -- well, it's a Lauren Boyd.

(Off-mic comment.)

CHAIR YOUNG: She had to leave. All right. Okay, I was going to give her an opportunity to come up at this point. All right. Thank you.

Then I think we're going to -- sir?

MR. SANTOS: (Off-mic comment.)

CHAIR YOUNG: Thank you for coming.

I believe we now have Mr. Xu, from the Water District.

MR. XU: Yes. Yes. So, good afternoon, Board and Chair. My name is Jack Xu. I'm with the Hydrology, Hydraulics, and Geomorphology Unit at the District. So, I share a very common background as the Vice-Chair right here.

And I just want to kind of layup -- I'm going to try to keep this more brief, because I know we've all had a long day.

But the purpose of my presentation is

really to explain why we believe that the current project reach is an erosional reach, and not a degradational reach, as the Water Board staff suggest.

So, this is kind of our look at it, our take, our observations, and the data we've collected. This is what we believe. Because, we don't want to maintain the channel and dredge it all the time, it costs us money. So, we want to make sure that it's going to function and it's going to stay stable for the long term, as well. So, it's in our best interest to kind of meet in the same -- you know, we have the same goal, it's just we have different viewpoints at this point. And I just want to present our viewpoint to you guys.

So, an overview. Three main points I'm trying to make. The first is, when you go into the field, there's significant field evidence that we believe this is a degradational channel.

Second, we have historical evidence, old model data from flood insurance studies, old plans that weren't built, but you have the existing ground to go off of, that show that in current surveys, when you compare them, kind of show the

channel is degrading, and not grading, as your staff believe.

And, lastly, in the post-project conditions we did sediment modeling, sediment analysis. This is the same sediment analysis that they mentioned earlier, on the Micosol (phonetic), and Tetra Tech. And we reviewed it, and went through several iterations, and we also shared it with the Water Board staff.

And we believe that, from these results, it shows that the project will actually be very stable and have not -- a very negligible amount of aggregation or degradation.

So, first, I'm going to start with just general observations of the area. So, this is -- oh, sorry, I forgot to dim the lights. Preset one or two?

VICE CHAIR MCGRATH: Can I ask you, when you do this, to define the reaches of the channel? Because I've been able to look at the velocity for the channels and that would help me try to understand how velocity changes up and down the stream.

MR. XU: Okay. Are you interested in the existing condition or the proposed condition,

mostly?

VICE CHAIR MCGRATH: Oh, both.

MR. XU: Okay. So, this is the existing condition, obviously. And, so, we walked the channel, we walked the creek and I found a lot of evidence of field degradation.

And, so, the picture on the top right, or circled in red, you see the bank is falling into the creek. There appears to be a bench and a low-flow channel. What we believe this is, is the original channel bottom was actually the bench, and the creek has (indiscernible) to the point that it has created a second channel, low-flow channel underneath.

The evidence that, if you look at the second picture, you see that there's an outfall that's been constructed a while ago, and you provide your normal armor and your protection for erosion, for the water coming out the pipe. And you can see how that sacrete (phonetic) really has fallen several feet. And when you construct this, you wouldn't build a secrete halfway down the creek and leave the rest of it dirt. You would construct it all the way to the toe, to protect the bank.

So, that leads us to believe that the

creek has dropped several creek and, subsequently, there has been a failure in this outfall protection, where the secrete has dropped. And this location is just upstream of Montague Expressway, if you look at the figure.

VICE CHAIR MCGRATH: And what reach is that?

MR. XU: This is all the same reach. So, I don't know exactly what the --

MS. GLENDENING: Reach 4.

MR. XU: Reach 4. Okay, thank you. Thanks, Susan.

Here, so if you imagine we just looked downstream, and we turn around and we look upstream, this is the 400ish foot of concrete trap channel, that my colleague, Jim, mentioned earlier. That will be removed in the proposed project.

You can see that's a big drop where the red arrow is, several feet. And this does not appear to be a local scour hole. It appears to be a head cut that has terminated at the concrete apron, because it acts like a (indiscernible) control structure.

Moving downstream to Los Coches Street. The same kind of idea. We see on the left an

outflow that's been constructed more recently, with newer concrete. It's kind of got a whiter sheen to it. I terminates at the invert.

On the right, almost across the creek, you can see where one that was constructed further in time, ago, has dropped several feet. The same idea that the other one has fallen. Which leads us to believe that the creek has, indeed, fallen by several feet.

One of my last pictures, probably one of the most telling, is at the Los Coches Creek Street crossing. And here, you can see a very deep cut around the apron of the old bridge bottom. So, what we believed that happened is that the concrete that you see, now, used to be the bottom of an old culvert. The creek used to be that wide.

And, then, when they put the new bridge n, they kind of just abandoned the old apron. But you can see how the creek has moved around and kind of cut around it, and the old concrete is still there, visibly marking the old invert.

VICE CHAIR MCGRATH: What direction are we looking at?

MR. XU: So, in the big picture, you're looking downstream at the bridge. And the smaller

picture, you're standing right near the cut, looking upstream.

VICE CHAIR MCGRATH: So, where does Los Coches Creek come in?

MR. XU: The very downstream end of the project reach.

VICE CHAIR MCGRATH: It's the other side of the bridge?

MR. XU: It's the -- oh, sorry, Los Coches Creek comes in upstream. It adds more flow to it.

MR. LICHTEN: It's to the right of the photo?

MR. XU: Yeah, so if you can -- yeah.

VICE CHAIR MCGRATH: And the concrete pad that we see in the foreground?

MR. XU: Yeah, so that -- that is still in the creek, but we believe that to be a remnant of the old culvert that went through. So, when they improved the road, they added a free-span bridge.

VICE CHAIR MCGRATH: But the large thing in the foreground, on this --

MR. XU: Oh, the very large. That's collapsed debris, erosion. You're talking about this stuff, right?

VICE CHAIR MCGRATH: No, no, in the larger

picture.

MR. XU: So, this -- this whole thing?

VICE CHAIR MCGRATH: Yeah.

MR. XU: That's the bottom of the concrete apron we believe to be the old channel invert going through Los Coches Street, before the bridge was turned into a clear span. Or, not a clear span. But it used to be a trapezoid kind of shape, very standard. You know, you throw a culvert in there. And, now, they've improved the bridge and made it wider.

VICE CHAIR MCGRATH: But you don't have any as-builts to kind of confirm that?

MR. XU: We do not. So, I guess this -- we can touch on what Setenay had talked about earlier.

One of our project managers, she incorrectly sent a design drawing. They're not as-builts. As-builts have a stamp from the resident engineer, signed and dated. These are not signed and dated by a resident engineer, they're signed and dated by a design engineer.

By looking through the plans, we do not believe this was ever built. There's a lot of evidence that, you know, if it was built, the stuff

would still be in the creek. It had, this design plan had large, three-foot drop structures, and massive amounts of concrete. You know, we just don't see any of that.

And for it to move from what was designed, but never built, to its current condition, is almost naturally infeasible. Where the creek would be a grading, but from the banks, not from the streambed. So, that's what leads us to believe that this was never built. And we could never find any as-built plans.

And when we consulted with our records staff, they had no idea of this ever being like a bid project.

So, going back to historical data, here's a few longitudinal profiles. The purple one, you can probably ignore. That's just in there. I don't know the datum for that. It was never explicitly established, so it's just kind of -- I plotted it, just to see where it would land. So, you can probably ignore that. But that's from some of the design plans that we dug up, that were never built.

The red line is the HEC 2 Hydraulic model flood insurance, done in the 70s. So, we consider

that to be pretty accurate. The datum was indeed in the model, in the metadata, so we know it's NGBE-29, so we can correlate it.

The blue line is the existing conditions profile that was surveyed before the project. And the green line is the proposed project invert.

So, you can see that in the middle of the project reach it's been pretty stable. But at the upstream and downstream area, it's degraded considerably, which is evidenced by the field observations at the upstream Montague area, and the downstream, Los Coches area.

VICE CHAIR MCGRATH: So, the downstream reach would be Reach 1, and then it would be Reach 1, 2, 3, 4, going upstream. Is that correct?

MR. XU: I believe so. Is that accurate? Okay, yeah.

VICE CHAIR MCGRATH: And the profile would be flat in Reach 1, which kind of makes sense given that the Reach 1 projected velocities are diminished from about 11 to about 6. And upstream, they're all about the same. Does that match your understanding?

MR. XU: Are you talking about the proposed conditions model?

VICE CHAIR MCGRATH: Yeah.

MR. XU: Okay. I believe so. I mean, you're also talking about the 100-year event, right?

VICE CHAIR MCGRATH: Yeah.

MR. XU: Okay.

VICE CHAIR MCGRATH: They're pretty rapid. But I guess the question that I would have in here, too, in terms of the developing recovery of the channel, which you're arguing for, what are the low-flow velocities? Because that's going to define how much sediment's going to move around --

MR. XU: Sure. Okay, yeah.

VICE CHAIR MCGRATH: -- and how rapidly.

MR. XU: How quick, yeah. Like, you would expect a 100-year flood to have a bunch of velocity. That's what happens, right?

VICE CHAIR MCGRATH: Yeah.

MR. XU: You expect to lose beds, you expect for some --

VICE CHAIR MCGRATH: Sometimes, 10-year floods are awful close to the same level.

MR. XU: Right. But we want to look at this longest, yeah. I believe an indication of those velocities are much lower, as you'd expect.

I don't have the numbers right in front of me. But I'm sure we can get them for you, if you're interested.

VICE CHAIR MCGRATH: I do think it's integral to your point that the channel will recover quickly.

MR. XU: Yeah, uh-hum. So, I think the -- if I can go back to this one, I guess, to talk about the channel, the Provost (phonetic) channel, in general.

So, as you can see here, the channel's already starting to create a bank full. It's depositing sediment here. So, we have a good idea of what the bank full section is going to look like, after we built a channel. Obviously, this is much -- if this is the real bank full width, I think it's about 12, 15 feet wide, maybe a couple of feet deep. If that's true, in our proposed cross-section, because it's much wider to carry the proposed conveyance, the creek will either, theoretically, if you cover it with four inches of soil, kind of cut into that four inches of soil and kind of build around that, or it will deposit a little more and create the bench afterwards. Depending on which way, you know, it swings, if

it's aggradational or degradational in certain areas.

And I believe that as the sediment gets fed into the system, it's going to eventually, the riprap will be clogged with cobbles, and small gravel that comes from upstream, whatever makes it through the debris basin. And everything else will be just fines, locally.

And these creeks tend to get pretty turbid during storms, so I don't think there's a lack of fine sediment. And I think your staff would agree that there's a lot of sediment that comes in.

So, I don't think there's any danger of it ever losing the bottom because it would just constantly replenish itself. It may erode, you know, in a 100-year storm, a 10-year storm, bigger events. But we believe that there's enough sediment coming in that it will, you know, keep enough depth to establish new vegetation growth after extreme events.

So, here is just another plot. These are cross-sections. The same color coding. So, blue is the current condition. Red is the old, 1970 HEC 2 model, which you have pretty good confidence in. And the green is a 90-percent design. And, then,

in one of them, we have a 1955, maybe, possibly accurate drawing of a ditch.

So, did my best to overlay them. But you can see there's a general trend of degradation.

And, especially, in the Los Coches, you can see what I mean when I say -- if you remember that picture, earlier, there's a small bench in the blue line, in the existing channel. And if you look at the red, from the 70s, you can tell that this bench is an artifact of the galwag (phonetic) of the old channel.

So, that you can see if it started like red, and then it kind of dug in here, and then the bank collapsed a little bit here, you get kind of this shape.

Right, well, this is going from a green to a red shape which is -- or a green to a blue shape, which means it would have build somehow -- the channel would have to build somehow on the banks, instead of, you know, building from an ingreat, which I don't think there's a natural example of that ever happening.

VICE CHAIR MCGRATH: But this seems to suggest that you've excavated about three feet what may or may not currently -- an equilibrium channel.

MR. XU: Right, yeah. So, we believe it to be degradational. So, if we increase the trough sectional area, and we're going to reduce stress, we're going to incur deposition from a degradational state. So, we're moving towards a more stable channel.

And, then, as I move forward, the next I'll talk about -- so, we want to know how far. Did we go too far? Did we move the creek too much toward a depositional scenario, where we're going to start having to incur maintenance? And that's where we performed the Proposed Condition Sediment Study to make sure that, hey, we didn't go too far to the other side. We actually kind of met somewhere close to the middle. And, you know, we can live with, you know, a foot of deposition or a foot of erosion. Because, you know, you're not always 100 percent sure of how accurate sediment studies are.

So, the proposed project, like I said, widens and it reduced your stresses. So, when we do that, we did the Sediment Model. So, here's just -- we just did one 10-year event, first. And, then, so the black line is the proposed and the red line is the after-storm invert.

This was run in HGC RADS, using their Act 6 routine.

So, you can see at the culverts, not surprisingly, where flow velocities drop out, you get little build ups of sediment. At the very end, you get a little bit of erosion.

And as we moved forward, we also did five, back-to-back 10-year events, which are more indicative of channel forming discharge. And we see kind of the same places had the same problems. The culvert gets a little bit of sediment. Los Coches gets a little sediment and a little more erosion. And that's expected after that many big events, we expect to see some large deposits.

You know, say another two-year storm comes along, you know, it might wash all that stuff out.

But for the most part, in the channel overall, the invert doesn't change too much. And that's what gives us confidence that, yes, this channel is in -- will not aggrade in its state.

VICE CHAIR MCGRATH: So, back to that for a second.

MR. XU: Sure.

VICE CHAIR MCGRATH: Because you've got -- I'm not quite understanding the left side of it.

You've got some aggradation, and that matches the flattening of the slope, and the lower velocities.

But then you've got Los Coches coming in, and I don't know what the cue on that is. And, then, you've got channel degradation, but it looks like you've got a mathematical problem in your model there, actually, is what it looks like.

MR. XU: And, yeah --

VICE CHAIR MCGRATH: If it's not at all smoothed.

MR. XU: Well, the --

VICE CHAIR MCGRATH: And what's causing that? Is that -- I mean, that could be bridge abutment.

MR. XU: Yeah, it could be the sediment sizing on the bed. It could be the change in velocity. Maybe after Los Coches there might be a design change for the channel because, you know, it gets higher velocities. Maybe the roughness changes or the vegetation design changed. I can't 100 percent tell you what it is without, you know, actually looking at it and doing analysis.

But those are possibilities. It could be an artifact of the downstream boundary condition, as well.

VICE CHAIR MCGRATH: Okay.

MR. XU: So, a lot of possibilities. Sorry, no answers for you.

So, our conclusion, then, is that we believe the data, you know, in the field. We'll go out there and it looks like degradational. We looked at historical plans and it all points to a degradational state.

So, if we wind in the proposed project, it should stabilize the channel. And, then, furthermore, our sediment modeling shows that, you know, we don't believe there's going to be any significant degradation, aggradation, either way, in the proposed conditions. Which gives us confidence to move forward with this. And that the, you know, proposed habitat that Jim mentioned will all probably take hold, and look like what you guys saw in the Lower Silver Creek Project.

So, any questions, any further questions? Thank you.

VICE CHAIR MCGRATH: That was quite helpful. Yeah, thank you.

MS. WHYTE: Can I make a comment? I just wanted to add and just clarify that the disagreement between whether the channel is

erosional or aggrading, essentially relates to the mitigation that would be necessary as part of any maintenance down the road, which is not as much of a critical question, now. It's the risk that the District has claimed they're willing to take in terms of what mitigation may be required, based on their certainty in their modeling.

I think what's more critical, at least from my perspective, is taking that information and considering it erosional, and then talking about how natural processes will create a viable, low-flow channel, that will sustain water and provide function and value during the dry season. And that, to me, was not answered as part of this presentation. And it's the question that I keep coming back to, in my mind.

I'll also note that the previous speaker, from the District, showed the example of the Lower Silver Creek there. Well, that is not a section, best of my understanding, in which the bottom of the channel was riprapped. So, you did see somewhat of a low-flow channel, and you saw some complex geomorphology within that. You did see some rock in the sidewalls that was coming in, that was vegetated.

But here, you know, the concern that we've continued to express is the bottom of the channel. And, so, if it's erosional, and you're protecting the bottom from eroding, then forming the low-flow channel and how that's going to work is one of the issues of concern that we're reaching out for, within the mitigation that we'd like to see happen because of those impacts.

VICE CHAIR MCGRATH: I think I recognized most of that. But I guess there's two questions that I have for you, recognizing, as probably you do, that relative accuracy of sediment movement modeling, is the weakest part of our hydrologic package.

MR. XU: Of course, right. Yeah.

VICE CHAIR MCGRATH: You know, that was the first lesson from Dr. Shen.

But the -- so, do you have any hydrographs for that stream? I mean, that goes back, that kind of gives us what a typical channel forming flow might be?

MR. XU: Uh-hum, yeah, we could -- I can speak to that. So, the Corps had a sediment inflow curve. They had some data points for a sediment input load.

VICE CHAIR MCGRATH: No, I'm looking for hydrographs.

MR. XU: Oh, you want sort of -- yeah, we have a stream gauge at Calaveras. It missed the 80s and the 90s, so the really wet years. But we got data from about the 70s to the early 80s, and we started the gauge up, again, in the early 2000s. So, we have enough data to, you know, do a flood frequency analysis curve, and come with a bankful discharge. And, also, with the field visits, we can kind of correlate that.

VICE CHAIR MCGRATH: Okay. Another issue that lies in a debate between our staff and your staff, on a technical basis, is what this will do to whether or not there's water in the stream. Which is, I think, critical.

And that, I think, both to the hydrograph and whether or not the source of the water in the channel, in the summer, is groundwater slowly seeping, or it's runoff. Do you have a take on that or any data on that?

MR. XU: So, these pictures that I took, they were in June. It was bone dry. The only little bit of water is from the Alhambra Plant, that has industrial discharge pools.

But in the winter geese and, you know, like you saw, they come in there. So, it definitely doesn't flow all the time.

So, I don't know if that changes any of the concerns that, you know, you would have on having it being able to flow continuously.

I also wanted to touch on your concerns on possibly, you know, if everything just eroded away and there's riprap left, right. From the bankful channel, that we believe will form, so this kind of small channel. If you can imagine, this will be there, that's four inches of dirt, and this will end up being, you know, whatever comes down from the hills. It will end up depositing and veg will grow there naturally.

And because it will be riprap, and not a flat channel, it will collect stuff, right. If the gravel comes down, it will lodge in between, and it will just get moved, generally, with the process. We'll never get something like a flat, you know, just pure riprap. Right? You can't -- things will get caught in it, right. Things will grow randomly. And there's probably trash that comes down here, too. So, it won't be completely bare riprap, I don't think ever, with the sediment load

and input that you'll get, and just the nature of the matrix of the rock.

BOARD MEMBER BATTEY: Can I just ask?

MR. XU: Uh-hum.

BOARD MEMBER BATTEY: So, to me, this question of does it flow year-round, or not, is sort of an important one. And, so, I just wanted to hear from staff on -- do you have a different perspective on that, based on the presentation you gave. I'd love to hear both sides of it.

MS. GLENDENING: All the documents I've seen, for the project, say there's perennial flow, at least up to the Piedmont Creek Tributary. And that flow is attributed to what they're saying is the excess groundwater, pumped groundwater from an Alhambra Water Plant, just upstream of the tributary mouth. Also --

BOARD MEMBER BATTEY: So, that includes this reach?

MS. GLENDENING: In this project, there will be a concrete culvert to direct flow from the Piedmont Creek Tributary into Berryessa Creek. So, just the very bottom 60 feet, or so, of Piedmont Creek is part of the project. In addition to a rail crossing, that crosses over Piedmont Creek.

So, that will also have the riprap treatment, from the rail crossing down to the tributary mouth in Piedmont Creek.

MS. WHYTE: I think she's asking about our observations for existing conditions during the dry season.

MS. GLENDENING: Right, so our -- I've been there at least five times, and there's been in that area down -- from Piedmont Creek, downstream to Calaveras Boulevard, the downstream boundary, including additional area upstream of Piedmont Creek, up to about Ames -- upstream of the Ames Bridge crossing. So, I estimated about one-third of the creek has been wet, every time I've been there during the dry season.

BOARD MEMBER BATTEY: In this section?

MS. GLENDENING: Yes.

BOARD MEMBER BATTEY: Okay.

MS. GLENDENING: In addition, I've observed wet, or muddy, you know, moisture in the creek in an inspection in May 2015. And, you know, that's not necessarily dry season, but it was during the drought.

MR. FERNANDEZ: And just to add a little bit onto that. The EIR, itself, identified impacts

to warm water fish, namely mosquito fish and California roach. But they dismissed them as less than significant because they were not rare and endangered species, and they can move somewhere else in the watershed.

But that doesn't mean that it wouldn't take away the beneficial use during a portion of the year, which we consider significant.

BOARD MEMBER BATTEY: And can I just get clarity on this. Is the bottom riprapped or is it not riprapped?

MR. XU: I believe the design has riprap, with covering of soil.

BOARD MEMBER BATTEY: Right, four inches of soil.

MR. MANITAKOS: And, actually, choked riprap. They're going to push the soil down into the void, so the riprap, and then compact, push the soil -- put a layer of soil and compact it.

And I think I can add to Susan's observations. Yeah, from somewhat above Piedmont Creek, if you see where Yosemite Drive is there, form there down pretty much there's water there all year.

From Yosemite to past Montague, up to the

-- actually, almost to 680, that's generally dry during the dry season. That completely dries up.

And, then, right at 680 it tends to get wet, again.

BOARD MEMBER BATTEY: Right. And if I followed your earlier presentation, you expect those same conditions to result after construction. After you're done, you're going to have wet where it was wet and you're going to have dry where it was dry?

MR. MANITAKOS: Right. No, we expect the same hydrology with -- yeah, the same water is flowing through. It appears that it really -- that section between like Yosemite and up above Montague, that area appears to infiltrate very well. I don't think adding the riprap will change that. I think it will still infiltrate and it will dry up.

It doesn't -- based on our geotechnical, it doesn't -- the groundwater table is well below bed level there. As you get down lower, groundwater rises. And by the time you're down to Calaveras, groundwater's almost to the creek bed level. So, we think that in addition to the bottling plant, which is right at the Piedmont

confluence, which puts out water every day, they're always discharging there. They bottle it in a very large, deep, groundwater well. And, then, the excess water they discharge into the --

CHAIR YOUNG: All right. I have two more --

MR. MANITAKOS: It keeps that area wet.

CHAIR YOUNG: I have two more cards. And there is Rita Chan, Assistant District Counsel.

MS. CHAN: Yes, good afternoon. My name is Rita Chan and I took the oath, earlier. I'm legal counsel to the Water District. And present, today, also is the outside counsel, Peter Prows, in case there's other questions.

I'm going to try to keep it short although, you know, I would have to try to address some of the questions or issues brought up by some of the Board Members, which I heard. And maybe our response might not be entirely satisfactory, or at least I want to provide some clarification of those issues.

I heard earlier that one of the Board Members want to hear more about how the NEPA/CEQA process work into this design.

I heard from one of the Board Members that

you wanted the issue to be framed. And I agree, totally. Because I think, at the end of the day, we need to talk about what, actually, is the contention here.

I also heard a lot of discussions about the certainty of whether there will be more, or less sedimentation removal. And I will kind of talk about a little bit, just so, you know -- but with the issue framed, you understand why I think that discussion might not be as important as we think today.

But before we go on, I do have a list of talking points, but I don't want to forget a couple things I want to mention. So, earlier, I heard that the Board is going to exclude the letter that the District sent. Well, actually, we sent two letters. One, a few days ago, asking for a delay.

And, then, we did send a letter yesterday, and before 5:00 p.m., providing more comments to the staff's responses to comments.

It is certainly not the Water District intention to surprise the Board or Board staff. And the reason that we sent the letter so late is because it took that much time to go through close to 100 pages of single-side responses.

Now, the District has submitted a number of comments, lengthy comments in the last few months. One in September, one in November. Commenting on staff's proposed -- in the Revised Tentative Order. And we have asked staff, Regional Board staff to share with us their responses to comments, you know, and give us enough time to prepare for the public hearing.

And, you know, our position is, from a due process stand point, and under the provision of the Administrative Procedural Act, we, as a party, should be given a little bit more time than the general public, you know, the typical seven days. And here, we're given four business days, because we didn't see the responses to comments.

And we understand that Regional Board staff is working feverishly. They're trying to, you know, get them done. But we were told, you know, a while ago, that they were working on the comments, that they needed to do some recategorization and reorganization to make it easier for the public, and we understand that. And just we're at -- but that's the reason that we had to send the letter so late.

And another reason is because there are

some new issues, and theories, that were raised in staff's responses to comments, that we believe relate to, and we ought to respond to. And that's part of, you know, the preservation of the records.

So, we respectfully request that, you know, the Regional Board reconsider that position and admit that letter into the record.

Otherwise, my secondary request would be just to ask the outside counsel to summarize what we said in the letter, because it is important that, you know, there are some new issues raised, and we were given four days.

And you mentioned, earlier, that you planned to hear all the evidence that's relevant to the matter, and this is clearly relevant to the matter. So, that's my first point.

CHAIR YOUNG: I'm not going to change my ruling, for the reasons I stated earlier. You are not the only parties to this matter. There are many other interested parties, some of whom were not even able to come today.

It is not fair for you to send a letter the night before the hearing and expect it to be part of the record. That's really outside of the bounds of normal procedure.

You folks have been testifying, pretty much here, since about noon. I would hope that the contents of your letter would actually already have been part of your testimony.

Mr. Prows is welcome to get up and summarize those points, in front of the Board. We've, you know, gone this far, we're not going to cut him off, now.

But I'm surprised that you are surprised, let's just put it that way. So, continue. Continue, please, with your testimony.

MS. CHAN: And, then, I think to the extent, you know, he's going to summarize, he's going to try his best to summarize the points that was not previously mentioned during the earlier testimony. So, hopefully, that will save the Board some time.

So, another point that has not been raised, but it has raised in our comments several times, was the idea, the notion that if the Regional Board adopts this order, it should be mindful that the State could very well be responsible for the cost required to comply with the condition, including the mitigation.

Because the Constitution requires that the

State reimburse local agency for the cost of State law mandates. And there's a recent Supreme Court decision, and it involved the Regional Board's issuance of a Stormwater Permit to local water agencies. And in that case the Board -- I mean, the Court held that those conditions in the Stormwater Permit are clearly State mandates, and not Federal mandates, so that exception does not apply.

Here, you know, it's pretty obvious to us that, you know, the requirements of State mandates, because it appeared over, again, in the Tentative Order that the impacts associated with what they call Waters of the State, which is a concept under State law, under the Porter-Cologne Act.

In the response to comments, which is what we just saw about four days ago, Regional Board staff invoked an exception to this reimbursement requirement. And this exception says, when the local agency has the authority to levy fees or assessment sufficient to pay for the cost, there's no, really, analysis in the response other than invoking that exception.

And we would just like to clarify that the District does not have the authority to levy new

fees and assessment unilaterally, without going through some kind of voter approval process, which is part of the Prop. 218.

Given that, you know, we talked about the $20 million project. I can't speak to it, you know, but I know there's a lot of discussion about the cost. But providing a restoration project on 20 acres of land is certainly not the type of cost that the District could easily just get our hands on, without going through some sort of process. So, I just want to at least make that point clear. Because it's in our response to comments, it's -- not response. The letter that we sent, yesterday.

So, let's try to frame the issue. So, I know there was a lot of discussion that talked about sedimentation. At the end of the day, we talked about a 20-acre mitigation. Where does that come from? Where does that requirement come from, based on our review of the order?

Here's what the calculation came about. In the District EIR, we concluded that there are about 4.18 acres of Waters of the U.S., which is also Waters of the State, as you know. And there is also some vegetation area, and I forgot what it is, about .5 acres. So, we add that amount and we

said construction would be to impact on this 5 acre of non-native grassland and habitat.

At the end of the project, the project's going to create more than 5 acre of habitat because we're going to have a wider channel, because we're going to hydro seed. And, also, our science told us that within one to two years, the vegetation is going to be regenerated.

I know this is a disputed issue, but that's what the EIR concluded. And that's it.

And we concluded that as far as impact on this Waters of the State and Waters of the U.S. there's a less than significant impact. Because, as I mentioned, there will be more than 5 acre at the end, after two years, so one to two years.

In the Order, Regional Board staff stated that 4.18 acres of Waters of U.S., and we agree that that's also Waters of the State. But Regional Board staff also added a 5.93, close to 6 acres of area as part of the Waters of the State. And this 5.93, and I might have misquote the figure, about that number, is area about the order in high watermark, through the top of the bank.

Now, I, you know, it just doesn't seem reasonable for us to count all the area of high

watermarks, to the top of the bank as Waters of the State. So, they add these two numbers together, 4.18 plus 5.93, whatever that number is. And, now, I saw from the Supplemental is that the summation of that number is like 9.81. And they multiplied that by 2, because they wanted a 2-to-1 ratio.

And the reason being, as we were told, that, you know, they were uncertain as to how fast the vegetation will be regenerated, the (indiscernible) -- of the habitat. So, they wanted, you know, it's quite typical, 2-to-1. So, that probably come up with close to 20 acre of mitigation. And that's the issue that we have the most problem with. Because the District fundamentally disagree with that analysis.

First, the actual acreage of impact and, you know, we also might have some question about a 2-to-1 ratio, too. But I know our EIR concluded that the impacts to Waters of the State is less than significant.

So, that's the issue that we are putting before you, with the hope that you could consider and, you know, discuss.

Now, earlier, there's some discussion about the CEQA guidelines allowing a responsible

agency to come in at a later time to add more mitigation requirements, pursuant to 15096, of the CEQA guidelines. Which is the provision that responsible agency should follow.

We, respectfully, disagree how 15096 should be interpreted. There are three sections in 15096 that need to be read together.

So, first, 15096(f), I believe, is said that, “Responsible agencies must consider” -- “In making a decision whether to approve a project, the responsible agency must consider the impacts as identified in the EIR.”

Okay. So, in our EIR, the impacts, whether it’s about diversity or, you know, diminished flow, we did not identify that as a significant impacts. So, that’s 15096(f).

And, then, 15096(g)(2) says, you know, and that’s what Ms. Austin, you know, alluded to, does say, “The responsible agency may” -- “should not approve a project where they could identify feasible alternatives, or mitigation measures that would substantially reduce the significant impacts.”

So, here, our argument is that there’s no significant impacts identified in the EIR. So,

responsible agency review and also the formulation of alternatives and mitigation measures are limited to what's identified in the EIR.

Most importantly, we have 15096(e), which cited a few options for responsible agency to take, if they -- if a responsible agency disagree with what a lead agency concluded.

So, a responsible agency's not required to rely on a lead agency's EIR to make a decision or to approve a project.

Here are the few options. One, which is the worst option, from most people's perspective, is to sue the lead agency within 30 days after the NRD was filed. No one wants to do that. I mean, we want to work together, right.

The second option is for the responsible agency to take on the lead agency role, but this action may only be taken if it's allowed at all, under 15052. 15052 allows the responsible agency to take on the lead agency role only if, one, the lead agency did not consult the responsible agency in the first place. And by the time the responsible agency found out that, oh, there's this document out there and I don't agree, and that 30 days statute of limitations is passed, then the

responsible agency can't take on the lead agency role.

The third option. The responsible agency may prepare a subsequent EIR. But you can only do that if 15162 circumstances exist. And what 15162 is that, once EIR certification is done, if there are new significant impacts, or substantially worse significant impacts. Meaning that impacts have already been identified in the EIR, but the agency, the responsible agency believes that because of changes to the project they're substantially worse, then they can prepare the subsequent EIR.

And if you don't take one of these options, the issues are considered waived.

So, if you read those three sections together, and I think most CEQA practitioners interpret it that way then, you know, really, I think it's too late to bring up those issues.

Not to mention, I mean this is a point that I want to make, but we do -- it's not just about timing. We do disagree, fundamentally, you know, with the impact analysis.

So, that's the item. Which brings me to the point that we've brought in several of our comment letter. And that is, if the Regional Board

is going to adopt the -- and that's exactly what I -- there's one potential option that the Regional Board can consider and that is to basically call a new significant impact or substantially worse significant impact, that responsible to prepare a CEQA subsequent document, in this case it would be a subsequent EIR does not fall with the District. It falls with the Regional Board.

So, these are some of the points. But, I mean, you know, I think we provided a lot, you know, of comments. But, I mean, the key that I really wanted to talk about is just that nexus between the impacts and mitigation. We just don't see the nexus.

And, you know, I think we had a lot of -- we've heard a lot of discussion about, you know, existing and potential, and beneficial use. But we believe that the law requires mitigation of impacts that has to be roughly proportional to the impact cost of the project.

So, even though we're looking at existing or potential beneficial use, it has to be an impact by the project. How does a project make an existing or potential beneficial use worse? Otherwise, you know, you might have a

Constitutionality issue under the long line of Nolan (phonetic) and, you know, Nolan cases.

So, you know, I want -- I mean, these are most of my main points. And I wanted to just leave it at that. And if you guys have any questions, I mean, I'm open to answer those questions.

And I have Peter here who's, you know, going to do it very quickly, summarize the points that I have not yet made and I missed, and in response to some of the new issues and new theories raised in the responses to comments, that we received about last Wednesday, at 4:15 p.m.

CHAIR YOUNG: Well, I'm going to suggest that we go ahead and hear from Mr. Prows, and then we'll do questions for both attorneys at the same time.

MR. PROWS: Thank you, again, Board Members. Just a couple quick points. I won't reiterate the points that have been made by others, I hope.

The letter that we submitted and the points that I want to focus on are responding to responses that were made to comments that we submitted months ago, and that we've been asking for responses for, for a long time. And have been

kind of sandbagged here in the last week with staff's -- I guess they've been thinking about this a while, but only sharing their views about a lot of the key legal issues, as well as all of the environmental impacts.

When the initial draft orders came in, there was no brief, there was no explanation, there was no science behind it. And we've been criticized by some of you for not providing data to you in advance of this hearing. That's primarily because we never saw staff's analysis of the environmental impacts until last Wednesday, very close to the end of business. So, that was unfortunate.

But on the question of who's going to be responsible for the reimbursement or the payment of the costs of the mitigation requirement, in this order, as Rita said, it's our view that it's going to be the State that's going to be on the hook for that. And that's Article 13-B, I believe, Section 6, of the California Constitution, which the California Supreme Court interpreted last summer, to apply to decisions by the Regional Board to local agencies.

One of the other exceptions that staff

invoked, Rita already mentioned the exception if the local agency has the ability to raise taxes, or assessments, or fees to pay for it, which the District does not have that ability. So, that exception does not apply.

The other exception that staff noted is if the mandate is not unique to local governments. The Supreme Court has interpreted that exception very narrowly. We don't think this is a project that complies with that. This order, and its conditions, would be directed to the District, not to the general public, and only arise from a Government-sponsored flood control project that would not be taken by the general public. So, that exception does not apply, in our view, either.

The District staff cited a 9th Circuit case for their view that they now have the authority to rescind and reissue a 401 Certification. But that case does not say that you have the authority rescind and reissue a Section 401 Certification with new conditions, when circumstances have not changed, this much time has passed, and construction has already been done. This case doesn't say anything like that.

There was a lot of discussion about the

language in the Section 401 Certification that referenced the -- that said, effectively, that the Regional Board would be considering waste discharge requirements for construction impacts.

Now, we were not a party to that Section 401 Certification, so, respectfully, we did not accept the benefits of that because it wasn't our permit.

But it's been our view all along that mitigation is not required. And that if the Board were to consider waste discharge requirements, that it should reject them. That 401 Cert was not made subject to or conditioned upon the issuance of subsequent waste discharge requirements that contained mitigation for the capital project impacts.

It was asking you to make a discretionary decision, one way or another. We've been urging, in our letters, that you reject this proposal and we continue to do so. You can consider it all you like, but our recommendation is that you reject it.

There are a couple of new papers cited in the staff's -- their main comment about environmental impacts is a response to C-13-A. Most of that was new to us, again.

They cite a paper by Sudduth and Meyer, for the proposition that bioengineered stream banks adversely affect species biomass. I read the paper, it doesn't really say that.

What it does say is that bank stabilization projects can have positive effects on bank habitat and macro invertebrate communities in urban streams. That's exactly what this is. I don't think that paper helps the staff.

They also state that the project has the "potential" to adversely affect water quality through a loss of nutrient cycling. And we've had a lot of discussion about the dry season flows here.

But in support of staff's analysis, they cite a 2005 EPA report. That report, what it actually said, is that projects that reestablish geomorphic stability in streams may promote conditions for de-nitrification, if they control erosion. So, that's some of the reason why we wanted to have some discussion about sedimentation here, because we do think this project controls erosion by bringing this from a degradational channel, to a channel that's more in equilibrium. Which I think addresses staff's concerns there.

There's a Water Code issue. The Water Code gives you authority to regulate discharges -- or to regulate discharges of waste into Waters of the State. It's our contention that this is -- well, this project is not discharging waste. This is building a flood control project.

So, our position has been this is not a waste discharge over which you have authority.

Staff's response, last week, was that you have authority -- they didn't actually take issue with our contention that this is not waste. What they said was that they have authority to regulate dischargers of dredge and fill materials with WDRs.

We disagree. Water Code Section 13372(b) gives you that authority only once the State has an approved permit program under Section 404. California does not. You do not have authority regulate dischargers of dredged or fill material that are not also waste. This is not a waste discharge in this project. You don't have authority.

We'd raised an argument in earlier letters that Water Code Sections 13263(a) and 13241 require you, in considering and issuing waste discharge requirements, to consider regional factors. Such

as economic impacts and housing impacts.

Staff's response to that was that they, "Have considered all cost data considered by the Corps and District."

But it's not the District's job to submit regional impacts to you. It's your job to affirmatively consider those factors, whenever you issue a WDR. You haven't done it. This order doesn't do it.

A couple of other smaller points. The responses to comments site numerous, earlier, Regional Board decisions as precedent for what they are suggesting you do here today.

But the Administrative Procedure Act prohibits reliance on prior decisions, administrative decisions, except when those decisions have been designated and indexed as precedential.

That's Government Code 11425.10(a)(7). Those earlier decisions that are cited in staff's responses to comments have not been designated and indexed as precedential, so they can't be relied upon by you, now, as precedent. That's actually my last point.

The last -- we've contended that we didn't

ask for this waste discharge requirement. We didn't apply for a permit from you. One is proposed to be imposed upon us. That feels like an enforcement action, to us, and maybe that's why we have our backs up a little bit.

We'd argued that there's a Constitutional and Administrative Procedure Act requirement to separate your prosecutorial from your advisory functions.

The response we got back was this isn't an enforcement action, so we aren't going to be separating functions.

We think this is an enforcement action. You were required to separate functions, and you should have done so. We should be sitting up there, as any other party is.

If there are any questions, I'm happy to field them. Thank you.

CHAIR YOUNG: All right, we will be taking questions for both Ms. Chan and Mr. Prows.

BOARD MEMBER KISSINGER: So, if you're confident that what we're doing, or what's on the table for us to do is State imposed, and under the recent Supreme Court decision going to be the financial costs are going to be borne by the State,

why are you here, arguing about this? I mean, it's not going to come out of your pocket, it's going to come out of our pocket.

MR. PROWS: Well, I guess I would throw that back and you and say what we've told you is, if you make this a mitigation condition, we have ways to -- I mean, if you make it a mitigation condition, we lose some of the ways we have to pay for it. So, we're going to be going to the State for reimbursement. I'm sure that's not going to make the Governor or the Legislature happy.

Obviously, staff disagrees with our analysis, or at least their responses to comments indicate they would contest that.

So, I mean, if they were conceding that the State were on the hook for this, maybe we'd not have such a problem with it. But we're going to have a -- if you go through with this, you know --

BOARD MEMBER KISSINGER: But the reverse is true. If you're confident in your argument, you have no reason to be making -- to be here today, right?

MR. PROWS: Well, I am confident in the argument, but I think it's important to be here today. I think it's important for you, also, to

understand the implications of what you're doing.

BOARD MEMBER KISSINGER: We've been duly cautioned, I appreciate it.

MR. PROWS: Good.

BOARD MEMBER KISSINGER: Let me ask you a different -- and I don't mean to be glib about it, because I recognize that there are real costs we're talking about here, in a time of scarcity. So, I don't mean to be glib about it.

We started this hearing talking about importance of getting this job done, getting the certification done so the construction could begin. And I haven't heard anyone argue back from the District, or from the Corps, that the Board was anything but clear that there would be, under consideration, waste discharge requirements that would be imposed not just on the Corps, but on the District. And it was in the letter that was the 401 Certification. So, that, I think, is uncontested.

What I hear in various arguments that you folks have put forward, and I take my hat off to you, you put it forward very skillfully, is that -- if I understand the District's position correctly, not only should we -- were we not entitled to

include waste discharge requirements or conditions in the 401 Certification, but the only time and the only way by which any mitigation could have been ordered would have been through the CEQA process. And if we had done it through the CEQA process, we would have had to take extraordinary actions, essentially pushing you aside as a lead agency and doing our own CEQA process. That's what I hear you saying.

MR. PROWS: That's the --

BOARD MEMBER KISSINGER: But I just want to finish the point. If we had done those things, construction would not have commenced on this project, right?

MS. CHAN: No. Well, and typically, how it works, or ideally how it works within the regulatory and CEQA framework is this. The lead agency would, you know, give the draft document or the public for review, and including all the responsible agencies. And during that process, the responsible agencies will come back and say, well, wait a minute, I don't think this is good enough, you know. And you can do it through the public review process. And sometimes we do engage with responsible agencies, regulatory agencies, like an

actual meeting and say, hey, tell us more about what you want to see.

In my experience, in the last, like, 13 years practicing CEQA, what we usually see is if the responsible agency and the lead agency agree that there is a significant impact to be mitigated, we try to -- or the lead agency try to write the mitigation measure as specific as possible, but also allow some flexibility for this later, you know -- so a lot of time, just to give you an example, when a mitigation measure, so say something like, you know, the lead agency will restore the habitat at a ratio minimum 2-to-1. So, you know, that allows the responsible agency, at a later time, to kind of go above. And sometimes we put a range, because that also protect the lead agency from -- but that's the place where it's better to go through that process and get some kind of agreement on what it should or should not be.

You know, at a later time, then we run into the CEQA issue. You know, like have the issue been waived? And in this case we said, yeah, it has, you know.

BOARD MEMBER KISSINGER: Okay, so let me stop you for a second. I want to make sure I

understand what you just said. What I heard you say is if there had been that kind of engagement in the CEQA process, we wouldn't be arguing about whether mitigation would be required, we'd only be arguing about how much mitigation. That the District was prepared to do mitigation then, but not now. Is that what I hear you saying?

MS. CHAN: Well, close, but not exactly. So, when I discuss about this process, the two agencies may or may not agree, right. At the end, it's the lead agency's conclusion, when they certify the EIR whether to -- just a scenario, the lead agency might put in the mitigation metric 2-to-1. And, then, the responsible agency, at a later time say, no, I want 3-to-1. Then the same thing, you run into the same issue.

BOARD MEMBER KISSINGER: But I've sat here and I've watched pictures. Ours have ducks. Yours don't have ducks. You know, ours have habitat. Yours don't have habitat.

You know, it's plain to me that these two agencies are not going to agree, right?

MS. CHAN: Well, that is a hypothetical, I don't know. We could be -- you know, we could craft, together, a metric that both agencies, you

know, feel comfortable with.

But we will be -- let's not forget that there's an additional limitation here and that is, you know, there is a Congress-authorized project that we cannot go beyond. So, we are not the only one who said that, you know, we don't think that the nexus in terms of the impact was there. The mitigation, and the degree -- you know, and the Corps agree with us, in their analysis.

BOARD MEMBER KISSINGER: Yeah. Look, I think everyone that's spoken today are people of goodwill, and honorable, and advocating effectively for their positions.

My problem, sitting here today, is I see two widely disparate presentations of the world, as it exists. And the one thing that we all agree upon, everyone agrees upon, is making sure that this construction commences.

And what I hear from lawyers, and I'm one, too, so I'm, you know, blaming myself, too, is lots of procedural hurdles, barriers, and ways by which to accomplish your end, except for the fact of getting this project off the ground and going. Which is what everyone worked together to do.

And, now, having done that, all these

arguments are being raised to prevent what was clear, at the time the arrangements were put in place, to get this thing off the ground.

And, so, that's where I'm struggling. I hear all your arguments. Your arguments, you know, I haven't double checked it. But your arguments may have some legal merit and I want to look at them more closely.

Except for one point, everyone came to the table and tried to figure out a solution. And here, after the fact, well, we never agreed to that. I guess I'm not totally on board for it, although I wasn't here for those discussions, and I don't think any of you guys were, either.

MR. PROWS: I think what you heard from Melanie, who I think -- did she leave? She had to leave, unfortunately.

What you heard from her was we had a different understanding of what had been agreed to. Our understanding of the agreement that management at the Regional Board, and at the Water District had reach, was a 401 Certification would be issued to the Corps for construction, with the conditions that would be required there. And then, later, waste discharge requirements would be issued for

O&M, and for the District.

BOARD MEMBER KISSINGER: But that's plainly not what the letter says.

MR. PROWS: Well, that's what staff wrote in the 401, but that's not how we saw it at the time.

BOARD MEMBER KISSINGER: Is there a letter in the record? Maybe I missed it, I haven't seen all the correspondence. In which the District says, hey, that's not what our deal was?

MR. PROWS: We wrote letters. We wrote letters in the spring, two or three letters in the spring saying -- you know, as soon as the Regional Board staff started saying, okay, now, we're going for a mitigation project, we immediately wrote letters saying that was not our understanding of the agreement.

CHAIR YOUNG: And, I'm sorry, I'm looking at an e-mail right now, that is in our record. It's on page 3 of the response to comments. It was an e-mail memorializing the agreement, on January 4th, written by Keith Lichten, to Melanie Richardson. The e-mail was dated January 21st.

It very clearly says that the Board will issue a separate WDR -- and I'm quoting, now. "The

WDRs are likely to address aspects of the project in greater detail…alternate mitigation to address the project design issues." that was there on January 21st.

You're referring to letters that you wrote disagreeing with the Water Quality Certification that was issued in the spring.

MR. PROWS: Well, I --

CHAIR YOUNG: It's hard for me to get to where you're trying to get us to go.

MR. PROWS: Well, I think what I've said before is still the same. Is that we made clear, even in that January meeting, we did not think mitigation was required. If your staff was going to bring a mitigation project to you, a waste discharge requirement to you, for your consideration, our suggestion has always been that you should reject it.

So, this was not our agreement that a mitigation project -- that we were agreeing to a mitigation project. That is not our understanding of that conversation. Maybe there was a miscommunication. This is obviously awkward for everybody, but that is not our understanding of the deal.

VICE CHAIR MCGRATH: I would like to get past this to actually discuss reasonable mitigation.

CHAIR YOUNG: But let's let Bill finish.

BOARD MEMBER KISSINGER: Let me, it's a good point to make a segue. Go ahead.

VICE CHAIR MCGRATH: Because what is very clear, if we're going to take a legal posture, and you're going to have to litigate us to make mitigation, when you get an e-mail that includes language about a plan to compensate for the capital project's impacts, I would take the position that your responsibility is to not accept any kind of document from the Regional Board, and go forward in construction with that understanding. But to litigate the question at that time, in a Writ of Mandate.

MR. PROWS: You didn't issue a document to us.

VICE CHAIR MCGRATH: So, you know, I would like to get past this question, perhaps just agree to disagree for the moment, and talk about mitigation. Because very little of the discussion, despite my pleas, has actually addressed project impacts.

CHAIR YOUNG: Yes. But I want to make sure that all of the Board Members have had the opportunity to ask the questions of the attorneys who are presenting here. Are there any additional questions at this time?

BOARD MEMBER KISSINGER: No. Well, then, I guess I'd come back to the question that I began with. Didn't begin with, but the second question which I really had in mind, is the key issue. Which is the various things that -- I guess the question is what do you think the Board should have done here, that would ensure both an outcome that satisfies the District, other than just agreeing there's no mitigation required, and gets the project moving forward?

Recognizing there is a fundamental view about the facts underlying here?

MR. PROWS: I think one of the key things that could have been done better, by Regional Board staff, who have been very diligent in this, I must compliment them. We got a response to our Draft EIR. It was a lengthy comment letter that the Regional Board submitted. And the Final EIR responded to those comments, made some changes.

But that comment letter did not include

many of the comments that we saw, for the first time, a week ago about impacts.

And, so, if Regional Board staff had concerns about -- and that's what you heard from Jim. If Regional Board staff had concerns about denitrification and, you know, low channel flows, the time to make those comments was much earlier in the process, rather than a week ago.

And that would have, maybe, enabled us to have a dialogue about what the science really is.

But we've been hamstrung. We've been asking for responses all along. What are the impacts that you're concerned about? And we only got that a week ago.

So, I would just suggest earlier engagement in the process by the Regional Board staff, with all of their concerns.

BOARD MEMBER BATTEY: I know I have it here someplace, but just to help me out here, when was the EIR certified, again?

MR. PROWS: February of 2016. And the draft was circulated when?

MR. MANITAKOS: (Off-mic comments.)

MR. PROWS: November 15th. And that came after an EIS process that was fully, publicly

noticed. You know, I don't know whether Regional Board staff ever, actually, physically, got in the mail a copy of the final -- the Draft EIS, or Final EIS, but these things are publicly noticed.

So, I mean, there's been years of opportunity to make some of these --

BOARD MEMBER BATTEY: So, they weren't done as one document, they were two separate documents?

MR. PROWS: There were two separate environmental reviews done, a full-blown EIS and a full-blown EIR.

BOARD MEMBER BATTEY: And the EIS was finalized in 2015 or 2016?

MR. PROWS: 2014.

MR. MANITAKOS: (Off-mic comments.)

BOARD MEMBER BATTEY: 2014.

CHAIR YOUNG: I think this might be an appropriate time to allow Regional -- I'm sorry, I'm kind of losing my voice. To allow Regional Board staff to let us know what was in the comment letter that you sent for the EIA, our EIS process. And, also, to comment on, particularly, Mr. Prows' statement that the Water Board -- didn't know why you wanted mitigation until four days ago?

MS. WHYTE: I don't, unfortunately, have our comment letter on the EIR here with me. I actually reviewed it two days ago. I thought it was in my package. I can't seem to find it.

I can say, when I reviewed it again, I looked at it and I felt reassured that, once again, we did clearly articulate our concerns regarding impacts. It was -- so, we can produce that. I believe it's part of the record. I think it's quite clear. We say it in a very straight forward way.

There's been a lot of conversation back and forth with the District staff, over time. It's not just been coming in, they're not hearing this stuff for the first time.

There's been a lot of legal analysis and discussions, back and forth, that Tamarin has been engaged in, with counsel. There's been a lot at the staff level.

Prior to this, there were a number of high level meetings that took place with the former Director of the Water District, Norma. Right now, there's an interim Director at this time. When these discussions took place, I was in many, maybe not all of those meetings, where we continued to

make the same points over, and over again on this.

We have been trying, quite frankly, to set up another meeting with the District since, I think it was, September. And they refused to meet with us until they had our final response to comments in hand. And given the nature and where we are in this process, we were not prepared to produce and distribute draft documents. But we offered many times to meet with them to try to have a technical discussion, to more fully discuss where we are with concerns with impacts, and to try to resolve this.

And we were repeatedly told not without a final response to comments document.

So, that's in part, why we are here today. I don't really know what else to say along those lines. I'm quite, shall I say, dumbfounded about the situation we're in, as well.

BOARD MEMBER BATTEY: Can I just clarify, a response to what? Final comments responding to --

MS. WHYTE: The order before you today. So, we have produced, for this Board package, a response to the comments that have been received. And those, we typically distribute seven days prior to the Board meeting, itself, so that the Board and

the public is seeing those responses at the same time. And that's been our standard practice. And that's what we waited to do in this situation.

Although, again, we would have been happy to discuss these comments and the details. Many of the arguments are really legal arguments. And, as I said, Tamarin has been engaged back and forth with that. But the technical issues and the issues related to impacts, I would say we've been nothing but open in trying to understand both the engineering out there, the sediment transport issues, and the habitat value issues, which is why we've been out in the field a number of times.

CHAIR YOUNG: It's a very small point, but Mr. Prows keeps saying four days. You just said a week. I could say that more than four days ago I was looking at it on the website.

MS. WHYTE: He said four business days, I believe.

CHAIR YOUNG: Okay.

MS. WHYTE: But this was a week ago, last Wednesday. When we finished packaging our Board materials would have been on Wednesday, a week ago today.

CHAIR YOUNG: Okay. Yes, Ms. Austin?

MS. AUSTIN: With your indulgence, I would like to address some of the legal issues, just so that we have a clear record and the Board feels comfortable moving forward.

Some of the issues that were raised, in the letter, yesterday, that Mr. Prows was discussing, I wanted to clarify that these were not new issues. These are litigated legal issues, that I've been in e-mails with Rita and Peter since last July, discussing CEQA issues. Whether or not mitigation can be required. Unfunded mandates, that's not new.

Unfunded mandates is addressed in your response to comments, in S04, S13, RTO-C-01. And I'm not expecting you to follow along with this. I'm just reiterating, so we have a clear record.

The issue concerning whether the District had agreed to mitigation, that was discussed back in my e-mail, with Peter and Rita, in July last year. It's also in your response to comments, RTO-C-01.

I won't address the findings of adverse impact. I think that's really more appropriate for staff. It's more technical.

With respect to the Regional Board's

authority to regulate non-waste dischargers, I would like to take Mike Napolitano that he can stop working on the Vineyard Waiver, if we're not going to regulate them.

(Laughter.)

MS. AUSTIN: Obviously, you all know from our last Board meeting, that this Board does regulate sediment in our Grazing Waiver, our Grazing Permits, our Vineyard Permits, our TMDLs concerning sediment. So, this is obviously an area that's within your purview.

Discussing jurisdiction, you have a slide on that. That's also in RTO- -- I think that's an S-04.

The regional factors was discussed in your response to comments in S-11.

There was a comment or a question about the citation to earlier Regional Board decisions. Government Code 11425.60 establishes that State Board decisions are precedential. And that's also State Board Order WR96 -- 96-1, the Lagunitas Creek Order, Footnote 11.

And I know you're all interested in separation of functions. One moment, switch screens. It is not the standard practice of the

Regional Board to separate functions in permitting matters. And I will quote, “Unlike in enforcement actions, in permitting actions such as the adoption of” -- this was the Central Coast AG Order -- “the State Water Board and Regional Water Boards do not separate functions between prosecutorial and advisory staff members. In permitting actions, staff members are expected to make recommendations to the Board Members. And doing so does not convert their role from advisory staff to independent advocates.” State Board Order WQ-2013-0101, page 9, note 27.

BOARD MEMBER KISSINGER: Precise.

MS. AUSTIN: CEQA, we talked a lot about CEQA today. And I did cover with you, earlier, the issue of the CEQA Guidelines. I made an additional note on that in here.

One thing to note is that the discharger’s EIR does describe significant impacts concerning areas under Water Board’s jurisdiction. And just for shorthand, you can look at Impacts Bio2, Bio3, Bio4, Bio5, Geo2, WAQ1, WAQ5, and WAQ6. And as I described earlier, where there are impacts, as the discharger has identified, the Regional Board has the duty to identify mitigation that can reduce

those impacts. And I think that's what we're here talking about, today.

In addition to the CEQA Guideline, you also have the California Code or Regs, Title 23, and it's Section 3742. Which says that, "The Board," and this is specific to you, the Board, "when acting as a responsible agency may condition the discharge of waste," which is what we're talking about here, "for any project subject to CEQA to protect against environmental damage to water resources, to minimize adverse environmental impacts on water resources, or to ensure long-term protection of water resources."

So, again, you're well within your purview to be asking for mitigation.

And for your reference, the CEQA comments, response to comments, S18, S21, and also S22 cover the issues that have been raised today. So, that is in your materials. I know you've all read them, so you can feel comfortable that we have a complete record on those issues.

BOARD MEMBER KISSINGER: Well, what about -- before you go, Ms. Austin, a response to the argument about this being a State-imposed mandate on a local agency?

MS. AUSTIN: Right. And, so, that was in S04 and S13. Having -- Marnie and I have had the joy, recently, of briefing the unfunded mandates issue with respect to the Municipal Regional Stormwater Permit. And, so, I think we both feel fairly comfortable in saying that these mitigation requirements for dredge and fill is a standard requirement.

This is not something specific to a local agency because they're doing flood control work. It's, as you saw last month, anybody who goes out and dredges and fills, private citizen, local agency, State agency, Federal agency is going to have to do mitigation. The Army Corps of Engineers does mitigation in its maintenance dredging projects. So, that is not unique. And, so, that is one of the requirements that we were talking about today.

There's other exceptions. I think that's the most compelling as we're sitting here, discussing it, today.

CHAIR YOUNG: All right. We've been going for some time without a break. Since we're all human, we might need a break. I'm going to ask people to be back, you know, in five minutes this

time. When we come back, I'm going to ask the staff if they have any additional information they want to give to us. That's a standard thing that we do when we're considering this kind of permit.

And, then, at that point, we will have Board discussion of the matter. And I will be asking the Board Members if anyone wants, at that time, to go into closed session deliberation? Which I understand, from Ms. Austin, is an option available to us at this point.

MR. PROWS: Can you give us the authority for that? I want to take a look at that, please.

MS. AUSTIN: Sure, that is Government Code Section --

MR. PROWS: Sorry, give it again, please.

MS. AUSTIN: On the agenda. 1126(b)(3).

MR. PROWS: Government Code 1126 --

MS. AUSTIN: 1123 --

MR. PROWS: (c)(3)

MS. AUSTIN: I beg your pardon.

MR. PROWS: Can you give it one more time?

MS. AUSTIN: From the beginning. 11126(c)(3).

MR. PROWS: Thanks.

MS. AUSTIN: Sure thing.

CHAIR YOUNG: All right, five minutes, folks. thank you.

(Off the record at 4:11 p.m.)

(On the record at 4:21 p.m.)

CHAIR YOUNG: All right, folks, we're going to reconvene. And we are now going to hear from the staff. Oh, as promised, thank you.

MS. WHYTE: Thanks. I was going to ask Xavier to say just a few words about -- you've heard from the District that they feel that they've really self-mitigated, or the mitigation is already included in what they're already planning to do as part of the project. So, I wanted to have Xavier articulate some of our concerns with that, and why it doesn't meet our full mitigation needs.

And, then, I'd like Keith to just say a few words about mitigation, itself, and then we can go from there if you have any questions. So, we'll keep it brief at this point.

MR. FERNANDEZ: First, I'd like to talk about native versus non-native vegetation. The District and Corps are planning to stockpile the existing seed that contains all the non-native species. And, then, they're going to use that to

overlay. So, then, hydro seeding the native vegetation, given those, is going to have very little chance of actually being very successful, because the invasive species will be there, the seed bed will be there. They'll come back strong as ever.

In terms of we also believe that the actual, physical space occupied by the riprap will reduce populations macro invertebrates, which will then have a food chain effect.

We also believe, we agree with the District that plans will grow in the spaces of the riprap. But it doesn't take away that the riprap is going to occupy space which is where nutrient cycling would occur, and there will be a reduction in nutrient cycling.

The parts that will be reference, actually, deal somewhat with interpretation. But what it showed was that by using bioengineering, that is plants, rather than hardscape, such as riprap, improves water quality.

In addition, we do have a tree planting plan that I know Mr. McGrath wanted to see. And what it does, and we don't think this is sufficient mitigation for the riparian impacts. What it shows

is that the trees are being planted outside the access road, which is above the top of the bank that will contain the 100-year flow event. It will not provide shade. It will not provide endemic matter into the creek. And for those reasons, we do not believe that the mitigation is acceptable in the EIR, all by itself.

CHAIR YOUNG: Yes, we have questions on that.

BOARD MEMBER BATTEY: I just had a question about the -- could -- when I was looking at the photos, it wasn't clear to me the trees, whether they were wetland, or wetland species. Are they willows? I couldn't see them in the photos. So, I'd like to understand.

MR. FERNANDEZ: The trees are primarily at the bank. They're not willows. The project design will be planting willows and such in the channel, which is what we were seeing at Lower Silver Creek, and Lower Berryessa, which we do think improves functions, including nutrient processes, and also provides habitat.

MR. LICHTEN: Okay, I'll briefly speak to the idea of mitigation. And I wanted to underline that, as staff following the Basin Plan, our desire

is always to look, first, for mitigation to impacts that is in-kind. So, the same kind of water item as is being impacted, onsite, or as close to onsite as possible.

And second, we always want to bring before you, at least to the extent we can, an order that has the mitigation spelled out. What's the project?

And, so, with that in mind, we spent a lot of time with the District and Corps staff, talking through project design alternatives that could be viewed as mitigating onsite, as a part of the project. And, as we discussed, because of the various procedures behind the project, and the need for a certain delivery time, the project wasn't able to accommodate those changes.

So, that said, we worked with the District and talked with them about options for mitigation. And always indicating our intent for the project to move forward, and our intent to be as flexible as possible in identifying whatever might be appropriate. Including projects like the work at Lake Almaden, behind their headquarters, that might be small in area, but would provide a benefit to a large reach of creek in terms of fish passage,

temperature reduction, and that kind of thing.

For whatever reason, their belief, perhaps, that mitigation isn't necessary for the project, we didn't receive any proposals.

And, so, in the absence of that information, you have the language in the order that you see before you, which is typical for projects with impacts.

In terms of the ratios, thinking through what the location of the mitigation might be, what the delay is between the timing of the impacts and the timing of construction, and mitigation, and so forth. Our intent continues to be to work collaboratively with the District, to identify projects that they're doing, that they may already be doing, they may already be funded, that could address the impacts that we find in the creek.

Oh, I wanted to just note, make two other brief notes. And there's a -- let's see. The question we're really asking is, you know, given what we have now, given the condition of the creek, and really, is reflective of a lot of disturbed waters that we have in our Region, you know, how can we maintain and improve it, and also maintain and improve waters overall?

So, when we talk about mitigation, to the degree there's some additional degradation here, we're really talking about creating that incremental benefit somewhere else. So that, overall, we're having a District-wide approach.

The District has that approach, or at least they're on their way, with their One Water Plan. So, we're going to continue to engage with that. We're hopeful that that's going to serve as the source for some projects. And we're hopeful to kind of get into that, so that we're not in the position of having this project-by-project discussion. We could have more efficient permitting overall.

CHAIR YOUNG: All right. I want to make sure I understand, Keith, what you just said. In working with the District to identify potential mitigation, or projects that the Regional Board would think would provide the same benefits as what the mitigation in this package is trying to get at, I think I heard you just say that there's -- since the District is doing so much work, both now and in the future with its One Water Plan, that it's possible that they've already got something on the drawing boards that might do -- I mean, we can't

say that because we don't know. But that would be a possibility. And I guess I'm assuming that if it isn't mitigation for something else, already, if it's something that they're just doing, that that could be legal and we could get there from here.

MR. LICHTEN: Yes, we think that we could accept such a project as mitigation for the impacts.

CHAIR YOUNG: Uh-hum. And that would, I'm assuming, be a whole lot less expensive than a new, that was their term, new mitigation project that would cost $20 million?

MR. LICHTEN: Yes, that's right.

CHAIR YOUNG: Okay, my logic is following your logic. All right.

MR. LICHTEN: Yeah, just when we -- when we talk about the benefit-to-effect ratio, you know, it doesn't necessarily require that someone go over a 10- or 20-acre area and do work on every square foot of that area. You know, it could be an intervention in a creek that has a benefit to a much broader area, even though the work is in a more limited extent.

So, certainly, one could do restoration over a larger area, but that's not necessarily

required under the order.

CHAIR YOUNG: All right, thank you.

Does the Board have any additional questions before we turn to our own deliberations?

BOARD MEMBER OGBU: Well, I just had a quick question about the taking existing projects and making them mitigation. It sounded like the District's attorneys are saying that that was not something -- like it's more complicated than that. And that, if it doesn't come from the same funding, they can't consider it. I mean, I liked that idea, but it sounded like it was there were a lot more hoops to jump through. And that might not actually be feasible because of the way the costs come together.

MR. KENDALL: (Off-mic comment.)

CHAIR YOUNG: I'm going to let the staff answer that question, first and -- you've been quiet for a very long time, so we'll give you this one.

(Laughter.)

MR. LICHTEN: Right. Our understanding, from talking with the District staff, is that there are limitations on certain funding pots that they have. So, it may be that some of the bond funds

may not qualify for such projects. On the other hand, they may have other sources of funding that could support it. So, we haven't -- it is more complex than that, but that's --

BOARD MEMBER KISSINGER: Just to follow up on that. Is there anything that requires -- or, is there anything that limits our ability to deem something as mitigation, while the District deems it as something else?

MS. WHYTE: Not that I'm aware of. As long as we would have long-term assurances that it would continue to function as intended. That's, you know, one of the key criteria that we look to for mitigation.

BOARD MEMBER KISSINGER: Right. Thanks.

CHAIR YOUNG: All right. Sir? Yes. No, I think you need to go to the microphone because of the court reporter and our recordings.

MR. KENDALL: So, Tom Kendall, again, from the Corps. So, yeah, the whole -- I mean, I brought up the "MOU" during my remarks, and that's the memorandum of understanding. And we're -- you know, this is really the heart of the issue is how do we find something that allows everybody to walk away feeling like we've got something?

And, so, the Water District, I think, was trying to make the point that once it's labeled mitigation, it really does impact some of their abilities to tap into funding sources and so on. And, so, I've had some sidebars with Mary about, you know, what could the whereas clauses look like, in this MOU, that allow us to say it doesn't smell like the way -- we can't have it smell, but it still smells like a way that works for the Water Board.

And we hope there's a way to do that. And Ken will even -- when we were all trying to recall what happened back in the January conversation, you know, what I think the Corps people I talked to got out of that was that it was sort of in this vein. That there might be some things that would be sort of allowed to be checking the box for the different audiences. But nobody from the Corps, at least, left that meeting feeling like we clearly felt there was a need for some new mitigation investment.

It was because of these very kind of talks that I think they left that meeting with that impression. So, I just wanted to share that.

CHAIR YOUNG: All right, thank you.

I think a number of us might be sort of thinking about the same types of possibilities, as whether there's a way that we can provide language in the Order, that would get the things done on the ground that we require to be done on the ground, without labeling it something that you folks can't live with.

So, I'll just put that out there as kind of where I'm going. But I don't want to foreshorten the conversation.

So, unless -- more questions of staff, sure.

VICE CHAIR MCGRATH: And I want to do this with the District. I apologize for not asking this when Jack Xu was here. And it has to do with the sedimentation practices. The testimony in the Regional Board response to comments was that over the period of time, since the 1980s, there's been about 250,000 cubic yards of material cleared from the stream.

And that works out to about 10,000 cubic yards a year, you know, given the relative accuracy.

So, is that a decent number, from the staff's perspective? Am I about right on the

facts?

MS. FRUCHT: That was the number reported on the EIS.

VICE CHAIR MCGRATH: So, it was reported in the EIS. And does the District agree that that number was in the EIS, and is a reasonable working number.

MR. MANITAKOS: That is a number that includes both Upper -- both the project reach in the area above 680, which was considered an alternative for the EIR. So, it actually goes way up into the hills beyond it.

I think about 10 percent, we can get the numbers, of it actually occurs within the project area.

VICE CHAIR MCGRATH: So, you think the number is closer to, say, one or two thousand?

MR. MANITAKOS: Well, let's see what --

MR. PROWS: Sorry, this is part of Jack's presentation that we elided in the interest of time, in case there wasn't any interest from the Board, on this specific question, actually.

Jack actually did prepare some slides on this, which are in your packet.

MR. MANITAKOS: Can you bear with me?

MR. PROWS: Yeah.

MR. MANITAKOS: So, the total is about 21, 22 thousand. If you look at the three red boxes? My math isn't so much better than yours. 14.7, plus 6.6 is 21.3. So, 21,300 cubic yards out of that total 250,000 actually occurred in this reach. Almost, you know, the greatest amount of sediment removal came, actually, downstream or upstream of this actual construction.

VICE CHAIR MCGRATH: A thousand cubic yards a year.

MR. MANITAKOS: Cubic yards, yeah, sorry.

VICE CHAIR MCGRATH: Okay, thank you.

MS. GLENDENING: I wanted to add, also, I believe in the EIS, Section 7.4, or something like that, it says there's about - that they estimate about 7,000 cubic yards per year, annually, on average, would need to be removed from the project reach.

VICE CHAIR MCGRATH: Would need to be?

MS. GLENDENING: Or, would accumulate. Whether that's subject to maintenance is a different issue.

VICE CHAIR MCGRATH: Yeah.

MR. MANITAKOS: Some level accumulations.

We don't go out there with the white gloves and get every spec of dirt. We only remove -- in fact, under SMP, we're only allowed to remove when it hits a certain trigger that compromises the flow conveyance capacity of the stream.

Yeah, so, we do look at -- yeah, that number, I believe, you know, is an over-estimate amount for that that would actually be removed. You know, sediment accumulates in places, and if doesn't affect conveyance capacity, then we leave it there and we don't -- we're not allowed to, in fact, by law.

CHAIR YOUNG: All right.

MR. MANITAKOS: And that's part of the Adaptive Management Plan, you know, would be to define what exactly that is. And I think that's a -- it would be somewhat less than that. Somewhat. Maybe quite a bit less than that.

CHAIR YOUNG: Okay, thank you.

All right. If there are no further questions for staff --

BOARD MEMBER BATTEY: I have one more, sorry.

(Laughter.)

BOARD MEMBER BATTEY: Could you just tell

me, in the process, either California Fish and Wildlife or U.S. Fish and Wildlife in terms of stream habitat and species issues, where did they -- what did they weigh in around all of this, in the EIR or elsewhere?

MS. GLENDENING: For the EIS, the U.S. Fish and Wildlife Service consulted and prepared a Coordination Act Report. And identified the emergent wetland -- or, excuse me, emergent vegetation as the mitigation target, using the egret as a target species.

And, also, ranked it as number 2, out of 4, in terms of value, with ranging 1 is the highest value and 4 is the least value.

They also ranked the grasslands in the project reach, at a ranking of 4, using predatory birds as the target species.

BOARD MEMBER BATTEY: Okay.

MS. GLENDENING: CDF, California Department of Fish and Wildlife, did not consult on the project because I understand that they do not typically consult on projects that are done by the Corps.

CHAIR YOUNG: Okay. Now, we'll shift to Board deliberation. And as promised, I'm going to

ask if there is any Member of the Board who would like to go into closed session to do deliberation. And our rule -- my rule is that one vote means that we go into closed session.

MR. PROWS: Madam Chair, point of order on that. We don't read the Government Code Section, as was cited by counsel, as giving you the authority here to go into closed session.

So, we would urge you to have your deliberations in public. But just for the record, we don't read the statute as authorizing you to do that.

CHAIR YOUNG: All right, thank you for that input. I'm still going to ask the question. My general feeling is that I take my attorney's advice. So --

BOARD MEMBER LEFKOVITS: Yeah, I think I would like a closed --

CHAIR YOUNG: All right, we will have a closed door deliberation. That means, unfortunately, I'm required to have all of you folks step out of the room.

We will send -- I usually say, oh, it's not going to take very long but, I mean, I never know. In ever know.

We will let you -- we'll send someone out and let you know what our estimate is of when we'll be reconvening. Thank you.

Item 12. Closed Session - Deliberation

CHAIR YOUNG: All right, let the record show we are convening -- reconvening in open session.

We've had a wonderful discussion. And the gist of what all of the Board Members have agreed upon is that mitigation is appropriate.

We have not been able to formulate the exact language at this point, that we all are comfortable with to describe that mitigation.

So, we -- and we're losing our quorum. So, we are going to continue this item to next month's Board meeting, to continue it then.

Is there anything that my attorney would like to add to what I just said, to make us all legal.

MS. WHYTE: No. Thank you, it's fine.

CHAIR YOUNG: All right.

(Off-mic comment.)

CHAIR YOUNG: If the attorneys are telling us that it's okay, we would prefer to continue to

March, because there will be people missing from the February meeting, and we would like to have the continuity of personnel.

MS. WHYTE: March is fine.

CHAIR YOUNG: March. All right. It's always the second Wednesday of the month. So, it will be the second Wednesday in March.

Thank you, folks, for your patience. We stand adjourned. I have been waiting to do this for hours.

Item 13. Adjournment to the Next Board Meeting - February 8, 2017

(Adjourned at 6:11 p.m.)

EXHIBIT 12

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

REVISED TENTATIVE ORDER No. R2-2017-00XX

WASTE DISCHARGE REQUIREMENTS and WATER QUALITY CERTIFICATION for:

SANTA CLARA VALLEY WATER DISTRICT and
U.S. ARMY CORPS OF ENGINEERS,
UPPER BERRYESSA CREEK FLOOD RISK MANAGEMENT PROJECT
SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (Water Board), finds that:

1. The Santa Clara Valley Water District (District) delivers water and is responsible for flood protection and stream stewardship in Santa Clara County (County). The District is charged with providing local flood protection within five major watersheds in the County, including the 322-square mile Coyote Creek watershed, which drains from the southeastern hills of the County to Lower San Francisco Bay.

2. Berryessa Creek is in the Coyote Creek watershed in the County and drains from the undeveloped Diablo Range hills east of San Jose, through urbanized areas in San Jose and Milpitas, until it discharges to Lower Penitencia Creek, which is tributary to Coyote Creek. Under existing conditions, Berryessa Creek overtops its banks about once every 10 to 20 years in the 2.2-mile-long reach from Calaveras Boulevard in Milpitas upstream to Interstate 680 (I-680) in San Jose (Upper Berryessa Creek) (Attachment A, Figure 1).

3. **Local-Federal Partnership.** The District is partnering with the U.S. Army Corps of Engineers (Corps) for the Upper Berryessa Creek Flood Risk Management Project (Project) to increase flood protection in the surrounding community. Construction of the Project was authorized by Congress in the Water Resources Development Act (WRDA) of 1990, Public Law 101-640, section 101(a)(5). The District and Corps are each funding Project costs and, between the two sponsors, are dividing and/or sharing various roles and responsibilities, such as design, construction, and post-construction operations, in accordance with the Project Partnership Agreement signed by the Corps and District on May 17, 2016. Regarding cost-sharing, the Project Partnership Agreement stipulates that the District will contribute 25 to 50 percent of the total Project cost, in accordance with the WRDA of 1986, Public Law 99-662, as amended (United States Code, title 33, section 2213). The cost-sharing schedule specifically requires the Corps to conduct (and/or oversee) construction contracting and activities and the District to provide all lands, easements, rights-of-way, relocations, and disposal areas (LERRD). The WRDA also requires the Corps to prepare an operations and maintenance manual for the Project (see Finding 16 - Maintenance).

   While the WRDA and the Project Partnership Agreement stipulate cost-sharing criteria between the Corps and District, construction management and implementation to the Corps,

and LERRD to the District, this Order specifically requires the development and implementation of additional plans, which are described in more detail in this Order:

a. Adaptive Management Plan (Finding 17; Provision 18);

b. Mitigation and Monitoring Plan for compensatory mitigation (Finding 21; Provision 19); and

c. Post-Construction Stormwater Management Plan (Finding 20 (Impacts); Provision 15).

The Water Board's understanding is that the District will be responsible for these three plans because the District owns the Project and is responsible for post-construction operations and maintenance. In addition, the Water Board understands that certain aspects of the construction activities are the responsibility of the Corps (see Findings 8, 9, and 10).

4. **Dischargers.** The Water Board is issuing this Order to the District and Corps, collectively referred to as the "Discharger," because the Project activities will cause or contribute to a discharge of waste that will affect the quality of waters of the State and the United States. By the nature of WRDA projects, the partnership between the Corps and District is inextricable, and the Project could not occur without each sponsor. Therefore, the Water Board is naming the District and Corps, the two Project co-sponsors, as dischargers. As appropriate, this Order notes which Discharger has agreed to be responsible for certain requirements based on WRDA requirements, as well as the Water Board's understanding of the agreements the Corps and District have made with each other (see Finding 3).

5. **Rescission of Existing Water Quality Certification.** The Water Board previously issued water quality certification for the Project pursuant to Clean Water Act (CWA) section 401 to the Corps on March 14, 2016, (Certification) to facilitate the Corps' timely contracting for the Project (see Finding 23). The Certification required the Corps to construct the Project consistent with the then-current design plans and the Corps' water quality certification application dated September 25, 2015 (Application). This Order rescinds and supersedes the previously-issued water quality certification with waste discharge requirements (WDRs) and a reissued water quality certification. The Water Board is authorized to issue WDRs and water quality certification for the Project in accordance with California Water Code (CWC) section 13263(a) and CWA section 401(d) to both the Corps and the District as the Dischargers.

6. **Project Purpose**. The Project is intended to provide flood protection in Upper Berryessa Creek from the one percent exceedance probability flood event (also known as the one-percent-annual-chance flood event, or the 100-year flood event) for an estimated 650 land parcels and to contribute to reduced flood risks for an unquantified number of additional parcels where flow from Upper Berryessa Creek combines with other flood waters. The Project will also modify about 220 linear feet of Los Coches Creek and 60 linear feet of Piedmont Creek, which are tributary to Upper Berryessa Creek. The completed Project will meet Federal Emergency Management Administration certification standards.

The area being protected encompasses the new Milpitas Bay Area Rapid Transit (BART) station and rail line infrastructure, part of a $2.3 billion (including $900 million in federal

funding) BART expansion project to extend BART service from Fremont through Milpitas to San Jose. Project construction began in early October 2016 and is scheduled to be completed in December 2017, with the intent to be complete before the planned opening of the Milpitas BART station in late 2017. The Project is located just upstream of the Lower Berryessa Creek and Lower Calera Creek Flood Protection Improvements Project currently under construction by the District, as authorized by the Water Board in October 2015, which has a planned completion date of October 2018.

7. **Coverage of this Order.** This Order covers Project construction activities (see construction elements listed below), as well as planned operations and maintenance activities after the Project is constructed (see Finding 16 for additional information about maintenance). This Order also covers the mitigation and monitoring requirements necessary for compliance with federal and State regulations (e.g., see Findings 19 through 28).

   The Project's major construction features include: (1) enlarging the Upper Berryessa Creek channel; (2) armoring the channel beds and banks with rock riprap to be covered with 4 inches of soil and to be hydroseeded; and (3) constructing concrete box culverts and concrete transition structures, floodwalls, and access ramps.

   The Project construction elements have the following details below and are shown in Attachment A, Figures 2 and 3; and the fill and excavation information is presented in Table 1:

   a. Widen, deepen, and contour Upper Berryessa Creek to create a trapezoidal channel cross section with a bed width varying from 12 to 40 feet, depth varying from 8 to 14 feet, and banks with a 2-to-1 horizontal-to-vertical (2:1) slope. The channel footprint from top of bank to top of bank in Upper Berryessa Creek will increase from 9.7 to 17.2 acres;

   b. Build two new pre-cast (or cast-in-place) concrete box culverts (where currently none exist), consisting of a box culvert at both the Los Coches Creek and Piedmont Creek mouths and a double-barrel box culvert to replace the existing Union Pacific Railroad (UPRR) wooden trestle bridge downstream of Montague Expressway, and the associated cast-in-place concrete wingwalls and concrete or grouted rock riprap transition structures;

   c. Armor the channel bed and banks with rock riprap, covered by 4 inches of soil and hydroseeded for erosion protection, with the following details:

      i. Total area of 9.81 acres (10,072 linear feet of rock riprap, including 9.71 acres in Upper Berryessa Creek (9,831 linear feet), 0.09 acres in Los Coches Creek (221 linear feet), and less than 0.01 acres in Piedmont Creek (20 linear feet);

      ii. Rock riprap (9 to 24 inches thick) in channel beds and banks extending up to the 2.5- to 10-year water surface elevation (7,547 linear feet);

      iii. Rock riprap in banks (additional 2,525 linear feet in Upper Berryessa Creek) extending from 5 feet below the channel invert elevation up to the 2.5- to 10-year water surface elevation;

      iv. A 4-inch layer of native soil covering channel bed and bank riprap (10,072 linear

feet), covered by biodegradable coconut fiber mats from the toe to top of banks, with hydroseed in beds and banks to promote herbaceous native vegetation growth and erosion protection; and

v. Grouted rock riprap (24 inches thick) at the Piedmont Creek confluence and beneath the existing Yosemite Drive bridge crossing;

d. Construct concrete floodwalls of 1,123 feet long by up to 2-feet high on the left bank (looking downstream) of Upper Berryessa Creek, between Los Coches Street and Piedmont Creek at the top of bank, and 450-feet long by 3-feet deep, to be buried on the left bank upstream of Montague Expressway to reinforce an existing retaining wall;

e. Construct two concrete access ramps on the right bank (looking downstream), one located about 1,000 feet upstream of Montague Expressway and the other one is 900 feet downstream of I-680;

f. Construct concrete and rock riprap transition structures at the upstream face of the existing Calaveras Boulevard Bridge;

g. Build 4.33 acres and 10,865 linear feet of new maintenance roads and redevelop 2.47 acres and 5,978 linear feet of existing maintenance roads, with a width of 18 feet on the right bank and a width of 15 to 18 feet on the left banks, except in certain two sections downstream of Montague Expressway and I-680 that lack space for a road;

h. Remove an unspecified volume of sediment and vegetation from about 200 linear feet of a concrete-lined reach of Upper Berryessa Creek just downstream of I-680; and

i. Replace and realign existing selected utilities within the Project right-of-way according to the 100 percent design plans dated August 4, 2016.

Table 1. Fill and Excavation Quantities

Project Element	Material	Excavation (cubic yards)	Fill (cubic yards)	Length (linear feet)	Area (acres)
Enlarge and contour channel	Soil	148,400	33,600	10,453	17.2
Riprap in beds and banks	Imported rock (9 to 24-inch diameter)	--	15,233	9,753	9.23
Grouted riprap in beds and banks	Imported rock (24-inch diameter)	--	1,882	319	0.58
Pre-cast concrete culverts	Concrete	--	675	284	0.11
Cast-in-place wingwalls and transition structures	Concrete	--	37	100	<0.01
Access ramps	Concrete	--	101	200	0.10
Floodwalls	Concrete	--	424	1,573	0.04
Concrete channel lining	Concrete	290	---	262	0.36
Maintenance roads	Aggregate base material	--	5,654	16,843[1]	6.8

Notes:
"- -" – Not applicable; UPRR – Union Pacific Railroad

[1] This length is the total for roads on both sides of the channel. Roughly 10,400 linear feet of Upper Berryessa Creek will have maintenance roads on at least one side of the channel. The area of new road is 4.33 acres and the area of redeveloped road is 2.47 acres.

8. **Staging, Stockpiling, and Hauling.** Two areas outside of the Project right-of-way will be used for staging and sediment stockpiling (Attachment A, Figures 2 and 3). Access to and from the Project site and the staging areas will occur along existing paved roads via Calaveras Boulevard, Los Coches Street, Yosemite Drive, Ames Avenue, and Montague Expressway. The Water Board's understanding is that the Corps is implementing the staging, stockpiling, and hauling tasks associated with the construction of the Project.

9. **Reuse or Dispose of Exported Material.** The Discharger will haul about 114,800 cubic yards of sediment from the Project site in addition to demolition debris such as concrete and utility components. Soil and demolition debris will be reused or recycled to the extent feasible. Disposal of any demolished material and debris will be in accordance with all applicable local, State, and federal regulations. The soil to be transported offsite is suitable for non-hazardous landfill disposal, according to the Project Environmental Impact Report (Project EIR) (State Clearinghouse No. 2001104013). The Water Board's understanding is

that the Corps is implementing the soil reuse and disposal tasks relevant to this Finding.

10. **Construction General Permit.** The Discharger is required to seek coverage under and comply with, or oversee that its contractors seek coverage and comply with, the statewide General Permit for Discharges of Storm Water Associated with Construction Activities (Order No. DWQ-2009-0009, as amended by Order Nos. 2010-0014-DWQ and 2012-006-DWQ) (Construction General Permit) (Provision 9). The Corps has contracted with its consultants to meet the requirements of the Construction General Permit.

11. **Final 100 Percent Design Plans.** The Water Board has received final 100 percent design plans and specifications dated August 4, 2016, and the final 100 percent Planting Plan dated April 1, 2016. Effective October 3, 2016, the Project is under construction.

12. **Replace and Realign Selected Utilities Infrastructure.** Multiple utility lines are in the Project right-of-way, including sanitary sewer, stormwater, irrigation, cable, electrical, telephone, fiber optic, and gas lines. The locations of some utilities are estimated and will be confirmed during Project construction activities. Consistent with the 100 percent design plans, the utility infrastructure planned for replacement and/or realignment are sanitary sewer, stormwater lines and outlets, a water irrigation line, an electric line, and two electric utility vaults. In addition, two groundwater monitoring wells and a gauging port will be relocated. In addition, the Application states that all utility work will be implemented by cut and fill procedures with no directional drilling.

13. **Rain Event Action Plan.** The Discharger shall develop and implement a Rain Event Action Plan (REAP), as required by the Construction General Permit, designed to protect all exposed portions of the Site within 48 hours prior to any likely precipitation event. The REAP requirement is designed to ensure that the Discharger has adequate materials, staff, and time to implement erosion and sediment control measures that are intended to reduce the amount of sediment and other pollutants generated from the active site. A REAP must be developed when there is a forecast of 50 percent or greater probability of substantial precipitation in the Project area.

14. **Dewatering.** Dewatering of surface water or groundwater that accumulates at excavated areas will likely be necessary. The Project EIR includes a mitigation measure for creek dewatering (WAQ-B, "Prepare and Implement a Dewatering Plan"). The Discharger submitted an acceptable Dewatering Plan on January 9, 2017.

15. **Groundwater Management and Soil Management.** The Project is within the footprint of a past solvent release from the former Jones Chemical, Inc., chemical plant (JCI site). The Water Board requires the Discharger to capture and treat all groundwater encountered from within the potential extent of the toxic waste plume as demarcated in the 100 percent design plans (JCI plume area). Any such groundwater must meet the standards of the General Permit for the Discharge or Reuse of Extracted and Treated Groundwater Resulting from the Cleanup of Groundwater Polluted by Volatile Organic Compounds (VOC), Fuel Leaks and Other Related Wastes (Water Board Order No. R2-2012-0012; NPDES Permit No. CAG912002) (VOC and Fuel General Permit), as stipulated in a letter to the Corps dated August 14, 2015. The Corps submitted a Groundwater Management Plan dated January 26,

2016, for groundwater discharges in the JCI plume area. Water Board staff notified Corps staff on March 8, 2016, that the plan is acceptable.

The Project EIR, Appendix E, contains soil sampling data from the JCI plume area indicating that VOCs were detected in soils at concentrations less than the Water Board's Environmental Screening Levels. However, excavating in the JCI plume area may bring soil vapor VOC concentrations to the surface at concentrations that may be a worker health and safety concern, in light of the soil vapor concentrations west of the Project site. The Corps' Design Documentation Report (DDR) dated April 29, 2016, states that if contaminated soils are encountered, the soil will be removed and stockpiled on the JCI site for disposal by others. The Water Board requires the data collected for soil analyses, stockpiling, and disposal for soil excavated within the JCI plume area to be made available to the Executive Officer upon request, consistent with Provision 16.

16. **Maintenance**. The Project EIR states that regular maintenance, such as sediment and vegetation removal in Upper Berryessa Creek, will be necessary after the Project is constructed. The District will be responsible for maintenance for the life of the Project, which is anticipated to be approximately 50 years. As part of the federal-local partnership, and in accordance with the WRDA of 1990 (Finding 3), the Corps will develop an Operations and Maintenance Manual (O&M Manual) to guide maintenance, such as sediment removal.

    The O&M Manual will be completed after the Local Cost Agreement is completed between the Corps and the District. However, the schedule for this has not been identified by the Corps. According to the Project Environmental Impact Statement/General Reauthorization Report (EIS/GRR), the Corps plans to conduct cross-sectional and longitudinal monitoring after construction is completed to inform development of the O&M Manual (Revised Final EIS/GRR, March 2014; specifically in the Corps' responses to comments from the Peer Review Panel (Batelle, 2013[1]).

    The Project EIR also states that the Project will result in less sediment accumulation and less volume than existing conditions and, specifically, that sediment will accumulate only at the UPRR trestle bridge replacement site and the other UPRR culvert upstream of Ames Avenue. Water Board staff's review of the sediment transport model and other Project documents indicates that the Project reach will continue to be depositional, despite the banks being stabilized. This is because there is ample sediment supply to the Project reach both from upstream and its tributaries, and because, as stated in the Project EIR, the Project design will increase the channel cross-sectional area, which will result in reduced velocity during storm flows and lower sediment transport capacity. In addition, based on the sediment transport modeling results in the technical memo dated July 20, 2016,[2] "…small benches might deposit in the proposed design cross section…," which would have "minor" impacts on flood

[1] Batelle Memorial Institute (Batelle), 2013. Final Independent External Peer Review Report Berryessa Creek, Santa Clara County, California, General Reevaluation Study (GRS) Draft General Reevaluation Report and Environmental Impact Statement/Environmental Impact Report. Department of the Army U.S. Army Corps of Engineers Flood Risk Management Planning Center of Expertise for the Baltimore District. Batelle, Columbus, OH.

[2] Santa Clara Valley Water District (District), 2016a. Comments on Waste Discharge Requirements for the Upper Berryessa Creek Flood Risk Management Project. Exhibit 1-Technical Memorandum. Channel Stability and Geomorphologic Characteristics (July 20, 2016). Submitted to Water Board, September 19, 2016.

conveyance and would not trigger sediment maintenance. Further, the Project site is in an alluvial fan, which by its very nature tends toward deposition. All lines of geomorphic evidence, including lower shear stresses, field observations, comparison of historic and current cross sections, and maintenance records, indicate the Project will result in a more-depositional system than existing conditions (Water Board Staff Memos, October 21, 2016,[3] and April 12, 2016[4]).

The accumulation of sediment may benefit the creek because the sediment could provide a more natural substrate for biota and allow for more diverse habitat via the development of a low-flow channel. However, if sediment must be removed at a volume and frequency that prevents the development and persistence of a low-flow channel, these benefits will not be realized. In addition, an independent peer review panel (Batelle, 2013 (see Footnote 1)) found that sedimentation can occur at various locations in the Project reach. Although the peer review panel did not elaborate on whether its members concur or disagree with the Discharger's findings that sediment will only accumulate at the two UPRR sites, the panel expressed significant concern about "…the lack of details on the operation and maintenance (O&M) plan and has identified the need for a detailed O&M plan to ensure the design assumptions concerning sedimentation are valid." The Water Board shares these concerns and, accordingly, requires the following steps to address sediment maintenance in the Project. These steps will occur in tandem with the Corps' process to develop an O&M Manual for the Project and are intended to minimize the recurring impacts from sediment maintenance activities:

a. **Santa Clara Valley Water District Stream Maintenance Program**. The timing of the Local Cost Agreement to occur, and for the transfer of the Project from the Corps to the District, is uncertain, and the O&M Manual may not be available immediately after the Project is constructed. Although the EIS/GRR states the O&M Manual will be developed during the pre-construction design and engineering phase, the Corps will instead develop it after the Project is constructed based on an interagency agreement (January 4, 2016, meeting with Water Board, Corps, and District staffs). Therefore, while the O&M Manual is being developed, this Order authorizes the District to conduct maintenance consistent with the District's existing Stream Maintenance Program (SMP) (Provision 17), authorized under Water Board Order No. R2-2014-0015 (SMP Order), and any future revisions. In the event there is a conflict between the SMP Order, the O&M Manual, and this Order, the requirements of this Order will govern.

b. **Multiagency Collaboration**. Development of the O&M Manual will be accomplished through a collaboration of the Water Board and other appropriate regional, State, and federal agencies. This is necessary to ensure the planning and implementation of

[3] Setenay Bozkurt Frucht, 2016. Response to SCVWD Comments on the Upper Berryessa Creek Tentative Order. Internal Staff Memorandum from S. Bozkurt Frucht to Keith Lichten, Chief, Watershed Management Division, San Francisco Bay Regional Water Quality Control Board. Available from Water Board staff upon request.

[4] Riley, Ann L., and Setenay Bozkurt Frucht, 2016. Projected Future Maintenance on the Upper BerryessaCreek Flood Risk Management Project. Internal Staff Memorandum from A. Riley and S. Bozkurt Frucht to Keith Lichten, Chief, Watershed Management Division, San Francisco Bay Regional Water Quality Control Board. Available from Water Board staff upon request.

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maintenance are consistent with the SMP and, accordingly, will minimize environmental impacts. Additionally, it is consistent with the SMP approach, which includes a multi-agency collaborative process to determine maintenance needs, based on avoiding and minimizing impacts in waters to the extent practicable.

c. **Maintenance Action Thresholds**. The O&M Manual will set maintenance action thresholds based on channel capacities and a performance standard based on protecting 50 percent of the Project design freeboard, consistent with the maximum tolerance applied by the Corps in flood control projects it co-sponsors. The Manual will include using a combination of vegetation and/or sediment management to meet flood risk objectives while minimizing environmental impacts. Using maintenance action thresholds is consistent with the District's SMP Manual process for developing reach- and creek-specific maintenance guidelines. Maintenance action thresholds will be revised iteratively, if needed, based on data to be collected under the Adaptive Management Plan described in the next finding.

d. **Five-Year Assessments for Adaptive Management, and Previously-Mitigated Areas**. The O&M Manual will be evaluated at least every five years to incorporate the findings (i.e., development of maintenance guidelines) under the activities required in the next finding to prepare and implement an Adaptive Management Plan.

e. **Authority to Conduct Maintenance in the Project Site**. Maintenance in the Project site, after construction is completed, is authorized under this Order until such time that the Executive Officer determines the site may be folded into the District's SMP. This is necessary because the monitoring necessary to verify sediment transport processes cannot be maintained under the SMP procedures for priority project budgeting and implementation.

17. **Adaptive Management Plan.** This Order requires the Discharger to submit an Adaptive Management Plan, acceptable to the Executive Officer, pursuant to Provision 18. The Adaptive Management Plan will describe channel dimension and flow data to be collected, which the Discharger will use to understand how the Project is performing after construction (e.g., stage-discharge relationships) and to generate quantifiable channel capacity flood protection objectives (e.g., acceptable freeboard at bridge crossings) to guide future maintenance activities. The objectives shall be revised iteratively as new data are collected under post-construction conditions and shall inform the O&M five-year assessments.

    Adaptive management is consistent with the District's SMP, which requires development of channel and reach-specific triggers for maintenance (i.e., maintenance guidelines) that minimize disturbance of the creek channel vegetation and substrate. This approach informs sediment and vegetation removal based on field observations of channel processes and performance, rather than solely using design criteria. Further, at least part of the data to be collected is consistent with the Corps' plans to collect longitudinal and cross-sectional data to calibrate sediment transport model results, specified in the Corps' responses to comments from the peer review panel (Batelle, 2013).

18. **Waters of the U.S. and of the State.** Based on a jurisdictional wetland delineation (Tetra

Tech, 2014), the Project has 4.18 acres of waters of the U.S. as creek waters (other waters). The waters of the U.S. are also waters of the State. An additional area of 5.63 acres from the ordinary high water mark elevation to the tops of banks constitutes waters of the State (but not waters of the U.S.), for a total area of 9.81 acres of waters of the State. This elevation difference, i.e., the vertical distance from the ordinary high water mark to the top of bank, ranges from zero to 6 feet. The linear extent of the Project activities in waters of the U.S. and of the State is approximately 10,072 linear feet of other waters.

No jurisdictional wetlands, as defined by the Corps' 1987 manual for wetland delineation, are in the Project area. However, significant portions of the creek, inset floodplain, and riparian habitat from top of bank to top of bank are riverine wetlands that are waters of the State (see Finding 26). The wetland delineation identified patches of wetland vegetation fringing the margins of the Upper Berryessa Creek active channel, with a combined area estimated at less than 0.5 acres, and an earlier assessment found an area of 0.39 acres of fringing wetland vegetation. For purposes of this Order, about 0.45 acres of fringing wetland vegetation is in the Project downstream of the Piedmont Creek confluence, where flow is most likely to be present year round and support wetland vegetation.

19. **Rare and Endangered Species.** The Project site does not presently support any rare or endangered species. It provides potential habitat for such species.

20. **Impacts.** The Project will result in fill and excavation impacts to 4.18 acres of waters of the U.S. that are also waters of the State and an additional 5.63 acres of waters of the State, for a total of 9.81 acres and about 10,450 linear feet of waters of the State in Upper Berryessa Creek, Los Coches Creek, and Piedmont Creek. These impacts consist of both permanent and temporal degradation of water quality function and value. The permanent and temporal impacts are co-located, although they each affect separate types of function and value in the affected creeks, as explained in detail in sections (a) and (b) below. The Project will also result in impacts from installation of new and replaced impervious surfaces.

a. Permanent Degradation in Water Quality Function and Values

i. *Rock Riprap.* The rock riprap fill (excluding the *grouted* riprap (see (ii) below)) will permanently degrade the function and value of creek bed and bank by displacing existing soil with 9- to 24-inch diameter angular rock underlain with a layer of geotextile fabric. This will result in less habitat for the benthic organisms living in the creek, including, but not limited to, algae, worms, diatoms, micro- and macroinvertebrates, and fish larvae. This impact to the benthic community will likely, in turn, reduce nutrient cycling and energy (as carbon) transfer to upper trophic level organisms (e.g., fish and birds). The lack of lower trophic organisms will restrict the designated beneficial uses in the Project, including warm water habitat, wildlife habitat, and non-contact water recreation uses (see Finding 26 for additional details of the beneficial uses).

The total rock riprap length is 9,753 feet, which encompasses 262 linear feet of concrete lining that will be removed in the area of Station 177. At this section, the replacement of concrete with rock riprap will result in a low-level improvement in

habitat quality. Therefore, the net length of permanent degradation from rock riprap is 9,491 feet (9.23 acres).

Although a 4-inch layer of soil will cover the rock, this layer is not enough to make up for the loss in functions and values currently provided by the earthen substrate in the creek bed and banks. In addition, the riprapped substrate is likely to severely restrict the colonization of vegetation in the creek bed and banks. Woody species that may attempt to grow would be impeded by the rock substrate. Any attempts to establish native vegetation as dominant cover at the Project site (see next finding - Mitigation) will be severely restricted due to the lack of soil on the creek banks and bed. Of the six native plant species in the upland and wetland hydroseed mixes being used in the Project, the minimum root depth requirement in soil ranges from 5.1 to 20.5 inches (Cal Flora database, http://www.calflora.org/. Accessed September 26, 2016).

ii. *Concrete and Grouted Riprap Structures.* Concrete and grouted riprap culverts and transition structures will permanently degrade the function and value by restricting the creek's natural processes in the same manner but to a greater extent than the riprapped sections of channel. Both concrete and grouted riprap are impervious and block the natural exchange of water, oxygen, and nutrients in the channel bed and bank. Further, concrete and grouted riprap surfaces do not support biota except a film of algae, fungi, and other non-vascular vegetative growth and any invertebrates that incidentally land on the hardscape. The length of concrete and grouted riprap is about 703 linear feet and 0.7 acres of creek bed and bank and an additional 200 linear feet (0.1 acre) along the right bank extending from the top of bank to the bed elevation. In addition, the 1,123-feet long concrete floodwall will disconnect the creek from the riparian corridor.

b. Temporal Degradation in Water Quality Function and Values

i. *Creek Widening.* The Project design will likely result in temporal losses of function and value by removing Upper Berryessa Creek's existing low-flow channel and inset floodplain benches that have formed over the past few decades and replacing them with a widened, flat-bottomed, riprapped channel. This could homogenize habitat structure within the creek and alter material transport functions until sediment deposition creates a new low-flow channel and floodplain benches. The formation of a low-flow channel with inset floodplain benches may occur from about the 1.1-year[5] to 10-year[6] flow based on the District's analyses and depending on precipitation patterns after construction is completed. Accordingly, recovery from channel widening will likely occur within five years. Thus, channel widening will result in temporal losses in function, contingent upon the Discharger's implementation of adaptive management discussed in Finding 17. Channel widening will impact 9,327 linear feet of Upper Berryessa Creek (channel widening will not occur at the Montague Expressway crossing, the two UPRR bridges, the Yosemite Drive crossing, and the Los Coches Creek confluence).

[5] Santa Clara Valley Water District, 2016-b. Geomorphic Approach to Design and Maintain Creeks. Powerpoint Presentation, June 24, 2016.

[6] Stefanovic, Dragi (District's Consulting Engineer at Tetra Tech), 2016. Email to Water Board staff, Setenay Bozkurt Frucht, January 11, 2016.

ii. *Vegetation Removal.* The Project will remove 53 native trees and shrubs growing within creek banks along the entire length of the Project. The Project will also remove about 0.45 acres of non-woody wetland vegetation fringing and within the active channel downstream of the Piedmont Creek tributary. Removing the woody vegetation from the riparian corridor and non-woody wetland vegetation fringing and within the active channel is impactful because this vegetation contributes to bank stability, nutrient cycling, water cycling, and habitat for wildlife. Wetland vegetation will likely reestablish within the same time frame as the active channel (i.e., within five years), based on similar projects in the San Francisco Bay Region, and the District's SMP.

iii. *Construction Activities.* The Project will temporarily impact waters of the State and the U.S. during construction (about 15 months) of the Project. The water quality of Upper Berryessa Creek, Los Coches Creek, and Piedmont Creek will be impacted by creek dewatering activities and may be impacted by accidental releases of soil, debris, other non-hazardous materials, hazardous materials, and contaminants during construction. These releases could cause violations of the water quality objectives proscribed in Chapter 3 of the Basin Plan, including, but not limited to, water quality objectives for the following parameters: bacteria, dissolved oxygen, floating material, oil and grease, pH, sediment, settleable material, suspended material, temperature, toxicity, turbidity, and specific chemical constituents.

21. **Mitigation.** The Application states the Discharger will replace any native trees and shrubs that will be removed and maintain them for five years. The locations for native tree and shrub species to be planted at the site are shown in the 100 percent Planting Plan dated April 1, 2016. The Discharger will seed the creek channel beds with wetland species to serve as a seed bank to restore the 0.45 acres of wetland vegetation to be removed by the Project. The Discharger will also seed the banks with native grass species. The wetland and grass species palettes are listed in the 100 percent Planting Plan specifications (section 32 92 19).

    The Water Board requires additional mitigation to compensate for temporary and permanent losses of functions and values resulting from the Project design as described in Finding 20. The Discharger has stated that compensatory mitigation is not feasible within the Project site. Therefore, compensatory mitigation will be offsite. This Order requires the Discharger to submit a Mitigation and Monitoring Plan (MMP), acceptable to the Executive Officer, by June 30, 2017, and to timely implement the MMP. The Water Board's understanding is that this schedule coincides with the District's schedule to adopt the capital improvement project budget for its One Water Plan. However, this Order does not require the District to propose a One Water Plan project as compensatory mitigation. The Water Board will notify the public upon receipt of the required MMP and consider public comments before the Executive Officer accepts it.

    The MMP must propose mitigation such that the Project and mitigation, taken together, meet the California Wetlands Conservation Policy (Executive Order W-59-93), known as the "No Net Loss Policy," as described in the Basin Plan (see Findings 27 and 28). The purpose of the No Net Loss Policy is to ensure no overall net loss and to achieve a long term net gain in the quantity, quality, and permanence of wetlands acreage and values. Compensatory mitigation is determined in part on the functions and areal extent of the lost wetlands. The Water Board

has considered the following factors in determining the required amount of mitigation that will adequately compensate for functions lost as a result of the Project:

- The mitigation project will enhance riverine wetland functions rather than restore or create riverine wetland area and functions;
- The mitigation will be in-kind (i.e., riverine mitigation for riverine impacts);
- The mitigation project will be offsite (because the Discharger has stated that compensatory mitigation is not feasible within the Project site) and will be within the Berryessa Creek watershed or elsewhere within the District's jurisdiction and within the San Francisco Bay Region;
- The mitigation project will be constructed within 12 months of the date when creek impacts first occurred (i.e., temporal loss of functions for one year);
- The enhancement benefits from the mitigation project will be fully achieved within five years;
- The mitigation project will have a moderate to high likelihood of success;
- The Project will result in an additional 7.4 acres of waters of the State, which will have the function and value of creek waters with rock riprap armor and concrete substrate and a moderate to low likelihood of native vegetation success in dominating the disturbed area; and
- The Project site will partially recover from impacts within five years of incurring the impacts (e.g., formation of a new low-low channel and establishment of wetland vegetation within five years).

Based on these factors, the Water Board requires the MMP to include measures that enhance about 15,000 linear feet or 15 acres of waters of the State or a combination of length and area commensurate with the Project's impacts.

In addition, the Water Board may increase or decrease the amount of mitigation required if any of the factors listed above change. For instance, the mitigation length and/or area will be increased by an additional 10 percent for each year mitigation is delayed to compensate for the additional temporal loss. This annual increase is consistent with how the Water Board accounts for temporary impacts in any project. Similarly, the Water Board may decrease the amount of mitigation if the proposed mitigation project is constructed quickly, has a small footprint for construction activities, and has far-reaching beneficial impacts in waters downstream and/or upstream of the mitigation project construction footprint.

When determining whether to accept out-of-kind mitigation, the Water Board may consider such sources as the Baylands Ecosystem Habitat Goals (1999), the Baylands Ecosystem Species and Community Profiles (2000), and the Baylands Ecosystem Habitat Goals Science Update (2015) (referred to collectively as the "Habitat Goals Reports"), the San Francisco Estuary Partnership's Comprehensive Conservation and Management Plan (1993 and its

2016 revision), or other plans specific to the District's flood protection and stream stewardship goals that would result in a project with a "long-term net gain in the quantity, quality, and permanence of wetlands acreage and values ..." consistent with the Basin Plan, section 4.23.4. Examples of potentially acceptable mitigation projects include dam removal, increasing salmonid habitat complexity in another creek, replacing a concrete channel with restored riverine wetland habitat, and preparing a watershed management plan and implementing projects specified in that plan sufficient to meet the Order's mitigation requirements.

The MMP must include performance and success criteria appropriate for the type of project. For vegetation in mitigation sites, herbaceous plantings must be monitored for no less than five years, and shrubs and trees must be monitored for no less than ten years, consistent with the Vegetation Performance and Success Criteria in Attachment B or standards of equivalent or better effectiveness.

The MMP will also report on the recovery of channel form and processes after the Project is completed using data collected to calibrate sediment transport model results and inform maintenance activities under the Adaptive Management Plan (see Finding 17).

22. **Monitoring and Technical Reports.** All monitoring and technical reports required in this Order are required pursuant to CWC section 13267. The burden of preparing these reports, including costs, bears a reasonable relationship to the benefits to be obtained from the reports and monitoring. Specifically, the monitoring and technical reports will demonstrate protection of beneficial uses during construction and maintenance projects, as well as verify the success of efforts to mitigate impacts as described in Findings 20 (i.e., impacts) and 21 (i.e., mitigation requirements). The monitoring reports will log the progress of revegetation over time and verify the success of mitigation plantings and/or other project features in the MMP, consistent with the minimum success and performance standards in the MMP. In addition, the technical reports will document the Project design and inform the Adaptive Management Plan and its implementation.

23. **Water Quality Certification.** The Project will result in discharge of dredge and fill materials into waters of the U.S. and of the State. The CWA (33 U.S.C. §§ 1251-1387) was enacted "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." (33 U.S.C. § 1251(a).) Section 401 of the CWA (33 U.S.C. §1341) requires every applicant for a federal license or permit that may result in a discharge into navigable waters to provide the licensing or permitting federal agency with certification that the project will be in compliance with specified provisions of the CWA, including water quality standards and implementation plans promulgated pursuant to CWA section 303 (33 U.S.C. § 1313). CWA section 401 directs the agency responsible for certification to prescribe effluent limitations and other limitations necessary to ensure compliance with the CWA and with any other appropriate requirement of state law. CWA section 401 further provides that state certification conditions shall become conditions of any federal license or permit for the project.

As the federal administrating agency for regulating the discharge of dredge and fill materials to waters of the U.S. pursuant to CWA section 404 (33 U.S.C., section 1344), the Corps

signed the Record of Decision dated May 29, 2015, stating that the Project meets all environmental statutes. On March 14, 2016, the Water Board issued the Certification pursuant to CWA section 401 to the Corps for the Project. The Certification states that the Water Board would consider WDRs for the Project to address the future operations and maintenance activities, vegetation monitoring for construction mitigation plantings, and an offsite mitigation plan for impacts due to the Project's design. This Order rescinds and supersedes the previously-issued water quality certification and replaces it with WDRs and a new water quality certification.

24. **Waste Discharge Requirements (WDRs).** Pursuant to CWC section 13263 and Title 23, section 3857 of the California Code of Regulations (CCR), the Water Board is issuing WDRs to regulate the proposed discharge of excavation, dredge, and fill materials into waters of the State. The Water Board considers WDRs necessary to adequately address impacts and mitigation to beneficial uses of waters of the State from the Project, to meet the objectives of the California Wetlands Conservation Policy (Executive Order W-59- 93), and to accommodate and require appropriate changes over the life of the Project, including during its construction. In accordance with CWC sections 13263(a) and 13241, the Water Board, after considering this matter at a public hearing, has prescribed requirements as to the nature of the proposed discharge. These requirements implement the Water Board's relevant water quality control plans and policies and take into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, and the need to prevent nuisance.

25. **California Environmental Quality Act (CEQA).** CEQA requires all discretionary projects approved by public agencies to be in full compliance with CEQA, and requires a lead agency to prepare an appropriate environmental document for such projects. The Discharger, as the lead agency, certified an Environmental Impact Report for the Project on February 9, 2016 (Project EIR). The Project EIR found several significant impacts that are under the purview and jurisdiction of the Water Board. These included significant impacts to: (1) biological resources; (2) soil or topsoil resources; (3) hazardous materials; (4) utility and service systems; and (5) hydrology and water quality. The Project EIR also found that the mitigation measures proposed therein would mitigate all of these impacts to less than significant levels. The Project EIR identified the following mitigation measures to mitigate these impacts to less than significant levels:

- Using seeds or cuttings collected at or near the Project area, or higher in the watershed if onsite collection is not feasible, to replace the 53 native tree and shrubs removed at the following rates:
    - Native tree up to 8 inches diameter at breast height (dbh): plant 1 native tree for each tree removed;
    - Native trees up to 20 inches dbh: plant 2 native trees for each tree removed;
    - Native trees greater than 20 inches dbh: plant 3 native trees for each native tree removed; and
    - Native shrubs: plant 2 native shrubs for each native shrub removed;

- Maintaining a buffer zone around those riparian trees that will be protected in place during construction;

- Replacing non-native and ruderal vegetation with native grass and forbs by hydroseeding disturbed areas;

- Conducting nesting bird surveys prior to construction and during nesting season, and establishing appropriate buffers to reduce impacts to nesting bird species;

- Preventing soil erosion or loss of topsoil by preparing and implementing Rain Event Action Plans (REAPs);

- Collecting and treating potentially contaminated groundwater encountered during Project excavation in the Jones Chemical groundwater plume area to comply with the VOC and Fuels General Permit standards before discharging the groundwater to the environment; and

- During construction, removing hazardous materials and wastes from the creek channel prior to substantial rain so that water flowing in the creek does not entrain hazardous substances.

The Water Board, as a responsible agency under CEQA, has considered the EIR and finds that in combination with the requirements of this Order, impacts during the construction of the Project that are within the Water Board's purview and jurisdiction have been identified and will be mitigated to less-than-significant levels. This Order includes conditions and mitigation measures that will substantially lessen or avoid the Project's impacts on the environment. The need for compensation of impacts from the Project design is addressed in this Order (see Finding 21).

26. **Water Quality Control Plans.** The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) was duly adopted by the Water Board and approved by the State Water Resources Control Board (State Water Board), U.S. EPA, and the Office of Administrative Law where required. The Basin Plan is the Water Board's master water quality control planning document. It designates beneficial uses of receiving waters, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed by the Plan.

Section 2.2.1 of the Basin Plan indicates that the beneficial uses of any specifically identified water body generally apply to its tributary streams. Existing and potential beneficial uses of waters at the Project include the following:

- **Upper Berryessa Creek:** Warm Freshwater Habitat (WARM), Wildlife Habitat (WILD), Water Contact Recreation (REC-1), and Noncontact Water Recreation (REC-2)

- **Los Coches Creek:** Preservation of rare and endangered species (RARE), WARM, WILD, REC-1, and REC-2

- **Piedmont Creek:** WARM, WILD, REC-1, and REC-2

Upper Berryessa Creek is tributary to Lower Penitencia Creek, Calera Creek, and Tularcitos Creek. The Basin Plan designates WARM, WILD, REC-1, REC-2, and Navigation (NAV) to these creeks. These creeks, in turn, flow into Coyote Creek, a tributary to San Francisco Bay. The beneficial uses of Lower Penitencia Creek are the same as for Upper Berryessa Creek. Some of the beneficial uses of Coyote Creek, which also apply to Upper Berryessa Creek by the Tributary Rule, include migration habitat (MIGR), spawning habitat (SPWN), preservation of rare and endangered species (RARE), and cold water habitat (COLD).

Section 2.2.3 of the Basin Plan indicates that the Water Board will rely on the naming conventions of the National Wetlands Inventory for mapping wetlands. Under these naming conventions, significant portions of Upper Berryessa Creek are riverine wetlands, and, as such, Table 2-3 of the Basin Plan lists examples of existing and potential beneficial uses for riverine wetlands. Therefore, Upper Berryessa Creek is a type of wetland under the Water Board's regulations. Moreover, Section 2.2.3 of the Basin Plan provides a list of aquatic features that the Water Board recognizes as wetlands, some of which would not be recognized as wetlands by the Corps. Some of the features listed that occur at the Project site include unvegetated ponded areas, the inset floodplain within the current channel, and riparian habitat within the Project site and are wetlands that are waters of the State. Moreover, the Project EIR states that there is in-channel wetland vegetation and riparian habitat on the Project site and acknowledges that the riparian habitat is waters of the State, although it is not waters of the U.S. The Corps disclaimed federal wetland jurisdiction over the fringing wetland vegetation because it did not have wetland soils. Section 4.23.4 of the Basin Plan states that "The Water Board may choose to exercise its independent authority under the Water Code in situations where there is a conflict between the state and the Corps, such as over a jurisdictional determination … ." Wetlands and waters impacted in the Project site are riverine wetlands. The beneficial uses associated with riverine wetlands at the Project site include WARM, WILD, REC-1, REC-2, and RARE. However, rare or endangered species do not presently inhabit the Project site. Requirements of this Order implement the Basin Plan.

27. **Basin Plan Wetland Fill Policy.** The Basin Plan Wetland Fill Policy (Fill Policy) establishes that there is to be no net loss of wetland acreage and no net loss of wetland value when a project and any proposed mitigation are evaluated together, and that mitigation for wetland fill projects is to be located in the same area of the region, whenever possible, as the project. The Fill Policy further establishes that wetland disturbance should be avoided whenever possible and, if not possible, should be minimized and only after avoidance and minimization of impacts should mitigation for lost wetlands be considered. The Water Board applies the Fill Policy to waters that are creeks because significant portions of creeks are riverine wetlands. Requirements of this Order implement the Fill Policy.

28. **California Wetlands Conservation Policy.** The goals of the California Wetlands Conservation Policy (Executive Order W-59-93, signed August 23, 1993) include ensuring "no overall loss" and achieving a "…long-term net gain in the quantity, quality, and permanence of wetland acreage and values…." The California Wetlands Conservation Policy

also calls for a "development of means to provide flexibility in the regulatory process … for allowing public agencies, water districts, and landowners to establish wetlands on their property consistent with the primary purpose of the property."

Senate Concurrent Resolution No. 28 states that "[i]t is the intent of the legislature to preserve, protect, restore, and enhance California's wetlands and the multiple resources which depend on them for benefit of the people of the State." Section 13142.5 of the CWC requires that the "highest priority shall be given to improving or eliminating discharges that adversely affect…wetlands, estuaries, and other biologically sensitive areas."

The Water Board applies the California Wetlands Conservation Policy to waters that are creeks because significant portions of creeks are riverine wetlands. Requirements of this Order implement the California Wetlands Conservation Policy.

29. **California EcoAtlas.** It has been determined through regional, State, and national studies that tracking of mitigation/restoration projects must be improved to better assess the performance of these projects, following monitoring periods that last several years. In addition, to effectively carry out the California Wetlands Conservation Policy, the State needs to closely track both wetland losses and mitigation/restoration project success. Therefore, this Order requires that the Discharger use the California Wetlands Form to provide Project information related to impacts and mitigation/restoration measures. An electronic copy of the form and instructions can be downloaded at: http://www.waterboards.ca.gov/sanfranciscobay/certs.shtml. Project information concerning impacts and mitigation/restoration will be made available at the web link: http://ecoatlas.org/regions/ecoregion/bay-delta/projects.

30. **Endangered Species Act.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). The Discharger is responsible for meeting all requirements of the applicable Endangered Species Acts. As applicable, the Discharger shall utilize the appropriate protocols, as approved by the U.S. Fish and Wildlife Service (USFWS) and stated in the USFWS Coordination Act Report, to ensure that Project activities do not adversely impact water quality or the beneficial uses of Upper Berryessa Creek, Los Coches Creek, and Piedmont Creek, or other beneficial uses of waters downstream of the Project as referenced in Finding 26.

31. **Notification of Interested Parties.** The Water Board has notified interested parties, including the Corps, U.S. EPA, USFWS, the California Department of Fish and Wildlife, the Guadalupe-Coyote Resource Conservation District, the Citizens Committee to Complete the Refuge, the City of Milpitas, the Valley Transportation Authority, BART, the Santa Clara County Parks and Recreation Department, and the California Department of Transportation-District 4, of its intent to prescribe WDRs for this discharge.

32. **Consideration of Public Comment.** The Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.

33. **Records Management.** This Project file is maintained at the Water Board under CIWQS Place No. 818597, and Regulatory Measure No. 403119.

34. **Fees for Dredge and Fill Projects.** The fee amount for the WDRs shall be in accordance with the current fee schedule, per California Code of Regulations (CCR), Title 23, Division 3, Chapter 9, Article 1, section 2200(a)(3). The Water Board understands, based on information from the Corps and the District, that the District is responsible for the fee.

35. Pursuant to 23 CCR sections 3857 and 3859, the Water Board is issuing WDRs and Water Quality Certification for the activities proposed in this Order.

IT IS HEREBY ORDERED that the water quality certification pursuant to CWA section 401, dated March 14, 2016, issued to the Corps, is rescinded upon the effective date of this Order, except for enforcement purposes. The Water Board hereby issues this modified certification for the Project, updating the March 14, 2016, certification to reflect current Project conditions and certifying that any discharge from the Project will comply with the applicable provisions of CWA sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 303 (Water Quality Standards and Implementation Plans), 306 (National Standards of Performance), and 307 (Toxic and Pretreatment Effluent Standards) and with other applicable requirements of State law. Pursuant to the provisions of CWA 401 and Division 7 of the CWC, related regulations, and guidelines adopted thereunder, the Dischargers, their agents, successors, and assigns shall comply with the following pursuant to authority under CWC sections 13263 and 13267:

A. Discharge Prohibitions

1. The discharge of wastes, including debris, rubbish, refuse, or other solid wastes into surface waters or at any place where they would contact or where they would be eventually transported to surface waters, including floodplains, is prohibited.

2. The discharge of floating oil or other floating materials from any activity in quantities sufficient to cause deleterious bottom deposits, turbidity, or discoloration in surface waters is prohibited.

3. The discharge of silt, sand, clay, or other earthen materials from any activity in quantities sufficient to cause deleterious bottom deposits, turbidity, or discoloration in surface waters is prohibited.

4. The fill activities in waters of the State subject to these requirements shall not cause a nuisance as defined in CWC section 13050(m).

5. The groundwater in the vicinity of the Project shall not be degraded as a result of the Project activities or placement of fill for the Project.

6. The discharge of materials, which are not otherwise regulated by a separate NPDES permit or allowed by this Order, to waters of the U.S. and State is prohibited.

7. The use of imported soil in the Project is prohibited unless the Executive Officer grants

an exception to this under the requirements of Provision 16. Under such circumstances, the Discharger shall submit the report required in Provision 16 to provide justification for the use of imported soil fill with resulting impacts to the waters of the State.

8. Directional drilling in the Project is prohibited.

9. The use of bank stabilization methods and materials other than the methods and materials in the 100 percent design plans and specifications is not authorized under this Order.

10. This Order prohibits any creek dewatering, diversion, or discharge before the Executive Officer accepts, in writing (including via electronic mail), a Dewatering Plan that meets the requirements of Provision 12.

11. This Order prohibits the alignment of any utilities, or maintaining existing utility lines in the Project, in such a manner that will create an obstacle to flow or destabilize the creek channel.

B. Provisions

1. The Discharger shall comply with all Prohibitions and requirements of this Order immediately upon adoption of this Order or as otherwise provided below. The Discharger shall fully implement all requirements of this Order, including all plans accepted by the Water Board or the Executive Officer. The Discharger shall notify the Executive Officer in writing should the Discharger need to significantly alter the Project. If the Water Board is not notified of a significant alteration to the Project, the Discharger will be considered in violation of this Order and may be subject to Water Board enforcement actions.

2. All plans and reports required under this Order shall be submitted and acceptable to the Executive Officer.

3. The Project shall be constructed in conformance with the 100 percent Design Plans dated August 4, 2016, and 100 percent Planting Plan, dated April 1, 2016, consistent with Finding 11.

4. All work performed within waters of the State shall be completed in a manner that minimizes impacts to beneficial uses and habitat. Measures shall be employed to minimize disturbances that will adversely impact the water quality of waters of the State. Disturbance or removal of vegetation shall not exceed the minimum necessary to complete Project implementation.

5. Disturbance or removal of vegetation shall be minimized. The Project site shall be stabilized through incorporation of appropriate BMPs, including the successful establishment of native grass vegetation, to compensate for impacts to wildlife habitat values and to prevent and control erosion and sedimentation. The Discharger shall revegetate the Project based on the 100 percent Planting Plan and Specifications for trees and shrubs dated April 1, 2016, and the 100 percent Conformed Drawings dated August 4, 2016, for native wetland and grass species. The Discharger shall maintain trees and shrubs for five years as stated in the Application.

6. There shall be no violation of any water quality standard for receiving waters adopted by the Water Board or the State Water Board. Creek dewatering discharges, accumulated groundwater or stormwater removed during dewatering of excavations, and diverted creek and stormwater flows shall not be discharged to waters of the State without meeting the receiving water objectives in the Basin Plan.

7. Dredging, excavation, and fill in Upper Berryessa Creek, Piedmont Creek, and Los Coches Creek shall not cause the turbidity in the receiving water (i.e., water in these creeks and in waters to which they discharge) to increase by more than 10 percent if the ambient turbidity of the receiving water is greater than 50 NTU or by more than 5 NTU if the ambient turbidity of the receiving water is less than or equal to 50 NTU.

8. No equipment shall be operated in stream channels or other waters where there is flowing or standing water. No fueling, cleaning, or maintenance of vehicles or equipment shall take place within any areas where an accidental discharge to waters of the State may occur.

9. Concrete used in the Project shall be allowed to completely cure (a minimum of 28 days) or be treated with a California Department of Fish and Wildlife-approved sealant before it comes into contact with flowing water.

10. **Construction General Permit.** The Discharger shall seek coverage under and comply with, or oversee that its contractors seek coverage and comply with, the statewide General Permit for Discharges of Storm Water Associated with Construction Activities (Order No. DWQ-2009-0009, as amended by Order Nos. 2010-0014-DWQ and 2012-006-DWQ) (Construction General Permit). All work performed within waters of the State shall be completed in a manner that minimizes impacts to water quality and the beneficial uses of Upper Berryessa Creek, Los Coches Creek, and Piedmont Creek and waters downstream of these creeks.

11. **Rain Event Action Plan.** The Discharger shall develop and implement a Rain Event Action Plan (REAP), as required by the Construction General Permit, designed to protect all exposed portions of the Project site within 48 hours prior to any likely precipitation event. The REAP requirement is designed to ensure that the Discharger has adequate materials, staff, and time to implement erosion and sediment control measures that are intended to reduce the amount of sediment and other pollutants generated from the active site. A REAP must be developed when there is a forecast of 50 percent or greater probability of precipitation in the Project area.

12. **Dewatering Plan.** The Discharger shall implement, or ensure that its contractor implements, the Dewatering Plan consistent with Finding 14 and the discharge requirements in Provision 14, for surface and groundwater flows throughout the Project site, excluding the groundwater flow within the JCI plume area that is regulated under Provision 13.

13. **Groundwater Management Plan.** The Discharger shall implement the Groundwater Management Plan dated January 26, 2016, and accepted by the Executive Officer on

March 8, 2016, to meet the standards of the VOC and Fuel General Permit, consistent with Finding 15, and discharge requirements in Provision 14.

14. **Discharge and Receiving Water Objectives.** Creek dewatering discharges, accumulated groundwater or stormwater removed during dewatering of excavations, and diverted creek and stormwater flows shall not be discharged to waters of the State without meeting the following discharge and receiving water limitations herein. All monitoring records at the Project site shall be maintained at a location to be designated in the Dewatering Plan and shall be made available upon request by Water Board staff.

    a. pH - the instantaneous discharge pH shall be in the range of 6.5 to 8.5, and controllable water quality factors shall not cause changes greater than 0.5 units in the receiving water pH levels.

    b. Discharge Dissolved Oxygen - the discharge dissolved oxygen concentration shall be no less than 5.0 milligrams per liter (mg/L) (hourly average).

    c. Discharge Dissolved Sulfide - the discharge dissolved sulfide shall not be greater than 0.1 mg/L.

    d. Receiving Water Turbidity - the receiving water turbidity measured as nephelometric turbidity units (NTU) shall not be greater than 10 percent of natural conditions in areas where natural turbidity is greater than 50 NTU (daily average). All Project discharge plans shall identify an acceptable location or locations at which to measure background turbidity. The Discharger shall monitor receiving water and discharge turbidity at least one time every 8 hours on days when discharges from excavations or any other dewatering processes may occur.

    e. Receiving Water Temperature - the receiving water shall not be increased by more than 5°F (2.8°C) above natural receiving water temperature.

    f. Nutrients - the receiving waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.

15. **Post-Construction Stormwater Management Plan.** No later than 90 days from the date this Order is adopted, the Discharger shall submit a Post-Construction Stormwater Management Plan consistent with the Municipal Regional Stormwater Permit's (Water Board Order No. R2-2015-0049; NPDES Permit No. CAS612008) requirements for post-construction stormwater management for new or replacement impervious surfaces. The plan shall identify construction materials, designs, treatment controls, a proposed operation and maintenance plan, and all other information, as appropriate, sufficient to ensure the appropriate treatment of runoff from 6.8 acres of maintenance roads and 0.1 acres of concrete access roads and ramps, either onsite or at an alternative offsite location, and a trash management plan for public access areas.

16. **Fill Quality Report**. The Discharger shall avoid reusing any contaminated soil excavated from within the JCI plume area, consistent with the Project's DDR. The Executive

Officer may authorize reuse of soil from the JCI plume area if the soil analytical results meet the criteria outlined in this Provision. The Discharger shall maintain records onsite of laboratory analyses, excavation quantities, stockpiling, and disposal records, for soil excavated from the JCI plume area, and shall make the records available upon request by the Executive Officer or staff upon request.

In addition, no later than 30 days prior to placing any imported soil fill material, and any soil from within the JCI plume area, at the Project area, including all placement of fill in areas below the top of bank, on levees, and at any other location where the fill is a discharge to or has the potential to discharge to any waters of the State in the Project, the Discharger shall submit a technical report, acceptable to the Executive Officer, that the chemical concentrations in the imported fill soil are in compliance with the protocols specified in the following documents:

- The Dredged Material Management Office (DMMO) guidance document *Guidelines for Implementing the Inland Testing Manual in the San Francisco Bay Region* (Discharger Public Notice 01-01, or most current version) (Inland Testing Manual) with the exception that the water column bioassay simulating in-bay unconfined aquatic disposal shall be replaced with the modified effluent elutriate test, as described in Appendix B of the Inland Testing Manual, for both water column toxicity and chemistry (DMMO suite of metals only); and,

- The Water Board May 2000 staff report *Beneficial Reuse of Dredged Materials: Sediment Screening and Testing Guidelines*, or the most current revised version. Water Board staff shall review and approve data characterizing the quality of all material proposed for use as fill prior to placement of fill at any of the levee, marsh, or channel areas at the Project site. Modifications to these procedures may be approved by the Executive Officer on a case-by-case basis, pending the Discharger's ability to demonstrate that the imported fill material is unlikely to adversely impact beneficial uses.

17. **Maintenance.** Maintenance activities shall be consistent with the District's SMP as described in Finding 16 and consistent with the Adaptive Management Plan this Order requires pursuant to Provision 18 (Finding 17). In addition, the mitigation required due to impacts from maintenance activities shall be consistent with the District's SMP.

18. **Adaptive Management Plan.** No later than 180 days after the date this Order is adopted, the Discharger shall submit an Adaptive Management Plan that is consistent with Finding 17. The Adaptive Management Plan shall identify the Project's performance with respect to sediment deposition and accumulation and develop ways of reducing the need and frequency of maintenance activities and maximizing habitat acreage, values, and functions. The Adaptive Management Plan shall be implemented immediately upon Project channel construction completion. For the purposes of this Order, Project channel construction completion is defined as the first business day after construction contractors are no longer within the Project right-of-way, except for any contractor present solely for the purposes of vegetation planting, monitoring, and/or management.

The Adaptive Management Plan shall include, but not be limited to, the following elements:

a. A workplan to periodically conduct cross-sectional and longitudinal profile surveys and collect stage-discharge recordings, including high water stages and velocities, after the Project is constructed. The data collected shall inform the Geomorphology Report described below in section (f).

b. A decision-making process to avoid sediment and/or vegetation removal before analyzing channel capacity based on field survey data to be collected in accordance with (a) above.

c. Identification of a maintenance trigger based on a stated freeboard; and other appropriate maintenance trigger(s).

d. Identification of stream gage locations necessary to implement the monitoring requirements for the Adaptive Management Plan, installation of gage(s), and data acquisition and analysis of stream flow gage(s) to implement the monitoring requirements of the Adaptive Management Plan.

e. A collaborative process comparable to the District's Notification of Proposed Work process under the SMP (see Finding 16) to convene a team, including Discharger staff and Water Board staff, to jointly develop Project-specific maintenance work plans, acceptable to the Executive Officer, for any bank stabilization, sediment, and/or vegetation (including woody vegetation) maintenance activities that may be necessary in the event that a maintenance trigger (or multiple triggers) occurs.

f. **Geomorphology Report.** A report submitted after five measurable flood events at or exceeding the estimated 1.1-year flood event, and one event at or exceeding the estimated 10-year flood event, to analyze data collected over the first years of Adaptive Management Plan implementation to evaluate channel performance and address the uncertainty in sediment transport processes (see Finding 16). The Geomorphology Report will evaluate:

   i. whether flow events have occurred that will enable the evaluation of sediment deposition processes in the Project;

   ii. whether sediment deposition rates have increased or decreased compared to the existing conditions;

   iii. whether sediment only accumulates at the two UPRR culverts as stated in the Project EIR; and

   iv. a comparison of stage-discharge relationships based on collected field data and the model projections.

   In addition, the Geomorphology Report shall be the basis for the following possible steps to determine whether the District will continue implementing the Adaptive

Management Plan:

v. The Executive Officer shall authorize the Project to be transferred to the District's SMP if results in the report indicate sediment deposition has decreased or is similar to existing conditions. The maintenance guidelines developed with the Adaptive Management Plan shall be incorporated into the District's SMP and implemented for future maintenance activities under the SMP.

vi. The District shall continue implementing the Adaptive Management Plan if the Geomorphology Report findings indicate the sediment transport issues have not been resolved, either because not enough rainfall has occurred to generate flows in the creeks to verify sediment transport processes and/or because the data are inconclusive.

Mitigation Requirements

19. **Mitigation and Monitoring Plan.** No later than June 30, 2017, the Discharger shall submit a final Mitigation and Monitoring Plan (MMP) acceptable to the Executive Officer. The MMP shall include the following performance criteria by addressing the following elements and/or comparable criteria appropriate for the case-specific plan:

    a. The MMP shall include a proposal, workplan, monitoring plan, performance standards, and all other information, as appropriate, sufficient to ensure the mitigation of permanent and temporal losses in functions and values of waters of the State and to ensure the Project results in no net loss and a long-term net gain in wetland and waters area, function, and value, consistent with Finding 21.

    Thus, the mitigation package (i.e., the MMP) shall provide for a minimum restoration of the Project reach, subject to the Adaptive Management Plan (see Provision 18) and additional offsite mitigation. The offsite mitigation shall enhance 15,000 linear feet or 15 acres of creek waters or the equivalent.

    The Water Board may require a lesser or greater amount of area and/or linear feet based changes in the factors listed in Finding 21, such that the size and scope of the mitigation project shall be appropriate for the Project's impacts.

    b. The MMP shall include (but not be limited to) the vegetation performance standards and success criteria, or comparable standards, as those in Attachment B. If the offsite mitigation plan includes vegetation plantings and/or hydroseeding, the vegetation shall be monitored annually for success, health, and vigor as specified in Attachment B, Tables 1 and 2.

    c. Plantings in the offsite mitigation area(s) shall be monitored for a minimum period of five years for grasses, forbs, and shrubs and ten years for trees, until the success criteria in the MMP are achieved.

    d. The Discharger shall ensure invasive plant species in the Project site do not exceed cover of more than 10 percent based on the percent cover of, specifically, "highly" invasive plant species as defined by the California Invasive Plant Council. In

addition, the Discharger shall apply the guidance in Attachment B, or comparable standards, for revegetation of onsite grasses, shrubs, and trees specified in the Planting Plan.

e. In addition to performance standards and success criteria for vegetation, the MMP shall identify other appropriate performance standards and success criteria based on the mitigation plan, habitat features, and other factors, as appropriate to the proposed mitigation project(s).

f. The MMP shall include methods for performing an assessment of whether the low-flow channel has recovered within the first five years after construction, using data collected for the Adaptive Management Plan (see Provision 18). If the low flow channel does not recover within five years, the Discharger shall provide additional mitigation to compensate for the temporal loss in function and value due to the impacts of creek widening, consistent with Finding 21.

The MMP shall incorporate the reporting requirements stipulated in Provisions 24 through 28.

20. **EIR Mitigation Measures.** To mitigate the significant impacts identified in the Project EIR over which the Water Board has authority, the Discharger shall implement those mitigation measures, which are summarized below and described in Finding 25:

    a. Replacing any native trees and shrubs of certain sizes the Project will remove during construction;

    b. Maintaining a buffer zone around riparian trees during construction;

    c. Replacing non-native and ruderal vegetation with native grass and forbs;

    d. Conducting nesting bird surveys following established protocols prior to construction and during the nesting season (general mid-April to late July). If nests are detected at staging areas and construction sites during these surveys, a 50-foot no-construction buffer will be delineated around the nest until young have fledged (300-foot buffer for raptors);

    e. Preparing and implementing Rain Event Action Plans;

    f. Preparing and implementing a creek dewatering plan;

    g. Collecting and treating potentially contaminated groundwater encountered to meet the VOC and Fuels General Permit standards; and

    h. Preventing hazardous materials and wastes from being entrained in creek flow.

21. **Log of Impacts.** The Discharger shall maintain an Impacts Log to track Project activities including the start dates of impacts to waters of the State and the associated mitigation

activities. The Discharger shall make the Impacts Log available for review by Water Board staff upon request. The Impacts Log shall include, but not be limited to, the start dates of the following Project milestones:

a. Channel excavation and grading;

b. Creek dewatering;

c. Groundwater management;

d. Hydroseeding;

e. Tree and shrub planting; and

f. Offsite mitigation construction elements (as described in the MMP requirements (Finding 21; Provision 19)).

Reporting Requirements

22. All reports pursuant to these Provisions shall be prepared under the supervision of suitable professionals registered in the State of California.

23. The Discharger shall report any water quality monitoring data that are not in compliance with Provision 14 (a non-compliance event) to the Water Board within 24 hours via telephone and shall follow up with a written report within 14 days. The written report shall provide the following:

    a. Discharge and receiving water measurements for the water quality parameter(s) collected during the non-compliance event;

    b. The location, duration, and likely cause of the non-compliance event;

    c. All actions taken to remedy non-compliance immediately after identifying the non-compliance event and to mitigate for any adverse impacts caused or contributed to by the non-compliance event; and

    d. All actions taken to prevent a similar non-compliance event in the future.

24. **California EcoAtlas.** The Discharger shall use the standard California Wetlands Form to provide Project information describing impacts and restoration measures no later than 14 days from the date of the final MMP approved pursuant to Provision 19. An electronic copy of the form can be downloaded at: http://www.waterboards.ca.gov/sanfranciscobay/certs.shtml. The completed form shall be submitted electronically to habitatdata@waterboards.ca.gov or shall be submitted as a hard copy to both (1) the Water Board, to the attention of EcoAtlas, and (2) the San Francisco Estuary Institute, 4911 Central Avenue, Richmond, CA 94804, to the attention of EcoAtlas.

25. **Mitigation Monitoring Reports**. The Discharger shall submit annual reports, no later

than January 31 following each year in which mitigation is monitored, during each year of the first five years of the initial ten year monitoring period. After the first five years, the Discharger shall submit reports in years seven, nine, and ten. The reports shall summarize each year's monitoring results, including the need for any remedial actions (e.g., re-planting or bank stabilization). The annual report shall compare data to previous years and describe progress towards meeting final success criteria. The final year's report (e.g., the year 10 report if the MMP spans 10 years) shall consist of the annual data from the final year (e.g., from year 10 for an MMP that spans 10 years), in addition to a comprehensive final report. Annual reports and the comprehensive final report shall include photographs from the photo-documentation points specified in Provision 29.

The final report shall document whether the Project site and offsite mitigation area(s) meet the final performance criteria of the MMP. If the criteria are not met, the report shall identify remedial measures to be undertaken, including extension of the monitoring period until the criteria are met.

Success of the mitigation program shall be determined by the Executive Officer after all the minimum success criteria in MMP are achieved. All Annual Reports shall include photographs, special-status species monitoring, and all other information, as appropriate.

26. The Discharger shall continue to submit Annual Reports after the designated monitoring period in the MMP as necessary (e.g., after the first ten years if the MMP spans 10 years), until the sites have met their performance standards and final success criteria, and the Executive Officer has accepted a notice of mitigation completion (see Provision 28) for each mitigation site.

27. **EIR Mitigation Measure Implementation**. The Discharger shall submit annual reports to report on implementation of Project EIR mitigation measures pursuant to Provision 20. The Discharger shall submit the first annual report no later than January 31 following adoption of this Order and shall continue annual reporting until one year after completion of channel construction. Annual reporting to meet this requirement may be a section within the MMP annual reports required under Provision 25, with clearly defined section headings to identify the Project EIR mitigation annual data and information.

28. **Notice of Mitigation Completion**. When the Discharger has determined that a mitigation area achieved the performance standards and final success criteria specified in the MMP, it shall submit a notice of mitigation completion. This notice shall include a status report on the implementation of the long-term maintenance and management portion of the MMP and a description of the status of the mitigation component that has been determined to be successful. After acceptance of the notice of mitigation completion in writing by the Executive Officer, the Discharger's submittal of mitigation monitoring reports for that mitigation component is no longer required.

29. **Photo-documentation Report**. To document channel and bank conditions immediately upstream and downstream of the Project site, as well as the Project site itself, the Discharger shall establish a minimum of 12 photo-documentation sites at the Project site, and additional sites sufficient to document each bridge crossing in the Project. These

photo-documentation sites shall be selected to document channel and bank conditions immediately upstream and downstream of each site, as well as the Project reach. The Discharger shall prepare site maps with the photo-documentation points clearly marked. Prior to implementing the Project, the Discharger shall photographically document the condition of each site. Following implementation of the Project, the Discharger shall photographically document the immediate post-construction condition of the sites and submit a report to the Water Board including the pre-construction photographs, the post-construction photographs, and the map with the locations of the photo-documentation points. This report shall be submitted to the Water Board along with the as-built plans (Provision 30).

30. **As-built Plans.** Within 180 days of construction completion in the Project site, the Discharger shall submit an as-built report of the Project in both digital format and hard copy of at least 11-inches by 17-inches to the Water Board. The as-built report shall be submitted either by email to staff or by uploading it to the Water Board's FTP internet site. Instructions for uploading documents to the FTP internet site are available at http://www.waterboards.ca.gov/sanfranciscobay/publications_forms/documents/FTP_Discharger_Guide-12-2010.pdf. If the as-built report is submitted by uploading it to the FTP internet site, the Discharger shall notify the Water Board case manager via email. For purposes of this Order, the definition for construction completion shall be the final date when construction contractors (excluding contractors for revegetation activities) are in the Project site.

31. **Project Completion Report**. The Discharger shall notify the Water Board by electronic mail or by hard copy of Project completion upon transfer of the Project to the local sponsor. This notification, known as a Project Completion Report, shall consist of the following information: (a) the CIWQS Place ID for this Project (i.e., CWIQS Place ID 818597); (b) the date Project construction activities were completed; and (c) the completion date of mitigation plantings. Project construction activities for the purpose of this condition are defined as activities associated with construction of the Project, establishing native grass vegetation on the banks, and planting trees and shrubs as per the Planting Plan. The Project Completion Report shall be submitted to Susan Glendening at Susan.Glendening@waterboards.ca.gov, or the current Water Board staff member assigned to the Project.

32. **Final Operations and Maintenance Manual.** The Discharger shall submit the final Project Operations and Maintenance Manual, as referenced in Finding 16, to the Water Board upon transfer of the Project to the local sponsor.

Other Requirements

33. The Discharger shall immediately notify the Water Board by telephone whenever an adverse condition occurs as a result of this discharge. Such a condition includes, but is not limited to, a violation of the provisions of this Order, a significant spill of petroleum products or toxic chemicals, or damage to control facilities that would cause noncompliance. A written notification of the adverse condition shall be submitted to the Water Board within two weeks of occurrence. The written notification shall identify the

adverse condition, describe the actions necessary to remedy the condition, and specify a timetable, subject to the modifications of the Executive Officer, for the remedial actions. The Discharger shall notify the Water Board, in writing or via electronic mail, at least 30 days prior to actual start dates for each Project component (i.e., prior to the start of grading or other construction activity for any Project component, including the creek mitigation components).

34. The Discharger shall at all times fully comply with the engineering plans, specifications, and technical reports submitted with the Project materials for the Corps' Application and the plans and reports required by this Order (e.g., Provisions 12, 13, 15, 16, 18, and 19), which, together, serve as the basis for the Project description this Order covers.

    Please be advised that failure to implement the Project as proposed is a violation of this Certification. Failure to comply with any condition of this Certification shall constitute a violation of the CWA. Any such Certification previously granted shall immediately be revoked and any or all discharges shall cease. The Discharger may then be subject to injunctive release, including stop work and/or restoration orders.

35. The Discharger shall be responsible for work conducted by its consultants, contractors, and subcontractors.

36. The Discharger is considered to have full responsibility for correcting any and all problems that arise in the event of a failure that results in an unauthorized release of waste or wastewater. The discharge of any hazardous, designated, or non-hazardous waste as defined in Title 23, Division 3, Chapter 15 of the California Administrative Code, shall be disposed of in accordance with applicable State and federal regulations.

37. The Discharger shall remove and relocate any wastes that are discharged at any sites in violation of this Order.

38. The Discharger shall maintain a copy of this Order at the Project site at all times during construction of the Project and be made available to Water Board staff upon request. All foremen and other employees responsible for overseeing that construction of the Project complies with permitting requirements shall have access to and be familiar with the Order requirements.

39. The Discharger shall permit the Water Board or its authorized representatives at all times, upon presentation of credentials:

    a. Entry onto Project premises, including all areas on which wetland or waters fill or mitigation of waters of the State, is located or in which records are kept.

    b. Access to copy any records required to be kept under the terms and provisions of this Order.

    c. Inspection of any treatment equipment, monitoring equipment, or monitoring method required by this Order.

d. Sampling of any discharge or surface water covered by this Order.

40. This Order does not authorize commission of any act causing injury to the property of another or of the public; does not convey any property rights; does not remove liability under federal, State, or local laws, regulations or rules of other programs and agencies, nor does this Order authorize the discharge of wastes without appropriate permits from other agencies or organizations.

41. The Discharger shall timely pay all fees associated with this Order. The fee amount for this Order shall be in accordance with the current fee schedule, per California Code of Regulations, Division 3, Chapter 9, Article 1, section 2200(a)(3). The fee payment shall indicate the Order number, the CIWQS Place ID no. 818597, the Regulatory Measure ID no. 403119, and the applicable season.

42. This Order is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to CWC section 13330 and 23 CCR section 3867.

43. The Water Board may add to or modify the conditions of this Order, as appropriate, to implement any new or revised water quality standards and implementation plans adopted and approved pursuant to the CWC or CWA section 303 or in response to new information concerning the conditions of the Project. Additionally, the Water Board reserves the right to suspend, cancel, or modify and reissue this Certification, after providing notice to the Discharger, if the Water Board determines that the Project fails to comply with any of the conditions of this Certification, or when necessary to implement any new or revised water quality standards and implementation plans adopted or approved pursuant to the CWC or CWA section 303 (33 U.S.C. § 1313).

44. This Order is not intended and shall not be construed to apply to any discharge from any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent Project materials for the Order were filed pursuant to 23 CCR subsection 3855(b) and those Project materials specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.

45. The Water Board may consider rescission of this Order upon Project completion and the Executive Officer's acceptance of notices of completion of mitigation for all mitigation, creation, and enhancement projects required or otherwise permitted now or subsequently under this Order.

This Order applies to the Project as proposed in the Project materials. Failure to implement the Project as proposed and as authorized herein is a violation of this Order. Violation or threatened violation of the Provisions of this Order is subject to any remedies, penalties, process or sanctions as provided for under applicable State or federal law, including administrative civil liability pursuant to CWC section 13350. Failure to meet any Provision of this Order may subject the Discharger to civil liability imposed by the Water Board to a maximum of $5,000 per day of violation or $10 for each gallon of waste discharged in

violation of the Order. Also, any requirement for a report made as a Provision to this Order (e.g., Provisions 23 through 32) or technical or monitoring reports the Water Board requests in response to a suspected violation of this Order, is a formal requirement pursuant to CWC section 13267, and failure to submit, late or inadequate submittal, or falsification of such technical report(s) is also subject to civil liability pursuant to CWC section 13268.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on (date).

_____

Bruce H. Wolfe
Executive Officer

Attachments:

Attachment A - Figures

1 – Upper Berryessa Creek Project Location and Vicinity

2 – Project Elements, Calaveras Boulevard to Ames Avenue

3 – Project Elements, Ames Avenue to Interstate 680

Attachment B - Vegetation Performance Standards and Criteria

ATTACHMENT A
Figures

ATTACHMENT B
Vegetation Performance and Success Criteria

Performance and success criteria for the Project's mitigation plantings are outlined in Table 1. The overall health and vigor of all plantings will be evaluated each year in the field using the ratings listed in Table 2. The criteria include annual or semi-annual plant survival success criteria of no less than five years for herbaceous species and no less than ten years for woody species (i.e. trees and shrubs).

a. A vegetation monitoring plan shall be developed and implemented to track whether the plantings meet success criteria; replanting to replace unsuccessful growth; and other steps to ensure establishment, vigor, and health in mitigation plantings and mitigation success.

b. The mitigation for tree and shrub removals shall be consistent with the tree removal ordinances or similar requirements in the County of Santa Clara and cities of Milpitas and San Jose, at a minimum, and shall meet the requirements of the U.S. Fish and Wildlife Service Coordination Act Report for the Project dated April 26, 2013.

c. The Discharger shall water all riparian and wetland plantings for a minimum of three years. The Discharger shall continue to water all plantings during all projected dry water years (defined as 75 percent of average annual rainfall) that occur during the first ten years after construction. Any replacement plants shall be watered for a minimum of three years.

d. The Discharger shall follow the best management practices for preventing introduction and spreading of plant pathogens in mitigation areas, in accordance with the Planting Plan.

Table 1. Performance and Minimum Success Criteria - Offsite Mitigation Plantings

Habitat Type	Criteria
Native herbaceous and forbs communities – percent cover native species and non-native species	Year 1: 50 percent cover Year 3: 75 percent cover Year 5: 85 percent cover • Post-planting shall meet 85 percent cover after five years • Invasive plant species at a maximum cover of no more than 10% based on, specifically, "highly" invasive plant species as defined by the California Invasive Plant Council. • Health and vigor monitoring pursuant to Table 2.

Riparian plantings including trees and shrubs – canopy cover success criteria	• Performance standards and success criteria shall be consistent with the District's Stream Maintenance Program Manual, July 21, 2014, section 11.3.2. • In addition, shrubs and trees shall be monitored for an additional 5 years beyond the first 5 years following initial planting. Monitoring shall be conducted in years 6 through 10, but annual reporting shall only be in years 7, 9, and 10. Each annual report shall cover the monitoring for the previous year or two years of monitoring conducted, in addition to the cumulative monitoring results at each monitoring milestone. • Annual health and vigor monitoring pursuant to Table 2.
Seasonal wetland communities (applicable if the offsite mitigation area includes seasonal wetland habitat)	Year 1: 5 percent or greater absolute cover of planted and natural recruitment of wetland species. No more than 5 percent absolute cover of target invasive plants. No large unvegetated bare spots (greater than 25 percent) or erosional areas; no evidence of oversaturation or permanent inundation. Year 2: 20 percent or greater absolute cover of planted and natural recruitment of wetland species. No more than 5 percent absolute cover of target invasive plants. No large unvegetated bare spots (greater than 25 percent) or erosional areas; no evidence of oversaturation or permanent inundation. Year 3: 45percent or greater absolute cover of planted and natural recruitment of wetland species. No more than 5 percent absolute cover of target invasive plants. No large unvegetated bare spots (greater than 25 percent) or erosional areas; no evidence of oversaturation or permanent inundation. Year 4: 60 percent or greater absolute cover of planted and natural recruitment of wetland species. No more than 5 percent absolute cover of target invasive plants. No large unvegetated bare spots (greater than 25 percent) or erosional areas; no evidence of oversaturation or permanent inundation. Year 5: 70 percent or greater absolute cover of planted and natural recruitment of wetland species. • Invasive plant species at a maximum cover of no more than 10% based on, specifically, "highly" invasive plant species as defined by the California Invasive Plant Council. • No large unvegetated bare spots (greater than 20 percent) or erosional areas; no evidence of oversaturation or permanent inundation. • Annual health and vigor monitoring pursuant to Table 2.

Table 2. Health and Vigor Ratings

5	Excellent – less than 5% of the quadrat affected by mortality or cumulative symptoms of poor health, for example, disease, insect damage, mechanical damage, and poor growth;
4	Very good – 5 to 25% of quadrat affected by mortality or cumulative symptoms of poor health;
3	Good – 25 to 50% of quadrat affected;
2	Fair – 50 to 75% of quadrat affected;
1	Poor – greater than 75% of quadrat affected; or
0	Dead – no living plants in quadrat

ATTACHMENT A
Figures

Attachment A

Figure 1 – Project Location and Vicinity

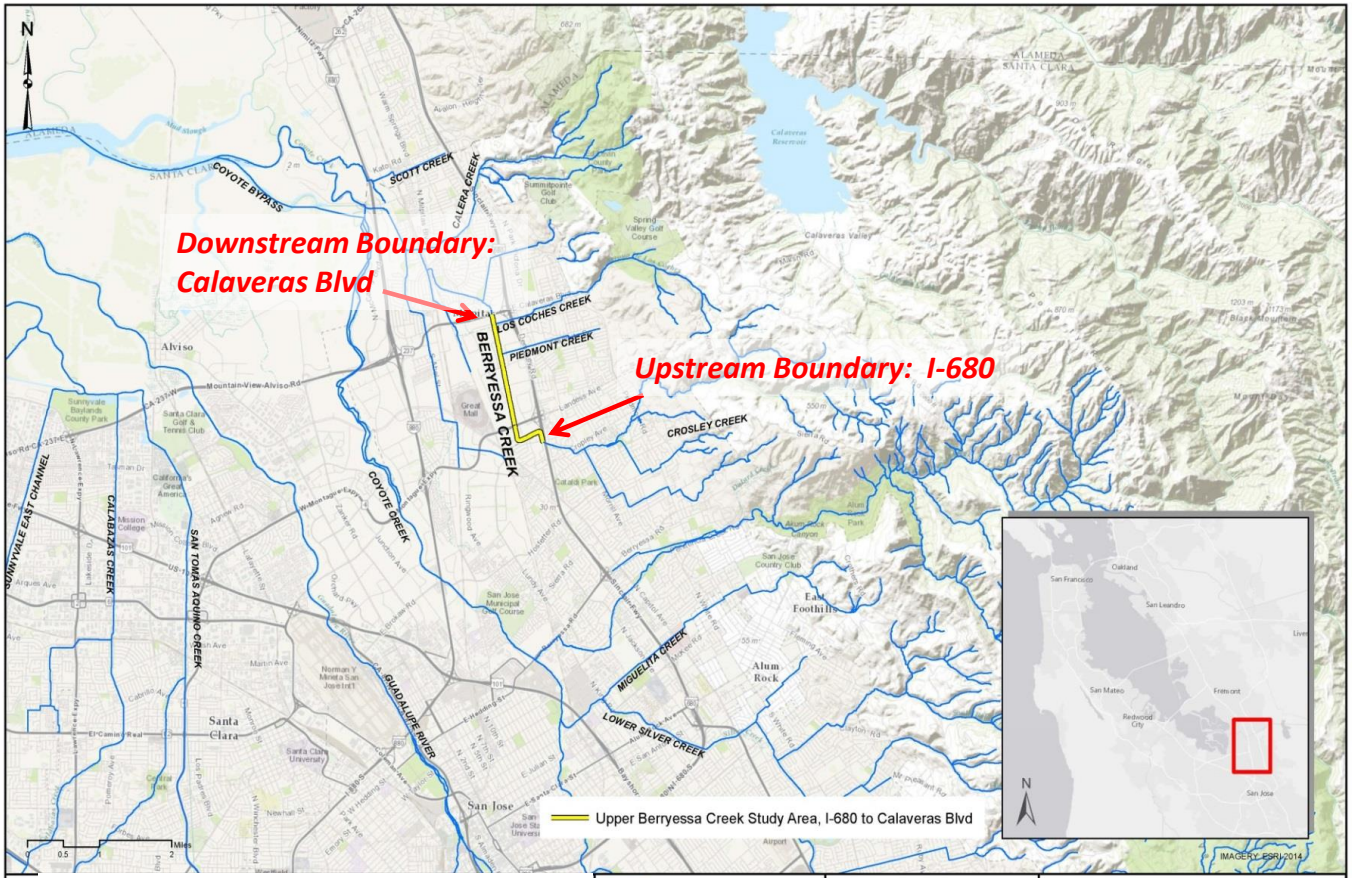


FIGURE 1 –Project Location & Vicinity

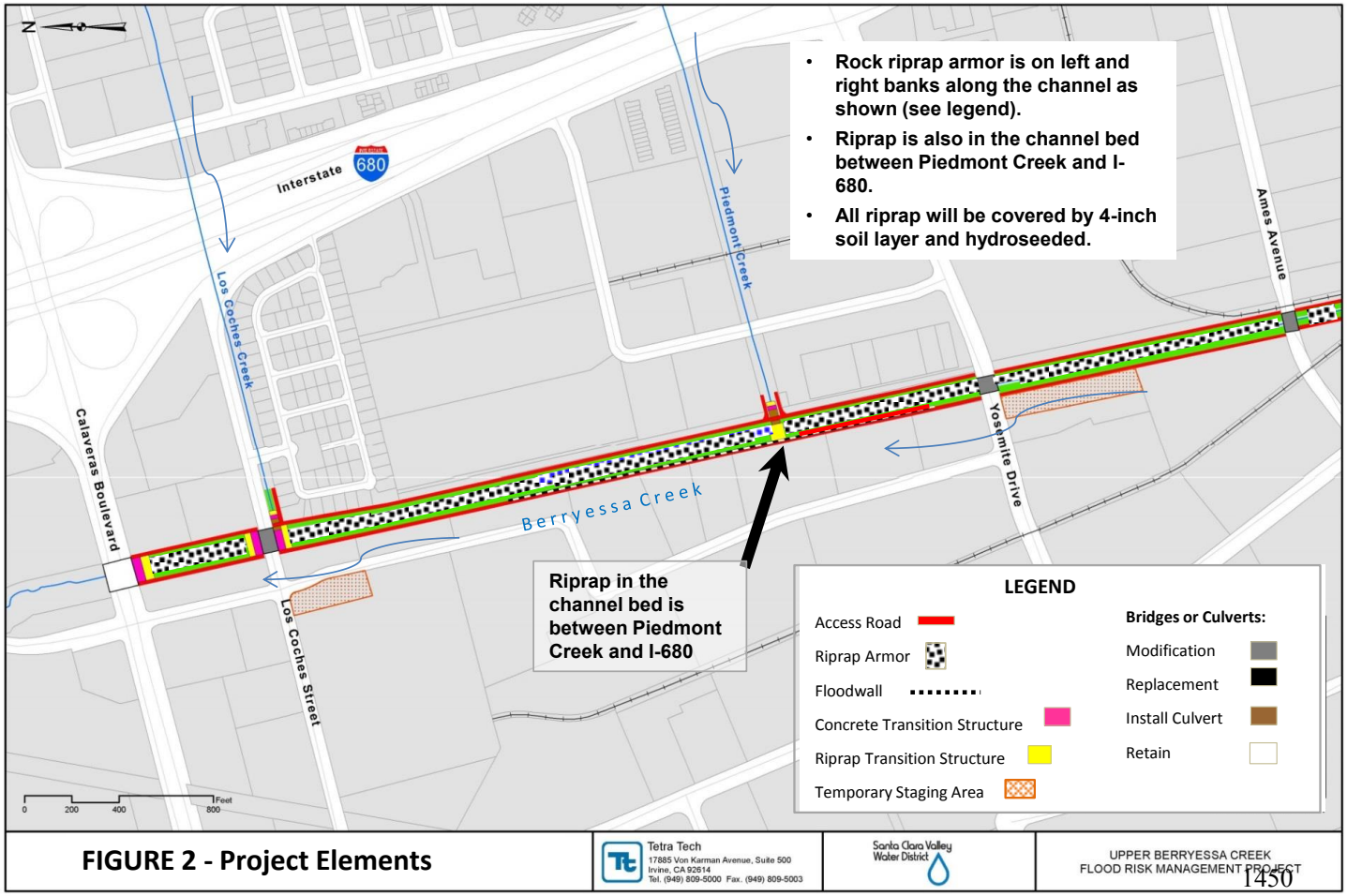
Tetra Tech
17885 Von Karman Avenue, Suite 500
Irvine, CA 92614
Tel. (949) 809-5000 Fax. (949) 809-5003

Santa Clara Valley Water District

UPPER BERRYESSA CREEK
FLOOD RISK MANAGEMENT PROJECT

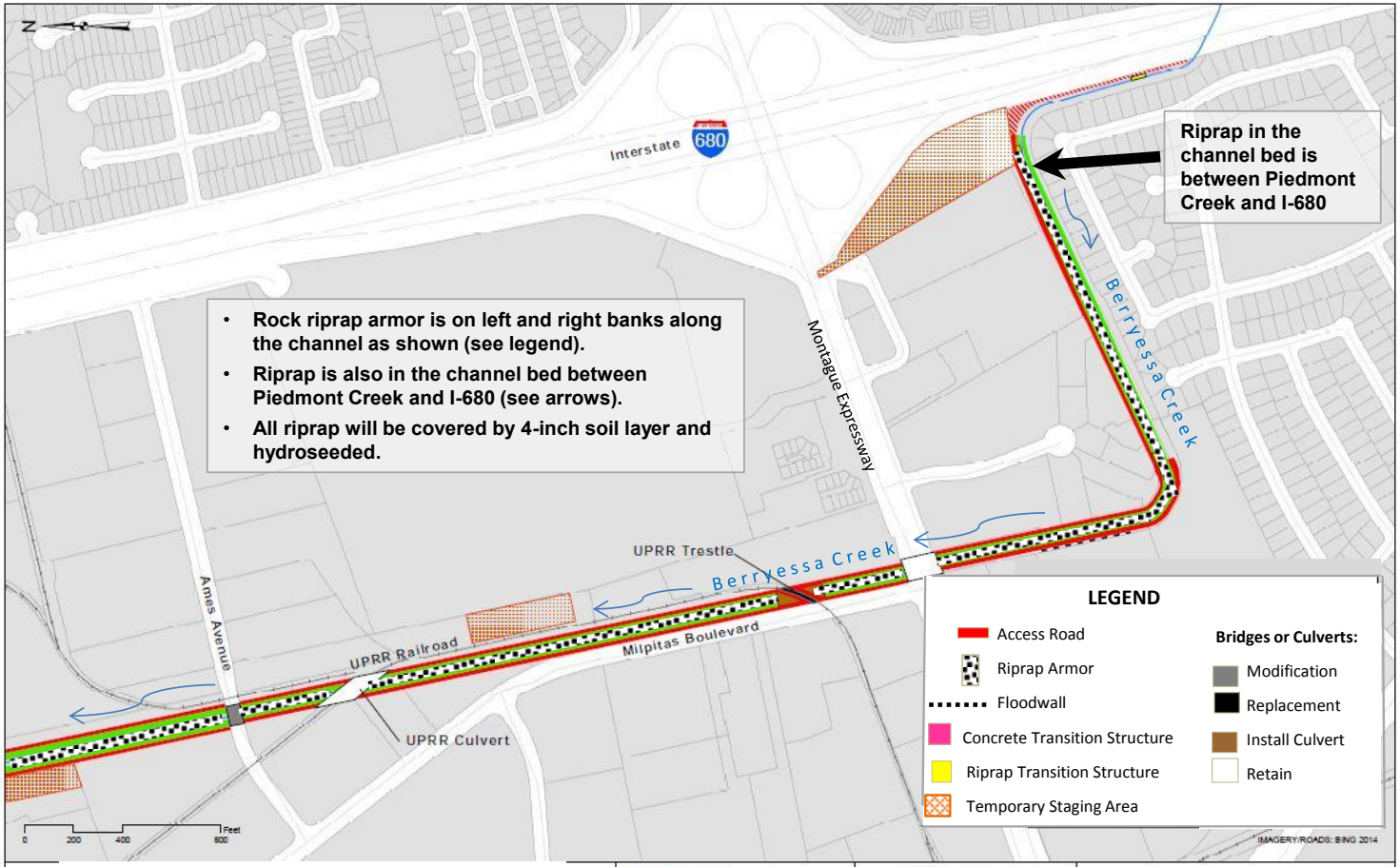
Attachment A

Figure 2 – Project Elements, Calaveras Boulevard to Ames Avenue



Attachment A

Figure 3 – Project Elements, Ames Avenue to Interstate 680



ATTACHMENT B
Vegetation Performance and Success Criteria

Performance and success criteria for the Project's mitigation plantings are outlined in Table 1. The overall health and vigor of all plantings will be evaluated each year in the field using the ratings listed in Table 2. The criteria include annual or semi-annual plant survival success criteria of no less than five years for herbaceous species and no less than ten years for woody species (i.e. trees and shrubs).

a. A vegetation monitoring plan shall be developed and implemented to track whether the plantings meet success criteria; replanting to replace unsuccessful growth; and other steps to ensure establishment, vigor, and health in mitigation plantings and mitigation success.

b. The mitigation for tree and shrub removals shall be consistent with the tree removal ordinances or similar requirements in the County of Santa Clara and cities of Milpitas and San Jose, at a minimum, and shall meet the requirements of the U.S. Fish and Wildlife Service Coordination Act Report for the Project dated April 26, 2013.

c. The Discharger shall water all riparian and wetland plantings for a minimum of three years. The Discharger shall continue to water all plantings during all projected dry water years (defined as 75 percent of average annual rainfall) that occur during the first ten years after construction. Any replacement plants shall be watered for a minimum of three years.

d. The Discharger shall follow the best management practices for preventing introduction and spreading of plant pathogens in mitigation areas, in accordance with the Planting Plan.

Table 1. Performance and Minimum Success Criteria - Offsite Mitigation Plantings

Habitat Type	Criteria
Native herbaceous and forbs communities – percent cover native species and non-native species	Year 1: 50 percent cover Year 3: 75 percent cover Year 5: 85 percent cover • Post-planting shall meet 85 percent cover after five years • Invasive plant species at a maximum cover of no more than 10% based on, specifically, "highly" invasive plant species as defined by the California Invasive Plant Council. • Health and vigor monitoring pursuant to Table 2.

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0	Dead – no living plants in quadrat

EXHIBIT 13

California Regional Water Quality Control Board
San Francisco Bay Region

April 12, 2017, 9:07 a.m.

Elihu M. Harris Building
First Floor Auditorium
1515 Clay Street, Suite 1400
Oakland, CA 94612

Reported by:
Julie Link

APPEARANCES

Board Members

Terry F. Young, Chair
James McGrath, Vice Chair
Newsha Ajami
Jayne Battey
Steve Lefkovits
Cecilia Ogbu

Tam Doduc, Member, State Water Resources Control Board

Staff

Bruce H. Wolfe, Executive Officer
Thomas Mumley, Assistant Executive Officer
Dyan Whyte, Assistant Executive Officer
Tamarin Austin, Counsel to the Board
Marnie Ajello, Counsel to the Board
Naomi Feger, Chief, Planning Division
Bill Johnson, Chief, Wastewater Control and Enforcement Division
Therisa Brechtel, Acting, Executive Assistant
Dale Bowyer, Section Leader, Watershed Management Division
Yuliya Scales, Watershed Management Division
Janet Tuttle, Scientific Aide, Watershed Management Division
Robert Schlipf, Section Leader, Watershed Management Division
Patrick Karinja, Pollution Prevention Coordinator, NPDES Permitting Section, Watershed Management Division
James Ponton, Section Leader, Planning & TMDL Division
Sara Melick, Scientific Aide, Planning & TMDL Division
Rene Leclerc, Engineering Geologist, Planning & TMDL Division
Kevin Lunde, Section Leader, Planning & TMDL Division
Kenneth Norberg, Scientific Aide, Planning & TMDL Division
Richard Looker, Planning & TMDL Division
Jessica Watkins, Staff Engineer, NPDES Wastewater Division
Xavier Fernandez, Section Leader, Watershed Management Division
Keith Lichten, Chief, Watershed Management Division

Mike Napolitano

APPEARANCES (CONT.)

Public Comment

Lori Schectel, Environmental & Regulatory Compliance Manager, Central Contra Costa Sanitary District
Lorien Fono, Bay Area Clean Water Agencies (BACWA)
Kirsten Struve, Santa Clara Valley Water District, Urban Runoff Pollution Prevention Program (SCVURPPP)
Dr. Tom Hall, Santa Clara Valley Urban Runoff Protection Program (SCVURPPP)
Grant Wilson, Interim Director, Earth Law Center
Kevin Buchan, Western States Petroleum Association
Andrea Ventura, Clean Water Action
Dr. Michael Connor, General Manager, East Bay Dischargers
James Ervin, Bay Area Clean Water Agencies (BACWA)
Chris Malan, Executive Director, Institute for Conservation, Advocacy, Research & Education
Robyn Stuber, United States Environmental Protection Agency (U.S. EPA)
Louis Sun, Deputy Director for Public Works, City of Pacifica
Rick Santos, Vice Chair, Santa Clara Valley Water District
Reverend Moore, President, San Jose/Silicon Valley NAACP
Daniel Degu, City of Milpitas
Liz Ainsworth, Resident & Business Owner, City of Milpitas
Will Ector, Superintendent, Berryessa School District
Chris York, representing San Jose Council Member Lan Diep
Linda Locke, President, Berryessa Citizens Advisory Council
Frank Cancilla, Resident & Business Owner, Berryessa
Melanie Richardson, Interim Chief Operating Officer of Watersheds, Santa Clara Valley Water District
Jack Xu, Hydrology & Morphology Group, Santa Clara Valley Water District
Jim Manitakos, Associate Water Resources Specialist, Santa Clara Valley Water District
Rita Chan, Legal Counsel, Santa Clara Valley Water District
Peter Prows, Outside Counsel, Santa Clara Valley Water District
Diane Dillon, Supervisor, County of Napa
Debra Dommen, Treasury One Estates
Michelle Novi, Napa Valley Vintners
Michelle Benvenuto, Wind Growers of Napa County

Adam Kotin, Wine Institute
Jesse Ramer, Executive Director, Napa County Farm Bureau

APPEARANCES (CONT.)

Public Comment

Joe Dillon, NOAA Fisheries
Kimberely Burr, Restoration Volunteer
Ladd Cahoon, Attorney, Edge Com Law Group
Bill Hanna, Grape Grower
Bob Anderson, United Wine Growers
Gary Margadant, Napa Resident
Larry Hansen, Manager, California River Watch
Michael Hackett, Napa Resident

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at the back of the room, and we are really going to try to reconvene at 1:15.

(Off the record at 12:48 p.m.)

(On the record at 1:20 p.m.

Item 8. Santa Clara Valley Water District and U.S. Army Corps of Engineers, Upper Berryessa Creek Flood Risk Management Project, Santa Clara County - Adoption of Waste Discharge Requirements and Water Quality Certification

CHAIR YOUNG: All right, we are now moving to Item 8, which is the Santa Clara Valley Water District and U.S. Army Corps of Engineers, Upper Berryessa Creek Flood Risk Management Project.

And what we have here is another unusual situation. Ordinarily, we hear a matter and there's a decision during the same Board meeting. But in this case we received public comments, we went into deliberation and we just plain ran out of time to finish our deliberations before we lost a quorum.

So, we had to -- in a circumstance like that, ordinarily we would just go straight back into deliberations today, and keep on going. But since the last Board meeting, the staff have proposed additional changes and prepared a redline

of the tentative order.

So, in keeping with State Board Order WQ2013-0101, we feel it would benefit the Board to reopen the testimony, but only on the limited subject of the staff's proposed changes, please.

So, I'm going to repeat that. We're only taking testimony on the package of proposed changes because we had such extensive testimony before, on the rest of the package.

So, I'm going to ask staff to do a presentation, in 15 minutes, for the redline version. The dischargers, collectively, as a group, will have 15 minutes to respond. And, then, we will move on to public comments. That's our normal order.

And I'm going to ask the interested parties to confine their comments to three minutes, which should be possible because we're only talking about the changes that happened since the last time you saw the package.

So, I do want to reiterate that we all must abide by the same rules here and limit comments to the redline and proposed changes. And if one party speaks on issues unrelated to the redline, another party may want to respond, and we

can get into a back and forth. So, in fairness to all parties my attorney, and I, will be firm about limiting the comments only to the proposed changes. And we ask you to please help us in that endeavor.

So, now, some housekeeping. Since January, which the last time we heard this matter, we received two additional comment letters. One from the City of Milpitas and one from the Santa Clara Valley Water District.

It's my job to exercise my discretion as to whether to include these two letters in the administrative record. And I am going to not include these two letters in the administrative record, out of the fairness to the other parties, because they did not receive the letters and were unable to respond.

This is consistent with the rulings I made in the January hearing, on the same subject.

But if you're one of the people who did send a letter, and you want to present verbally, what you presented in your letter, during your verbal comments that's fine. Again, please, only if they look at the changes done in the redline version.

We received an additional submittal from

the U.S. Army Corps of Engineers, which was a revised 401. And, ordinarily, this would be something that I would not include in the administrative record, but since the Army Corps of Engineers submitted this proposal as an attempt to create a middle ground among the parties, and it was responding to the redline version, I am going to allow the Army Corps of Engineers' letter into the administrative record.

All right, clear as mud?

MS. AUSTIN: Yeah.

CHAIR YOUNG: Okay, one last thing. We also received correspondence from Mr. Peter Prows last week, along with an email chain between Mr. Prows and our attorney, Ms. Austin. I have decided that this also will not be part of the administrative record because the underlying correspondence that was referenced in the letter, and the testimony is already part of the record.

Are there any other things that we have -- I'm asking our attorney whether there's anything else we have to do before we get started.

MR. WOLFE: I'd recommend we do the oath again. I think there's many people here, both for this item and the vineyard item, who were not here

initially, when we did those.

CHAIR YOUNG: Yes, thank you. Here it is.

All relevant evidence that any person desires to be considered by this Board must be introduced at this hearing, first by the Board staff, second by the discharger, third by public agencies, and fourth by any other interested parties.

The Board and Board counsel may ask questions to clarify the testimony of a witness at any time.

Cross-examination of any witness by others will be allowed following completion of direct testimony by all persons. Each person testifying will commence by stating his or her name, whom he or she represents, and whether he or she took the oath to tell the truth.

The technical rules of evidence, the Board will accept any evidence or testimony that is reasonable relevant to the issues. All Board files, exhibits, and agenda materials pertaining to this matter will be made part of the record of this proceeding. Additional written material will be made part of the record at the discretion of the Board.

Those wishing to testify in the hearing will now rise or raise their hand.

Do you promise to tell the truth?

(Collective affirmations.)

CHAIR YOUNG: Thank you.

MR. WOLFE: Yeah. So, I'd like Xavier Fernandez to give the staff presentation.

MR. FERNANDEZ: Good afternoon, Chair Young, Vice Chair McGrath, and fellow Board Members. My name is Xavier Fernandez. I am a Section Leader in the Watershed Management Division and have taken the oath.

I am pleased to present Item 8, the revised tentative order for waste discharge requirements and water quality certification for the Upper Berryessa Creek Flood Risk Management Project. During my presentation, I'll refer to this as the tentative order.

This item picks up where you left off in the January Board meeting. In the January meeting, you stated that the compensatory mitigation is appropriate for the project. However, you did not reach a decision about whether to adopt the tentative order.

In my presentation, I'm going to briefly

summarize the project, then I'll present the framework that we use to evaluate project impacts and determine mitigation requirements, as specified in the San Francisco Bay Basin Plan.

Finally, I'll explain the basis of the edits that we made in the tentative order, since the January Board meeting. These edits clarify the project's impacts and provide the framework for mitigation requirements. These edits respond to written comments, and discussion on the record, were shared with the dischargers in February, and discussed with the dischargers in two meetings.

As a reminder, the project is on Berryessa Creek, in the Cities of San Jose and Milpitas. The project purpose is to modify about two miles of Berryessa Creek to provide flood protection up to the 100-year event for at least 650 parcels, with homes, businesses, and associated infrastructure.

Notably, it will provide flood protection for the new Milpitas BART station, which is currently under construction.

As the Corps indicated in the January Board meeting, adoption of the order is unlikely to cause delays in the ongoing construction of the flood control project.

At the January Board meeting, we heard from you that compensatory mitigation for the project is appropriate. We also heard that the order needed clearer language on the basis of the mitigation.

In response, we revised the order to clarify the project's impacts and mitigation. In February, we spent a day with the District and Corps, looking at the site, and walked through the proposed changes in the tentative order and requested feedback.

We met again with the dischargers, on May [sic] 24th, to get their response to the proposed revisions. On March 28th, the dischargers submitted a revised water quality certification for our consideration.

The revised water quality certification, however, didn't name the District as a discharger, continued to contest impacts by stating that there was disagreement between the Corps and Water Board, and did not propose, nor commit, to completing any mitigation actions beyond what is in the project EIR.

It did, however, provide a list of enhancement and restoration opportunities that

could potentially be part of a compensatory mitigation package.

Now, I'll present a review and framework used to determine mitigation requirements in accordance with the Basin Plan. This framework is articulated in the tentative order.

This slide provides a framework typically used by the Water Board to develop compensatory mitigation requirements for dredge and fill projects in accordance with the Basin Plan. The Water Board requires compensatory mitigation when a project results in unavoidable impacts to wetlands, including creeks.

Compensatory mitigation must be consistent with the California Wetlands Conservation Policy, which is also known as the State's No Net Loss Policy. The goals of which are to ensure no overall net loss and achieve a long-term net gain in the quantity, quality and permanence of wetland area and values.

Therefore, when projects have unavoidable impacts to wetlands, we use the following factors to determine whether compensatory mitigation requirements will meet the State's No Net Loss Policy.

First, we factor in the type of mitigation. Types of mitigation include restoration, creation, enhancement and preservation. Restoration and creation increase wetland area and values at the mitigation site and, therefore, require the least amount of mitigation to offset impacts.

Enhancement increases only wetland values at a mitigation site and, therefore, requires a greater amount of mitigation than restoration and creation.

Lastly, preservation protects existing wetland area and values. However, it does not increase them. As a result, preservation by itself will not meet the State's No Net Loss Policy. The Board has, however, accepted preservation as part of a mitigation package that also includes restoration, creation or enhancement of wetlands.

Second, we factor in whether mitigation is in-kind or out-of-kind. In-kind mitigation restores, creates or enhances the same type of wetland as the impact to wetland, while out-of-kind does not.

For example, in-kind mitigation for a project that impacts a perennial freshwater creek

would consist of restoration, creation or enhancement of a perennial freshwater creek. In general, out-of-kind mitigation is accepted when in-kind mitigation is infeasible or environmental benefits justify acceptance of out-of-kind mitigation.

When out-of-kind mitigation is accepted because in-kind mitigation is infeasible, a greater amount of mitigation is required.

Third, we factor in whether the mitigation is on-site or off-site. Mitigation is on-site when it occurs at or adjacent to the impact site. Off-site mitigation is accepted when it is not feasible to provide on-site mitigation. When off-site mitigation is accepted, the amount of mitigation is increased in relation to the distance from the impact site.

Fourth, we factor in the timing of when mitigation will be implemented relative to when impacts will occur. Mitigation implemented prior to or concurrent with the impacts will have less temporal losses in functions than mitigation implemented after impacts have occurred. The temporal losses in function are defined as the water quality benefits lost during the period of

time between when impacts occur and when a compensatory mitigation project is completed. As such, when mitigation is implemented prior to a project, the amount of mitigation required is less compared to when mitigation is implemented afterwards.

Fifth, we factor in the establishment period of mitigation. In general, we assume that most wetland types develop functions sufficient to offset impacts within five years. However, a wetland type that takes a relatively long time to develop functions requires more mitigation to offset temporal losses in function. For instance, a woody riparian wetland that takes a relatively long time period to develop functions would require additional mitigation, while a fish passage improvement project that provides immediate benefits would require less mitigation.

Sixth, we factor in the likelihood of mitigation success. A greater likelihood of success will require less mitigation, while more uncertainty will require more mitigation.

Seventh, we factor in the magnitude of potential impacts to ambient water quality and beneficial uses. The greater the magnitude of

potential impacts, the greater the mitigation required. For instance, placing rock riprap on the bed and bank of a creek requires more mitigation than placing riprap only at the toe of the bank, because the magnitude of the impacts to ambient water quality and beneficial uses is greater when the entire channel is covered with riprap.

In the context of the Basin Plan framework for determining mitigation requirements, we revised the tentative order to more clearly state the impacts of the project. These impacts consist of permanent degradation of 10,400 linear feet and 9.8 acres of creek channel, and temporal degradation to 9,300 linear feet co-located within the project reach.

Because these impacts occur in the same area, the tentative order includes a single compensatory mitigation requirement for both.

In the next two slides, I will provide a detailed explanation of the permanent and temporal degradation impacts of the project.

The entire bed and bank of about 6,900 linear feet will be lined with riprap. For approximately another 2,800 linear feet, riprap will be placed on the creek banks and deeper below

the creek bottom, but not directly on the bed.

Portions of another approximately 700 linear feet of creek bed and bank will be lined with either concrete, or grout, or riprap. And about 216 linear feet of concrete will be removed from the channel bed and bank. In addition, the project will also remove 53 native trees and shrubs growing within the creek banks along the 10,400 linear feet of the project reach.

Replacing an earthen channel with a channel lined with rock riprap, concrete, and grout or rock, will permanently degrade water quality and limit existing and potential beneficial uses to the creek channel.

This permanent degradation will consist of elimination of perennial flows, a reduction in the creek's ability to cycle nutrients, and adverse effects on the creek's food web. The EIR indicated that the project would impact fish by reducing the perennial flow in about a third of the project reach. This is because under the predicted base flow fish would no longer be able to occupy the perennial portion of the project reach during the dry season.

As a result, the perennial portion of the

project reach would lose the warm water habitat beneficial use during a portion of each year.

The EIR dismissed project impacts to fish by indicating that the fish would move elsewhere in the watershed. The EIR, however, did not indicate how the project would offset the loss of a beneficial use in the perennial reach for a portion of each year.

Nutrient cycling will be affected because it is a microbially mediated process in sediment and soil, and the riprap, concrete, and grout or rock will displace the sediment and soil that provides the habitat structure for the microbial community.

Likewise, the displacement of soil and sediment by riprap, concrete, and grout or rock will reduce space for plant roots, thereby diminishing nutrient uptakes by plant.

Further, the creek's food web will be impacted by the reduction in space for plant roots and macro benthic invertebrates. As a result of a loss of habitat for these lower trophic organisms, the food resources for higher trophic levels will be diminished at the project site.

Although, the project EIR identified these

impacts on Waters of the U.S., it indicated that hydroseeding with native vegetation, after construction, would offset these impacts. Hydroseeding with native species, however, is insufficient to offset these impacts for three reasons. One, the rock will only be covered with four inches of soil and the rooting depth of native species is six inches or greater.

Two, existing soil, along with its seed bank, will be used to cover the riprap, thereby minimizing any potential benefits of seeding with native species.

And, three, it ignores impacts to nutrient cycling and the food web that would result from reducing the habitat structure for the benthic community.

Removing woody vegetation will also permanently degrade water quality and limit existing and potential beneficial uses of the creek channel. This permanent degradation will consist of a decrease in shade and adverse effects on the creek's food web. Decreases in shade will adversely affect water quality by increasing temperatures. The creek's food web will be impacted by a loss of leaf litter and other

smaller, benthic matter that would fall from the riparian canopy into the creek.

The mitigation in the EIR includes planting trees. This mitigation, however, will not offset impacts because the planted trees will be separated from the creek by a 15 to 18-foot wide maintenance road. Thereby, limiting their ability to provide shade and food resource benefits to the creek.

Construction of a new channel will result in the loss of water quality benefits for the period of time between the occurrence of the impacts and partial recovery of creek functions. In addition, the project design will require periodic maintenance that will result in additional, recurring temporal losses and water quality benefits.

This temporal degradation of the water quality and beneficial uses will occur because habitat structure will be simplified and nutrient cycling reduced when the existing low-flow channel and vegetation are removed.

Construction of the project would impact existing and potential beneficial uses along the entire project reach by eliminating the low-flow

channel, associated flood plain bench, and verbacious vegetation within the channel.

As shown by studies in the Napa River, maintaining an active low-flow channel increases biodiversity. This increase in biodiversity results, in part, from the complexity and the habitat structure provided from an active low-flow channel connected to a flood plain and wetland vegetation fringing the channel. The active low-flow channel, flood plain bench, and wetland vegetation will be eliminated by the project and replaced with a trapezoidal channel which has a simpler habitat structure.

Construction of the project will also remove verbacious wetland vegetation fringing and within the active channel downstream of the Piedmont Creek tributary. This vegetation removal will reduce nutrient cycling by removing roots that facilitate hydrogen removal from the creek.

Although the District's data suggests that the low-flow channel well eventually reform and vegetation will reestablish, the impacts will recur over the life of the project because the project's design ensures that maintenance will be required.

To determine the amount of mitigation

necessary to address project's impacts, consistent with the Basin Plan, our starting point to meet the No Net Loss policy is that the mitigation needs to equal the impacts.

From there, we made the following assumptions. Mitigation would consist of an enhancement project to offset degradation impacts and the enhancement would benefit an area equal to the area being impacted in order to provide an equal amount of function.

Mitigation would be in-kind, thereby requiring no change in the mitigation amount. For example, planting trees in a riparian corridor of a creek would quality as in-kind mitigation.

Because of project design constraints, mitigation would be off-site, thereby increasing the amount of mitigation. Mitigation will be implemented within one year of the impacts occurring, thereby slightly increasing the amount of mitigation. We made this assumption because since the project is already under construction, it is not possible for the mitigation to be implemented concurrent with the impacts.

Mitigation would have an establishment period of five years because enhancement projects

frequently include vegetation that often take five years to establish. The establishment period may end up being greater or lesser, thereby warranting an increase or decrease in the amount of mitigation, accordingly.

Mitigation would have a high likelihood of success, thereby slighting reducing the amount of mitigation required. We made this assumption based on the District's track record with implementation of mitigation projects.

Lastly, although the project would permanently degrade wetland functions, the magnitude of the impacts would be somewhat ameliorated by the project creating an additional 7.4 acres of Waters of the State, and partial recovery of functions within five years. This decreased the amount of mitigation required.

Given the assumptions we made, we modified the tentative order to require a baseline of 15,000 linear feet or 15 acres of mitigation. The tentative order provides flexibility in determining the final amount of mitigation by including the framework and assumptions used to determine the mitigation requirement in accordance with the Basin Plan.

Therefore, the final mitigation amount will be determined based on, one, how the proposed mitigation project fits within the framework for determining mitigation requirements and, two, the speed and magnitude of recovery that occurs naturally at the project site and is allowed by future core maintenance requirements.

We also surveyed eight other Santa Clara Valley Water District Flood Control Projects and found that the mitigation in the tentative order is within the range required for these other projects.

Thus, the amount required for the Upper Berryessa Creek project is comparable to similar projects you have authorized previously.

As noted in this presentation and in the tentative order, the mitigation requirement allows flexibility in how much mitigation is required depending on various factors in the proposed mitigation project.

In summary, the edits we made to the tentative order since the January meeting are intended to clarify the project's impacts to existing and beneficial uses, and elucidate how we have applied the Basin Plan's approach in determining the mitigation requirements.

We have shown you that the mitigation required in the order will be commensurate with the project's impacts and will be consistent with Basin Plan requirements. To accomplish this without a mitigation proposal in hand, the order is intended to provide a framework for determining the final mitigation in accordance with the Basin Plan.

And that concludes my presentation and I'd be happy to take any questions.

CHAIR YOUNG: All right. Before we take questions, I'm going to note that the staff report took 18 minutes and 15 seconds, which will now become the time limit for the discharger presentations.

I do want to remind the dischargers, the Santa Clara Valley Water District, that you submitted six cards for six different people. And that means you may want to consolidate because, otherwise, all six of you have to go in 18 minutes and 15 seconds. So, it's not 18 minutes apiece.

If you need to remember who you have in your cards, the cards are right here.

So, now, we'll go to Board questions.

VICE CHAIR MCGRATH: I have two questions. Since the critical issue on this project is the

recovery of the system from disturbance, and whether or not that requires mitigation, I want to ask two questions to be absolutely clear on the background.

First, what is the length of channel bed under which there will be rock riprap. Because I thought I heard you say 2,800 feet. I'm trying to distinguish between those areas where there will be riprap on the channel banks and those where there will be riprap underneath the stream, itself.

MR. FERNANDEZ: Okay, there's 6,900 linear feet of creek that will be lined with riprap on the bed and bank. And, then, there's 2,800 linear feet where it will line the bank, but then will go under the bank like this, so it won't be directly on the bed.

VICE CHAIR MCGRATH: Okay, so 6,900 feet of bed will have a hard bottom, rather than a soft bottom?

MR. FERNANDEZ: Well, plus 700 linear feet of concrete and grout or riprap.

VICE CHAIR MCGRATH: Plus 700, okay.

MR. FERNANDEZ: So, it will be 7,600 linear feet total.

VICE CHAIR MCGRATH: The second question

that had to do again with recovery, had to do with prototypes in the testimony, that we heard at the previous meeting, which is available on page -- I've folded it over -- 193 of the transcript. There was discussion of Lower Silver Creek as a model for recovery. I want to make sure that my memory of this is accurate because it's a first order factor in what we should do.

Does that have similar rock riprap underneath the bed or is it a soft bottom channel?

MS. GLENDENING: It does not have riprap on the channel bed, it's just on the banks.

VICE CHAIR MCGRATH: Okay, those are my questions.

CHAIR YOUNG: Other Board Members have questions?

BOARD MEMBER AJAMI: Chair, I have a question.

CHAIR YOUNG: All right.

BOARD MEMBER AJAMI: It's a (indiscernible) -- but what is an out-of-kind mitigation?

MR. FERNANDEZ: Sorry, I know I went through that kind of quick. But in-kind mitigation just means that it's the same habitat type.

BOARD MEMBER AJAMI: But you said --

MR. FERNANDEZ: And out-of-kind is when it's not the same habitat type. So, an out-of-kind would be impacts to a perennial freshwater creek and the mitigation was a brackish tidal marsh. They're two different habitats, so it would be out-of-kind.

BOARD MEMBER AJAMI: And we don't want that or is that okay? Or, it doesn't matter, we just want them to mitigate?

MR. FERNANDEZ: In-kind is -- we have a strong preference for in-kind mitigation. We only allow out-of-kind where it can be shown that it's not feasible to do in-kind. For instance, a seep wetland, there's no way to purposefully restore a seep wetland, so we'll accept out-of-kind for that reason.

Also, if you can show that there's an environmental benefit. So, let's say, a seasonal wetland is impacted and somebody wants to provide a vernal pool, well, there's an ecological benefit for that.

BOARD MEMBER AJAMI: So, we basically evaluate the options and see.

MR. FERNANDEZ: Right.

BOARD MEMBER AJAMI: And rank them as somewhat feasible, what's a good idea environmentally and then go from there.

MR. FERNANDEZ: In this case we assumed in-kind mitigation --

BOARD MEMBER AJAMI: It's the higher priority.

MR. FERNANDEZ: -- is a higher priority. It's to a creek.

BOARD MEMBER AJAMI: Right.

MR. FERNANDEZ: The Santa Clara Valley Water District works with creeks, so it seemed reasonable.

BOARD MEMBER AJAMI: Right. So, they have to have a portfolio of these sort of mitigation options and we'll evaluate which ones are --

MR. FERNANDEZ: Well, what we typically have is a specific mitigation project. And then we look at all these factors and weigh them, and come up with a mitigation ratio.

BOARD MEMBER AJAMI: Got it.

MR. FERNANDEZ: So, that's why we had to make assumptions. Because, as you'll recall from the January meeting, we -- the uncertainty was -- we couldn't predict the uncertainty because we

didn't have a mitigation project.

So, in this case what we did was we assumed a high likelihood of success and used that to help us with the mitigation ratio. When we actually get a mitigation project, the likelihood of success may go down and we could actually need more. But given the track record, we think that it will stay as a high likelihood of success.

BOARD MEMBER AJAMI: Thank you.

BOARD MEMBER OGBU: And I just want to -- and they would, the discharger, any discharger would prefer to do in-kind because they would have to do -- there would be less than you would have to do, than if it's out-of-kind you'd have to do more mitigation, right.

MR. FERNANDEZ: Correct.

BOARD MEMBER OGBU: Okay.

CHAIR YOUNG: I appreciate you presenting this as a framework, the mitigation requirements as a framework. Because that does highlight the fact that what you just said, you don't have a specific project, so there are a certain number of assumptions that lead to the numbers that we see in this permit. But once you start working with the District and they provide suggestions about

particular projects, the acreage could go up, the acreage could go down. And we talked, specifically, in the last hearing about this one factor that you look at as to whether a -- perhaps a project with a very small acreage might have very wide, far-reaching beneficial impacts. And I think that is a direct quote, now, in the permit. And that would mean that a project that, for example, is much smaller than 15 acres, might be able to satisfy the requirements of this permit. Is that correct?

MR. FERNANDEZ: That's correct. We look at the area that's being enhanced and the linear feet that's being enhanced. Not necessarily the area where the work is being done.

CHAIR YOUNG: Right, okay.

MR. FERNANDEZ: So, like a fish passage project, you can do work in a very small area and have wide-reaching effects, and we would consider that all part of the enhancement.

CHAIR YOUNG: Thank you. That leads me to suppose that it's very hard to put a cost on this requirement right now because we don't know what the project is.

We heard testimony at the last hearing

that the cost may be up to $20 million, and that was the testimony from the Water District. There was other testimony that would indicate that it could be quite a bit less. So, I'm just checking to make sure that that is still correct, there is a wide variety of potential costs out there depending on what specific project the District comes back with. Is that correct?

MR. FERNANDEZ: That's correct.

CHAIR YOUNG: Thank you.

Did you have a question?

BOARD MEMBER LEFKOVITS: Just a quick question. What's the timeline connection between the mitigation requirements and projects, and the BART Station completion? Is there any -- I mean, is there any issue in terms of getting the BART Station completed on time, with regard to mitigation, are they connected at all?

MR. FERNANDEZ: To our knowledge, no.

CHAIR YOUNG: All right. Let's go ahead and hear testimony from the dischargers. I don't have any cards from the Corps, at the moment. But I understand that there may be a statement that's presented from the Corps.

But let's go ahead, first, with the

testimony of the Santa Clara Valley Water District, all 18 minutes and 15 seconds of it. And you folks are welcome to come up in any order and any combination you want. Just, please, identify yourselves as you begin so that our court reporter can get it all straight.

MR. SANTOS: Good afternoon, Madam Chair Young, and Vice Chair McGrath, and Honorable Board Members. I'm Richard Santos, the Vice Chair of the Santa Clara Valley Water District. And it's a pleasure to come here today and talk about our concerns.

Several people had to leave because they had to go back to work. And they're residents, and they're South Bay Labor and I can go on and on.

I appreciate the time to come before you to talk about the revisions that we strongly oppose, the WDR 401.

As we have witnessed just recently, on national news, Coyote Creek made 14,000 people homeless. So, if there had been a high tide in these rivers and so on, they would have flooded even more. As we just witnessed that flood.

The project will also protect the long-awaited, regionally significant, new BART Station,

part of the system to which the Federal Government has already invested $900 million, and is expected to generate 10,000 daily riders.

It is well known that the disadvantaged communities of concern often reside in flood-prone areas, and this is no different in this area. This is very significant. These folks have waited a long time. Your staff is reviewing the previously-issued permit under which construction is already underway, and imposing revised, unnecessary requirements.

In simple terms, your adoption of these revisions could endanger this entire project, denying the people that we serve, in that community, flood protection and needed services. Even worse, the Congress has not authorized work beyond the permit the Board already issued, so your revision will constitute a modification to the project, which will require Congressional restoration and jeopardizing the project more.

Forgive me because I just got out of surgery six days ago, with a back surgery, so I had to be up here, and so I'm a little groggy and so on.

I brought several people here from the

community, like I said, labor, business people, elected officials, and so on. Together, we urge you not to adopt these revisions to the tentative order. Instead, allow this project to proceed to the benefit of our residents, business people, and newly Regional BART Station, and the thousands of commuters that will be using this every day.

Give the community, my community, your community, the equal treatment by providing the same flood protection already enjoyed by others outside this flood plain. And, please, do not -- do the right thing. Do not -- for the people, the commuters, and the structures who will be protected, this is really vital and we just hope you'll take a look at this thing. I really think this cost is outrageous. And to endanger the communities, the people who have insurance and so on, it's just so costly. And we're having flooding now, so we need action now to not hamper this and take another three or five years, that would just be outrageous.

Well, thank you so much.

MS. RICHARDSON: Chair Young and Members of the Board, I'd like to request that the community go next so that they can leave, those

that have to go back to work, and then the District come back and resume our presentation. Is that acceptable?

CHAIR YOUNG: We can do that.

MS. RICHARDSON: Thank you very much.

CHAIR YOUNG: You'll have 15 minutes left, when you come back.

MS. RICHARDSON: I appreciate that, thank you.

REVEREND MOORE: Good afternoon, I'm Reverend Moore, President of the San Jose/Silicon Valley NAACP. I'm here today to urge the Regional Board, once again, not to revise the tentative order. And, in fact, authorize the implementation of the Berryessa Project as currently certified, without the proposed combined WDR-401 requirements.

I just want to talk to the Board real quick and just say that when you limit us to have to talk technically, it's a form of implicit bias that has a practice that subordinates and oppresses communities because we don't have the expertise to speak to the technical issues of what's going on.

But I wanted to just say this that by stopping it right now, and slowing this project down, not only will it raise the cost, but you'll

also kick it back up, possibly, to a current government that's not friendly to communities of color and, particularly, low-income communities.

Number 45 might must throw this whole thing out with arts and entertainment, as well as whatever else. So, if you do not proceed, we stand at an opportunity to not only be flooded again, and 14,000 people be found homeless or without shelter. I really want to emphasize, I really would urge you on April 17th we invite you to come down to our community and talk with those in that community about what's going on, and how and what our community wants, and not just sit here and make the decision from a distance.

Rudyard Kipling has a poem. That poem is called "If". If you can walk with kinds and not lose the common touch, yours is the world. We ask you to come to our community and get a common touch and a feel for what the people of that community want and need. Thank you.

CHAIR YOUNG: Thank you, Reverend Moore.

Two things, whoever's doing the clock, can you restart the three-minute clock, so per person. I don't even know who's running the clock here.

(Laughter.)

CHAIR YOUNG: Okay, all right. And I did want, Reverend Moore, to point out that -- and this is a fact not known by very many people, actually very few people, when we have a matter that gets to this stage in our process, we're precluded by the ethics rules from coming out and talking to you about it, because we can only get input in a public setting that has been given prior notice. And that's we're in that box and we can't do anything about it. So, I was --

REVEREND MOORE: You can just come down and visit.

CHAIR YOUNG: I get your point. I hope you get mine. Thank you.

MS. AUSTIN: Chair Young, if I can just, as a matter of procedure, remind the folks coming up to the mic, I know not everyone's spoken before. So, if you would please identify yourself for the record, confirm that you have taken the oath. And, again, if you can direct the comments to the areas of the tentative order that have been proposed for changes. And those proposed changes are the de-watering plan, the JCI plan, sediment transport, the impacts, and the mitigation proposals. And I think that we have an eight-hour record on the

other issues and to open those up again today, I think is a problem process-wise. Thank you.

CHAIR YOUNG: Thank you.

MR. DEGU: Daniel Degu, with the City of Milpitas. And, yes, I have taken the oath. Good afternoon, Chair Young, and Honorable Members of the Board. On behalf of the City of Milpitas, I would like to express the City's views on the revised tentative order for waste discharge requirements and water quality certification related to the Upper Berryessa Creek Flood Risk Management Project.

The Regional Board's currently proposed revised tentative order for a combined WDR-401 could, at a minimum, result in significant delays for the Berryessa Project and the flood protection it would provide. Leading to long-term waste of public funds and fundamental delays in transit operations.

At worse, adoption of the revised tentative order can jeopardize Congressional authorization for the project, potentially affecting flood protection for the new Milpitas BART Station and rail lines.

For these reasons, the Milpitas City

Council, on February 21, 2017, unanimously adopted Resolution Number 8646, a resolution of support for the implementation of the Berryessa Project without WDRs.

The City of Milpitas urges the Regional Board to implement the Berryessa Project as currently certified, without adoption of the proposed combined WDR-401.

As this approach will help ensure the safety, economic health and quality of life of not just Milpitas residents, but also communities across the Bay Area. Thank you.

CHAIR YOUNG: Thank you.

MS. AINSWORTH: Good afternoon, Regional Quality Board, my name is Liz Ainsworth. I am a resident of Milpitas since 1998. And in addition to that, for the last three years, I have been in the leadership role at the Milpitas Chamber of Commerce, rebuilding and bringing to the organization it is today.

As a business person, I'm not a politician but, you know, my way of working is you strike a contract, you follow through on that contract, and when it's completed payment is made.

And it strikes me that two years ago,

before the work started, there was a contract for the work to start and to go ahead on this project, which now seems to be in question and open to changes.

As a resident, when I first moved to Milpitas in 1998, the housing complex that I moved to, my rental complex was subject to a flood as part of the El Nino of 1998, and residents on the lower floor woke up to four feet of water in their apartments. We've recently seen this in just south of us, down in San Jose this year.

This project is to -- you know, the mitigation is important and I've been told -- I have taken the oath by the way, so this is my understanding, rather than something that I can categorically state. But I've been told by the Santa Clara Valley Water District that for every tree that's taken out, they'll be planting four. That must surely be part of that mitigation.

This particular creek area runs through a predominantly commercial area, which if those businesses go under is going to significantly damage commerce in the City of Milpitas. It is also right beside, adjacent to the BART Station due to open either later this year, or early next year.

And, you know, electric rails and water -- you know, it would impact the BART corridor so much that, you know, it will have to stop because you don't have the electric rail and the water surrounding it.

So, this mitigation issue, my request to you is, please, can we go back to the original permit that was allowed, that you all approved to allow this work to go ahead, that Congress approved funds for, for the Corps of Engineers to come and work on. And, now, the rules seem to be changed, which seems a little unfair. And it seems that the Santa Clara Water is going to have to find funding from elsewhere if extra mitigation is needed. So, somebody else will suffer, whether it's those people that they're trying to get back into housing in downtown San Jose, who still haven't been back after the flood, or another project. I don't know what that is.

As I say, I'm not a politician. I'm a resident, a concerned one, and I'm a business owner. Thank you.

MS. AUSTIN: Another reminder to commenters, the conversation or the comments concerning delay of the project are not relevant

today to the redline. And we're trying to stick with the additional staff changes, and focusing comments on those, if you would, please.

MR. ECTOR: Okay, good afternoon, Chair Young, Madam Chair Young, and Distinguished Regional Board. My name is Will Ector. I'm Superintendent of Berryessa Union School District, and my district borders that whole -- this project from the north, from the south end. And I did take the oath, for the record.

I'm here today not to tell you anything new here, but I just want to urge this Board not to revise the tentative order that has already been authorized, and the implementation of the Berryessa Project, as currently certified. But we'd ask you to do this without the WDR-401 requirements.

This project will provide critical flood protection to the communities that I serve and will, hopefully, spare us some more devastating flooding that we're dealing with today. Before I came up here today, we were dealing with some of the fallout of giving assistance to families that were still impacted by the recent flood.

However, your adoption of this revised tentative order could endanger this whole project,

and delay and the estimated fees that come with the delay. And it also denies the community that could be impacted the most of the flood protection that they need and deserve, including our students, and more so impact my schools.

I know most of these projects, just by the nature of where they're located, traditionally they're in the lower socioeconomic communities, impact people of color, people who have less voices to come here and speak.

So, I'm not here on my behalf. I'm here on behalf of those that I represent. That you give that concern that we could just move forward with the plan as it's been adopted, that we could help maintain and prevent a lot of the impact to the schools and businesses in our area.

Berryessa Union School District Board would like to authorize the implementation of this project without the proposed WDR. And we would also like to have, allow this project to proceed, which would benefit everybody in our intended area, and include those that are disadvantaged.

So, I thank you for giving us the time to listen to us this afternoon, thank you.

CHAIR YOUNG: Thank you.

MR. YORK: Good morning, Madam Chair Young, Vice Chair McGrath, and Honorable Members of the Board. My name is Chris York. I'm here on behalf of San Jose Council Member Lan Diep, who represents the residents, businesses, and the schools in the community of Berryessa.

I'm here to urge the Regional Board not to revise the tentative order and authorize the implementation of the Berryessa Project as currently certified, without the proposed combined WDR-401 requirements.

As Director Santos mentioned, we just finished -- we just witnessed, firsthand, on Coyote Creek, the devastating impacts that flooding can have on people and our residents.

This project will protect hundreds of residents, business owners, and schools, in Council Member Diep's District, from those devastating impacts and prevent more than half a billion dollars in potential flood damages.

Yet, the staff is asking you to make revisions to this project. It could endanger the entire project and deny the people we serve of the flood protection they need and deserve, is just wrong.

Even worse, these requirements could jeopardize the project's Congressional authorization, which would leave this community without any flood protection at all, and could jeopardize the new BART Station, wasting millions, hundreds of millions of dollars of Federal funding that would otherwise go to our community.

That's why Council Member Diep is standing Director Santos, Superintendent Ector, other esteemed members of our community to urge you not to revise or adopt the tentative order. Instead, allow this project to proceed to the benefit of our residents, our businesses, the new Regional BART Station, and the thousands of commuters who are going to use it every day. Thank you for your time, and I'll turn my time over. Thank you.

MS. LOCKE: I have to stand on my tippy toes here. My name is Linda Locke. And I did take the oath. And I'm the President of the Berryessa Citizens Advisory Council in San Jose. I've lived in San Jose for over 50 years and have been involved with the community a great deal, and with the school district, also.

So, I'm just here again to -- we wrote a letter. Our board wrote a letter back in October,

of '16, regarding this event. And I was here last January, just a couple months ago, and here I am again. So, just to let you know, you know, that our community does support the project. We have great faith in our Army Corps of Engineers, and our Santa Clara Valley Water District. And like everybody has said, the flood that just occurred, you know, in the Coyote Creek area was so devastating to the people, and the whole city.

So, we're very concerned about BART. BART is on our border of Milpitas and Berryessa, or San Jose, really, and then it's coming down to Berryessa, where we have another station coming in.

So, you know, I'm just here to kind reiterate that please let us move forward. It was permitted in the first place and, you know, work has begun, and we'd like you to continue to let us do that. Thank you very much.

MR. CANCILLA: Good afternoon, Madam Chair, and Board Members, and staff. My name is Frank Cancilla. I have taken the oath. I am a homeowner and a business owner in Berryessa. My comments are on the record from this last time we had this meeting. But today I would like to recommend the Board not to adopt the tentative

order, which would require 15 acres of mitigation, and to allow the project to move forward. To where another flood, like the one we just had in the Coyote Valley, displacing residents from their homes and have no place to live. This is loss of income. Please, do the right thing for the community, for the residents, and the business owners that live in the area, especially in the Berryessa and the Milpitas area.

Please do not adopt the tentative order. Thank you for your time.

CHAIR YOUNG: Thank you.

It appears that we have no additional people from the community. Is that correct?

MS. RICHARDSON: I believe that's correct.

CHAIR YOUNG: So the rest of these folks had to leave?

MS. RICHARDSON: Yes. I don't believe there's any more public comments.

CHAIR YOUNG: Okay.

MS. RICHARDSON: Some of them had to leave.

CHAIR YOUNG: Yes. So, we're now resuming the testimony of the Santa Clara Valley Water District, and we can reset the clock accordingly.

And one more time, I want to remind you that we're here to discuss the difference between the new language and the previous language. So, if you can focus on that in your remarks, that would be good. I think they were at 15 something.

(Off-mic conversations.)

MS. RICHARDSON: I'll wait.

CHAIR YOUNG: So, let's give them 15:15, rounding up.

(Laughter.)

MS. RICHARDSON: Okay. Good afternoon, Members of the Board and Chair Young. I'm Melanie Richardson, the Interim Chief Operating Officer of Watersheds for the Water District. First of all, I'd like to thank the Regional Board staff for originally postponing the hearing that was scheduled on March 8th, to allow the District to deal with the Coyote Creek Flood issues, which many of you have heard about today.

As you may be aware, our County experienced a severe flooding event on the same watershed -- in the same watershed as this project, the Upper Berryessa Project, occurred. And it really impacted our County's most vulnerable residents. Fourteen thousand people were evacuated

from their homes. It caused almost up to $100 million in damage. And this event really reinforces for us, as well as for our community, that timely and affordable flood protection is really important to the communities most at risk.

So, since the time that we last met in January, our staffs have continued to talk. And we have talked about potentially entering into an MOU to do restoration and/or enhancement projects. Although the District continues to believe that mitigation is not required for this project, we do agree with the Regional Board that enhancement and restoration projects, such as the Osier Ponds Project in San Jose, California, that we put forward, which is a potential fish passage project, are a viable and important beneficial project.

We are, we remain open to discussing other possible resolutions to resolve this matter with the Regional Board. One possible solution is setting aside this tentative order and pursuing a memorandum of understanding to continue to explore and plan for implementation of a project such as Osier Ponds.

And, lastly, I wanted to note that the U.S. Army Corps of Engineers was not able to make

it today due to a mandatory event that all of their staff had to attend. But they did ask that they speak on their behalf, that they remain consistent with the comments they made last time, and with the four letters that they had previously submitted to the Regional Board.

And with that, I will turn it over to the next presenter.

MR. XU: Good afternoon, Chair and Members of the Board. My name is Jack Xu. I am with the Hydrology, Hydrology and Morphology Group at the Water District. I have taken the oath.

My comments are in response to the revised tentative order. The District does not agree with Finding 16 under the revised tentative order. The independent review performed by Patel, on the original EIS, does not support the findings in the revised tentative order.

In the Patel Report, and the EIS, analyzed the entire Berryessa Creek, which is twice as long as the project reach that's currently under construction. The project reach is only a subject of the entire creek analyzed, and there are clear differences in these sections of creek.

The existing project reach has been

heavily modified, and this is evident in the map that you saw in planning view. It is straight, and it has 90-degree bends, and concrete-lined trapezoid channels. While the additional upstream area, that was also included in the EIS and the Patel Study Report, is more natural and has meanders and features that you would expect from a natural channel.

Therefore, the Patel conclusion for general sedimentation issues, including both erosion and deposition, is not applicable to this entire creek at large.

Second, the District also does not agree with the Finding 20 in the revised tentative order. The Regional Board staff claims that it will take five to ten years for the channel to reestablish itself without any clear evidence. Widely accepted bank-full, channel-forming discharges for creeks are around a 1.5 year flood event. And this is widely used in literature. Even, for example, in Luna Leopold's research.

And, in addition, our experience in our watershed supports that even a lower threshold, closer to possibly 1.2 year of occurrence flood is closer to the bank-full or effective discharge.

An email from the sediment transfer consultant that the Water District had, placed an upper bound a for ephemeral stream effective discharge at a 10-year flood, which is a value that the Regional Board staff misused as a reference point.

The source for this 10-year return period comes from ephemeral desert creeks found in southwestern states, such as Arizona, that is only flowing for a couple hours after a large rainstorm. This is fundamentally different than Berryessa Creek, which is a perennial or intermittent creek.

Therefore, it should not take more than two years if there's a 1.5 year flood event, to cause channel forming discharge for the channel carve out a low-flow and bank-full channel and return to its natural state.

The District's position, which is consistent with the EIS, is that the existing project reach is erosional. This is also evidenced by some pictures your staff had put up. It's a very incised channel bank. It has near vertical walls. And to claim it as depositional just does not seem reasonable to me.

This is presented very clearly in a

presentation I presented in the meeting, in January 11th. And it's backed up by historical data, longitudinal profile data that shows degradation.

Sediment modeling performed on post-project conditions show a channel close to equilibrium, with isolated -- isolated deposition near bridges. That modeling analysis, which is consistent with current engineering practice for a stream design, show a well-designed channel that will last the test of time.

We do not believe the revised tentative order is basing its findings on sound science, as evidenced by these comments. Thank you.

MR. MANITAKOS: Okay, I'll get my Power Point back up here. It's showing up here, but not up there. Okay, great.

Okay, I'm Jim Manitakos, I'm an Associate Water Resource Specialist with the Santa Clara Valley Water District. And I am speaking -- I will tell the truth and I'm speaking to the redline version, so we'll skip this and get just to the changes that have been made.

Finding 20, which is new. Remove the statement that the project area contains no jurisdictional wetlands. I think even the Water

Board staff agrees there are no jurisdictional wetlands, so they used a broader thing, which is riverine wetlands in their thing.

If you look at the project, that the number of riverine wetlands will increase from 9.81 acres to 17.2 acres, a 7.4-acre increase, about 75 percent increase in riverine wetlands. I think that meets the No Net Loss criterion in the Basin Plan, in the State. And we support that and we're glad we're meeting it.

The amount of exposed hardscape, will include concrete and grout riprap. We'll deal with the buried riprap later. That's going to decrease from .83 to .78 acres. I think that's a decrease.

And we'll get on to the buried riprap, which is the real area of contention. As Xavier said earlier, there's about 6.9 acres. And, so, we had a couple of biologists look at what is the functioning, how will it work with this buried riprap? They'll have four inches of soil on top of it and interstices filled with soil.

And you can read this, we had Corps biologist, William Jager (phonetic). You might know him. He's an expert in this field and has worked on a number of projects. And his feeling is

that the four inches of soil, plus the interstices will be more than sufficient for herbaceous plants to grow, upland in the higher banks, and within the bed, the wetter bed, you'll get the wetlands herbaceous.

Why District Senior Biologist, Doug Titus, I won't read this whole thing, says the exact same thing. There's plenty of rooting depth within that for herbaceous plants, which are native plants, which we'll be seeding to grow, that they'll grow. It will maintain the beneficial use and functions of values. The trophic organisms will have plenty of food to sustain them and it will return to a thriving ecosystem.

But you don't have to take the word of these experts for it, you can -- we can look at some other things. There was a big -- a lot made about the gravel, or the rock riprapping going all the way across the bed. Well, you can't see it here, but you can trust me, it does go -- this is upper Guadalupe River, Reach 10-B, which is in Southern San Jose. And rock, as you can see, the rock varies in size, but it encompasses the range of sizes of rock riprap that will be put in. It goes all the way under that creek. 2013, you can

see it not long after it was put in. The water's covering some of it, but there's rock under there. Here's the exact same spot three years later, in 2016. It looks like things are growing and are not being inhibited by rooting depth. This is a verdant, they're growing in rock that goes all the way across the channel.

Let's try Lower Silver Creek. The Water Board is proud of the work there. We're proud of the work there. In this case, the rock does not go all the way across, but it's on the banks and beds. And this is rock of similar size as the rock riprap proposed for Berryessa Creek. Those bed and banks are under it. There's geotextile fabric, and about a foot of rock riprap on top of it, and then the soil's filled in. And this is what it looks like. I was out there just about a week ago and you can see the herbaceous wetland is growing quite well in that.

And I did a close up there. If you don't believe me, there is rock covering those banks and it is supporting a very thriving ecosystem.

Let's see, Finding 21, we're looking at, once again, back to the Not Net Loss Policy. A great policy. We all support it. The District

works hard to it. If you look at it, the riverine wetlands, which is the preferred categorization of the Water Board staff, it's increasing by 75 percent as a result of the widening of the channel. Plus 75 percent is no net loss.

Finding 20, it talks about the 1,123-long foot wall that will disconnect the creek from the riparian corridor, causing tremendous impacts.

Well, actually, that flood wall is outside the channel access road and it's between the channel access road and the adjoining commercial parking lot.

The U.S. Fish & Wildlife's Coordination Report, I think succinctly says this, the banks lack any trees or shrubs that provide cover for wildlife opportunities, The ability of the landscape vegetation to function as wildlife move in the corridor is limited because of residential and industrial development.

This impact will not occur. It was factored into the 15 acres.

Finding 21 states that the project will replace removed trees. We talk about how that's terrible, lack of shading, low leaf litter. What the Water Board staff overlooked is that we are

replacing all of those trees at 4.5 to 1 ratio. That is, for every tree and shrub removed, four and a half will be planted. And they will be located outside the access roads. That is correct for the most part. Not all of them, but most of them. But that's where the ones that are being removed are almost entirely outside the corridor. In fact, 95 percent of the trees and shrubs being removed are in fact outside an existing channel access road. So, the 4.5 to 1 that are being planted, not only replace it in basically the exact same location, but at a much greater ratio, four and a half to one. I don't know why that requires mitigation.

Finding 20.B.ii states that the channel recovery will take five years. In fact, we have studies, the Water District Stream Maintenance Project found that within two years after channel sediment activity, 98 percent of wetlands have regrown. Two years, not five years.

Also, the Water Board staff, Xavier, had stated that the topsoil, with all the weedy, weed ad nonnative seeds will be replaced. That's not correct. We will -- the project will remove the top three to six inches deleterious material, with all the weeds and nonnative seed. Those will be

removed. And what we'll be using as the soil underneath it doesn't contain that now, and that will be used to cover the riprap. So, it will not -- the native seeds that we will be seeding will have a fertile ground to grow and will not be contained with seeds from nonnatives.

Finally, Finding 21 requires the 15 acres and 15,000 linear feet of off-site mitigation. It also states that the mitigation project should increase salmonid habitat complexity in another creek. That's the Water Board staff recommendation.

I'll contrast to what the U.S. Fish and Wildlife Coordination Act Report states, "This reach has seasonally high water temperature and low dissolved oxygen that would be lethal anadromous fish. And most have a fish species during summer months. The only fish likely found, and the mosquitos, in the area are mosquito fish and California roach. It also states the project would have no effect on Federal State Listed species.

So, I don't know why the tentative order would require off-site mitigation for impacted salmonids. They're not there, they're not being impacted.

That was my last slide. The Corps had also asked that I talk about Finding 16, and go back --

CHAIR YOUNG: I would ask that you come back to the Corps comments and go ahead, because you're on your own time clock, here.

MR. MANITAKOS: No, that's fine, I'm done with my presentation.

CHAIR YOUNG: Thank you.

MR. MANITAKOS: What the Corps --

CHAIR YOUNG: No, no, stop on the Corps.

MR. MANITAKOS: Okay.

CHAIR YOUNG: Let her finish the Santa Clara Valley Water District, and then we'll invite you back up to talk about the Corps. Thank you.

MR. MANITAKOS: Okay.

CHAIR YOUNG: Thank you.

MS. CHAN: Hi, Chair Young, Members of the Board, my name is Rita Chan, Legal Counsel to the Water District. And I've taken the oath earlier.

In the interest of time, I'm just focus on -- thank you. Yeah, so, this revised order reduced the mitigation acreage from 20 acre to 15 acre, and now included some analysis on the Regional Board staff's view of what the permanent and temporal

impacts of the project.

We still cannot tell how that 15 acre was calculated. Earlier, your staff put on some slides that talks about the criteria and assumptions, but we don't know how those numbers come about. So, from that perspective, we still contend that the requirement arbitrary and is not supported by evidence.

Putting aside the legal authority that we have, you know, debated for quite some time last time, I'd like to call to your attention that Condition 19, of the Order, requires submittal of a final mitigation and monitoring plan, acceptable to the Executive Officer by June 30th.

More importantly, the order requires that the mitigation project be constructed within 12 months from the data that impacts first occurred. As you know, the Corps started channel work in October 2016. So, this order appears to be, at least, requiring construction of this mitigation project by October this year, which is infeasible for many reasons. As we stated before, requiring this mitigation project, whether it's 20 acre or 15 acre, require further CEQA review, not to mention environmental permits and clearances. Not just

from Regional Board, but from other agencies might need to be secured prior to constructing the project.

As Melanie Richardson, our Interim Chief Operating Officer, alluded to earlier, the District is open to explore with your staff some of the approaches, including an MOU to provide for planning and implementation of this restoration or enhancement project.

If this project does not require a condition in the order it, for the most part, remove a lot or we solve a lot of issues that were previously raised. Just as an example, if it isn't -- a project that the District is proposing, is in the form of an MOU, we would be the lead agency because we have agency undertaking the project.

In addition, if a project is not required as a condition, the issue related to the reimbursement by the State, for a State mandate, as we wrote in details about, would mostly be moot.

CHAIR YOUNG: I think we covered this at the last hearing, so I would ask you to go ahead and finish your --

MS. CHAN: I just have one last sentence.

CHAIR YOUNG: All right, thank you.

MS. CHAN: And it addresses, really, you know, what I want, meant to say is whether it's 15 acre, which is what's currently in the revised order, or 15 acre, it doesn't change the fact that -- you know, but I'm just reiterating what our Interim Chief Operating Officer's alluding to. This MOU approach could potentially resolve the issue, many of the issues that we talked about.

And, lastly, the District would be in a much better position to secure funding to implement this restoration project if it's not a required mitigation. That's all. If you have any questions, then we'll --

CHAIR YOUNG: All right, Ms. Chan, I do have a question for you.

I think you raise a good point in terms of the timing of the -- the due date of the mitigation and monitoring plan. Because when we first heard this issue, it was January and now it's April.

What do you think would be a fair date for a due date for the mitigation and monitoring plan, if the Board were to adopt.

MS. CHAN: Well, as you recall, our contention is because our EIR did not conclude this as a significant impact --

CHAIR YOUNG: I know you don't want to do it.

MS. CHAN: Right.

CHAIR YOUNG: But if you are required to do it, what do you think is a fair date.

MS. CHAN: If the intention is that the Regional Board is going to have to take that responsibility to complete the CEQA review of this mitigation project, that is up to your schedule. Whenever, you know, we would have to work together, find out what this mitigation project can be and then, you know, you would have to do subsequent CEQA review, whether it's an EIR or MND. And here, I'd like to remind you that under 15096, you know, there are certain steps that the responsible agency must take. And here, it seems to me what's left is, you know, what the responsible agency has to take on that, you know, do a subsequent review.

Because here, it's suggesting to me that we are, yeah, are concluded that there's no significant impact. Yet, now you requiring mitigation. So, the conclusion must be you --

CHAIR YOUNG: I'm sorry to interrupt you. We're short on time. You did make that point at the last hearing and we heard that testimony.

Are there any other questions for the group from the Santa Clara Valley Water District, from the Board, questions from the Board?

All right. I would like to invite the gentleman back up, who was going to talk about the Corps, what the Corps asked you to convey. Thank you.

MR. MANITAKOS: Okay. I've been asked - - the Corps, as you heard, did not make it due to an important event. But they did ask us to pass on something.

I'm talking to Condition 16, which talks about soil, sediment testing and management within the Jones Chemical plume area.

I want to look back. The revised 401 changes the original 401, it rescinds it. And one of the attachments to the 401 was a letter, the original 401 from March of 2016 included an attachment that was a letter of no enforcement from the Regional Board, signed by the Honorable Mr. Wolfe. And in that it determined, in that letter, that while there was a concern about groundwater contamination, contaminated groundwater being countered, that soil -- the testing done by the Corps and their contractor showed that soil,

shallow soil that would be excavated would not be contaminated. Therefore, there was no need for a soil management plan.

In fact, it specifically states in the letter of no enforcement, that was attached to the original 401, that a soil management plan would not be required. WE though that issue had all been settled. There would be a groundwater management plan. The Corps submitted the groundwater management plan and the Water Board accepted it. So, any contaminated groundwater that's encountered will be taken care of.

Now, the question is, is there special handling needed for a contaminated soil? And under the old 401, based on the no enforcement letter that was issued and attached to it, there would be no need for a soil management plan.

Now, Condition 16 of the revised order brings this whole issue back. I don't know what the new information is. It requires a soil sediment management plan, and testing, et cetera, for soil within the Jones Chemical Industry's plume area. Which is a complete 100 degree reversal from what was determined through consultation between the Corps and the Board back when the original 401

was issued. There's no new information there. I don't believe there's any new testing. So, I have no idea why this issue, thought, itself, is now being turned on its head a new requirement for a soil sediment testing plan being added.

And the no enforcement letter, I don't know if it's still valid or not, it's being thrown out? I have no idea why it's removed as an attachment for the 401.

And one last point on that, the soil, the tentative order also requires soil testing using dredge material testing. This soil is in an area where the creek is very ephemeral. It will be dry in summer. The protocols required for testing of wet soils would not be appropriate, anyways, in this area.

So, the need, there is no need for this kind of testing of soil management plan. And the proposed testing protocols that the Water staff are just totally inappropriate to this kind of material. Thank you.

CHAIR YOUNG: Thank you. All right, that concludes the people who are trying to testify on this.

Are there follow-up questions that the

Board has of the staff at this time?

BOARD MEMBER BATTEY: Can I just get some direction on where the last comment that was made, on Number 16 -- Item 16, where is that? I had a hard time following that.

MR. LICHTEN: That's actually -- this is Keith Lichten with the Watershed Division. That's Provision 16, titled, "Field Quality Report", on page -- it's on the page 27 of the markup, on page 22 of the clean version.

BOARD MEMBER BATTEY: Okay, thank you.

VICE CHAIR MCGRATH: I do have a question on the salmonid, the testimony that had to do with salmonid. Presumably, so I'm going to lead the witness a little bit here or lead the staff a little bit here. I do remember that this stream does not now have salmonid habitat. And, so, I believe it would be inappropriate to require salmonid habitat.

I didn't -- I don't remember the exact language, but I presume from the previous discussion we had about potential mitigation, that the intent was that if salmonid habitat was actually enhanced, that would be an example of habitat restoration that would be quite apart from

acreage of substantial benefit.

I don't -- nodding heads don't show up on the record, so let's have a clear answer to that.

MR. FERNANDEZ: That's correct, we're not requiring salmonid restoration. We're not requiring mitigation for impacts to salmonid habitat.

VICE CHAIR MCGRATH: But you would recognize it as a significant benefit.

MR. FERNANDEZ: Right, we would recognize it as a significant benefit and that, potentially, depending on the project, could lower the mitigation.

VICE CHAIR MCGRATH: And you don't think there's any modifications in the staff report to make that clear? You think that was just a misunderstanding by the District?

MR. LICHTEN: I wanted to just briefly read the sentence in question.

VICE CHAIR MCGRATH: Okay.

MR. LICHTEN: From the finding. It's really intended to help the District or the dischargers. It says, "Examples of potentially acceptable mitigation projects include dam removal, increasing salmonid habitat complexity at another

creek, replacing a concrete channel with restored river and wetland habitat, and preparing a watershed management plan, and implementing projects specified in that plan sufficient to meet the order's mitigation requirements."

So, one of the things we were trying to do was both give examples, and also to line those up with projects we k now the District is pursuing.

VICE CHAIR MCGRATH: And to be very clear, because some of the testimony had to do with 15 acres, but you wanted to provide a benchmark in this. In fact, depending on the value in existing enhancement projects, a project contemplated currently by the District and funded through its creek enhancement measure, which was a popularly supported measure, could be implemented and suffice to mitigate the impacts. is that correct?

MR. LICHTEN: That's correct.

MR. WOLFE: Now, I think it's worth noting what the actual proposed is. It says, "Thus the mitigation package," and this is in Condition 19, on page 25, it says, "Thus the mitigation package, i.e. the mitigation monitoring plan, shall provide for a minimum restoration of the project reach subject to the adaptive management plan and

additional off-site mitigation. The off-site mitigation shall enhance 1,500 linear feet, or 15 acres of creek waters, or the equivalent."

And, so, I think we're providing a lot of leeway in there because we further go on to say, "The Water Board may require a greater or lesser amount based on changes in the factors listed in Finding 21, such that the" --

VICE CHAIR MCGRATH: I want to stay at the 30,000-foot level for the public and the public comment. Because as the line in the movie, there appears to be a failure to communicate here.

I think the Board and our staff have bent over backwards to try to create a mechanism to allow the schedule to proceeded, and needed flood control improvements to benefit the public to be constructed while we worked on things.

It is, I think, unfair to now say, well, because you let the project go forward and you tried to recognize what the District might be doing anyway, then you can't ask for something. Well, we'll mitigate if you don't ask us. But if you don't -- you know.

So, to do this, and I think this is very important to members of the public in terms of

whether this is a new requirement, we said we would try to recognize those enhancement projects -- this is my understanding as a Board Member, when I did this. And, you know, I'm an engineer, I'm interested in flood control, but I'm also interested in streams. That we wanted to recognize and allow projects that the District could be implemented as part of that initiative, where they weren't required as mitigation for something else, but the District saw fit that they would enhance communities and the like, that those could be recognized.

So, the intention here was not to add $20 million, or whatever, in cost, but it was to make sure that those projects that were conceived would actually mitigate, if not in-kind, and we also provided a mechanism.

So, there's been a certain amount of misunderstanding and I apologize for that. But my understanding, when I went forward, is very clear.

MR. PROWS: Madam Chair, might I interject to just correct something that was just said by staff, and I think it's underlying the assumption on something that was just said by the Board Member. Peter Prows, outside counsel for the Water

District.

What we've said before is that if a project is required as mitigation in an order from this Board, it actually gets harder for the District to fund. We cannot use our Safe Clean Water funds to fund those projects. You're actually --

CHAIR YOUNG: Thank you, Mr. Prows, we did hear that testimony in January, and we input it into our brains.

I would like to follow up what Jim was trying to say. There were several members of the public, who were here today, who were not here, so to speak, or part of the whole history of this project. And just by looking at the WDR, it's very difficult to ferret out the fact, I'm sure, that the Board decided that we wanted to make sure that this project went forward and went forward on the fastest schedule possible. And that's why we constructed a two-step process, whereby we could adopt or approve the certification, allow construction to proceed, and then come back at a later time to discuss the issues with the District and the Corps, where the Board, and the District, and the Corps were not seeing eye to eye.

It was clear to our staff, and to me as a Board Member, that if we tried to work out those differences prior to allowing the Corps to proceed with its certification, and its construction, that we would have delayed the project. So, we said, no, we're not going to delay this project. These people need flood control. The BART Station needs flood control. The businesses need flood control.

So, we did everything in our power to make sure that the construction went ahead and there was no delay.

But there were these unresolved issues, and that is what we're here talking about, today, and that we talked about in January. In January, we heard a lot of testimony about some people feeling like the WDR might cause a delay. Other people saying there was no nexus there and it would not cause a delay.

So, I'm not going to go through all of that, but I do want the m embers of the public to know just what Jim said, which was that the staff and the Board did everything that they could in their power to make sure that there was no delay in the construction of this project.

And as I understand it, it's due to be

completed -- I think it was December 2017, later on this year.

So, again, I just, you know, I hope members of the public go home with that understanding.

Having said that, we now have to go back to figuring out what to do with this WDR, and the contentious part seems to be what do we do about mitigation? Do we, don't we? How much? All of that.

So, I would like to get back to a few specifics about mitigation. And I want to ask the staff the question that I asked the District. Which is, looking at the Mitigation and Monitoring Program, June does seem a little soon, that we're sitting here in April. What would you recommend as a reasonable later date for that requirement?

MR. WOLFE: Yeah, we did -- you can answer that later, if you want to think about it for a while. We can circle back to it.

MR. WOLFE: We have pointedly -- I've asked District management, pointedly, that we're willing to move on that date. But as you see, the response we get is not overwhelming. So, we have not gotten any response, but we'd be happy as part

of our discussions here to suggest a date, if you think that that's a reasonable concession for the District.

CHAIR YOUNG: So, you know, we're three months later. If we push it back three months, does that work for everybody?

MR. WOLFE: That's reasonable.

CHAIR YOUNG: And, then, if there are other -- there was another date that was a year from the time -- there was a one-year deadline for the --

MR. WOLFE: Well, one year is tied to the impacts. So, it's hard to change that because the impacts already started in October 2016. So, that's typically of our approach of when the impacts started.

Ideally, mitigation would be in place either before or at the same time that the impacts take place. In this case, we're just providing guidance on to address temporal impacts, this is the approach we would take.

Now, if you feel we're being too stringent to say if the impacts are not addressed within one year, I mean, we can wiggle with that. But that's based on the approach of how do we manage the fact

that on some projects the mitigation is implemented after the impacts take place.

CHAIR YOUNG: Right, okay.

MR. FERNANDEZ: Is this on? Okay. Just to add to that a little bit is only part of the project's been implemented and it's only been -- I think it's about, how many 500 linear feet. So, the vast majority of the project has not been implemented, yet, so the impacts have not begun to occur on that. We can factor that into that 12 months. So, the 12 months for the 500 linear feet started in October. The rest of, approximately, somewhere around 10,000 linear feet, that 12 months won't start until those impacts begin.

MR. LICHTEN: And I would, just in terms of the schedule, I would note the Santa Clara Valley Water District had a Board meeting yesterday. I did not attend the meeting, but I did look at some of the materials. My understanding is the materials reported to the Board that despite the year's heavy rains, the project remained on schedule and was expected to be completed by December 2017. So, which would suggest that the remainder of the impacts would occur sometime this year.

I would suggest, Javier or Bruce, if we were to move that back by a year, more or less, that October date, that would be a reasonable deadline for completion. The framework in the order certainly allows for thinking through, well, what are the differences in the amounts based on when the actual construction date is.

CHAIR YOUNG: So, just to clarify. If the Board made it clear that we wanted to utilize the wiggle room, that Bruce just -- Mr. Wolfe just described, could we do that without amending the language of the order, simply by us directing you, as staff, to do that? Or, do we need to amend the language of the order? And you can answer that later, if you need to think about it. Okay, thank you.

VICE CHAIR MCGRATH: I'm gonna make a statement later, but there's a technical question here that's been bedeviling me for some time. And, so, the District understands, I studied river engineering under Professor Shen at UC Berkeley and I served with Luna Leopold on the San Francisco Estuary Institute, and employed one of his graduate students. So, I worked on stream function for a long, long time.

And in the earlier testimony we talked about the recovery of the stream. And I came into that hearing of the opinion that this channel would have some wetland values, but it was very difficult to tell what they would be. And that it wasn't appropriate to mitigate for destruction, but it was absolutely appropriate to try to resolve what level of benefit would be there.

And there's been, unfortunately, more heat and less light on that issue. The velocities, there's contrary information that's been presented by the District, in the record. The velocities are high enough to disturb the top soil and begin to reestablish a channel. The existing system has a flat flood channel and, then, a slightly incised channel within it that has more substantial value.

It may well be that the velocities and the nature of the stone is enough that a new channel can be restored relatively quickly. It may well depend on what level of storms occur in what period of time.

But there was also uncontradicted evidence that periodically this channel is also accretional. So, now, that's not unusual that a channel would be erosional in major flood and accretional all the

rest of the time.

But that gets to the heart of whether or not the channel -- you know, the level of channel value it has.

So, of the staff, is there anything more that you can bring to bear on this question about is there somebody independent who can look at the question of recovery of the channel? The positions of the staff and the positions of the District remain far apart. I'm not completely convinced by either one. But my experience also doesn't tell me what the answer is.

Is there a way that this uncertainty could be incorporated into a condition so that we're not Over-mitigating, or am I missing something?

MR. FERNANDEZ: I believe the adaptive management plan addresses that. We assume some partial recovery within five years. It could be ten years, it could be one year, we don't really know. A lot of it depends on storm events and that's highly variable from year to year and from within the year. So, we just took a mid-point and assumed five years. We acknowledge that it could happen sooner, it could happen later, and that's where the adaptive management comes in. The

adaptive management plan, we put in some requirements in the order to put in monitoring to find out when that recovery would occur. And that's how we tried to account for that uncertainty in the tentative order, already.

MS. AUSTIN: Xavier, is that finding or subprovision 19-F?

VICE CHAIR MCGRATH: No, could an off-site mitigation or enhancement project essentially moot that question out and rather than count the number of angels that are going to dance on the head of the existing -- or the new channel, there might be an enhancement project that is to their benefit, that would kind of sweep all objections before it?

MR. FERNANDEZ: Yes, it could. That would, though, likely require us to adjust the ratios. Because we're assuming -- we assumed in our ratios that there would be some recovery within five years.

VICE CHAIR MCGRATH: Yeah.

MR. FERNANDEZ: If we say that's a moot point, then --

VICE CHAIR MCGRATH: I guess that's the point that I'm pursuing here. That in adopting a 15-acre example, we are not necessarily writing

that in stone. We're providing a benchmark. And more definitive demonstration by the District about the recovery, or an off-site enhancement project could both change that.

MR. FERNANDEZ: That's correct.

VICE CHAIR MCGRATH: Okay, yeah, that's important to have on the record.

CHAIR YOUNG: All right, are there other questions from Board Members to staff?

BOARD MEMBER AJAMI: I think I'm just going to make a comment for the record. Which is just that I want to thank the staff for all their work on this. I may be missing something, but at a high level it does seem very much to me that the staff has really listened at the last meeting, that we had a good exchange between the Board and staff, and that you've really bent over backwards to say, okay, let's do this in an adaptive fashion. So, you show us your sort of the target, that you track it. You develop the plan, you track it, you show us, and when we're done, we're done.

But, really, I just want to say thank for really trying to make something very workable.

MS. AUSTIN: Chair Young, if I could interrupt. I would feel more comfortable if the

record reflected a response from staff on the Jones Chemical Plume, if they could give some comments about the reason for those changes?

MR. WOLFE: I've probably been the one who's pushed hardest on that. I've understood from our staff, in the Toxics Division, that the Jones Chemical site which, itself, is a former industrial site that bounds the project, and at some point in the past an above-ground tank of volatile organic chemicals exploded and basically spread its contents far and wide.

Right on the west side of the project is a proposed new development, including housing in there, and based on recent soil vapor sampling, even though the groundwater is relatively deep, the soil vapor is so high that they're going to need to put in all sorts of risk management controls into that new development.

And that's literally adjacent to this project. And, so, in our mind for protection of safety of workers on this site, and depending on where soil is moved and stockpiled, it needs to be managed in a way that's protective of human health and the environment. And, so, that's why there are changes from what you're seeing now, from what you

saw in January. And we feel this is addressing that protection of worker health and safety.

MS. AUSTIN: And to further clarify for the record, these are changes that were discussed with the District and the Corps.

MR. WOLFE: Did bring these up during our teleconference on March 24th. And they had some questions and we felt we had clarified them.

MR. LICHTEN: And just to add to that, they were initially provided to both the Corps and the Water District on February 24th, and we also went over them at that time.

CHAIR YOUNG: And what was the Corps' response during the teleconference? I know this is hearsay, but we don't have to care.

MR. WOLFE: Actually, the questions on this came from the District, on our teleconference, and not from the Corps. So, I can't say offhand whether they fully understood this until maybe they read it later. But in our mind, it doesn't necessarily change the management past implementing, basically, best management practices for handling contaminant soils. The soils just seem to be more of a source than we had anticipated in the past.

CHAIR YOUNG: Okay.

VICE CHAIR MCGRATH: Okay, I do have one more statement, which is important, and it goes to the heart of this. I think it has been difficult to listen to arguments that this project would have no impact and was self-mitigating. I came to the first hearing convinced that the existing -- you know, the new channel would have value, but would still need mitigation.

And I listened carefully to the testimony. And I want to call one the bits of testimony into attention, because I think it's important, the quality of testimony. And this is from the District that said, in fact, speaking about the new channel, "It will be a bottom that will grow emergent vegetation than the nonnative emergent vegetation that's there, now."

Now, that's a claim, it's not necessarily evidence. But a little bit further, and I remember this picture very clearly, was a picture of Lower Silver Creek was shown, that said we have all kinds of vegetation growing on Lower Silver Creek. But that's not an analogous situation because that bottom was not armored.

This is why I asked the questions about

the level of armoring. That's why I'm interested in the velocities.

The question is whether or not the stream will recover and whether or not there's clear and compelling evidence that says it will restore. And there's not. And, in fact, showing a different kind of stream is not really credible.

So, I'm going to support the staff recommendation, with the clear understanding that we have made here, that there is not an automatic requirement for 15 acres. That the District has the capacity to formulate an enhancement project, such as salmonids -- it's not mitigation for salmonids -- which would be well within your mission and satisfy this. And you could bring back other information that adjusts that. But there is no credible information, to me that says no mitigation is required.

CHAIR YOUNG: All right. Before we get into Board comment, if we are done with the questions to the staff, my question to the Board is whether anyone of you wants to go back into closed session. We have the option to do that if -- it takes a majority of one. All right, we have no requests to go back into closed session.

Then, as a housekeeping matter, I will remind the Board Members that we have a very important item after this one, which is the vineyards, which we've been working on for a long time. And I was planning to take a break between the time we voted on this matter and going into vineyards. But I'm going to suggest a slight change.

I'm going to ask the staff to think about an appropriate change to the timeline for the mitigation and monitoring plan due date, think about whether any other changes need to be made to the plain language to deal with the one year -- with the issue, in order words do we need more language to have wiggle room or is the wiggle room there. And, then, think about the staff recommendation. And we'll come back in five minutes and we'll listen to it.

And, then, we'll go right into vineyards. Thank you.

(Off the record at 3:01 p.m.)

(On the record at 3:16 p.m.)

CHAIR YOUNG: Thank you, folks. We are reconvening. And I think this is an appropriate time to have a staff recommendation. We will be

able to have Board Member comments and discussion after we have a motion, as usual.

MR. WOLFE: Well, this has been a challenging one. So, as part of my staff recommendation, I just want to make a few comments, especially since I wasn't able to be part of the January meeting.

I think you continued to hear the issues about that if this is adopted, it will slow down the project. And in our mind, our actions have already ensured timely completion of the project. We acted expeditiously to issue certification to allow the Federal funding to be secured. That Federal funding has now been allocated, construction has begun and is on schedule.

And just yesterday, District staff told its Board that the project is fully funded and on schedule.

I'll also note that the District staff released its annual capital improvement program budget, at the end of February. It's still in draft. But it indicates that the project is not only fully funded, but it says "allocated funding exceeds planned expenditures by approximately $.349 million." So, it seems this project is well

funded.

That project also indicated that flood control projects in the Coyote Creek watersheds, says the watersheds have benefitted from higher than projected property tax revenue in fiscal years 2013 through 2016. The District will also receive $55 million from the Department of Water Resources to assist with construction of Lower Silver, Lower Berryessa, upper Berryessa, and Lower Penitencia.

So, it seems like funding is in place. The Corps has confirmed that the project's moving forward and will be on schedule to provide its flood protection by the end of the year.

We've, at times, had questions saying why are we doing this, now? I guess the short answer is we didn't do it before.

The Corps applied for certification, initially on this, in September 2015, but initiated an alternative permitting process, where they would have essentially self-permitted this.

We responded to their application in October 2015. While the Corps expected to issue their permit under their self-certification, they were directed by headquarters in Washington to go back to the State in December 2015. So, in mid-

December 2015 Traci Cleaver, of the Corps Pacific Division, as had staff there, and Beau Goldie, District CEO, they reached out to me. We had a couple of phone calls to come up with the two-step approach. We had a conference call with many parties in the middle of December to set things in motion. And the three agencies, the staff scrambled to get the certification drafted so I could issue it as soon as the District certified its CEQA process. I was able to do that in March 2016.

We immediately turned to working with the District on waste discharge requirements. It initially asked us for delaying that until the summer, and bit by bit we've had a number of requests for delays. So, it's appropriate that we get this done today.

Because in addition to addressing the mitigation issue, this permit, waste discharge requirements will also permit the District to maintain the project. It's had significant silt deposition over the past few weeks. And this would provide permit coverage for the project moving forward.

I think specific to the order requirements

for mitigation, as Xavier described, it's very consistent with the Basin Plan requirements and statewide policies. While we still feel the project design could have been improved, we agreed to call the design, as submitted, the least environmentally damaging practical alternatives.

And, so, consistent with the Section 404(b)(1) guidelines that are in the Basin Plan, once we establish what the project is, then we turn to what the impacts are that need mitigation and specify that mitigation. And I think we've done a good job, now, of identifying the impacts, setting up the framework for the District to propose its monitoring mitigation plan. And we would say, if anything, we're providing a concession to the District. Because, typically, we want to see a specific mitigation monitoring plan in hand at the time we approve. So that on the record, in open meeting, we have a chance to have everybody look at that.

I think we've got it written well in the order that there's an opportunity for public input. We'll ensure, when that monitoring mitigation plan comes in there is that opportunity for mitigation -- I mean, for public input.

So, I think it's very possible, entirely possible for the District to comply with the requirements. And I think while the requirements are generous on our part, I think they're consistent with the Basin Plan and requirements by the State.

Likewise, I think it's consistent with the mitigation that the District has implemented in the past. I get chided by staff by holding onto things, but I was noting that we permitted the District and the Corps to implement its Guadalupe River Park and Flood Protection Project. We permitted that by the Board in 2001. And there was a lot of back and forth. They had a celebration of the completion of the project in January of 2005, and I kept the folder. It's worth noting, I thought, that in that folder, because there had been some back and forth between the agencies, and the District and the Corps, it said, "To resolve the complex issues of providing suitable habitat for threatened species, while meeting the critical flood protection needs of the community, the District, the City of San Jose, the San Jose Redevelopment Agency, and the Army Corps of Engineers invited natural resource groups and State

and local agencies to reformulate the project."

And as part of the reformulation it said, "Developing of a Mitigation and Monitoring Plan to ensure that environmental concerns are being addressed."

And, so, somebody said, gee, what's changed since 2005? From the Water Board, I'm still here, staff's still here, nothing's changed from our side. So, we're not quite understanding why it's changed from the Water District side.

Some parties have suggested that we're requiring mitigation only because what the project design could have been or should have been. I think, as Xavier has detailed, that's not the case.

But I'd say, on reflection, we probably should be requiring improved flood control project design when we're looking at projects like this. The Board already requires updated designs for new and rebuilding of housing and commercial projects, already requires updated designs for road projects. Why not flood protection?

So, nonetheless, you know, I want to go ahead and recommend adoption of this order. It's been developed in response to the comments received and as a logical outgrowth of those comments and

updates.

The draft before you, we've talked about making a change to allow more time for submittal of a mitigation monitoring plan. And, so, I was just going to suggest that that be September 30th. But staff was quick and looked to see that September 30th is a weekend. So, I recommend in finding 21, on page 12, that we make that date October 2nd, 2017, that's a Monday. And likewise, in Provision 19, on page 25, that we change that date to October 2nd, 2017.

So, with that change, I recommend adoption of the revised tentative order before you.

CHAIR YOUNG: Okay, do we have a motion?

BOARD MEMBER BATTEY: So moved.

BOARD MEMBER OGBU: Second.

CHAIR YOUNG: I don't know whether that picked up on your microphone.

BOARD MEMBER OGBU: Second.

CHAIR YOUNG: All right, thank you.

Is there anything that somebody wants to say, that they haven't said, yet?

(Laughter.)

CHAIR YOUNG: All right. I know, I'm actually going to say a couple of things. So, you

guys should feel free.

BOARD MEMBER OGBU: Oh, I just want to say that I appreciate very much the staff's hard work on this and especially having gone through January's meeting and, you know, what we got this time around reflected to me a lot of hard work and showing a lot of flexibility in trying to craft revisions that still maintain the obligations that the Water Board has, but also is something that works better for the District, hopefully.

And I really, you know, saw a lot of effort there and I really appreciated that.

I do respect the District's concerns about what you call something can impact how easy it is to get it done. And, you know, I appreciate that concern, but I still think that the WDRs are essential, and including the mitigation, you know, absolutely has to be there. And, so, I will be supporting the revised tentative order.

CHAIR YOUNG: All right. I'd like to build on what Ms. Ogbu's just said about the nature of the mitigation requirements and the fact that defining something as mitigation affects the processes that are used inside the District. And I think all of the Board Members are understanding of

that argument, which is why I appreciated the staff, today, making more clear that the mitigation requirements -- the things that are being called mitigation requirements in this order, tentative order, allow a lot of, we'll use the technical term that Mr. Wolfe coined, they allow a lot of wiggle room in terms of the definition of what may be put together in a package and suffice as mitigation for this project.

I think we've all heard that. And, so, I hope that the District staff and our staff can work together, productively, to put together a package that works for everybody.

And again, much of the concern that we heard from various parties was that the adoption of the WDR would delay construction of the project. And I do not see the nexus. I do not think the arguments are convincing on that score.

You know, with respect to the Corps, their argument was that they had to be up front about the potential risk of being held accountable for financing the required mitigation and that they would have to report that back to their superiors, and that may cause a chain of events to occur that would cause the project to be delayed or cancelled.

The timelines are such that that just doesn't seem like it can possibly happen.

I applaud the Corps' honesty in that regard. But given the fact that we don't have a project, a mitigation project, we don't have a price tag, we don't have anything that they can start running their numbers on and won't for some months. It's just not credible to me that we are running a serious or any kind of a significant risk of delaying this project.

If we were, I would be thinking differently about it.

So, enough said on that. I'm going to support the motion.

And seeing no other enthusiastic responses, I think we'll call for a roll call vote, please.

MS. BRECHTEL: Board Member Ogbu?

BOARD MEMBER OGBU: Aye.

MS. BRECHTEL: Board Member Lefkovits?

BOARD MEMBER LEFKOVITS: Aye.

MS. BRECHTEL: Board Member Battey?

BOARD MEMBER BATTEY: Aye.

MS. BRECHTEL: Vice Chair McGrath?

VICE CHAIR MCGRATH: Aye.

MS. BRECHTEL: Chair Young?

CHAIR YOUNG: Aye.

So moved, all right, and approved, adopted, whatever we just did.

MR. WOLFE: Okay.

Item 9. Proposed General Waste Discharge Requirements for Vineyard Properties in the Napa River and Sonoma Creek Watersheds - Informational Workshop to Receive Testimony.

CHAIR YOUNG: Let's move on to the proposed vineyard WDRs. And while we're playing musical chairs here, I just wanted to thank everyone in the audience who came on the vineyard issue for your patience. It's unusual that we have to move something so important to so late in the day, but we appreciate you staying.

(Multiple off-mic conversations.)

CHAIR YOUNG: All right, our general process always is to have the staff report and then have comments from the people who are the prospective -- people who are affected, let's call you that.

I'm aware that we went late in the day and that some folks are on a tight time clock. So, if

EXHIBIT 14

San Francisco Bay Regional Water Quality Control Board

Sent via electronic mail: No hard copy to follow

September 20, 2017
CIWQS Reg. Meas. 403119
CIWQS Place ID 818597

Santa Clara Valley Water District
Attn. Norma J. Camacho, CEO
5750 Almaden Expressway
San Jose, CA 5123
Email: NCamacho@valleywater.org

Subject: Submittal of Mitigation and Monitoring Plan for the Upper Berryessa Creek Flood Risk Management Project, Santa Clara County (Water Board Order No. R2-2017-0014)

Dear Ms. Camacho:

This letter is regarding the upcoming October 2, 2017, deadline for the Santa Clara Valley Water District (District) to submit a mitigation and monitoring plan (MMP) for the subject project pursuant to Water Board Order No. R2-2017-0014 (Order), Provision B.19.

The District and the Regional Board staff continue to discuss how the District can meet the MMP requirement. While the District has not yet submitted an acceptable proposal, staff are working together to obtain additional information regarding the District's proposed Lake Almaden mitigation project, identify changes to it, or to identify an additional project(s) that would meet the Regional Board Order's requirement. In light of the ongoing discussions, Regional Board prosecution staff will not seek enforcement for failure to meet the October 2 due date for an acceptable MMP as long as the District continues to work diligently to complete and submit an acceptable plan. Given discussions to date, we believe the District should be able to submit an acceptable plan by mid-November.

If we reach an impasse with these discussions or if either party believes that continuing discussions would be futile, upon written notice, that party may terminate this agreement. More specifically, the District may file its motion to stay the Order, and the Regional Board may proceed with enforcing the Order. Upon belief by either party that

an impasse has been reached, or that any further discussions would be futile, the District would have seven days from the date the terminating party provides written notice of the termination in which to file a stay motion. If a stay motion is filed, the Regional Board agrees that it will not take enforcement action until the court resolves the motion. In setting its stay motion for hearing, the District must arrange to have the hearing on the earliest court date as a regularly-noticed motion with the assigned judge.

We look forward to continuing to work with the District in developing an appropriate MMP for the Project. If you have any questions about this matter, please contact Susan Glendening at (510) 622-2462 or Susan.Glendening@waterboards.ca.gov, or Keith Lichten at (510) 622-2380 or Keith Lichten@waterboards.ca.gov.

Sincerely,

Dyan Whyte
Assistant Executive Officer

Cc: SCVWD
Chris Hakes, CHakes@valleywater.org
Rechelle Blank, RBlank@valleywater.org
Melanie Richardson, MRichardson@valleywater.org
U.S. Army Corps of Engineers, SF District
Jessie Burton Evans, Jessica.L.Burtonevans@usace.army.mil
Tom Kendall, Thomas.R.Kendall@usace.army.mil
John Morrow, John.C.Morrow@usace.army.mil

EXHIBIT 15

	A	B	C	D	E
1	Date	Hrs	Productive hourly rate	Cost based on productive hourly rate	Notes
2	4/13-4/14/17	2	$134.91	$269.82	
3	4/24/2017	2	$130.55	$261.10	
4	4/25/2017	0.5	$130.55	$65.28	
5	4/26/2017	4.5	$130.55	$587.48	
6	Subtotal for FY2016-17	**9**		**$1,183.67**	Note - these hours are related to the filing of the test claim
7					
8					
9				Cost based on productive hourly rate	
10	8/24-8/25/17	2	$111.18	$222.36	
11	9/8/2017	1	$123.04	$123.04	
12	9/11-9/14/17	3	$127.39	$382.17	
13	9/22/2017	1	$127.39	$127.39	
14	9/26-9/28/17	3	$123.04	$369.12	
15	10/4-10/6/17	1	$123.04	$123.04	
16	10/9-10/11/17	1	$127.39	$127.39	
17	11/9/2017	1.5	$127.39	$191.09	
18	12/13-12/15/17	1	$127.39	$127.39	
19	12/18-12/20/17	1.5	$126.91	$190.37	
20	1/31-2/2/18	2	$131.26	$262.52	
21	Subtotal for FY2017-18	**18**		**$2,245.87**	Note - these hours are related to time spent assisting staff with developing/negotiating mitigation
22					
23					
24				Cost based on productive hourly rate	
25	3/2/2018	1	$131.26	$131.26	
26	3/12/2018	0.5	$115.05	$57.53	
27	3/16/2018	0.5	$115.05	$57.53	
28	3/21/2018	0.5	$115.05	$57.53	
29	3/27/2018	0.5	$131.81	$65.91	
30	3/28/2018	1.5	$131.81	$197.72	
31	3/28/2018	1	$131.81	$131.81	
32	3/29/2018	1	$131.81	$131.81	
33	3/26-3/30/18	5	$131.81	$659.05	
34	4/2-4/11/18	26	$131.81	$3,427.06	
35	Subtotal	**37.5**		**$4,917.19**	Note - these hours are related to the filing of the test claim
36					
37					
38		Total		$8,346.73	
39		Total for FY2016-17		$1,183.67	
40		Total for FY2017-2018		$7,163.06	

DECLARATION OF CHRIS HAKES

I, Chris Hakes, declare as follows:

1. I have personal knowledge of the facts in this declaration, and if called as a witness could competently testify to them.

2. I am a licensed civil engineer in the State of California. I am employed by the Santa Clara Valley Water District ("District") as its Acting Deputy Operating Officer for Treated Water Operations and Maintenance.

3. I have held my current position since January 31, 2018. My duties include overseeing the treated water delivery operations and maintenance for the County. Prior to January 31, 2018, I was employed by the District as its Assistant Operation Officer for Water Utility Capital Division. My duties as Assistant Operation Officer for Water Utility Capital Division included assisting in the delivery in our five year rolling capital improvement program. From September 2015 to September 2016, I was employed by the District as the Unit Manager for the Watershed Design and Construction, Unit Two. My duties as Unit Manager included project delivery for various flood protection projects including on Berryessa Creek.

4. My duties related to the District's Upper Berryessa Project include responsibility for coordination with the U.S. Army Corps of Engineers and project delivery. I worked closely with District staff and counsel to prepare for and participate in the two public hearings the San Francisco Bay Regional Water Quality Control Board ("Regional Board") held on the Upper Berryessa Project for Berryessa Creek.

5. Since the Regional Board issued Order Number R2-2017-0014, including Condition B.19 - Mitigation and Monitoring Plan (the "Mandate") on April 12, 2017, my duties have included communicating with the Regional Board about the Lake Almaden Project as a potentially suitable off-site mitigation project to satisfy the Mandate. Specifically, I began spending time on developing the Lake Almaden Project to satisfy the Regional Board's Mandate requirements on August 23, 2017, shortly after a settlement meeting with the Regional Board that I had participated in, with counsel, at the offices of the California Attorney General in Oakland.

6. My work relating to the suitability of the Almaden Lake Project to satisfy the Mandate in this matter has included communicating with Regional Board staff (Ms. Susan Glendening) about the suitability of the Lake Almaden Project to satisfy the Mandate, and working with District staff and counsel to help formulate responses to questions from Ms. Glendening about the suitability of the Lake Almaden Project to satisfy the Mandate, which I would not have done if the Regional Board had not issued the Mandate.

7. Between August 23, 2017, and November 16, 2017, I logged time in to the District's normal electronic recordkeeping system, Peoplesoft, to the Upper Berryessa matter, at or close to the time I actually spent on that matter. Exhibit 1 to Gloria del Rosario's declaration contains an accurate copy of a PeopleSoft spreadsheet, prepared at my direction, containing the data I logged into that system to the Upper Berryessa matter during that time. All of the time listed on that spreadsheet accurately reflects the time I spent in that date range, at my correct productive hourly rate, on the suitability of the Almaden Lake Project to satisfy the Mandate in this matter (as described above), except for three entries—1 hour on 10/13/2017, 1 hour on 10/25/2017, and 5 hours on 11/6/2017—which I spent on matters unrelated to the Mandate and which are not included within this test claim. Excluding those three entries from the spreadsheet, I spent a remaining total of 17 hours on the suitability of the Almaden Lake Project to satisfy the Mandate, for a total cost to the District this fiscal year of $2,044.45.

8. After November 16, 2017, I have spent time on the suitability of the Almaden Lake Project to satisfy the Mandate in this matter, but I have not logged that time in to the PeopleSoft system. Other than the time I have spent helping to prepare this test claim, my unlogged time is not included as part of this test claim.

9. I have spent 3 hours helping to prepare this test claim at a productive hourly rate of approximately $148.03 (my latest available rate), including reviewing records, consulting with counsel, and drafting this declaration. The cost to the District of my time spent helping to prepare this test claim is approximately $444.09.

10. The costs of responding to the Regional Board's inquiries about the suitability of the Almaden Lake Project to satisfy the Mandate are paid out of Measure B funds.

11. It is difficult to predict with any reasonable degree of certainty how much time I will need to spend for the remainder of this fiscal year on implementing the Mandate. The amount of work the District or I may have to do likely depends entirely on the actions of the Regional Board in evaluating the suitability of the Lake Almaden Project. Other than responding to any such actions by the Regional Board, I would not otherwise expect to be spending any of my time for the remainder of this fiscal year on the Lake Almaden Project.

12. The District has not applied for any federal Clean Water Act permit for the Upper Berryessa Project. Nor has the District requested a Section 401 certification from the Regional Board for this Project.

13. Construction of the Upper Berryessa Project began in October 2016.

14. Attached as Exhibit 1 is an accurate copy of an email chain amongst Corps, Regional Board, and District staff on March 1, 2016.

I declare under penalty of perjury under the laws of the State of California that the facts stated in this declaration are true.

Dated: April 11, 2018

CHRIS HAKES

EXHIBIT 1

From: Hurley, Bill@Waterboards [mailto:Bill.Hurley@waterboards.ca.gov]
Sent: Tuesday, March 01, 2016 5:29 PM
To: Glendening, Susan@Waterboards <susan.glendening@waterboards.ca.gov>; 'Cruz, Amanda B SPN' <Amanda.B.Cruz@usace.army.mil>; Kendall, Thomas@USACE <Thomas.R.Kendall@usace.army.mil>; Austin, Tamarin@Waterboards <Tamarin.Austin@waterboards.ca.gov>; Roselyn.J.Wang@usace.army.mil
Cc: Lichten, Keith@Waterboards <Keith.Lichten@waterboards.ca.gov>; Christopher Hakes <CHakes@valleywater.org>; Judy Nam <JNam@valleywater.org>; James Manitakos <JManitakos@valleywater.org>
Subject: RE: Suggested language for mitigation finding

Susan, Amanda,

"The **need for** compensation of impacts from the Project design and future O&M will be addressed under the WDR"

Addressing the need for compensation of impacts does not necessarily imply that the Project design requires compensatory mitigation.

Bill

Bill Hurley
Senior Engineer
Leader, North Bay Watershed Section
Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, # 1400
Oakland CA, 94612
(510) 622-2300

-----Original Message-----
From: Glendening, Susan@Waterboards
Sent: Tuesday, March 01, 2016 3:50 PM
To: 'Cruz, Amanda B SPN'
Cc: Lichten, Keith@Waterboards; Hurley, Bill@Waterboards; Kendall, Thomas@USACE; Christopher Hakes; Judy Nam (JNam@valleywater.org); James Manitakos; Wolfe, Bruce@Waterboards
Subject: RE: Suggested language for mitigation finding
Importance: High

Hello All:

Amanda and I just got off the phone. I explained to Amanda that her proposed language would violate CEQA due to piecemealing, and does not meet CEQA regulations in the California Code of Regulations, Title 14, Section 15096 (g)(2) states:

"When an EIR has been prepared for a project, the Responsible Agency shall not approve the project as proposed if the agency finds any feasible alternative or feasible mitigation measures within its powers that would substantially lessen or avoid any significant effect the project would have on the environment."

Amanda said that the Corps cannot accept a 401 that contains findings that they perceive as being inaccurate. Hence, the "letter of objection" proposal we discussed in yesterday's meeting is not an option for the Corps.

The proposed sentence we discussed, with the minor edit to change the word "will be evaluated" to "will be addressed" won't work for the Corps because it assumes the conclusion that mitigation is required.

Amanda said she is alerting her management that we are not able to agree on the 401's findings with respect to mitigation requirements.

Please let me know if you have any questions about this.

Regards,
Susan

Susan Glendening
Environmental Specialist
San Francisco Estuary Partnership/
San Francisco Regional Water Board
1515 Clay Street, Suite 1400
Oakland, CA 94612
510.622.2462
SGlendening@waterboards.ca.gov

-----Original Message-----
From: Cruz, Amanda B SPN [mailto:Amanda.B.Cruz@usace.army.mil]
Sent: Tuesday, March 01, 2016 3:18 PM
To: Glendening, Susan@Waterboards
Cc: Lichten, Keith@Waterboards; Hurley, Bill@Waterboards; Kendall, Thomas@USACE; Christopher Hakes; Judy Nam (JNam@valleywater.org); James Manitakos
Subject: Suggested language for mitigation finding

Executive Order W59-93 provides a policy ensuring "no overall net loss and long-term net gain in the quality, quality, and permanence of wetlands acreage and values in California..." In accordance with this policy, mitigation may be required to provide for long-term net gain. However, the federal government lacks authority to implement environmental enhancement without specific congressional authorization. The Water Board will separately consider the issuance of a WDR to the SCVWD upon project completion to include the issue of compensation for any impacts related to this policy.

Amanda Cruz, CHMM
San Francisco Planning Branch
US Army Corps of Engineers

DECLARATION OF RECHELLE BLANK

I, Rechelle Blank, declare as follows:

1. I have personal knowledge of the facts stated in this declaration, and if called as a witness could competently testify to them.

2. I am a licensed civil engineer in the State of California. I am employed by the Santa Clara Valley Water District ("District") as its Temporary Assistant Operating Officer for the Watersheds Stewardship and Planning Division.

3. I have held my current position since April 2, 2018. My duties include overseeing the Division's units: Hydrology, Hydraulics, & Geomorphology; Environmental Planning; Environmental Mitigation & Monitoring; and Water Resources Planning. Prior to April 2, 2018, I was employed by the District as a Capital Engineering Manager of the Watersheds Design and Construction Division's Design and Construction Unit Four. My duties as Capital Engineering Manager for Watersheds Design and Construction Division included overall project oversight, budgeting, and project team management of three capital improvement projects, including the Almaden Lake project.

4. I am the Engineer-on-Record for the Almaden Lake project. I have expertise in watersheds capital project planning, design, project management, budgeting, water resource engineering, permitting, and environmental processes.

5. The Almaden Lake project is in the preliminary design phase. The District has not committed to actually constructing the project. Putting aside the San Francisco Bay Regional Water Quality Control Board ("Regional Board" or "RWQCB"), the District is under no obligation to actually construct the project. The District has not publicly circulated a draft environmental review document under CEQA for the project, though the current schedule is for a draft environmental impact report to be publicly circulated by late Spring 2018.

6. Almaden Lake is a 32-acre, manmade lake that is located within Almaden Lake Park, San Jose. The majority of the lake is a former quarry and the lake was initially formed by the breaching of the quarry levee located between the quarry pit and an adjacent creek. The adjacent

creek was Alamitos Creek, which now flows through the lake. Having the creek flow through the lake creates various water quality issues, including issues of methylmercury associated with a former upstream mine, elevated temperature, low dissolved oxygen concentration, and high concentrations of coliform bacteria.

7. As a result of poor water quality, public use of the lake has been impeded, and Almaden Lake has been closed to swimming since August 2010. Additionally, poor quality water released from the lake can impact and degrade water quality downstream along the Guadalupe River. The comingling of Almaden Lake with Alamitos Creek also imposes temperature, predation, and entrainment impacts to steelhead by disrupting its migratory passage through the footprint of the lake.

8. The Almaden Lake project is planning to address these issues by separating and restoring Alamitos Creek within the footprint of Almaden Lake.

9. Prior to September 2017, the Almaden Lake project team spent no planning time preparing or providing information to the Regional Board to help it assess whether that project might be a possible means of satisfying Provision B.19 of Regional Board Order Number R2-2017-0014 (the "Mandate"), related to the Upper Berryessa project.

10. Susan Glendening of the Regional Board has been my point of contact at the Regional Board about the suitability of using the Almaden Lake Project to satisfy the Mandate. To my knowledge, all of the time Ms. Glendening has spent related to the Almaden Lake Project has been related to the suitability of using the Almaden Lake Project to satisfy the Mandate.

11. Since the Regional Board, in September 2017, began inquiring of me and my team about improvements at Almaden Lake as a possible means of satisfying Provision B.19 of Order Number R2-2017-0014 (the "Mandate"), added to my other duties has been communicating with the Regional Board about improvements at Almaden Lake, communicating with District staff and counsel in order to formulate responses to questions from the Regional Board about using Almaden Lake to satisfy the Mandate, and responding to questions from the Regional Board about the

implementation of the Mandate, which I would not have done if the Regional Board had not issued the Mandate.

12. I have been closely aware of the efforts of the Almaden Lake project team in responding to inquiries from the Regional Board. I also keep close track of time my project team has put in to help in responding to these inquiries; that time then becomes a cost to the project.

13. I prepared a list of those project-team members whom I know have spent time on those efforts, together with the date ranges in which they spent respective time on those efforts and the project and/or activity ID parameters to which they respectively logged their time on those efforts to the PeopleSoft system. That information was transmitted to the General Accounting Department.

14. I have reviewed the General Accounting Department spreadsheets for my project team members, identified below, attached to the declaration of Gloria del Rosario ("GAD Spreadsheets"). Those spreadsheets accurately reflect the time and costs to the District of those employees' efforts to respond to the Regional Board's questions related to the suitability of Lake Almaden for satisfying the Mandate as explained on an employee-by-employee basis below:

15. Clayton Leal – Biologist III in the Environmental Mitigation & Monitoring Unit of the Watersheds Stewardship and Planning Division

Clayton serves as the fishery biologist, water resources biologist, and wildlife biologist on the Almaden Lake project team. Clayton is a subject matter expert (SME) for fishery biology/ecology, water resource biology, and wildlife biology and assisted in providing input on responses to Regional Board questions on Almaden Lake. Clayton provided input on the benefits of separating Alamitos Creek from Almaden Lake to native fish and directly prepared the *Fisheries Benefits of Almaden Lake* Memorandum and the *Recreation Benefits of Almaden Lake* Memorandum. Both Memorandums were developed in September 2017 to address RWQCB questions about quantifying the potential benefits of the project (to ascertain whether those benefits would suffice to meet the benefits required by the Mandate) and were finalized on September 28, 2017 and October 2, 2017 respectively.

Clayton is the SME on the design of the riffle-pool-run of the restored channel section. Clayton is SME in answering water temperature related questions for fishery biology/ecology of native fish. RWQCB directly emailed Clayton with restored channel design, water temperature, and project benefits for fisheries related questions. Clayton's work and responses were conducted under my oversight. I reviewed Clayton's time spent on these matters monthly, as my responsible role of project oversight, and the information reported in the GAD Spreadsheets accurately reflects his productive time and hourly rate. The listed hours and time are correct, and the reported hours worked are reasonably accurate. Adding his entries in the GAD Spreadsheets together, Clayton's work on this matter cost the District $2,847.81.

16. Zooey Diggory – Biologist II in the Environmental Mitigation & Monitoring Unit of the Watersheds Stewardship and Planning Division

Zooey serves as the wetlands and vegetation ecologist/biologist on the Almaden Lake project team. Zooey is a subject matter expert (SME) in botanical resources, wetlands, conservation biology, and habitat restoration. Zooey also has knowledge and experience in geomorphology, aquatic ecology, fisheries biology, and restoration planning.

Zooey assisted in providing input on responses to RWQCB questions on Almaden Lake. Zooey provided input on the design to restore the channel geomorphically. Zooey developed the restored channel, new levee, and island plant pallets. Zooey assisted in reviewing the Fisheries Benefits of Almaden Lake Memorandum and the Recreation Benefits of Almaden Lake Memorandum. Zooey assisted in marking up the plan sets for CADD work to update the plans that were provided to RWQCB. Zooey's work and responses were conducted under my oversight. I reviewed Zooey's time spent on these matters monthly, as my responsible role of project oversight, and the information reported in the GAD Spreadsheets accurately reflects her productive time and hourly rate. The listed hours and time are correct, and the reported hours worked are reasonably accurate. Adding her entries in the GAD Spreadsheets together, Zooey's work on this matter cost the District $4,022.68.

17. Michael Martin – Associate Water Resources Specialist in the Water Supply Planning & Conservation Unit of the Water Supply Division

Michael serves as the water resource specialist on the Almaden Lake project team. However, up to March 2017, Michael formally served as the Almaden Lake's project environmental planner and continued serving as the environmental planner until a replacement planner was assigned in November 2017. Michael is a subject matter expert (SME) in preparing legally defensible environmental documents and completing regulatory processes to secure necessary project permits for construction.

Michael assisted in providing input on responses to RWQCB questions on Almaden Lake. Michael provided knowledge transfer to the replacement environmental planner, Tim Tidwell. Michael assisted in reviewing the *Fisheries Benefits of Almaden Lake* Memorandum and the *Recreation Benefits of Almaden Lake* Memorandum. Michael's work and responses were conducted under my oversight. I reviewed Michael's time spent on these matters monthly, as my responsible role of project oversight, and the information reported in the PeopleSoft accounting spreadsheets accurately reflects his productive time and hourly rate. Only those entries of his GAD Spreadsheets highlighted in yellow, in the spreadsheet attached as Exhibit 1 to this declaration, were for his time and costs related to this test claim, and are reasonably accurate; the other entries on that spreadsheet were for other work he did unrelated to RWQCB questions. The highlighted entries add up to 20 hours of his time at a cost to the District of $1,899.38.

18. Tim Tidwell – Environmental Planner II in the Environmental Planning Unit of the Watersheds Stewardship and Planning Division

Tim serves as the environmental planner on the Almaden Lake project team. Tim began working on Almaden Lake in November 2017. Tim is a subject matter expert (SME) in preparing legally defensible environmental documents and completing regulatory processes to secure necessary project permits for construction. Tim also has knowledge and experience with wetland and stream assessments in Santa Clara County.

Tim assisted in providing input on responses to RWQCB questions on Almaden Lake. Tim provided support on environmental assessments, restoration benefit analyses, and review of Almaden Lake's wetland and channel restoration components on the plans and cross sections provided to RWQCB. Tim's work and responses were conducted under my oversight. I reviewed Tim's time spent on these matters monthly, as my responsible role of project oversight, and the information reported in the GAD Spreadsheets accurately reflects his productive time and hourly rate. The listed hours and time are correct, and the reported hours worked are reasonably accurate. Adding his entries in the GAD Spreadsheets together, Tim's work on this matter cost the District $2,618.81.

19. CADD Services Staff in the CADD Services Unit of the Water Utility Capital Division: Patrick Key – Supervising Engineering Tech & Stella Karoglou – Engineering Tech III

CADD Services staff provide CADD support for the Almaden Lake Project team. RWQCB requested plans of Almaden Lake. CADD Services staff prepared the plans consisting of plan views, profile views, cross-sections, and details. Two CADD staff worked on the Almaden Lake CADD services request to prepare plans for RWQCB. CADD Supervising Engineering Tech Patrick Key worked with James Ujah to understand the request and assigned the request to CADD Engineering Tech III, Stella Karoglou, to complete. CADD Supervising Engineering Tech is also responsible for overall quality assurance and quality control of CADD work products. The Engineering Tech III was responsible for drafting the Almaden Lake plans.

CADD Services work was conducted under my oversight. I reviewed CADD Services time spent on these matters monthly, as my responsible role of project oversight, and the information reported in the GAD Spreadsheets accurately reflects CADD Services productive time and hourly rate. The listed hours and time are correct, and the reported hours worked are reasonably accurate. Adding the CADD Services entries in the GAD Spreadsheets together, CADD Services work on this matter cost the District $2,974.73 for Patrick Key and $3,045.74 for Stella Karoglou.

20. James Ujah – Associate Engineer (Civil) in the Design and Construction Unit Four of the Watersheds Design and Construction Division

James serves as the project manager on the Almaden Lake project team. James is responsible for managing and leading the Almaden Lake project. James is a subject matter expert (SME) for planning, design, and construction of improvement projects. James leads the engineering of the Almaden Lake planned components such as creek/lake separation, restored channel design, hydraulic analysis, new levee design, geotechnical requirements, water supply infrastructure design, and serves as the interface with other units for service requests such as with CADD and survey.

James led the effort to prepare the plans requested by RWQCB. James marked up the plans and submitted a request to CADD for preparing the plans consisting of plan views, profile views, cross-sections, and details. James was responsible for ensuring the plans were an accurate representation of the Almaden Lake proposed project. James' work was conducted under my oversight. I reviewed James' time spent on these matters monthly, as my responsible role of project oversight, and the information reported in the GAD Spreadsheets accurately reflects his productive time and hourly rate. The listed hours and time are correct, and the reported hours worked are reasonably accurate. Adding his entries in the GAD Spreadsheets together, James' work on this matter cost the District $10,904.68.

21. Myself, Rechelle Blank

I have reviewed my time spent on these matters monthly, in my responsible role of project oversight, and the information reported in the GAD Spreadsheets for me accurately reports the time I spent on the suitability of the Almaden Lake Project to satisfy the Mandate, except for the entries for 11/20/2017 (8 hours), 11/27/2017 (2 Hours), and 1/2/2018 through 1/23/2018 (11 hours), which were for time spent unrelated to the Mandate. With those 21 hours adjusted, my work on this matter cost the District $18,630.23.

22. Adding all the bottom-line costs to the District related to the Mandate I have identified above yields a total of $46,944.06 in costs incurred by the District this fiscal year. These

costs were incurred as a result of the Regional Board's interest in the suitability of the Almaden Lake Project to satisfy the Mandate. These costs would not have been incurred to date otherwise.

23. I have spent, and expect to spend, 15 hours to prepare this declaration. At my most recent productive hourly rate of $108.71, for the pay period including March 15 and 21, 2018, the District would incur a cost of $1,630.65 for my time in preparing this declaration.

24. The costs of responding to the Regional Board's inquiries about the suitability of the Almaden Lake Project to satisfy the Mandate are paid out of Measure B funds.

25. It is not possible to predict with any reasonable degree of certainty what the costs to the District will be for the Almaden Lake Project team's work related to the Mandate for the remainder of this fiscal year because those costs so far have been driven by what it has taken to respond to the Regional Board's questions. My understanding is that Regional Board staff are using the information the District has provided to formulate a report on the Almaden Lake Project's suitability to satisfy the Mandate. If before the end of this fiscal year the Regional Board has additional questions about the Almaden Lake Project, or if there is some need to respond to, prepare for, or implement actions by the Regional Board related to the Mandate, then there may be additional costs to the District. Unless there is a need to respond to further Regional Board inquiries or actions, I do not expect to spend any time before the end of this fiscal year on work related to the suitability of the Almaden Lake Project to satisfy the Mandate.

I declare under penalty of perjury under the laws of the State of California that the facts stated in this declaration are true.

Dated: April 10, 2018

Rechelle Blank

Rechelle Blank

EXHIBIT 1

	A	B	C	D	E	F	G	H	I	J
1	NAME	DATE	PROJECT_ID	PROJECT_DESCR	HOURS	HOURLY_RT	ER Benefit OnlyRate	Productive	Productive Total Cost	
2	Martin,Michael A	9/8/2017	26044001	Almaden Lake Improvement	3.00	$ 67.58	26.33	$ 93.91	$ 281.73	
3	Martin,Michael A	9/12/2017	26044001	Almaden Lake Improvement	1.00	$ 67.58	29.86	$ 97.44	$ 97.44	
4	Martin,Michael A	9/14/2017	26044001	Almaden Lake Improvement	4.00	$ 67.58	29.86	$ 97.44	$ 389.76	
5	Martin,Michael A	9/18/2017	26044001	Almaden Lake Improvement	7.00	$ 67.58	29.86	$ 97.44	$ 682.08	
6	Martin,Michael A	9/19/2017	26044001	Almaden Lake Improvement	3.00	$ 67.58	29.86	$ 97.44	$ 292.32	
7	Martin,Michael A	9/20/2017	26044001	Almaden Lake Improvement	6.00	$ 67.58	29.86	$ 97.44	$ 584.64	
8	Martin,Michael A	9/21/2017	26044001	Almaden Lake Improvement	6.00	$ 67.58	29.86	$ 97.44	$ 584.64	
9	Martin,Michael A	9/22/2017	26044001	Almaden Lake Improvement	2.00	$ 67.58	29.86	$ 97.44	$ 194.88	
10	Martin,Michael A	9/26/2017	26044001	Almaden Lake Improvement	3.00	$ 67.58	26.33	$ 93.91	$ 281.73	
11	Martin,Michael A	9/27/2017	26044001	Almaden Lake Improvement	6.00	$ 67.58	26.33	$ 93.91	$ 563.46	
12	Martin,Michael A	9/28/2017	26044001	Almaden Lake Improvement	2.00	$ 67.58	26.33	$ 93.91	$ 187.82	
13	Martin,Michael A	10/2/2017	26044001	Almaden Lake Improvement	2.00	$ 67.58	26.33	$ 93.91	$ 187.82	
14	Martin,Michael A	10/4/2017	26044001	Almaden Lake Improvement	2.00	$ 67.58	26.33	$ 93.91	$ 187.82	
15	Martin,Michael A	10/18/2017	26044001	Almaden Lake Improvement	1.00	$ 67.58	29.86	$ 97.44	$ 97.44	
16	Martin,Michael A	10/19/2017	26044001	Almaden Lake Improvement	2.00	$ 67.58	29.86	$ 97.44	$ 194.88	
17	Martin,Michael A	10/20/2017	26044001	Almaden Lake Improvement	3.00	$ 67.58	29.86	$ 97.44	$ 292.32	
18	Martin,Michael A	10/26/2017	26044001	Almaden Lake Improvement	2.00	$ 67.58	26.33	$ 93.91	$ 187.82	
19	Martin,Michael A	11/9/2017	26044001	Almaden Lake Improvement	1.00	$ 67.58	29.86	$ 97.44	$ 97.44	
20	Martin,Michael A	11/15/2017	26044001	Almaden Lake Improvement	1.00	$ 67.58	29.86	$ 97.44	$ 97.44	

DECLARATION OF GLORIA DEL ROSARIO

I, Gloria del Rosario, declare as follows:

1. I have personal knowledge of the facts in this declaration and if called as a witness could competently testify to them.

2. I am employed by the Santa Clara Valley Water District ("District") as the Accounting Manager of the General Accounting Unit. I have held this position for approximately two-and-half years. I have a Masters degree in Business Administration.

3. My job duties include overseeing a staff of 16 employees in the General Accounting Unit, including payroll, accounts payable, and general ledger employees. I am also responsible for the District's Comprehensive Annual Financial Report.

4. In addition, I am the custodian of the District's accounting records. Those records include payroll records, vendor payment records, revenue receipts, certain accounts receivable records.

5. The District's accounting records are stored and managed through a PeopleSoft financial management system, which is an Oracle product.

6. The District's accounting records are made in the ordinary course of my department's duties and of the District's employees' duties at or near the indicated time of the act, condition, or event.

7. Attached as Exhibit 1 to this declaration is an accurate copy of an Excel spreadsheet, converted to PDF, generated under my responsibility (in consultation with counsel), from records in the PeopleSoft system.

8. The purpose and outcome of generating Exhibit 1 has been:

   a. To extract hourly time records of identified employees who entered time into the PeopleSoft system to identified projects within identified date ranges for each of those employees. These extracted records are contained in columns A through E of each sheet of Exhibit 1.

b. To extract records of those employees' respective hourly salary cost and hourly benefit cost on each day with time records within the date range. These extracted records are contained in columns F and G of each sheet of Exhibit 1.

c. To calculate productive hourly costs for each employee by adding their respective hourly salary cost in column F to their hourly benefit cost in column G. This calculation is contained in column H of each sheet of Exhibit 1.

d. To calculate total hourly costs for each employee by multiplying the hours entered per day in column E by productive hourly costs in column H, and listing the total in column I.

9. The District, through the General Accounting Unit, has made payments to the Association of Bay Area Governments ("ABAG") for costs charged to the District under a series of agreements by which the District pays the costs of a San Francisco Bay Regional Water Quality Control Board full time employee. Each month, the District allocates those costs as charges to various District projects.

10. ABAG's September 2017 invoice was for $13,228.47, of which $8,140.67 was paid for Upper Berryessa.

11. ABAG's October 2017 invoice was for $12,164.50, of which $8,082.59 was paid for Upper Berryessa.

12. ABAG's November 2017 invoice was for $12,164.50, of which $1,566.64 was paid for Upper Berryessa.

13. ABAG's December 2017 invoice was for $12,164.50, of which $1,500.81 was paid for Upper Berryessa.

14. Further invoices have not been received by the General Accounting Unit. Further invoices will be processed in accordance with regular procedures.

15. Productive hourly employee rates are adjusted from time-to-time, sometimes retroactively.

I declare under penalty of perjury under the laws of California that the facts stated in this declaration are true.

Dated: April 12, 2018

Gloria del Rosario
GLORIA DEL ROSARIO

EXHIBIT 1

	A	B	C	D	E	F	G	H	I
1	NAME	DATE	PROJECT_ID	PROJECT_DESCR	HOURS	HOURLY_RT	ER Benefit OnlyRate	Productive	Productive Total Cost
2	Blank,Rechelle	9/1/2017	26044001	Almaden Lake Improvement	2.00	$ 85.42	31.21	$ 116.63	$ 233.26
3	Blank,Rechelle	9/7/2017	26044001	Almaden Lake Improvement	3.00	$ 85.42	31.21	$ 116.63	$ 349.89
4	Blank,Rechelle	9/11/2017	26044001	Almaden Lake Improvement	7.00	$ 85.42	34.49	$ 119.91	$ 839.37
5	Blank,Rechelle	9/13/2017	26044001	Almaden Lake Improvement	2.00	$ 85.42	34.49	$ 119.91	$ 239.82
6	Blank,Rechelle	9/14/2017	26044001	Almaden Lake Improvement	2.00	$ 85.42	34.49	$ 119.91	$ 239.82
7	Blank,Rechelle	9/15/2017	26044001	Almaden Lake Improvement	2.00	$ 85.42	34.49	$ 119.91	$ 239.82
8	Blank,Rechelle	9/20/2017	26044001	Almaden Lake Improvement	8.00	$ 85.42	34.49	$ 119.91	$ 959.28
9	Blank,Rechelle	9/22/2017	26044001	Almaden Lake Improvement	4.00	$ 85.42	34.49	$ 119.91	$ 479.64
10	Blank,Rechelle	9/25/2017	26044001	Almaden Lake Improvement	8.00	$ 85.42	31.21	$ 116.63	$ 933.04
11	Blank,Rechelle	9/28/2017	26044001	Almaden Lake Improvement	4.00	$ 85.42	31.21	$ 116.63	$ 466.52
12	Blank,Rechelle	10/2/2017	26044001	Almaden Lake Improvement	8.00	$ 85.42	31.21	$ 116.63	$ 933.04
13	Blank,Rechelle	10/5/2017	26044001	Almaden Lake Improvement	4.00	$ 85.42	31.21	$ 116.63	$ 466.52
14	Blank,Rechelle	10/16/2017	26044001	Almaden Lake Improvement	8.00	$ 85.42	34.49	$ 119.91	$ 959.28
15	Blank,Rechelle	10/19/2017	26044001	Almaden Lake Improvement	2.00	$ 85.42	34.49	$ 119.91	$ 239.82
16	Blank,Rechelle	10/20/2017	26044001	Almaden Lake Improvement	3.00	$ 85.42	34.49	$ 119.91	$ 359.73
17	Blank,Rechelle	10/23/2017	26044001	Almaden Lake Improvement	4.00	$ 85.42	31.21	$ 116.63	$ 466.52
18	Blank,Rechelle	10/25/2017	26044001	Almaden Lake Improvement	3.00	$ 85.42	31.21	$ 116.63	$ 349.89
19	Blank,Rechelle	10/26/2017	26044001	Almaden Lake Improvement	2.50	$ 85.42	31.21	$ 116.63	$ 291.58
20	Blank,Rechelle	10/27/2017	26044001	Almaden Lake Improvement	3.00	$ 85.42	31.21	$ 116.63	$ 349.89
21	Blank,Rechelle	10/30/2017	26044001	Almaden Lake Improvement	2.00	$ 85.42	31.21	$ 116.63	$ 233.26
22	Blank,Rechelle	10/31/2017	26044001	Almaden Lake Improvement	2.00	$ 85.42	31.21	$ 116.63	$ 233.26
23	Blank,Rechelle	11/1/2017	26044001	Almaden Lake Improvement	4.00	$ 85.42	31.21	$ 116.63	$ 466.52
24	Blank,Rechelle	11/2/2017	26044001	Almaden Lake Improvement	2.00	$ 85.42	31.21	$ 116.63	$ 233.26
25	Blank,Rechelle	11/3/2017	26044001	Almaden Lake Improvement	2.00	$ 85.42	31.21	$ 116.63	$ 233.26
26	Blank,Rechelle	11/20/2017	26044001	Almaden Lake Improvement	8.00	$ 87.56	31.73	$ 119.29	$ 954.32
27	Blank,Rechelle	11/27/2017	26044001	Almaden Lake Improvement	2.00	$ 87.56	31.73	$ 119.29	$ 238.58
28	Blank,Rechelle	12/1/2017	26044001	Almaden Lake Improvement	2.00	$ 87.56	31.73	$ 119.29	$ 238.58
29	Blank,Rechelle	12/6/2017	26044001	Almaden Lake Improvement	8.00	$ 87.56	35.01	$ 122.57	$ 980.56
30	Blank,Rechelle	12/8/2017	26044001	Almaden Lake Improvement	2.00	$ 87.56	35.01	$ 122.57	$ 245.14
31	Blank,Rechelle	12/13/2017	26044001	Almaden Lake Improvement	8.00	$ 87.56	35.01	$ 122.57	$ 980.56
32	Blank,Rechelle	12/15/2017	26044001	Almaden Lake Improvement	2.00	$ 87.56	35.01	$ 122.57	$ 245.14
33	Blank,Rechelle	12/19/2017	26044001	Almaden Lake Improvement	8.00	$ 87.56	45.04	$ 132.60	$ 1,060.80
34	Blank,Rechelle	1/2/2018	26044001	Almaden Lake Improvement	2.00	$ 87.56	40.72	$ 128.28	$ 256.56
35	Blank,Rechelle	1/4/2018	26044001	Almaden Lake Improvement	4.00	$ 87.56	40.72	$ 128.28	$ 513.12
36	Blank,Rechelle	1/19/2018	26044001	Almaden Lake Improvement	2.00	$ 87.56	31.73	$ 119.29	$ 238.58
37	Blank,Rechelle	1/22/2018	26044001	Almaden Lake Improvement	1.00	$ 87.56	31.73	$ 119.29	$ 119.29
38	Blank,Rechelle	1/23/2018	26044001	Almaden Lake Improvement	2.00	$ 87.56	31.73	$ 119.29	$ 238.58
39	Blank,Rechelle	1/24/2018	26044001	Almaden Lake Improvement	1.00	$ 87.56	31.73	$ 119.29	$ 119.29
40	Blank,Rechelle	1/25/2018	26044001	Almaden Lake Improvement	1.00	$ 87.56	31.73	$ 119.29	$ 119.29

	A	B	C	D	E	F	G	H	I
41	Blank,Rechelle	1/29/2018	26044001	Almaden Lake Improvement	4.00	$ 87.56	35.01	$ 122.57	$ 490.28
42	Blank,Rechelle	1/31/2018	26044001	Almaden Lake Improvement	4.00	$ 87.56	35.01	$ 122.57	$ 490.28
43	Blank,Rechelle	2/2/2018	26044001	Almaden Lake Improvement	2.00	$ 87.56	35.01	$ 122.57	$ 245.14
44	Blank,Rechelle	2/5/2018	26044001	Almaden Lake Improvement	2.00	$ 87.56	35.01	$ 122.57	$ 245.14
45	Blank,Rechelle	2/6/2018	26044001	Almaden Lake Improvement	2.00	$ 87.56	35.01	$ 122.57	$ 245.14
46	Blank,Rechelle	2/8/2018	26044001	Almaden Lake Improvement	2.00	$ 87.56	35.01	$ 122.57	$ 245.14
47	Blank,Rechelle	2/9/2018	26044001	Almaden Lake Improvement	2.00	$ 87.56	35.01	$ 122.57	$ 245.14
48	Blank,Rechelle	2/12/2018	26044001	Almaden Lake Improvement	8.00	$ 87.56	31.73	$ 119.29	$ 954.32
49	Blank,Rechelle	2/16/2018	26044001	Almaden Lake Improvement	2.00	$ 87.56	31.73	$ 119.29	$ 238.58
50	Blank,Rechelle	2/21/2018	26044001	Almaden Lake Improvement	1.00	$ 87.56	31.73	$ 119.29	$ 119.29
51	Blank,Rechelle	3/15/2018	26044001	Almaden Lake Improvement	2.00	$ 87.56	21.15	$ 108.71	$ 217.42
52	Blank,Rechelle	3/21/2018	26044001	Almaden Lake Improvement	1.00	$ 87.56	21.15	$ 108.71	$ 108.71

	A	B	C	D	E	F	G	H	I
1	NAME	DATE	PROJECT_ID	PROJECT_DESCR	HOURS	HOURLY_RT	ER Benefit OnlyRate	Productive	Productive Total Cost
2	Martin,Michael A	9/8/2017	26044001	Almaden Lake Improvement	3.00	$ 67.58	26.33	$ 93.91	$ 281.73
3	Martin,Michael A	9/12/2017	26044001	Almaden Lake Improvement	1.00	$ 67.58	29.86	$ 97.44	$ 97.44
4	Martin,Michael A	9/14/2017	26044001	Almaden Lake Improvement	4.00	$ 67.58	29.86	$ 97.44	$ 389.76
5	Martin,Michael A	9/18/2017	26044001	Almaden Lake Improvement	7.00	$ 67.58	29.86	$ 97.44	$ 682.08
6	Martin,Michael A	9/19/2017	26044001	Almaden Lake Improvement	3.00	$ 67.58	29.86	$ 97.44	$ 292.32
7	Martin,Michael A	9/20/2017	26044001	Almaden Lake Improvement	6.00	$ 67.58	29.86	$ 97.44	$ 584.64
8	Martin,Michael A	9/21/2017	26044001	Almaden Lake Improvement	6.00	$ 67.58	29.86	$ 97.44	$ 584.64
9	Martin,Michael A	9/22/2017	26044001	Almaden Lake Improvement	2.00	$ 67.58	29.86	$ 97.44	$ 194.88
10	Martin,Michael A	9/26/2017	26044001	Almaden Lake Improvement	3.00	$ 67.58	26.33	$ 93.91	$ 281.73
11	Martin,Michael A	9/27/2017	26044001	Almaden Lake Improvement	6.00	$ 67.58	26.33	$ 93.91	$ 563.46
12	Martin,Michael A	9/28/2017	26044001	Almaden Lake Improvement	2.00	$ 67.58	26.33	$ 93.91	$ 187.82
13	Martin,Michael A	10/2/2017	26044001	Almaden Lake Improvement	2.00	$ 67.58	26.33	$ 93.91	$ 187.82
14	Martin,Michael A	10/4/2017	26044001	Almaden Lake Improvement	2.00	$ 67.58	26.33	$ 93.91	$ 187.82
15	Martin,Michael A	10/18/2017	26044001	Almaden Lake Improvement	1.00	$ 67.58	29.86	$ 97.44	$ 97.44
16	Martin,Michael A	10/19/2017	26044001	Almaden Lake Improvement	2.00	$ 67.58	29.86	$ 97.44	$ 194.88
17	Martin,Michael A	10/20/2017	26044001	Almaden Lake Improvement	3.00	$ 67.58	29.86	$ 97.44	$ 292.32
18	Martin,Michael A	10/26/2017	26044001	Almaden Lake Improvement	2.00	$ 67.58	26.33	$ 93.91	$ 187.82
19	Martin,Michael A	11/9/2017	26044001	Almaden Lake Improvement	1.00	$ 67.58	29.86	$ 97.44	$ 97.44
20	Martin,Michael A	11/15/2017	26044001	Almaden Lake Improvement	1.00	$ 67.58	29.86	$ 97.44	$ 97.44

	A	B	C	D	E	F	G	H	I
1	NAME	DATE	PROJECT_ID	PROJECT_DESCR	HOURS	HOURLY_RT	ER Benefit OnlyRate	Productive	Productive Total Cost
2	Tidwell,Timothy	10/23/2017	26044001	Almaden Lake Improvement	1.00	$ 46.74	15.46	$ 62.20	$ 62.20
3	Tidwell,Timothy	10/24/2017	26044001	Almaden Lake Improvement	2.00	$ 46.74	15.46	$ 62.20	$ 124.40
4	Tidwell,Timothy	10/25/2017	26044001	Almaden Lake Improvement	1.00	$ 46.74	15.46	$ 62.20	$ 62.20
5	Tidwell,Timothy	10/26/2017	26044001	Almaden Lake Improvement	3.00	$ 46.74	15.46	$ 62.20	$ 186.60
6	Tidwell,Timothy	12/14/2017	26044001	Almaden Lake Improvement	1.00	$ 46.74	18.55	$ 65.29	$ 65.29
7	Tidwell,Timothy	12/18/2017	26044001	Almaden Lake Improvement	2.00	$ 46.74	15.46	$ 62.20	$ 124.40
8	Tidwell,Timothy	12/19/2017	26044001	Almaden Lake Improvement	2.00	$ 46.74	15.46	$ 62.20	$ 124.40
9	Tidwell,Timothy	12/20/2017	26044001	Almaden Lake Improvement	1.00	$ 46.74	15.46	$ 62.20	$ 62.20
10	Tidwell,Timothy	12/21/2017	26044001	Almaden Lake Improvement	3.00	$ 46.74	15.46	$ 62.20	$ 186.60
11	Tidwell,Timothy	12/26/2017	26044001	Almaden Lake Improvement	3.00	$ 46.74	15.46	$ 62.20	$ 186.60
12	Tidwell,Timothy	12/27/2017	26044001	Almaden Lake Improvement	1.00	$ 46.74	15.46	$ 62.20	$ 62.20
13	Tidwell,Timothy	1/19/2018	26044001	Almaden Lake Improvement	1.00	$ 46.74	15.46	$ 62.20	$ 62.20
14	Tidwell,Timothy	1/22/2018	26044001	Almaden Lake Improvement	3.00	$ 46.74	15.46	$ 62.20	$ 186.60
15	Tidwell,Timothy	1/31/2018	26044001	Almaden Lake Improvement	2.00	$ 46.74	18.54	$ 65.28	$ 130.56
16	Tidwell,Timothy	2/6/2018	26044001	Almaden Lake Improvement	1.00	$ 46.74	18.54	$ 65.28	$ 65.28
17	Tidwell,Timothy	2/7/2018	26044001	Almaden Lake Improvement	1.00	$ 46.74	18.54	$ 65.28	$ 65.28
18	Tidwell,Timothy	2/12/2018	26044001	Almaden Lake Improvement	2.00	$ 46.74	15.48	$ 62.22	$ 124.44
19	Tidwell,Timothy	2/14/2018	26044001	Almaden Lake Improvement	1.00	$ 46.74	15.48	$ 62.22	$ 62.22
20	Tidwell,Timothy	2/15/2018	26044001	Almaden Lake Improvement	1.00	$ 46.74	15.48	$ 62.22	$ 62.22
21	Tidwell,Timothy	2/21/2018	26044001	Almaden Lake Improvement	2.00	$ 46.74	15.48	$ 62.22	$ 124.44
22	Tidwell,Timothy	3/5/2018	26044001	Almaden Lake Improvement	2.00	$ 54.21	20.53	$ 74.74	$ 149.48
23	Tidwell,Timothy	3/15/2018	26044001	Almaden Lake Improvement	2.00	$ 54.21	13.59	$ 67.80	$ 135.60
24	Tidwell,Timothy	3/21/2018	26044001	Almaden Lake Improvement	2.00	$ 54.21	13.59	$ 67.80	$ 135.60
25	Tidwell,Timothy	3/22/2018	26044001	Almaden Lake Improvement	1.00	$ 54.21	13.59	$ 67.80	$ 67.80

	A	B	C	D	E	F	G	H	I
1	NAME	DATE	PROJECT_ID	PROJECT_DESCR	HOURS	HOURLY_RT	ER Benefit OnlyRate	Productive	Productive Total Cost
2	Ujah,James	9/26/2017	26044001	Almaden Lake Improvement	5.00	$ 65.90	26.55	$ 92.45	$ 462.25
3	Ujah,James	9/27/2017	26044001	Almaden Lake Improvement	4.50	$ 65.90	26.55	$ 92.45	$ 416.03
4	Ujah,James	9/28/2017	26044001	Almaden Lake Improvement	6.00	$ 65.90	26.55	$ 92.45	$ 554.70
5	Ujah,James	9/29/2017	26044001	Almaden Lake Improvement	5.00	$ 65.90	26.55	$ 92.45	$ 462.25
6	Ujah,James	10/2/2017	26044001	Almaden Lake Improvement	6.00	$ 65.90	26.55	$ 92.45	$ 554.70
7	Ujah,James	10/3/2017	26044001	Almaden Lake Improvement	5.00	$ 65.90	26.55	$ 92.45	$ 462.25
8	Ujah,James	10/4/2017	26044001	Almaden Lake Improvement	5.00	$ 65.90	26.55	$ 92.45	$ 462.25
9	Ujah,James	10/10/2017	26044001	Almaden Lake Improvement	6.00	$ 65.90	62.13	$ 128.03	$ 768.18
10	Ujah,James	10/11/2017	26044001	Almaden Lake Improvement	5.00	$ 65.90	62.13	$ 128.03	$ 640.15
11	Ujah,James	10/13/2017	26044001	Almaden Lake Improvement	4.00	$ 65.90	62.13	$ 128.03	$ 512.12
12	Ujah,James	10/16/2017	26044001	Almaden Lake Improvement	6.00	$ 65.90	62.13	$ 128.03	$ 768.18
13	Ujah,James	10/17/2017	26044001	Almaden Lake Improvement	6.00	$ 65.90	62.13	$ 128.03	$ 768.18
14	Ujah,James	10/18/2017	26044001	Almaden Lake Improvement	5.00	$ 65.90	62.13	$ 128.03	$ 640.15
15	Ujah,James	10/19/2017	26044001	Almaden Lake Improvement	3.00	$ 65.90	62.13	$ 128.03	$ 384.09
16	Ujah,James	10/23/2017	26044001	Almaden Lake Improvement	4.00	$ 65.90	26.5	$ 92.40	$ 369.60
17	Ujah,James	10/24/2017	26044001	Almaden Lake Improvement	5.00	$ 65.90	26.5	$ 92.40	$ 462.00
18	Ujah,James	10/25/2017	26044001	Almaden Lake Improvement	4.00	$ 65.90	26.5	$ 92.40	$ 369.60
19	Ujah,James	10/26/2017	26044001	Almaden Lake Improvement	5.00	$ 65.90	26.5	$ 92.40	$ 462.00
20	Ujah,James	10/27/2017	26044001	Almaden Lake Improvement	5.00	$ 65.90	26.5	$ 92.40	$ 462.00
21	Ujah,James	10/30/2017	26044001	Almaden Lake Improvement	5.00	$ 65.90	26.5	$ 92.40	$ 462.00
22	Ujah,James	10/31/2017	26044001	Almaden Lake Improvement	5.00	$ 65.90	26.5	$ 92.40	$ 462.00

	A	B	C	D	E	F	G	H	I
1	NAME	DATE	PROJECT_ID	PROJECT_DESCR	HOURS	HOURLY_RT	ER Benefit OnlyRate	Productive	Productive Total Cost
2	Leal,Clayton	9/5/2017	26044001	Almaden Lake Improvement	1.00	$ 54.21	17.33	$ 71.54	$ 71.54
3	Leal,Clayton	9/7/2017	26044001	Almaden Lake Improvement	1.00	$ 54.21	17.33	$ 71.54	$ 71.54
4	Leal,Clayton	9/13/2017	26044001	Almaden Lake Improvement	1.00	$ 54.21	20.52	$ 74.73	$ 74.73
5	Leal,Clayton	9/14/2017	26044001	Almaden Lake Improvement	2.00	$ 54.21	20.52	$ 74.73	$ 149.46
6	Leal,Clayton	9/19/2017	26044001	Almaden Lake Improvement	1.00	$ 54.21	20.52	$ 74.73	$ 74.73
7	Leal,Clayton	9/26/2017	26044001	Almaden Lake Improvement	2.00	$ 59.82	18.74	$ 78.56	$ 157.12
8	Leal,Clayton	9/27/2017	26044001	Almaden Lake Improvement	5.00	$ 59.82	18.74	$ 78.56	$ 392.80
9	Leal,Clayton	9/28/2017	26044001	Almaden Lake Improvement	5.00	$ 59.82	18.74	$ 78.56	$ 392.80
10	Leal,Clayton	10/2/2017	26044001	Almaden Lake Improvement	2.00	$ 59.82	18.74	$ 78.56	$ 157.12
11	Leal,Clayton	10/5/2017	26044001	Almaden Lake Improvement	1.00	$ 59.82	18.74	$ 78.56	$ 78.56
12	Leal,Clayton	10/19/2017	26044001	Almaden Lake Improvement	1.00	$ 59.82	21.92	$ 81.74	$ 81.74
13	Leal,Clayton	10/26/2017	26044001	Almaden Lake Improvement	2.00	$ 59.82	18.74	$ 78.56	$ 157.12
14	Leal,Clayton	11/8/2017	26044001	Almaden Lake Improvement	1.00	$ 59.82	21.92	$ 81.74	$ 81.74
15	Leal,Clayton	11/9/2017	26044001	Almaden Lake Improvement	1.00	$ 59.82	21.92	$ 81.74	$ 81.74
16	Leal,Clayton	12/18/2017	26044001	Almaden Lake Improvement	1.00	$ 59.82	21.27	$ 81.09	$ 81.09
17	Leal,Clayton	2/1/2018	26044001	Almaden Lake Improvement	1.00	$ 59.82	24.46	$ 84.28	$ 84.28
18	Leal,Clayton	2/2/2018	26044001	Almaden Lake Improvement	2.00	$ 59.82	24.46	$ 84.28	$ 168.56
19	Leal,Clayton	2/5/2018	26044001	Almaden Lake Improvement	2.00	$ 59.82	24.46	$ 84.28	$ 168.56
20	Leal,Clayton	2/6/2018	26044001	Almaden Lake Improvement	1.00	$ 59.82	24.46	$ 84.28	$ 84.28
21	Leal,Clayton	3/2/2018	26044001	Almaden Lake Improvement	2.00	$ 59.82	21.92	$ 81.74	$ 163.48
22	Leal,Clayton	3/21/2018	26044001	Almaden Lake Improvement	1.00	$ 59.82	15	$ 74.82	$ 74.82

	A	B	C	D	E	F	G	H	I
1	NAME	DATE	PROJECT_ID	PROJECT_DESCR	HOURS	HOURLY_RT	ER Benefit OnlyRate	Productive	Productive Total Cost
2	Diggory,Zooey	9/7/2017	26044001	Almaden Lake Improvement	1.50	$ 51.60	24.01	$ 75.61	$ 113.42
3	Diggory,Zooey	9/11/2017	26044001	Almaden Lake Improvement	4.50	$ 51.60	27.49	$ 79.09	$ 355.91
4	Diggory,Zooey	9/14/2017	26044001	Almaden Lake Improvement	2.00	$ 51.60	27.49	$ 79.09	$ 158.18
5	Diggory,Zooey	9/15/2017	26044001	Almaden Lake Improvement	4.50	$ 51.60	27.49	$ 79.09	$ 355.91
6	Diggory,Zooey	9/26/2017	26044001	Almaden Lake Improvement	6.00	$ 51.60	24.02	$ 75.62	$ 453.72
7	Diggory,Zooey	9/27/2017	26044001	Almaden Lake Improvement	3.00	$ 51.60	24.02	$ 75.62	$ 226.86
8	Diggory,Zooey	9/28/2017	26044001	Almaden Lake Improvement	2.00	$ 51.60	24.02	$ 75.62	$ 151.24
9	Diggory,Zooey	9/29/2017	26044001	Almaden Lake Improvement	3.00	$ 51.60	24.02	$ 75.62	$ 226.86
10	Diggory,Zooey	10/2/2017	26044001	Almaden Lake Improvement	0.50	$ 51.60	24.02	$ 75.62	$ 37.81
11	Diggory,Zooey	10/12/2017	26044001	Almaden Lake Improvement	0.50	$ 51.60	27.49	$ 79.09	$ 39.55
12	Diggory,Zooey	10/26/2017	26044001	Almaden Lake Improvement	1.00	$ 51.60	24.01	$ 75.61	$ 75.61
13	Diggory,Zooey	11/16/2017	26044001	Almaden Lake Improvement	1.00	$ 51.60	27.49	$ 79.09	$ 79.09
14	Diggory,Zooey	12/19/2017	26044001	Almaden Lake Improvement	2.00	$ 51.60	24.01	$ 75.61	$ 151.22
15	Diggory,Zooey	12/20/2017	26044001	Almaden Lake Improvement	0.50	$ 51.60	24.01	$ 75.61	$ 37.81
16	Diggory,Zooey	12/21/2017	26044001	Almaden Lake Improvement	1.00	$ 51.60	24.01	$ 75.61	$ 75.61
17	Diggory,Zooey	12/22/2017	26044001	Almaden Lake Improvement	4.00	$ 51.60	24.01	$ 75.61	$ 302.44
18	Diggory,Zooey	1/3/2018	26044001	Almaden Lake Improvement	6.00	$ 51.60	27.51	$ 79.11	$ 474.66
19	Diggory,Zooey	1/4/2018	26044001	Almaden Lake Improvement	1.00	$ 51.60	27.51	$ 79.11	$ 79.11
20	Diggory,Zooey	1/9/2018	26044001	Almaden Lake Improvement	0.50	$ 51.60	27.51	$ 79.11	$ 39.56
21	Diggory,Zooey	1/19/2018	26044001	Almaden Lake Improvement	1.50	$ 51.60	24.05	$ 75.65	$ 113.48
22	Diggory,Zooey	1/31/2018	26044001	Almaden Lake Improvement	2.00	$ 51.60	27.51	$ 79.11	$ 158.22
23	Diggory,Zooey	2/7/2018	26044001	Almaden Lake Improvement	2.00	$ 51.60	27.51	$ 79.11	$ 158.22
24	Diggory,Zooey	3/2/2018	26044001	Almaden Lake Improvement	1.00	$ 51.60	27.51	$ 79.11	$ 79.11
25	Diggory,Zooey	3/7/2018	26044001	Almaden Lake Improvement	1.00	$ 51.60	27.51	$ 79.11	$ 79.11

	A	B	C	D	E	F	G	H	I
1	NAME	DATE	PROJECT_ID	PROJECT_DESCR	HOURS	HOURLY_RT	ER Benefit OnlyRate	Productive	Productive Total Cost
2	Karoglou,Stella	10/16/2017	26044001	Almaden Lake Improvement	7.00	$ 46.74	26.71	$ 73.45	$ 514.15
3	Karoglou,Stella	10/17/2017	26044001	Almaden Lake Improvement	6.00	$ 46.74	26.71	$ 73.45	$ 440.70
4	Karoglou,Stella	10/18/2017	26044001	Almaden Lake Improvement	9.00	$ 46.74	26.71	$ 73.45	$ 661.05
5	Karoglou,Stella	10/19/2017	26044001	Almaden Lake Improvement	9.00	$ 46.74	26.71	$ 73.45	$ 661.05
6	Karoglou,Stella	10/30/2017	26044001	Almaden Lake Improvement	6.00	$ 46.74	23.15	$ 69.89	$ 419.34
7	Karoglou,Stella	10/31/2017	26044001	Almaden Lake Improvement	5.00	$ 46.74	23.15	$ 69.89	$ 349.45

	A	B	C	D	E	F	G	H	I
1	NAME	DATE	PROJECT_ID	PROJECT_DESCR	HOURS	HOURLY_RT	ER Benefit OnlyRate	Productive	Productive Total Cost
2	Key,Patrick A	9/29/2017	26044001	Almaden Lake Improvement	2.00	$ 56.96	26.31	$ 83.27	$ 166.54
3	Key,Patrick A	10/2/2017	26044001	Almaden Lake Improvement	9.00	$ 56.96	26.31	$ 83.27	$ 749.43
4	Key,Patrick A	10/3/2017	26044001	Almaden Lake Improvement	9.00	$ 56.96	26.31	$ 83.27	$ 749.43
5	Key,Patrick A	10/4/2017	26044001	Almaden Lake Improvement	3.50	$ 56.96	26.31	$ 83.27	$ 291.45
6	Key,Patrick A	10/12/2017	26044001	Almaden Lake Improvement	1.50	$ 56.96	59.98	$ 116.94	$ 175.41
7	Key,Patrick A	10/17/2017	26044001	Almaden Lake Improvement	4.00	$ 56.96	59.98	$ 116.94	$ 467.76
8	Key,Patrick A	10/30/2017	26044001	Almaden Lake Improvement	2.00	$ 56.96	26.31	$ 83.27	$ 166.54
9	Key,Patrick A	10/31/2017	26044001	Almaden Lake Improvement	2.50	$ 56.96	26.31	$ 83.27	$ 208.18

	A	B	C	D	E	F	G	H	I
1	NAME	DATE	PROJECT_ID	PROJECT_DESCR	HOURS	HOURLY_RT	ER Benefit OnlyRate	Productive	Productive Total Cost
2	Hakes,Christopher	8/23/2017	26174041	Berryessa Calav/Old Pied Cor	2.00	$ 88.74	21.41	$ 110.15	$ 220.30
3	Hakes,Christopher	8/24/2017	26174041	Berryessa Calav/Old Pied Cor	1.00	$ 88.74	21.41	$ 110.15	$ 110.15
4	Hakes,Christopher	8/31/2017	26174041	Berryessa Calav/Old Pied Cor	1.00	$ 88.74	32	$ 120.74	$ 120.74
5	Hakes,Christopher	9/5/2017	26174041	Berryessa Calav/Old Pied Cor	1.00	$ 88.74	32	$ 120.74	$ 120.74
6	Hakes,Christopher	9/7/2017	26174041	Berryessa Calav/Old Pied Cor	1.00	$ 88.74	32	$ 120.74	$ 120.74
7	Hakes,Christopher	9/15/2017	26174041	Berryessa Calav/Old Pied Cor	1.00	$ 88.74	35.94	$ 124.68	$ 124.68
8	Hakes,Christopher	9/18/2017	26174041	Berryessa Calav/Old Pied Cor	1.00	$ 88.74	35.94	$ 124.68	$ 124.68
9	Hakes,Christopher	9/26/2017	26174041	Berryessa Calav/Old Pied Cor	1.00	$ 88.74	32	$ 120.74	$ 120.74
10	Hakes,Christopher	10/4/2017	26174041	Berryessa Calav/Old Pied Cor	1.00	$ 88.74	32	$ 120.74	$ 120.74
11	Hakes,Christopher	10/13/2017	26174041	Berryessa Calav/Old Pied Cor	1.00	$ 88.74	35.94	$ 124.68	$ 124.68
12	Hakes,Christopher	10/17/2017	26174041	Berryessa Calav/Old Pied Cor	1.00	$ 88.74	35.94	$ 124.68	$ 124.68
13	Hakes,Christopher	10/19/2017	26174041	Berryessa Calav/Old Pied Cor	1.00	$ 88.74	35.94	$ 124.68	$ 124.68
14	Hakes,Christopher	10/25/2017	26174041	Berryessa Calav/Old Pied Cor	1.00	$ 88.74	32	$ 120.74	$ 120.74
15	Hakes,Christopher	11/2/2017	26174041	Berryessa Calav/Old Pied Cor	1.00	$ 88.74	32	$ 120.74	$ 120.74
16	Hakes,Christopher	11/3/2017	26174041	Berryessa Calav/Old Pied Cor	2.00	$ 88.74	32	120.74	$ 241.48
17	Hakes,Christopher	11/6/2017	26174041	Berryessa Calav/Old Pied Cor	5.00	$ 88.74	35.94	124.68	$ 623.40
18	Hakes,Christopher	11/16/2017	26174041	Berryessa Calav/Old Pied Cor	2.00	$ 88.74	35.94	124.68	$ 249.36

DECLARATION OF TAMRA ZOZAYA

I, Tamra Zozaya, declare as follows:

1. I have personal knowledge of the facts stated in this declaration, and if called as a witness could competently testify to them.

2. I am a Staff Analyst with the Stream Maintenance Program of the Santa Clara Valley Water District ("District").

3. Since approximately 4 years ago, my responsibilities for the District have included administering a series of contracts related to the District, the San Francisco Bay Regional Water Quality Control Board ("Regional Board"), and the Association of Bay Area Governments ("ABAG").

4. Attached as Exhibit 1 is an accurate copy of one of those contracts with the District from 2012.

5. Attached as Exhibit 2 is an accurate copy of the third amendment to 2012 contract.

6. Attached as Exhibit 3 is an accurate copy of the most recent of these contracts with the District, effective October 1, 2017.

7. ABAG submits to the District an invoice as well as a log of the time billed to the District under those contracts for work by Susan Glendening. Invoices for time from September 2017 to January 2018 are attached as Exhibit 4. The logs of Ms. Glendening's time for September 2017 to January 2018 are attached as Exhibit 5.

8. The District has regularly paid the invoices under these contracts.

I declare under penalty of perjury under the laws of the State of California that the facts stated in this declaration are true.

Dated: April 11, 2018

Tamra Zozaya

EXHIBIT 1

1595

SCVWD ENACTED COPY
Contract Administration Unit
AGMT: A3613S FILE: BT 3540

AGREEMENT FOR CONTRACT SERVICES BETWEEN SANTA CLARA VALLEY WATER DISTRICT AND ASSOCIATION OF BAY AREA GOVERNMENTS

THIS **Agreement For Contract Services** (hereinafter "Agreement") is made and entered into this 1st day of October 2012, by and between the SANTA CLARA VALLEY WATER DISTRICT, an independent special district created by the Legislature of the State of California (hereinafter "District"), and ASSOCIATION OF BAY AREA GOVERNMENTS (hereinafter "ABAG") on behalf of the California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter "Water Board").

PURPOSE:

The District is committed to an enhanced quality of life in Santa Clara County through watershed stewardship, reducing potential for flooding, and providing a healthy and safe supply of drinking water for county residents and visitors. The Water Board has the primary responsibility to protect the quality of the surface and groundwater within the San Francisco Bay Region for beneficial uses. In order to accomplish these complimentary efforts the two agencies must collaborate in their execution of work. The Water Board has extremely limited resources and cannot support the proactive approach undertaken by the District without supplementation of the Water Board's staff resources. The purpose of this Agreement is to provide the ABAG with financial assistance to enable it to provide the Water Board with additional staff resources that can focus on expediting service requests from the District.

RECITALS

WHEREAS, District, in the execution of its authority of flood protection and water supply in the County of Santa Clara, as prescribed in the District Act and carried out by its Board of Directors, makes applications or requests for permits, certifications, waivers or other actions, needs, or services to or from the Water Board; and

WHEREAS, the Water Board, under its authority for implementation of the federal Clean Water Act and the State Porter-Cologne Act administers water rights, water pollution control, and water quality functions for the State as part of the California Environmental Protection Agency, does advise, regulate, certify and permit various actions and projects of District; and

WHEREAS, District and Water Board, agree that the expedited and timely processing of District applications or requests for permits, certifications, waivers or other actions, needs, or services from the Water Board is in the best interest of the District and the public it serves in Santa Clara County; and

WHEREAS, Water Board cannot dedicate staff solely to the applications or requests of District and may not be able to provide timely processing; and

WHEREAS, ABAG is able and willing to provide a qualified staff member to assist the Water Board in primarily processing and responding to the applications or requests of District.

THEREFORE, the parties hereby agree as follows:

SECTION 1

SCOPE OF AGREEMENT

A. ABAG agrees to competently perform the work described in this Agreement in accordance with the terms and conditions contained therein.

B. The Water Board through its staff has the sole right to control and direct the means, manner, and method by which the services required by this Agreement will be performed. District's obligation under this Agreement is solely limited to providing funding as specified herein. ABAG shall ensure that ABAG staff funded under this Agreement adheres to the principles and measures set forth in Section 3 of this Agreement.

SECTION 2

TERM OF AGREEMENT

The 2-year term of this Agreement commences on October 1, 2012 and continues through September 30, 2014, inclusive, subject to the provisions of Section 12 of this Agreement.

SECTION 3

OPERATING PRINCIPLES

ABAG agrees that the following principles and measures of performance will apply to work performed by ABAG staff funded under this Agreement who is assisting Water Board staff in expediting the processing of District matters and service requests:

A. Both parties maintain there is no intent to limit, influence or otherwise control the Water Board's discretion in fulfilling its statutory duties;

B. ABAG will provide the Water Board with fully qualified staff to expeditiously review documents and process applications submitted by the District;

C. ABAG staff assigned to the Water Board will ensure that open and regular communication is maintained with the District;

D. ABAG and District will engage in joint analyses of potential problems to determine their nature, and cause and to develop appropriate solutions. In the event that a solution

cannot be agreed upon at staff level, issues will be presented to the Water Board's Executive Officer and the District's Chief Executive Officer for direction on resolution;

E. District will provide an indication of the general order or priority for the work to be completed under this Agreement and will provide written notification to ABAG/Water Board staff of any changes in priorities;

F. ABAG will perform the work in the order or priority Water Board staff deems appropriate consistent with the prioritized projects or applications of the District;

G. ABAG staff assigned to the Water Board will participate in public meetings during normal business hours, as requested by the District. ABAG staff will make a good faith effort to participate in public meetings scheduled outside of regular working hours (Monday through Friday, 8:00 a.m. to 5:00 p.m.);

H. ABAG staff will endeavor to review and provide written comments for documents submitted by the District, within 30 days (excluding permit applications or other documents that have previously established, legally binding review time frames). Where legally established timelines exist in the regulations for review of permit applications and/or related documents, the ABAG staff will endeavor to complete the necessary review within 75% of such regulatory timeline. In the event that a review of documents cannot be provided within the requested time, written notification will be sent to the District within five working days. ABAG staff will also provide early communication to avoid potential delays;

I. ABAG staff will endeavor to process complete permit applications as expeditiously as possible, once the project application meets Federal Clean Water Act and Porter-Cologne Water Quality Act regulatory requirements. In the event a permit application and/or related documents are found to be incomplete, the ABAG staff will immediately notify the District of the insufficiency;

J. ABAG staff will track, by District Project, the labor and materials expenditures, and services provided under this Agreement. To measure the overall performance of staff, the tracking will include significant project dates such as receipt of documents, project timetable, requests for additional application information, project deliverables, and successful project completion;

K. ABAG staff will inform the District within five (5) working days of any staff changes due to resignation, or other departure;

L. During October of each year, the District, ABAG, and Water Board staff will undertake a joint evaluation of the performance under this Agreement. The evaluation will serve to identify whether the District's interests are being served, and to evaluate if this arrangement should continue. The evaluation will be consistent with the following steps:

    1. By October 15th of each year the ABAG staff will initiate the review by providing a draft written report that identifies the accomplishments and challenges under this

Agreement. The report shall include a summary of the expenditures by project, timeliness of response, and areas for improvement
2. The District, ABAG, and Water Board staff will conduct a face-to-face meeting to review and discuss findings identified in the report
3. ABAG staff will produce a final draft report that incorporates the comments of the District by December 1 for District final review
4. ABAG staff will finalize the report by December 31; and

M. ABAG staff dedicated to District projects to assist Water Board staff will not support new or existing Water Board programs that are funded through other fees, in order to ensure that the District does not pay twice for the same work.

SECTION 4

WORK TO BE PERFORMED

ABAG shall ensure that its staff funded by the District under this Agreement expeditiously processes the District's Water Board service requests, including, but not limited to, the performing the following:

A. General activities pertaining to the permitting of District (or District-sponsored) projects. Review applications for new or revised National Pollutant Discharge Elimination System (NPDES) Permits, Waste Discharge Requirements (WDR), Water Quality Certifications (WQC) (401 certifications), waivers of any permit, certification or action, or other submittals made by the District under this Agreement.

B. Preparation of District WDRs, NPDES Permits, WQCs, and related Water Board meeting agenda material.

C. Review of District plans, or other documents that are requirements of or submitted in support of WDRs, NPDES Permits, or WQCs.

D. Meetings with District staff to review, discuss, or plan District projects, maintenance, mitigation requirements, environmental documents or other activities that may involve the Water Board or results from any permit, certification or action of Water Board.

E. Field trips to review proposed District (or District-sponsored) projects or work or to review and/or assess projects or work in progress related to Water Board jurisdiction.

F. Participate in public hearings and other public meetings related to the above listed activities.

ABAG will perform the above prescribed work in the order or priority it deems appropriate consistent with the prioritized projects or applications of the District, as approved by the Water Board.

SECTION 5

COST AND PAYMENT

The annual Fiscal Year cost for the services provided in accordance with this Agreement is for the full time employment of an Environmental Specialist II or equivalent. If due to the departure of existing staff, new staff is substituted, the actual step of the replacement person shall be used.

Costs for Fiscal Year 1 (*October 1, 2012 - September 30, 2013*) shall not exceed:

Salaries, Wages, and Benefits	$133,029	
Travel, Training & Other Expenses	$ 1,500	
Annual Staff Total	$134,529	
ABAG/SFEP Accounting/Management	$ 13,453	(10%)
Agreement Annual Total	**$147,982**	

Costs for Fiscal Year 2 *(October 1, 2013 – September 30, 2014*) shall not exceed:

Salaries, Wages, and Benefits	$139,680	
Travel, Training & Other Expenses	$ 1,500	
Annual Staff Total	$141,180	
ABAG/SFEP Accounting/Management	$ 14,118	(10%)
Agreement Annual Total	**$155,298**	

Estimated costs for the total Agreement (Fiscal Year 1 and Fiscal Year 2) is $303,280. Annual costs shall be invoiced as described in Section 6.

For Fiscal Year 2, the District's CEO, at its sole discretion, may approve an increase in compensation for costs stated above by not more than ten percent (10%) of the Fiscal Year 1 annual total. ABAG will provide the District a revised cost estimate for Fiscal Year 2, which will be forwarded to District management for consideration.

SECTION 6

METHOD OF PAYMENT

A. District agrees to reimburse ABAG for ABAG's actual cost of performance hereunder. Notwithstanding the foregoing, in no event shall the total amount paid to ABAG under this Agreement exceed the Fiscal Year 1 annual total amount or the Fiscal Year 2 annual total amount specified in Section 5 above, unless an increase in such amounts are first approved in writing by an authorized District CEO.

B. District agrees to reimburse ABAG for the salary, wages and benefits paid to ABAG staff assigned to the Water Board to expeditiously process the District's State Board requests. However, in no event shall the amount reimbursed to ABAG for such staff's salaries, wages, and benefits exceed the "Salaries, Wages, and Benefits" amount specified in Section 5 above, unless such increase is first approved in writing by an authorized District CEO. No overtime shall be paid.

C. District agrees to reimburse ABAG for staff travel, training fees, and other expenses. However, in no event shall the amount paid to ABAG under this Agreement by the authority for travel, training fees and other expenses exceed one thousand five hundred dollars ($1,500) annually. Staff hours related to training shall not exceed twenty (20) hours annually.

D. District agrees to reimburse ABAG for ABAG's accounting and management of this Agreement. However, in no event shall the amount paid to ABAG under this Agreement by the District for ABAG's accounting and management exceed the ABAG/SFEP Accounting/Management amounts specified in Section 5 above, unless such increase is approved in writing by the District CEO.

E. Using the District's provided "RWQCB Master Template - List of Billable Projects," each month ABAG shall furnish District an invoice of the work performed for compensation during the preceding month. Such invoice shall also include a detailed record of the month's actual reimbursable expenditures and a list of the work performed. Each invoice shall list the total of each item in Section 5. Additionally, ABAG shall provide a monthly report which lists the District projects supported each month, and the corresponding District contact name and total hours worked on each project. The invoice shall list the amount spent on training, including training description, location, and hours spent. District has the option to request additional information concerning the work performed. District shall pay all undisputed invoices or undisputed portions of invoices within sixty 60 days of receipt of an invoice containing the information described in this Section 6(E).

F. ABAG shall pay its employee's salary, benefits, reasonable travel expenses, and per diem allowances incurred during the performance of work under this Agreement from funds provided in this Agreement at rates not to exceed those amounts paid to the equivalent Water Board's represented employees under collective bargaining agreements currently in effect.

G. ABAG shall provide written notice to District thirty (30) days in advance of any proposed rate changes for direct or indirect costs associated with the work to be performed under this Agreement. If such changes impact the maximum reimbursement stipulated under this section, parties agree to meet and negotiate a mutually acceptable amendment.

SECTION 7

INDEPENDENT CONTRACTOR

It is understood and agreed that ABAG, in the performance of the work and services agreed to be performed by ABAG, shall act as and be an independent contractor and not an agent or employee of District; and as an independent contractor, ABAG nor any employee of ABAG performing work under this contract shall obtain any rights to retirement benefits or other benefits which accrue to District's employees, and ABAG hereby expressly waives any claim it may have to any such rights.

SECTION 8

ASSIGNABILITY

The parties agree that the expertise and experience of ABAG are material considerations for this Agreement. ABAG shall not assign or transfer any interest in this Agreement nor the performance of any of ABAG's obligations hereunder, except to Water Board, without the prior written consent of District. Any attempt by ABAG to so assign this Agreement or any rights, duties, or obligations other than noted arising hereunder shall be void and of no effect.

SECTION 9

INDEMNIFICATION

ABAG shall defend, indemnify, and hold harmless District, its officers, employees, and agents against any claim, loss, or liability arising out of or resulting in any way from work performed under this Agreement due to the willful or negligent acts (active or passive) or omissions by ABAG's officers, employees, agents, or Water Board. The acceptance of said services and duties by District shall not operate as a waiver of such right of indemnification.

SECTION 10

INSURANCE REQUIREMENTS

ABAG agrees to have and maintain the policies set forth in Exhibit A, entitled Insurance, which is attached hereto and incorporated herein. All policies, endorsements, certificates, and/or binders shall be subject to approval by the Risk Manager of the District as to form and content. These requirements are subject to amendment or waiver if so approved in writing by the Risk Manager. ABAG agrees to provide District with a copy of said policies, certificates, and/or endorsements before work commences under this Agreement.

SECTION 11

NONDISCRIMINATION

The District is an equal opportunity employer and requires all parties it contracts with to have and adhere to a policy of equal opportunity and non-discrimination. In the performance of the contract, ABAG will comply with all applicable federal, state, local laws and regulations, and will not discriminate against any sub-consultant, employee, or applicant for employment, in the recruitment, selection for training including apprenticeship, hiring, employment, utilization, promotion, layoff rates of pay, or other forms of compensation, or against any other person, on the basis of race, color, religion, ancestry, gender, national origin, age (over 40), marital status, medical condition (including cancer), pregnancy, parental status, the exercise of family leave rights, political affiliation, sexual orientation, gender identity, special disabled veteran status, Vietnam Era veteran and all other Veteran status, or because of a physical or mental disability (including HIV and AIDS). ABAG's policy must conform with applicable state and federal guidelines including the Federal Equal Opportunity Clause, "Section 60-1.4 of Title 41, part 60 of the Code of Federal Regulations," title VII of the Civil Rights Act of 1964 as amended; the American's with Disabilities Act of 1990; the Rehabilitation Act of 1973 (Sections 503 and 504)' California Fair Employment and Housing Act (government Code Section 12900 et.seq.); California Labor Code Sections 1101 and 1102.

SECTION 12

TERMINATION

A. District or ABAG shall have the right to terminate this Agreement, without cause, by giving not less than thirty (30) days written notice of termination.

B. If ABAG fails to perform any of its material obligations under this Agreement, in addition to all other remedies provided by law, District may terminate this Agreement immediately upon written notice.

C. District's CEO is empowered to terminate this Agreement on behalf of District. ABAG's Executive Director is empowered to terminate this Agreement on behalf of ABAG.

D. In the event of termination, ABAG shall deliver to District copies of all reports, documents, and other work performed by ABAG under this Agreement, and upon receipt thereof, District shall pay ABAG for services performed and reimbursable expenses incurred to the date of termination.

SECTION 13

GOVERNING LAW AND COMPLIANCE WITH LAWS

District and ABAG agree that the law governing this Agreement shall be that of the State of California. Both shall comply with all applicable laws, ordinances, codes, and regulations of the federal, state, and local governments.

SECTION 14

CONFIDENTIAL INFORMATION

All data, documents, discussions, or other information developed or received by or for ABAG in performance of this Agreement are confidential and not to be disclosed to any person except in accordance with standard policy of Water Board, or as required by law.

SECTION 15

OWNERSHIP OF MATERIALS

All reports, document, or other materials developed or discovered by ABAG or any other person engaged directly or indirectly by ABAG to perform the services required hereunder shall be and remain the property of Water Board without restriction or limitation upon their use.

SECTION 16

WAIVER

ABAG agrees that waiver by District of any breach or violation of any term or condition of this Agreement shall not be deemed to be a waiver of any other term or condition contained herein or a waiver of any subsequent breach or violation of the same or any other term or condition. The acceptance by District of the performance of any work or services by ABAG shall not be deemed to be a waiver of any term or condition of this Agreement.

SECTION 17

ABAG'S BOOKS AND RECORDS

A. ABAG shall maintain all documents and records which demonstrate performance under this Agreement for a minimum period of three (3) years, or for any longer period required by law, from the date of termination or completion of this Agreement.

B. Any records or documents required to be maintained pursuant to this Agreement shall be made available for inspection or audit, at any time during regular business hours, upon written request by a designated representative of the District. Copies of such documents shall be provided to District for inspection at the District's offices when it is practical to do so. Otherwise, unless an alternative is mutually agreed upon, the records shall be available at ABAG's address indicated for receipt of notices in this Agreement.

C. Where District has reason to believe that such records or documents may be lost or discarded due to dissolution, disbandment, or termination of ABAG's business, District may, by written request by District's CEO or his Designated Officer require that custody of the records be given to District and that the records and documents be maintained at the District's offices. Unless disclosure is exempted by the Public Records Act, access to such records and documents shall be granted to any party authorized by ABAG, ABAG's representatives, or ABAG's successor-in-interest.

SECTION 18

CONFLICT OF INTEREST

ABAG and District shall avoid all conflict of interest or appearance of conflict of interest in the performance of this Agreement.

SECTION 19

NOTICES AND EXECUTION OF AGREEMENT

All notices and other communications required or permitted to be given under this Agreement shall be in writing and shall be personally served or mailed, postage prepaid, and return-receipt requested, addressed to the representative parties as follows:

To District: Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118
Attention: Mr. Shree Dharasker, Engineering Unit Manager

To ABAG: Mr. Ezra Rapport
Executive Director
Association of Bay Area Governments
101 Eighth Street
Oakland, CA 94607

Notice shall be deemed effective on the date personally delivered, or, if mailed, three (3) days after deposit in the United States mail, with postage prepaid to the recipient's address as stated above.

Execution of this Agreement and action thereof shall be upon the direction of ABAG Executive Director, Mr. Ezra Rapport. Execution of this Agreement and action thereof shall be upon the direction of District CEO, Beau Goldie, or his Designated Officer, Ms. Ann Draper. Termination of this Agreement per Section 12 can be performed by the District's Board of Directors, District CEO, and ABAG's Executive Director or ABAG's governing body.

SECTION 20

VENUE

In the event that suit shall be brought by either party to this contract, the parties agree that venue shall be exclusively vested in the state courts of the County of Santa Clara, or where otherwise appropriate, exclusively in the United States District Court, Northern District of California, San Jose, California.

Intentionally left blank

SECTION 21

PRIOR AGREEMENTS AND AMENDMENTS

This Agreement, including all exhibits attached hereto, represents the entire understanding of the parties as to those matters contained herein. No prior oral or written understanding shall be of any force or effect with respect to those matters covered hereunder. This Agreement may only be modified by a written amendment duly executed by the parties to this Agreement.

WITNESS THE EXECUTION HEREOF on the day and year first hereinabove written.

APPROVED AS TO FORM:

Anthony Fulcher
Senior Assistant District Counsel

District

SANTA CLARA VALLEY WATER DISTRICT,

By _____
Beau Goldie
Chief Executive Officer

ABAG

ASSOCIATION OF BAY AREA GOVERNMENTS

By Patricia M Jones, Asst Exec. Dir.
for Ezra Rapport
Executive Director

Dated: 10-24-12

EXHIBIT A
INSURANCE – CONTRACTOR – No Construction Risk

Please refer to the insurance requirements listed below.

Without limiting the Contractor's indemnification of, or liability to, the Santa Clara Valley Water District ("District"), the Contractor must provide and maintain at its own expense, during the term of this Agreement, or as may be further required herein, the following insurance coverages and provisions:

Contractor must provide its insurance broker(s)/agent(s) with a copy of these requirements and warrants that these requirements have been reviewed by Contractor's insurance agent(s) and/or broker(s), who have been instructed by Contractor to procure the insurance coverage required herein.

In addition to certificates, Contractor must furnish District with copies of original endorsements affecting coverage required by this Appendix. The certificates and endorsements are to be signed by a person authorized by that insurer to bind coverage on its behalf. **All endorsements and certificates are to be received and approved by District before the contract commences**. In the event of a claim or dispute, District has the right to require Contractor's insurer to provide complete, certified copies of all required pertinent insurance policies, including endorsements affecting the coverage required by this Appendix.

Contractor must, at its sole cost and expense, procure and maintain during the entire period of this Agreement the following insurance coverage(s).

Required Coverages

1. **Commercial General/Business Liability Insurance** with coverage as indicated:

   $1,000,000 per occurrence / **$1,000,000** aggregate limits for bodily injury and property damage

   $1,000,000 Products/Completed Operations aggregate (to be maintained for at least three (3) years following acceptance of the work by District.

   General Liability insurance must include:

   a. Coverage that is at least as broad as that found in the standard ISO Form CG 00 01.
   b. Contractual Liability expressly including liability assumed under this contract.
   c. If Contractor will be working within fifty (50) feet of a railroad or light rail operation, any exclusion as to performance of operations within the vicinity of any railroad bridge, trestle, track, roadbed, tunnel, overpass, underpass, or crossway must be deleted, or a railroad protective policy in the above amounts provided.
   d. Severability of Interest
   e. Broad Form Property Damage liability
   f. If the standard ISO Form wording for "OTHER INSURANCE," or other comparable wording, is not contained in Contractor's liability insurance policy, an endorsement must be provided that said insurance will be primary insurance and any insurance or self-insurance maintained by District, its Directors, officers, employees, agents or volunteers will be in excess of Contractor's insurance and will not contribute to it.

EXHIBIT A
INSURANCE – CONTRACTOR – No Construction Risk

2. **Business Auto Liability Insurance** with coverage as indicated:

   $1,000,000 combined single limit for bodily injury and property damage per occurrence, covering all owned, non-owned and hired vehicles.

3. **Workers' Compensation and Employer's Liability Insurance**

   Statutory California Workers' Compensation coverage covering all work to be performed for the District.

   Employer Liability coverage for not less than $1,000,000 per occurrence.

General Requirements

With respect to all coverages noted above, the following additional requirements apply:

1. **Additional Insured Endorsement(s)** Contractor must provide an additional insured endorsement for Commercial General/Business Liability and Business Automobile liability coverage naming the **Santa Clara Valley Water District, its Directors, officers, employees, and agents, individually and collectively,** as additional insureds, and must provide coverage for acts, omissions, etc. arising out of the named insureds' activities and work. Other public entities may also be added to the additional insured endorsement as applicable and the Contractor will be notified of such requirement(s) by the District.

   (**NOTE:** Additional insured language on the Certificate of Insurance is **NOT** acceptable without a separate endorsement such as Form CG 20 10, CG 2033, CG 2037. Note: Editions dated 07/04 are not acceptable)

2. **Primacy Clause:** Contractor's insurance must be primary with respect to any other insurance which may be carried by the District, its officer, agents and employees, and the District's coverage must not be called upon to contribute or share in the loss.

3. **Cancellation Clause Revision:** The Certificate of Insurance **MUST** provide **30 days notice of cancellation, (10 days notice for non-payment of premium). NOTE: The standard wording in the ISO Certificate of Insurance is not acceptable.** The following words must be crossed out or deleted from the standard cancellation clause: "...endeavor to..." AND "...but failure to mail such notice must impose no obligation or liability of any kind upon the company, its agents or representatives."

4. **Acceptability of Insurers:** All coverages must be issued by companies admitted to conduct business in the State of California, which hold a current policy holder's alphabetic and financial size category rating of not less than A- V, according to the current Best's Key Rating Guide or a company of equal financial stability that is approved by the District's Risk Management Administrator.

EXHIBIT A
INSURANCE – CONTRACTOR – No Construction Risk

5. **Self-Insured Retentions or Deductibles:** Any deductibles or self-insured retentions must be declared to and approved by the District. At the option of the District, either: the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the District, its officers, officials, employees and volunteers; or the Contractor shall provide a financial guarantee satisfactory to the Entity guaranteeing payment of losses and related investigations, claim administration, and defense expenses.

6. **Subcontractors:** Should any of the work under this Agreement be sublet, the Contractor must require each of its subcontractors of any tier to carry the aforementioned coverages, or Contractors may insure subcontractors under its own policies.

7. **Amount of Liability not Limited to Amount of Insurance:** The insurance procured by Contractor for the benefit of the District must not be deemed to release or limit any liability of Contractor. Damages recoverable by the District for any liability of Contractor must, in any event, not be limited by the amount of the required insurance coverage.

8. **Coverage to be Occurrence Based:** All coverage must be occurrence-based coverage. Claims-made coverage is not allowed.

9. **Waiver of Subrogation:** Contractor agrees on to waive subrogation against the District to the extent any loss suffered by Contractor is covered by any Commercial General Liability policy, Automobile policy, or Workers' Compensation policy, described in **Required Coverages** above. Contractor agrees to advise its broker/agent/insurer about this provision and obtain any endorsements, if needed, necessary to ensure the insurer agrees.

10. **Non-compliance:** The District reserves the right to withhold payments to the Contractor in the event of material noncompliance with the insurance requirements outlined above.

11. **Please mail the certificates and endorsements to:**

Contract Administrator
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118

IMPORTANT: **On the certificate of insurance, please note either the name of the project or the name of the District contact person or unit for the contract.**

If your insurance broker has any questions please advise him/her to call Mr. David Cahen, District Risk Management Administrator at (408) 265-2607, extension 2213.

AMENDMENT NO. 1
To Grant Agreement No. A3613S
Agreement for Contract Services
Between the
Santa Clara Valley Water District and Association of Bay Area Governments

This Amendment No. 1, effective June 1, 2013, amends the terms of Agreement for Contract Services Agreement No. A3613S ("Agreement") between the SANTA CLARA VALLEY WATER DISTRICT ("District") and ASSOCIATION OF BAY AREA GOVERNMENTS ("ABAG") dated October 1, 2012. Capitalized terms not otherwise defined will have the meaning set forth in the Agreement.

Whereas, pursuant to the terms and conditions of the Agreement, the Association of Bay Area Governments (ABAG) on behalf of the California Regional Water Quality Control Board, San Francisco Bay Region (Water Board), provides for a qualified ABAG staff to work as a contract employee at the Water Board, dedicated to District projects;

Whereas, as part of the ABAG mid-year review of agency-wide labor costs, the billing rate for the designated staff, supporting District projects, increased as of February 1, 2013; therefore the original rates stated in Section 5, Cost and Payment (Salaries, Wages, and Benefits; Annual Staff Total, and ABAG/SFEP Accounting/Management fees) need to be modified;

Now, therefore, in consideration of the mutual promises and agreements contained herein, District and ABAG hereby agree to amend the Agreement as follows:

1. In Section 5 entitled "COST AND PAYMENT", is amended to state:

   The annual Fiscal Year cost for the services provided in accordance with this Agreement is for the full time employment of an Environmental Specialist II or equivalent. If due to the departure of existing staff, new staff is substituted, the actual step of the replacement person shall be used.

   Costs for Fiscal Year 1 (October 1, 2012 - September 30, 2013) shall not exceed:

Salaries, Wages, and Benefits	$ 138,929	
Travel, Training & Other Expenses	$ 1,500	
Annual Staff Total	$ 140,029	
ABAG/SFEP Accounting/Management	$ 14,043	(10%)
Agreement Annual Total	**$ 154,472**	

   Costs for Fiscal Year 2 (October 1, 2013 – September 30, 2014) shall not exceed:

Salaries, Wages, and Benefits	$ 152,922	
Travel, Training & Other Expenses	$ 1,500	
Annual Staff Total	$ 154,422	
ABAG/SFEP Accounting/Management	$ 15,497	(10%)
Agreement Annual Total	**$ 169,919**	

Estimated costs for the total Agreement (Fiscal Year 1 and Fiscal Year 2) is $324,391. Annual costs shall be invoiced as described in Section 6.

For Fiscal Year 2, the District's CEO, at its sole discretion, may approve an increase in compensation for the costs stated above by not more than ten percent (10%) of the Fiscal Year 1 annual total. ABAG will provide the District a revised cost estimate for Fiscal Year 2, which will be forwarded to District management for consideration.

2. All other terms and conditions of Agreement No. A3613S remain in full force and effect.

IN WITNESS WHEREOF, THE PARTIES HAVE EXECUTED THIS AMENDMENT NO. 1 TO AGREEMENT A3613S AND AGREE TO ITS TERMS THROUGH THE SIGNATURES OF THEIR DULY AUTHORIZED REPRESENTATIVES.

SANTA CLARA VALLEY WATER DISTRICT		**ASSOCIATION OF BAY AREA GOVERNMENTS**	
Signature:		Signature:	Brad Paul
Name:	Beau Goldie	Name:	Brad Paul
Title:	CEO	Title:	Deputy Executive Director
Date:	5/29/13	Date:	6/17/13

EXHIBIT 2

AMENDMENT NO.3
To Grant Agreement No. A3613S
Agreement for Contract Services
Between the
Santa Clara Valley Water District and Association of Bay Area Governments

This Amendment No. 3, effective as of the date it is fully executed by the parties, amends the terms of Agreement for Contract Services Agreement No. A3613S ("Agreement") between the SANTA CLARA VALLEY WATER DISTRICT ("District") and ASSOCIATION OF BAY AREA GOVERNMENTS (" ABAG") dated October 1, 2012.

WHEREAS, pursuant to the terms and conditions of the Agreement, the Association of Bay Area Governments (ABAG) on behalf of the California Regional Water Quality Control Board, San Francisco Bay Region (Water Board), provides for a qualified ABAG staff to work as a contract employee at the Water Board, dedicated to District projects;

WHEREAS, the Agreement was previously amended by Amendment No. 2, dated October 1, 2014, and is again amended by this Amendment No. 3. The original Agreement dated October 1, 2012 and all previous amendments are collectively referred to herein as the "Agreement"; and

WHEREAS, the Agreement currently expires on September 30, 2015. The Parties desire to amend the Agreement to extend its term to September 30, 2017; update the classification of the qualified staff member selected to provide the contracted for services; and set forth the estimated costs for the current term (Fiscal Years 4-5).

Now, therefore, in consideration of the mutual promises and agreements contained herein, and notwithstanding anything to the contrary in the Agreement, District and ABAG hereby agree to amend the Agreement as follows:

1. Section 2 entitled "TERM OF AGREEMENT", is amended to state:

   "The 5-year term of this Agreement commences on October 1, 2012 and continues through September 30, 2017, inclusive, subject to the provisions of Section 12 of the Agreement.

2. Section 5 entitled "COST AND PAYMENT', is amended to add the following language:

   "The annual Fiscal Year cost for fiscal years 4 and 5 for the services provided in accordance with this Agreement is for the full time employment of an Environmental Specialist III or equivalent. If due to the departure of existing staff, new staff is substituted, the actual step of the replacement person shall be used.

Costs for Fiscal Year 4 (October 1, 2015 - September 30, 2016) shall not exceed:

Salaries, Wages, and Benefits	$ 155,000.00	
Travel, Training & Other Expenses	$ 1,500.00	
Annual Staff Total	$ 156,500.00	
ABAG/SFEP Accounting/Management	$ 15,650.00	(10%)
Agreement Annual Total	**$ 172,150.00**	

Costs for Fiscal Year 5 (October 1, 2016 - September 30, 2017) shall not exceed:

Salaries, Wages, and Benefits	$155,000.00	
Travel, Training & Other Expenses	$ 1,500.00	
Annual Staff Total	$ 156,500.00	
ABAG/SFEP Accounting/Management	$ 15,650.00	(10%)
Agreement Annual Total	**$ 172,150.00**	

The total estimated costs for (Fiscal Years 4 and 5) is $.$344,300.00. Annual costs shall be invoiced as described in Section 6.

2. All other terms and conditions of Agreement No. A3613S remain in full force and effect.

IN WITNESS WHEREOF, THE PARTIES HAVE EXECUTED THIS AMENDMENT NO. 3 TO AGREEMENT A3613S AND AGREE TO ITS TERMS THROUGH THE SIGNATURES OF THEIR DULY AUTHORIZED REPRESENTATIVES.

SANTA CLARA VALLEY WATER DISTRICT		**ASSOCIATION OF BAY AREA GOVERNMENTS**	
Signature:		**Signature:**	Brad Paul Mgmt Div. for
Name:	**Beau Goldie**	**Name:**	**Ezra Rapport**
Title:	**Chief Executive Officer**	**Title:**	**Executive Director**
Date:	9/15/15	**Date:**	9/10/15

EXHIBIT 3

AGREEMENT FOR CONTRACT SERVICES BETWEEN SANTA CLARA VALLEY WATER DISTRICT AND ASSOCIATION OF BAY AREA GOVERNMENTS

THIS AGREEMENT, effective as of October 1, 2017, is entered into by and between the SANTA CLARA VALLEY WATER DISTRICT, an independent special District (hereinafter "District"), and the ASSOCIATION OF BAY AREA GOVERNMENTS (hereinafter "ABAG"), a public entity formed under the California Joint Exercise of Powers Act, Government Code Sections 6500, et seq. for itself and on behalf of the San Francisco Estuary Partnership (SFEP), an ABAG program. District and ABAG are referred to hereafter individually as "Party" or collectively as "Parties".

PURPOSE:

The District is committed to an enhanced quality of life in Santa Clara County through watershed stewardship, reducing potential for flooding, and providing a healthy and safe supply of drinking water for county residents and visitors. The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter "Water Board") has the primary responsibility to protect the quality of the surface and groundwater within the San Francisco Bay Region for beneficial uses. The Water Board has extremely limited resources and cannot support the District's desired timing for review of District actions requiring review or approval within the regulatory authority of the Water Board. The purpose of this Agreement is to provide ABAG with financial assistance to enable it to assist the Water Board with expediting service requests from the District.

RECITALS:

WHEREAS, District, in the execution of its authority of flood protection and water supply in the County of Santa Clara, as prescribed in the District Act and carried out by its Board of Directors, makes applications or requests for permits, certifications, waivers or other actions, needs, or services to or from the Water Board; and

WHEREAS, the Water Board, under its authority for implementation of the federal Clean Water Act and the State Porter-Cologne Act administers water rights, water pollution control, and water quality functions for the State as part of the California Environmental Protection Agency, does advise, regulate, certify and permit various actions and projects of District; and

WHEREAS, District and Water Board, agree that the expedited and timely processing of District applications or requests for permits, certifications, waivers or other actions, needs, or services from the Water Board is in the best interest of the District and the public it serves in Santa Clara County; and

WHEREAS, Water Board requests professional staff support to meet responsibilities for processing applications and requests of the District in a timely manner; and

WHEREAS, ABAG and the Metropolitan Transportation Commission (MTC) have entered into a Contract for Services effective July 1, 2017 (hereinafter "Contract for Services") which

provides for the transition of ABAG staff to MTC and for MTC to use the consolidated staff to carry out all of ABAG's programs on ABAG's behalf; and

WHEREAS, ABAG is able and willing to provide a qualified consolidated staff member, through the Contract for Services to assist the Water Board in primarily processing and responding to the applications or requests of District.

THEREFORE, the Parties hereby agree as follows:

SECTION 1

SCOPE OF AGREEMENT

A. ABAG agrees to competently perform the work described in this Agreement in accordance with the terms and conditions contained therein.

B. The Parties understand that ABAG through its staff has the sole right to control and direct the means, manner, and method by which the services required by this Agreement will be performed. District's obligation under this Agreement is solely limited to providing funding as specified herein. ABAG shall ensure that its staff funded under this Agreement adheres to the principles and measures set forth in Section 3 of this Agreement.

SECTION 2

TERM OF AGREEMENT

The 2-year term of this Agreement commences on October 1, 2017 and continues through September 30, 2019, inclusive, subject to the provisions of Section 12 of this Agreement.

SECTION 3

OPERATING PRINCIPLES

Under the direction of ABAG, ABAG agrees that the following principles and measures of performance will apply to work performed by its staff funded under this Agreement who is assisting Water Board staff in expediting the processing of District matters and service requests:

A. Both Parties maintain there is no intent to limit, influence or otherwise control the Water Board's discretion in fulfilling its statutory duties;

B. ABAG will provide the Water Board with assistance from fully qualified staff to expeditiously review documents and process applications submitted by the District (hereafter referred to as "Staff");

C. Staff assisting the Water Board will maintain open and regular communication with the District;

D. District will provide an indication of the general order or priority for the work to be completed under this Agreement and will provide written notification to ABAG/Water Board staff of any changes in priorities;

E. Staff will perform the work in the order or priority Water Board staff deems appropriate consistent with the projects or applications that the District prioritizes;

F. Staff assisting the Water Board will participate in public meetings during normal business hours, as requested by the District. ABAG staff will make a good faith effort to participate in public meetings scheduled outside of regular working hours (Monday through Friday, 8:00 a.m. to 5:00 p.m.);

G. Staff will endeavor to review and provide written comments for documents submitted by the District, within 30 days (excluding permit applications or other documents that have previously established, legally binding review time frames). Where legally established timelines exist in the regulations for review of permit applications and/or related documents, staff will endeavor to complete the necessary review within 75% of such regulatory timeline. In the event that a review of documents cannot be provided within the requested time, written notification will be sent to the District within five working days;

H. Staff will endeavor to process complete permit applications as expeditiously as possible, once the project application meets Federal Clean Water Act and Porter-Cologne Water Quality Act regulatory requirements. In the event a permit application and/or related documents are found to be incomplete, staff will immediately notify the District of the insufficiency;

I. ABAG will inform the District within five (5) working days of any staff changes related to the services provided in this Agreement; and

J. Each year of the contract ABAG staff will provide the District an Annual Summary Report (ASR) for the work performed throughout the year. The ASR will be consistent with the following steps:

   1. By August 1 of each year the ABAG staff will initiate the ASR by providing a draft written report. The report shall identify the accomplishments and challenges of each project, and include a summary of the expenditures by project.
   2. ABAG staff will produce a final draft report that incorporates the comments of the District by September 1 for District final review.
   3. ABAG staff will finalize the report by September 30; and

K. Staff dedicated to District projects to assist Water Board staff will not support new or existing Water Board programs that are funded through other fees, in order to ensure that the District does not pay twice for the same work.

SECTION 4

WORK TO BE PERFORMED

Under the direction of ABAG, staff funded by the District under this Agreement shall expeditiously process the District's Water Board service requests, including, but not limited to, the performing the following:

A. General activities pertaining to the permitting of District (or District-sponsored) projects. Review applications for new or revised National Pollutant Discharge Elimination System (NPDES) Permits, Waste Discharge Requirements (WDR), Water Quality Certifications (WQC) (401 certifications), waivers of any permit, certification or action, or other submittals made by the District under this Agreement.

B. Preparation of District WDRs, NPDES Permits, WQCs, and related Water Board meeting agenda material.

C. Review of District plans, or other documents that are requirements of or submitted in support of WDRs, NPDES Permits, or WQCs.

D. Meetings with District staff to review, discuss, or plan District projects, maintenance, mitigation requirements, environmental documents or other activities that may involve the Water Board or results from any permit, certification or action of Water Board.

E. Field trips to review proposed District (or District-sponsored) projects or work or to review and/or assess projects or work in progress related to Water Board jurisdiction.

F. Participate in public hearings and other public meetings related to the above listed activities.

SECTION 5

COST AND PAYMENT

The annual Fiscal Year cost for the services provided in accordance with this Agreement is for the full time employment of an Environmental Specialist II or equivalent. If due to the departure of existing staff, new staff is substituted, the actual step of the replacement person shall meet this requirement.

Costs for Fiscal Year 1 (*October 1, 2017 - September 30, 2018*) shall not exceed:

Salaries, Wages, and Benefits	$132,704
Admin, Travel, Training & Other Expenses (10%)	$13,270
Annual Staff Total	$145,974
Agreement Annual Total	**$145,974**

Costs for Fiscal Year 2 *(October 1, 2018 – September 30, 2019)* shall not exceed:

Salaries, Wages, and Benefits	$145,974
Admin, Travel, Training & Other Expenses (10%)	$14,597
Annual Staff Total	$160,571
Agreement Annual Total	**$160,571**

Costs for the total Agreement (Fiscal Year 1 and Fiscal Year 2) is **$306,545.** Annual costs shall be invoiced as described in Section 6.

SECTION 6

METHOD OF PAYMENT

A. District agrees to reimburse ABAG for 1/12 of the annual amount specified in Section 5 above, billed monthly. Notwithstanding the foregoing, in no event shall the total amount paid to ABAG under this Agreement exceed the Fiscal Year 1 annual total amount or the Fiscal Year 2 annual total amount specified in Section 5 above, unless an increase in such amounts are first approved in writing by an authorized District CEO.

C. ABAG administration time and staff travel, training fees, and other expenses related to the services provided in the Agreement will be covered by the District as specified in Section 5, above. Staff hours related to training shall not exceed twenty (20) hours annually.

D. ABAG shall invoice the District monthly for 1/12 of the annual amount billed monthly. Using the District's provided "RWQCB Master Template - List of Billable Projects," each month ABAG shall provide a monthly informational report which lists the District projects supported each month, a description of the work performed during the month, and the corresponding District contact name and total hours worked on each project. The report shall include a description of any training or travel. District has the option to request additional information concerning the work performed. District shall pay all undisputed invoices or undisputed portions of invoices within sixty 30 days of receipt of an invoice containing the information described in this Section 6(E).

E. ABAG shall provide written notice to District thirty (30) days in advance of any proposed rate changes for direct or indirect costs associated with the work to be performed under this Agreement. If such changes impact the maximum reimbursement stipulated under this section, the Parties agree to meet and negotiate a mutually acceptable amendment.

SECTION 7

ABAG NOT AN AGENT OF DISTRICT

It is understood and agreed that ABAG, in the performance of the work and services agreed to be performed by ABAG, is not an agent or employee of District; and as such, ABAG nor any employee of ABAG performing work under this contract shall obtain any rights to retirement benefits or other benefits which accrue to District's employees, and ABAG hereby expressly waives any claim it may have to any such rights.

SECTION 8

ASSIGNABILITY

The Parties agree that the expertise and experience of ABAG are material considerations for this Agreement. ABAG shall not assign or transfer any interest in this Agreement nor the performance of any of ABAG's obligations hereunder, except to Water Board, without the prior written consent of District. Any attempt by ABAG to so assign this Agreement or any rights, duties, or obligations other than noted arising hereunder shall be void and of no effect.

SECTION 9

MUTUAL INDEMNIFICATION

In lieu of and notwithstanding the pro rata risk allocation that might otherwise be imposed between the Parties pursuant to Government Code Section 895.6, the Parties agree that all losses or liabilities incurred by a Party shall not be shared pro rata but, instead, ABAG and District agree that pursuant to Government Code Section 895.4, each Party shall fully indemnify and hold the other Party, its officers, governing board members, employees, and agents, harmless from any claim, expense or cost, damage, or liability imposed for injury (as defined in Government Code Section 810.8) occurring by reason of the negligent acts or omissions or willful misconduct of the indemnifying Party, its officers, employees, or agents, under or in connection with or arising out of any work, authority, or jurisdiction delegated to such Party under this Agreement. No Party, nor any board member, officer, employee, or agent thereof shall be responsible for any damage or liability occurring by reason of the negligent acts or omissions or willful misconduct of the other Party hereto, its officers, board members, employees, or agents, under or in connection with or arising out of any work or authority delegated to such other Party under this Agreement. This provision will survive termination of this Agreement.

SECTION 10

INSURANCE REQUIREMENTS

ABAG agrees to have and maintain the policies set forth in Exhibit A, entitled Insurance, which is attached hereto and incorporated herein. All policies, endorsements, certificates, and/or binders shall be subject to approval by the Risk Manager of the District as to form and content. These requirements are subject to amendment or waiver if so approved in writing by the Risk Manager. ABAG agrees to provide District with a copy of said policies, certificates, and/or endorsements before work commences under this Agreement.

SECTION 11

NONDISCRIMINATION

The District is an equal opportunity employer and requires all parties it contracts with to have and adhere to a policy of equal opportunity and non-discrimination. In the performance of the contract, ABAG will comply with all applicable federal, state, local laws and regulations, and will not discriminate against any sub-consultant, employee, or applicant for employment, in the recruitment, selection for training including apprenticeship, hiring, employment, utilization, promotion, layoff rates of pay, or other forms of compensation, or against any other person, on the basis of sex (which includes pregnancy, childbirth, breastfeeding and medical conditions related to pregnancy, childbirth or breastfeeding), race, religion, color, national origin (including language use restrictions), ancestry, religious creed (including religious dress and grooming practices, political affiliation, disability (mental and physical, including HIV or AIDS), medical condition (cancer and genetic characteristics), genetic information, marital status, parental status, gender, age (40 and over), pregnancy, military and veteran status, sexual orientation, gender identity and gender expression, the exercise of family and medical care leave, the exercise of pregnancy disability leave, or the request, exercise, or need for reasonable accommodation.

SECTION 12

TERMINATION

A. District or ABAG shall have the right to terminate this Agreement, without cause, by giving not less than thirty (30) days written notice of termination.

B. If ABAG fails to perform any of its material obligations under this Agreement, in addition to all other remedies provided by law, District may terminate this Agreement immediately upon written notice.

C. District's CEO is empowered to terminate this Agreement on behalf of District. ABAG's Executive Director is empowered to terminate this Agreement on behalf of ABAG.

D. In the event of termination, ABAG shall deliver to District copies of all reports, documents, and other work performed by ABAG under this Agreement, and upon receipt thereof, District shall pay ABAG for services performed and reimbursable expenses incurred to the date of termination.

SECTION 13

GOVERNING LAW AND COMPLIANCE WITH LAWS

District and ABAG agree that the law governing this Agreement shall be that of the State of California. Both shall comply with all applicable laws, ordinances, codes, and regulations of the federal, state, and local governments.

SECTION 14

CONFIDENTIAL INFORMATION

All data, documents, discussions, or other information developed or received by or for ABAG in performance of this Agreement are confidential and not to be disclosed to any person except in accordance with standard policy of Water Board, or as required by law, including the California Public Records Act (Gov't Code Sec. 6250 et seq.).

SECTION 15

OWNERSHIP OF MATERIALS

All reports, document, or other materials developed or discovered by ABAG or any other person engaged directly or indirectly by ABAG related to the performance of the services required hereunder shall be provided to the District.

SECTION 16

WAIVER

ABAG agrees that waiver by District of any breach or violation of any term or condition of this Agreement shall not be deemed to be a waiver of any other term or condition contained herein or a waiver of any subsequent breach or violation of the same or any other term or condition. The acceptance by District of the performance of any work or services by ABAG shall not be deemed to be a waiver of any term or condition of this Agreement.

SECTION 18

CONFLICT OF INTEREST

ABAG and District shall avoid all conflict of interest or appearance of conflict of interest in the performance of this Agreement.

SECTION 19

NOTICES AND EXECUTION OF AGREEMENT

All notices and other communications required or permitted to be given under this Agreement shall be in writing and shall be personally served or mailed, postage prepaid, and return-receipt requested, addressed to the representative Parties as follows:

To District: Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118
Attention: Mr. Scott Akin, Envir. Svcs. Manager, Stream Maintenance Program

To ABAG: Ms. Caitlin Sweeney
Manager
San Francisco Estuary Partnership
1515 Clay Street, 14th Floor
Oakland, CA 94612

Notice shall be deemed effective on the date personally delivered, or, if mailed, three (3) days after deposit in the United States mail, with postage prepaid to the recipient's address as stated above.

Execution of this Agreement and action thereof shall be upon the direction of MTC Executive Director, Mr. Steve Heminger, acting pursuant to the Contract for Services dates May 30, 2017. Execution of this Agreement and action thereof shall be upon the direction of District CEO, Norma Camacho, or her designee, the Environmental Services Manager for Stream Maintenance Program Unit. Termination of this Agreement per Section 12 can be performed by the District's Board of Directors, District CEO, and MTC's Executive Director or ABAG's governing body.

SECTION 20

VENUE

In the event that suit shall be brought by either Party to this Agreement, the Parties agree that venue shall be exclusively vested in the state courts of the County of Santa Clara, or where otherwise appropriate, exclusively in the United States District Court, Northern District of California, San Jose, California.

SECTION 21

PRIOR AGREEMENTS AND AMENDMENTS

This Agreement, including all exhibits attached hereto, represents the entire understanding of the Parties as to those matters contained herein. No prior oral or written understanding shall be of any force or effect with respect to those matters covered hereunder. This Agreement may only be modified by a written amendment duly executed by the Parties to this Agreement.

(Signature Page Follows)

WITNESS THE EXECUTION HEREOF on the day and year first hereinabove written.

APPROVED AS TO FORM:

Anthony Fulcher
Senior Assistant District Counsel

District

SANTA CLARA VALLEY WATER DISTRICT,

By Melanie Richards for
Norma Camacho
Chief Executive Officer

ABAG

ASSOCIATION OF BAY AREA GOVERNMENTS

By _____
Steve Heminger, MTC Executive Director, acting pursuant to the Contract for Services dated May 30, 2017

Dated: 11/16/17

EXHIBIT A
INSURANCE – CONTRACTOR – No Construction Risk

Please refer to the insurance requirements listed below.

Without limiting the Contractor's indemnification of, or liability to, the Santa Clara Valley Water District ("District"), the Contractor must provide and maintain at its own expense, during the term of this Agreement, or as may be further required herein, the following insurance coverages and provisions:

Contractor must provide its insurance broker(s)/agent(s) with a copy of these requirements and warrants that these requirements have been reviewed by Contractor's insurance agent(s) and/or broker(s), who have been instructed by Contractor to procure the insurance coverage required herein.

In addition to certificates, Contractor must furnish District with copies of original endorsements affecting coverage required by this Appendix. The certificates and endorsements are to be signed by a person authorized by that insurer to bind coverage on its behalf. **All endorsements and certificates are to be received and approved by District before the contract commences**. In the event of a claim or dispute, District has the right to require Contractor's insurer to provide complete, certified copies of all required pertinent insurance policies, including endorsements affecting the coverage required by this Appendix.

Contractor must, at its sole cost and expense, procure and maintain during the entire period of this Agreement the following insurance coverage(s).

Required Coverages

1. **Commercial General/Business Liability Insurance** with coverage as indicated:

   $1,000,000 per occurrence / **$1,000,000** aggregate limits for bodily injury and property damage

   $1,000,000 Products/Completed Operations aggregate (to be maintained for at least three (3) years following acceptance of the work by District.

   General Liability insurance must include:

   a. Coverage that is at least as broad as that found in the standard ISO Form CG 00 01.
   b. Contractual Liability expressly including liability assumed under this contract.
   c. If Contractor will be working within fifty (50) feet of a railroad or light rail operation, any exclusion as to performance of operations within the vicinity of any railroad bridge, trestle, track, roadbed, tunnel, overpass, underpass, or crossway must be deleted, or a railroad protective policy in the above amounts provided.
   d. Severability of Interest
   e. Broad Form Property Damage liability
   f. If the standard ISO Form wording for "OTHER INSURANCE," or other comparable wording, is not contained in Contractor's liability insurance policy, an endorsement must be provided that said insurance will be primary insurance and any insurance or self-insurance maintained by District, its Directors, officers, employees, agents or volunteers will be in excess of Contractor's insurance and will not contribute to it.

EXHIBIT A
INSURANCE – CONTRACTOR – No Construction Risk

2. **Business Auto Liability Insurance** with coverage as indicated:

   $1,000,000 combined single limit for bodily injury and property damage per occurrence, covering all owned, non-owned and hired vehicles.

3. **Workers' Compensation and Employer's Liability Insurance**

   Statutory California Workers' Compensation coverage covering all work to be performed for the District.

   Employer Liability coverage for not less than $1,000,000 per occurrence.

General Requirements

With respect to all coverages noted above, the following additional requirements apply:

1. **Additional Insured Endorsement(s)** Contractor must provide an additional insured endorsement for Commercial General/Business Liability and Business Automobile liability coverage naming the **Santa Clara Valley Water District, its Directors, officers, employees, and agents, individually and collectively,** as additional insureds, and must provide coverage for acts, omissions, etc. arising out of the named insureds' activities and work. Other public entities may also be added to the additional insured endorsement as applicable and the Contractor will be notified of such requirement(s) by the District.

   (**NOTE:** Additional insured language on the Certificate of Insurance is **NOT** acceptable without a separate endorsement such as Form CG 20 10, CG 2033, CG 2037. Note: Editions dated 07/04 are not acceptable)

2. **Primacy Clause:** Contractor's insurance must be primary with respect to any other insurance which may be carried by the District, its officer, agents and employees, and the District's coverage must not be called upon to contribute or share in the loss.

3. **Cancellation Clause Revision:** The Certificate of Insurance **MUST** provide **30 days notice of cancellation, (10 days notice for non-payment of premium). NOTE: The standard wording in the ISO Certificate of Insurance is not acceptable.** The following words must be crossed out or deleted from the standard cancellation clause: "...endeavor to..." AND "...but failure to mail such notice must impose no obligation or liability of any kind upon the company, its agents or representatives."

4. **Acceptability of Insurers:** All coverages must be issued by companies admitted to conduct business in the State of California, which hold a current policy holder's alphabetic and financial size category rating of not less than A- V, according to the current Best's Key Rating Guide or a company of equal financial stability that is approved by the District's Risk Management Administrator.

EXHIBIT A
INSURANCE – CONTRACTOR – No Construction Risk

4. **Self-Insured Retentions or Deductibles:** Any deductibles or self-insured retentions must be declared to and approved by the District. At the option of the District, either: the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the District, its officers, officials, employees and volunteers; or the Contractor shall provide a financial guarantee satisfactory to the Entity guaranteeing payment of losses and related investigations, claim administration, and defense expenses.

6. **Subcontractors:** Should any of the work under this Agreement be sublet, the Contractor must require each of its subcontractors of any tier to carry the aforementioned coverages, or Contractors may insure subcontractors under its own policies.

7. **Amount of Liability not Limited to Amount of Insurance:** The insurance procured by Contractor for the benefit of the District must not be deemed to release or limit any liability of Contractor. Damages recoverable by the District for any liability of Contractor must, in any event, not be limited by the amount of the required insurance coverage.

8. **Coverage to be Occurrence Based:** All coverage must be occurrence-based coverage. Claims-made coverage is not allowed.

9. **Waiver of Subrogation:** Contractor agrees on to waive subrogation against the District to the extent any loss suffered by Contractor is covered by any Commercial General Liability policy, Automobile policy, or Workers' Compensation policy, described in **Required Coverages** above. Contractor agrees to advise its broker/agent/insurer about this provision and obtain any endorsements, if needed, necessary to ensure the insurer agrees.

10. **Non-compliance:** The District reserves the right to withhold payments to the Contractor in the event of material noncompliance with the insurance requirements outlined above.

11. **Please mail the certificates and endorsements to:**

Contract Administrator
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118

IMPORTANT: **On the certificate of insurance, please note either the name of the project or the name of the District contact person or unit for the contract.**

If your insurance broker has any questions please advise him/her to call Mr. David Cahen, District Risk Management Administrator at (408) 265-2607, extension 2213.

EXHIBIT 4

INVOICE

Association of
Bay Area Governments
Bay Area Metro Center
375 Beale Street, Suite 800
San Francisco, CA 94105
PHONE (415) 778-6700

Customer Number: V04392
Invoice Number: AR016738
Invoice Date: 02/28/18
Terms: Net 30
1/12 OF ANNL AMT

E-MAILED MAR 06 2018
D. Honore

To: SANTA CLARA VALLEY WATER DISTRICT
TAMRA ZOZAYA
STREAM MAINTENANCE PROGRAM
5750 ALMADEN EXPRESSWAY
SAN JOSE, CA 95118

Transaction Date	Description	Amount
02/28/18	5008 SCVWD A4118X JAN18	12,164.50

Tax: 0.00
Total Due 12,164.50

PLEASE RETURN THIS PORTION WITH YOUR PAYMENT

Please make checks payable to:

ASSOCIATION OF BAY AREA GOVERNMENTS
P.O. Box 45801
San Francisco, CA 94145-0801

Customer Number V04392
Invoice Number AR016738
Invoice Date 02/28/18
Total Amount Due $ 12,164.50

Total Payment $ _____

INVOICE

Association of Bay Area Governments
Bay Area Metro Center
375 Beale Street, Suite 800
San Francisco, CA 94105
PHONE (415) 778-6700

Customer Number: V04392
Invoice Number: AR016414
Invoice Date: 01/29/18
Terms: Net 30

To: SANTA CLARA VALLEY WATER DISTRICT
TAMRA ZOZAYA
STREAM MAINTENANCE PROGRAM
5750 ALMADEN EXPRESSWAY
SAN JOSE, CA 95118

Transaction Date	Description	Amount
01/29/18	5008 SCVWD FY17-18 DEC.	12,164.50

Tax: 0.00
Total Due 12,164.50

PLEASE RETURN THIS PORTION WITH YOUR PAYMENT

Please make checks payable to:

ASSOCIATION OF BAY AREA GOVERNMENTS
P.O. Box 45801
San Francisco, CA 94145-0801

Customer Number V04392
Invoice Number AR016414
Invoice Date 01/29/18
Total Amount Due $ 12,164.50

Total Payment $ _____

INVOICE

Association of Bay Area Governments
Bay Area Metro Center
375 Beale Street, Suite 800
San Francisco, CA 94105
PHONE (415) 778-6700

Customer Number: V04392
Invoice Number: AR016413
Invoice Date: 01/29/18
Terms: Net 30

To: SANTA CLARA VALLEY WATER DISTRICT
TAMRA ZOZAYA
STREAM MAINTENANCE PROGRAM
5750 ALMADEN EXPRESSWAY
SAN JOSE, CA 95118

Transaction Date	Description	Amount
01/29/18	5008 SCVWD FY17-18 NOV.	12,164.50

Tax: 0.00
Total Due 12,164.50

PLEASE RETURN THIS PORTION WITH YOUR PAYMENT

Please make checks payable to:

ASSOCIATION OF BAY AREA GOVERNMENTS
P.O. Box 45801
San Francisco, CA 94145-0801

Customer Number V04392
Invoice Number AR016413
Invoice Date 01/29/18
Total Amount Due $ 12,164.50

Total Payment $ _____

INVOICE

Association of Bay Area Governments
Bay Area Metro Center
375 Beale Street, Suite 800
San Francisco, CA 94105
PHONE (415) 778-6700

Customer Number: V04392
Invoice Number: AR016410
Invoice Date: 01/29/18
Terms: Net 30

To: SANTA CLARA VALLEY WATER DISTRICT
TAMRA ZOZAYA
STREAM MAINTENANCE PROGRAM
5750 ALMADEN EXPRESSWAY
SAN JOSE, CA 95118

Transaction Date	Description	Amount
01/29/18	5008 SCVWD FY17-18 OCT.	12,164.50

Tax: 0.00
Total Due 12,164.50

PLEASE RETURN THIS PORTION WITH YOUR PAYMENT

Please make checks payable to:

ASSOCIATION OF BAY AREA GOVERNMENTS
P.O. Box 45801
San Francisco, CA 94145-0801

Customer Number V04392
Invoice Number AR016410
Invoice Date 01/29/18
Total Amount Due $ 12,164.50

Total Payment $ _____

INVOICE

Association of Bay Area Governments
Bay Area Metro Center
375 Beale Street, Suite 800
San Francisco, CA 94105
PHONE (415) 778-6700

Customer Number: V04392
Invoice Number: AR015825
Invoice Date: 11/27/17
Terms: Net 30
SEP-2017, A3613S

To: SANTA CLARA VALLEY WATER DISTRICT
TAMRA ZOZAYA
STREAM MAINTENANCE PROGRAM
5750 ALMADEN EXPRESSWAY
SAN JOSE, CA 95118

Transaction Date	Description	Amount
11/27/17	5000 CNTRCT ADMIN-AR 1HR	66.01
11/27/17	5000 ENV. SPCLST 170.5HRS	13,162.46

Tax: 0.00
Total Due 13,228.47

PLEASE RETURN THIS PORTION WITH YOUR PAYMENT

Please make checks payable to:

ASSOCIATION OF BAY AREA GOVERNMENTS
Dept LA 22860
Pasadena, CA 91185-2860

Customer Number V04392
Invoice Number AR015825
Invoice Date 11/27/17
Total Amount Due $ 13,228.47

Total Payment $ _____

EXHIBIT 5

Master List of Billable Projects

	B	C	D	E	F	G	H	I	J	K	L	M
1	**Contact**	**Project**	**Account Coding**						**Hrs Billed**	**% of Hrs Billed**	**Amount to Charge Project**	**AGENCY NOTES (December 2017)**
2	Williams, S.	Stream Maint Program Management	2017	99	297	6789	00041022	0000	22.75	20%	$ -	Inspected Evelyn St. fish passage project and reviewed the associated reports. Reviewed the mitigation proposal and vetted with management and agencies. Vetted SMP proposal with management. Met with District to kick off the SMP renewal process. Telecon'd with District staff re. turbidity exceedance report.
3	Martin, M.	South SF Bay Shoreline Study	2017	99	297	6789	00044026	1313	-	0%	$ -	
4	Caldon, D.	Environmental Planning and Compliance	2017	99	297	6789	00741042	0698	-	0%	$ -	
5	Codianne, J.	Management of Revegetation Projects	2017	99	297	6789	00761075	0000	-	0%	$ -	
6	Xu. L.	Hydrologic Data Msrmt & Mgmt	2017	99	297	6789	00811043	0000	-	0%	$ -	
7	Heacock, R.	Reconstruction of Bollinger Bridge (Phase 1 and 2)	2017	12	297	6789	20104015	1321	-	0%	$ -	
8	Lueneburger, K	Los Alamitos Creek Geotechnical Borings	2017	26	297	6789	26041024	1309	-	0%	$ -	
9	Blank R.	Almaden Lake	2017	26	297	6789	26044001	1321	-	0%	$ -	
10	Moore M.	Fish Passage Improvements	2017	26	297	6789	26044002	1490	-			
11	Ferranti, S. / Akiyama, K.	Sunnyvale East & West Channel (Sunnyvale East Channel - SF Bay to Inverness Way & Sunnyvale West Channel - SF Bay to Almanor Avenue)	2017	26	297	6789	26074002	1313	-	0%	$ -	
12	Newman, K/Minkler, K.	Guadalupe River - Upper, 280-SPRR (Reach 6)	2017	26	297	6789	26154002	1321	14.50	13%	$ -	Coordinated and participated in site visit on 12/11/17. Worked on draft meeting notes.
13	Newman, K./Minkler, K.	Guadalupe River - Upper, SPRR - BH, Reaches 7-12	2017	26	297	6789	26154003	1321	-	0%	$ -	
14	Hosseini, S./ Nishijima L.	Hale Creek Enhancement	2017	26	297	6789	26164001	1321	-	0%	$ -	
15	Newman, K./Minkler, K. Valencia, J.	Upper Berryessa Calaveras / Old Piedmont Cor	2017	26	297	6789	26174041	1321	14.25	12%	$ -	Reviewed District's submittals for Almaden Lake project and sent questions to District for clarification. Continued to review water quality monitoring data. Processed information regarding a milky discharge from a storm drain reported by the contractors; and recurring turbid discharges from storm drains. Continued to track final project construction activit with the contractor.
16	Rouhani, A	Coyote Ck, Montague to I-280	2017	26	297	6789	26174043	1321	-	0%	$ -	
17	Ferranti, S. / Moore, M. /Akiyama, K.	Upper Llagas Creek Flood Protection Project	2017	26	297	6789	26174052	1313	-	0%	$ -	
18	Hosseini, S./ Paramo, C.	Permanente Ck, Bay-Fthill CSC	2017	26	297	6789	26244001	1321	-	0%	$ -	
19	Hosseini, S./ Paramo, C.	SanFrancisquito Ck, BaySer CSC/San Francisquito Implemt	2017	26	297	6789	26284002	1321	26.50	23%	$ -	Inspected site construction activities and coordinated with JPA to improve stormwater BMPs. Prepared draft letter to JPA re. considerations for the DEIR to incorporate sediment transport issues in the cumulative impacts analysis.
20	Titus, D.	Revitalize Stream, Upland & Wetland Habitat	2017	26	297	6789	26761076	0000	-	0%	$ -	
21	Codianne, J.	Stream Capacity Vegetation Control	2017	26	297	6789	26771067	0602	-	0%	$ -	
22	Titus, D.	Downtown Guadalupe River Mitigation Monitoring Prog	2017	12	297	6789	30151026	0000	2.50	2%	$ -	For LOWER Guadalupe project, processed CIWQS status to discontinue invoicing. Also worked on identifying the proper Place ID and Regulatory Measure numbers for the three Guadalupe projects in CIWQS, and to make sure the numbers were assigned correctly.
23	Newman, K./Minkler, K.	Alviso Slough Design and Construction	2017	12	297	6789	30154030	1321	-	0%	$ -	
24	Newman, K./Minkler, K.	Lower Berryessa Creek Phase 2, D/S Abel Street to Calaveras Boulevard	2017	12	297	6789	40174005	1321	5.75	5%	$ -	Reviewed District's emails pertaining to work window extension for continuing construction outside of channe. Responded to additional requests for documents.
25	Porcella, L.	Coyote Creek Mitigation Monitoring	2017	12	297	6789	40212032	1321	-	0%	$ -	
26	Ferranti, S. / Akiyama, K.	Lower Silver Creek, Reaches 5-6 North Babb-Cunningham	2017	12	297	6789	40264008	1321	-	0%	$ -	
27	Manitakos, J.	White Road Berm Restoration	2017	12	297	6789	40264011	1321	-	0%	$ -	
28	Newman, K./Minkler, K.	Upper Penitencia Creek, Corps Coordination	2017	12	297	6789	40324003	1321	-	0%	$ -	
29	Blank R.	Lower Penitencia Creek	2017	12	297	6789	40334005	1321	-	0%	$ -	
30		Coyote Watershed Levee Maintenance	2017	12	297	6789	40811011	0000	-	0%	$ -	
31	Ferranti, S. / Akiyama, K.	Lower Llagas Creek Capacity Restoration (Buena Vista Avenue to Parjaro River Confluence)	2017	12	297	6789	50284010	1313	-	0%	$ -	
32	Hernandez, T.	Madrone Channel and Canal Maintenance	2017	12	297	6789	60061007	1321	-	0%	$ -	
33	Rouhani, A	Integrated Water Resources Master Plan	2017	12	297	6789	62041027	1321	-	0%	$ -	
34	Porcella, L.	Small Mitigation Monitoring Programs(Lenihan, Calabazas, Adobe 1-5, Lower Silver Crk)	2017	12	297	6789	62042032	1321	3.25	3%	$ -	Participated in discussions with agencies and with District and agencies together for revegetation at Adobe 1-4 and Calabazas sites.
35	Porcella, L.	SMP Mitigation Sites Management	2017	12	297	6789	62181005	1321	-	0%	$ -	
36	Porcella, L.	SMP Mitigation - Stream Watershed Land Acquistion	2017	12	297	6789	62184001	1321	-	0%	$ -	
37	Codianne, J.	Emergency Tree Removals	2017	12	297	6789	62761010	0000	-	0%	$ -	
38	Codianne, J.	Non-SMP Veg. Removal for Conveyance	2017	12	297	6789	62761080	0000	-	0%	$ -	
39	Ganjoo, B	Calero Dam & Guadalupe Dam Geotechnical Exploration	2017	61	297	6789	91084020	1213	-	0%	$ -	
40	Ashktorab, H./ Latedjou E.	South County Recyled Water	2017	61	297	6789	91181001	0136	-	0%	$ -	
41	Crowley, J.	Pacheco Conduit Rehabilitation	2017	61	297	6789	91214001	0136	-	0%	$ -	
42	Baker, A./Shaikh,S.	Local Resv Plan & Analysis	2017	61	297	6789	91761001	0000	-	0%	$ -	
43	Caldon, D.	Dam Maintenance Program Permits	2017	61	297	6789	91761099	0388	-	0%	$ -	
44	Hernandez, T./Gutierrez,V.	Almaden Dam Improvement Project - Geo. Investigation	2017	61	297	6789	91854001	1321	-	0%	$ -	
45	Desai, H./ Mooers, M.	Anderson Dam Seismic Retrofit Project	2017	61	297	6789	91864005	1321	-	0%	$ -	
46	Ganjoo, B	Calero Dam Seismic Retrofit Project - Design & Contsr.	2017	61	297	6789	91874004	1321	-	0%	$ -	
47	Ganjoo, B	Guadalupe Dam Seismic Retrofit Project - Design & Constr.	2017	61	297	6789	91894002	1321	-	0%	$ -	
48	Heacock, R.	FAHCE	2017	61	297	6789	92041014	1321	-	0%	$ -	
49	Coleman, M.	South County Pipeline	2017	61	297	6789	92144001	0	-	0%	$ -	
50	Caldon, D.	Upper Penitencia Creek, Vandalism Repair	2017	61	297	6789	92761010	0000	-	0%	$ -	
51	Caldon, D.	Coyote Canal and Madrone Channel Repair	2017	61	297	6789	92761099	0000	-	0%	$ -	
52	Coleman, M.	Rinconada WTP	2017	61	297	6789	93294057	1490	-	0%	$ -	
53	Hernandez, T.	Penitencia Force Main MND	2017	61	297	6789	94384002	1313	-	0%	$ -	
54	Crowley, J.	Ten Year Pipeline Inspection & Rehab	2017	61	297	6789	95081002	1321	-	0%		
55	Crowley, J.	Five Year Program	2017	61	297	6789	95084001	1321	-	0%		
56	***Additional Requested Work: Please first notify Tamra Zozaya (408) 630-2836 to validate Project Number***											
57	Heacock, R./Caldon D.	Coyote Percolation Pond Emergency Dam Repair	2017		297	6789			14.75	13%	$ -	Participated in interagency site inspection. Reviewed and commented on NMFS's inspection summary repc Participated in numerous interagency telephone discussions and emails, and briefed management.
58	Lueneburger, K	Lake Cunningham Freeboard Projec	2017		297	6789				0%	$ -	
59	Gabrielsen, E./Nam, J.	Harvey Marsh/Calabazas Creek/San Tomas Aquino Creek	2017		297	6789				0%	$ -	
60	Tidwell, T.	Thompson Creek/Lower Silver Creek Pipeline Projec	2017		297	6789				0%	$ -	
61	Scott Akin/D. Modey (??)	Downtown Guadalupe PL-84-99 bank repair sites	2017		297	6789			11.25	10%	$ -	Reviewed Corps' submittals to augment previous plans. Continued to coordinate with the Corps and NMFS regarding project design and schedule. Coordinate with Corps for Corps to develop mitigation comparable to SMP requirements.
62			2017		297	6789				0%	$ -	
63								**Subtotal:**	**115.5**	**100%**		
64								**Administration**	9.50			Project admin; Water Board meeting.
65								**Training**	-			
66								**Total Chargable Hours**	**125.00**			
67								**Vacation/Holiday/Sick**	43.00			
68								**Total Hours:**	168.00			
69												

Master List of Billable Projects

	B	C	D	E	F	G	H	I	J	K	L	M
1	**Contact**	**Project**	**Account Coding**						**Hrs Billed**	**% of Hrs Billed**	**Amount to Charge Project**	**AGENCY NOTES (January 2018)**
2	Williams, S.	Stream Maint Program Management	2017	99	297	6789	00041022	0000	29.50	30%	$ -	Met with agencies and the District to kickoff the renewal process and go over the mitigation proposal. Worked on NPW spreadsheet with Corps and CDFW. Reviewed case of Guadalupe River debris removal under Minor Maintenance and associated alleged redd destruction. Reviewed Rancho Canada de Pala Preserve Yr 2 MMR (I h no questions or comments on this report).
3	Martin, M.	South SF Bay Shoreline Study	2017	99	297	6789	00044026	1313	-	0%	$ -	
4	Caldon, D.	Environmental Planning and Compliance	2017	99	297	6789	00741042	0698	-	0%	$ -	
5	Codianne, J.	Management of Revegetation Projects	2017	99	297	6789	00761075	0000	-	0%	$ -	
6	Xu. L.	Hydrologic Data Msrmt & Mgmt	2017	99	297	6789	00811043	0000	-	0%	$ -	
7	Heacock, R.	Reconstruction of Bollinger Bridge (Phase 1 and 2)	2017	12	297	6789	20104015	1321	-	0%	$ -	
8	Lueneburger, K	Los Alamitos Creek Geotechnical Borings	2017	26	297	6789	26041024	1309	-	0%	$ -	
9	Blank R.	Almaden Lake	2017	26	297	6789	26044001	1321	-	0%	$ -	
10	Moore M.	Fish Passage Improvements	2017	26	297	6789	26044002	1490	-			
11	Ferranti, S. / Akiyama, K.	Sunnyvale East & West Channel (Sunnyvale East Channel - SF Bay to Inverness Way & Sunnyvale West Channel - SF Bay to Almanor Avenue)	2017	26	297	6789	26074002	1313	-	0%	$ -	
12	Newman, K/Minkler, K.	Guadalupe River - Upper, 280-SPRR (Reach 6)	2017	26	297	6789	26154002	1321	2.50	3%	$ -	Worked on meeting notes for the 12/11/17 site meeting
13	Newman, K./Minkler, K.	Guadalupe River - Upper, SPRR - BH, Reaches 7-12	2017	26	297	6789	26154003	1321	-	0%	$ -	
14	Hosseini, S./ Nishijima L.	Hale Creek Enhancement	2017	26	297	6789	26164001	1321	-	0%	$ -	
15	Newman, K./Minkler, K. Valencia, J.	Upper Berryessa Calaveras / Old Piedmont Cor	2017	26	297	6789	26174041	1321	22.50	23%	$ -	Continued to process the Almaden Lake propsoal for mitigation of this project; reviewed submittals and briefed managers. Conducted Q&A with the project managers.
16	Rouhani, A	Coyote Ck, Montague to I-280	2017	26	297	6789	26174043	1321	1.50	2%	$ -	Site tour (split time with Anderson Dam site).
17	Ferranti, S. / Moore, M. /Akiyama, K.	Upper Llagas Creek Flood Protection Project	2017	26	297	6789	26174052	1313	-	0%	$ -	
18	Hosseini, S./ Paramo, C.	Permanente Ck, Bay-Fthill CSC	2017	26	297	6789	26244001	1321	0.50	1%	$ -	Coordinated with District regarding sediment chemistry data request by Water Board Planning Division staff.
19	Hosseini, S./ Paramo, C.	SanFrancisquito Ck, BaySer CSC/San Francisquito Implemt	2017	26	297	6789	26284002	1321	20.50	21%	$ -	Inspected site construction activities and coordinated with JPA to improve stormwater BMPs. Reviewed REAP (which JPA sent upon my request). Finalized letter to JPA re. considerations for the DEIR to incorporate sediment transport issues in the cumulative impacts analysis (letter sent on January 18).
20	Titus, D.	Revitalize Stream, Upland & Wetland Habitat	2017	26	297	6789	26761076	0000	-	0%	$ -	
21	Codianne, J.	Stream Capacity Vegetation Control	2017	26	297	6789	26771067	0602	-	0%	$ -	
22	Titus, D.	Downtown Guadalupe River Mitigation Monitoring Prog	2017	12	297	6789	30151026	0000	-	0%	$ -	
23	Newman, K./Minkler, K.	Alviso Slough Design and Construction	2017	12	297	6789	30154030	1321	-	0%	$ -	
24	Newman, K./Minkler, K.	Lower Berryessa Creek Phase 2, D/S Abel Street to Calaveras Boulevard	2017	12	297	6789	40174005	1321	1.00	1%	$ -	Responded to request for Three Creeks Plan (draft) from attorney.
25	Porcella, L.	Coyote Creek Mitigation Monitoring	2017	12	297	6789	40212032	1321	-	0%	$ -	
26	Ferranti, S. / Akiyama, K.	Lower Silver Creek, Reaches 5-6 North Babb-Cunningham	2017	12	297	6789	40264008	1321	-	0%	$ -	
27	Manitakos, J.	White Road Berm Restoration	2017	12	297	6789	40264011	1321	-	0%	$ -	
28	Newman, K./Minkler, K.	Upper Penitencia Creek, Corps Coordination	2017	12	297	6789	40324003	1321	-	0%	$ -	
29	Blank R.	Lower Penitencia Creek	2017	12	297	6789	40334005	1321	-	0%	$ -	
30		Coyote Watershed Levee Maintenance	2017	12	297	6789	40811011	0000	-	0%	$ -	
31	Ferranti, S. / Akiyama, K.	Lower Llagas Creek Capacity Restoration (Buena Vista Avenue to Parjaro River Confluence)	2017	12	297	6789	50284010	1313	-	0%	$ -	
32	Hernandez, T.	Madrone Channel and Canal Maintenance	2017	12	297	6789	60061007	1321	-	0%	$ -	
33	Rouhani, A	Integrated Water Resources Master Plan	2017	12	297	6789	62041027	1321	-	0%	$ -	
34	Porcella, L.	Small Mitigation Monitoring Programs(Lenihan, Calabazas, Adobe 1-5, Lower Silver Crk)	2017	12	297	6789	62042032	1321	9.00	9%	$ -	Continued my review of Adobe 1-4 and Calabazas revised MMPs and email discussions for the plans. Prepared draft letter for Water Board authorization of revised plan for Adobe 1-4. Started draft for Calabazas Creek project.
35	Porcella, L.	SMP Mitigation Sites Management	2017	12	297	6789	62181005	1321	-	0%	$ -	
36	Porcella, L.	SMP Mitigation - Stream Watershed Land Acquistion	2017	12	297	6789	62184001	1321	-	0%	$ -	
37	Codianne, J.	Emergency Tree Removals	2017	12	297	6789	62761010	0000	-	0%	$ -	
38	Codianne, J.	Non-SMP Veg. Removal for Conveyance	2017	12	297	6789	62761080	0000	-	0%	$ -	
39	Ganjoo, B	Calero Dam & Guadalupe Dam Geotechnical Exploration	2017	61	297	6789	91084020	1213	-	0%	$ -	
40	Ashktorab, H./ Latedjou E.	South County Recyled Water	2017	61	297	6789	91181001	0136	-	0%	$ -	
41	Crowley, J.	Pacheco Conduit Rehabilitation	2017	61	297	6789	91214001	0136	-	0%	$ -	
42	Baker, A./Shaikh,S.	Local Resv Plan & Analysis	2017	61	297	6789	91761001	0000	-	0%	$ -	
43	Caldon, D.	Dam Maintenance Program Permits	2017	61	297	6789	91761099	0388	-	0%	$ -	
44	Hernandez, T./Gutierrez,V.	Almaden Dam Improvement Project - Geo. Investigation	2017	61	297	6789	91854001	1321	-	0%	$ -	
45	Desai, H./ Mooers, M.	Anderson Dam Seismic Retrofit Project	2017	61	297	6789	91864005	1321	1.50	2%	$ -	Site tour Jan. 26.
46	Ganjoo, B	Calero Dam Seismic Retrofit Project - Design & Contsr.	2017	61	297	6789	91874004	1321	-	0%	$ -	
47	Ganjoo, B	Guadalupe Dam Seismic Retrofit Project - Design & Constr.	2017	61	297	6789	91894002	1321	-	0%	$ -	
48	Heacock, R.	FAHCE	2017	61	297	6789	92041014	1321	-	0%	$ -	
49	Coleman, M.	South County Pipeline	2017	61	297	6789	92144001	0	-	0%	$ -	
50	Caldon, D.	Upper Penitencia Creek, Vandalism Repair	2017	61	297	6789	92761010	0000	-	0%	$ -	
51	Caldon, D.	Coyote Canal and Madrone Channel Repair	2017	61	297	6789	92761099	0000	-	0%	$ -	
52	Coleman, M.	Rinconada WTP	2017	61	297	6789	93294057	1490	-	0%	$ -	
53	Hernandez, T.	Penitencia Force Main MND	2017	61	297	6789	94384002	1313	-	0%	$ -	
54	Crowley, J.	Ten Year Pipeline Inspection & Rehab	2017	61	297	6789	95081002	1321	-	0%		
55	Crowley, J.	Five Year Program	2017	61	297	6789	95084001	1321	-	0%		
56	***Additional Requested Work*: Please first notify Tamra Zozaya (408) 630-2836 to validate Project Number**											
57	Heacock, R./Caldon D.	Coyote Percolation Pond Emergency Dam Repa	2017		297	6789			4.00	4%	$ -	Reviewed emails and discussed the site with managers and other agency sta
58	Lueneburger, K	Lake Cunningham Freeboard Projec	2017		297	6789			2.50	3%	$ -	Started review of final MND and responses to Water Board and CDFW incomplete application letters.
59	Gabrielsen, E./Nam, J.	Harvey Marsh/Calabazas Creek/San Tomas Aquino Creek	2017		297	6789			-	0%	$ -	
60	Tidwell, T.	Thompson Creek/Lower Silver Creek Pipeline Proje	2017		297	6789			-	0%	$ -	
61	Scott Akin/D. Modey (??)	Downtown Guadalupe PL-84-99 bank repair site	2017		297	6789			4.50	5%	$ -	Started preparing draft incomplete application letter for second application.
62			2017		297	6789				0%	$ -	
63								**Subtotal:**	**99.5**	**100%**		
64								**Administration**	16.50			Participated in Coordination meeting at headquarters (3 hrs at the watershed sites are in separate line items for the Coyote Creek site, SMP IPMP site, and Anderson Dam site). Coordinated with District and Water Board staff to pl the meeting. Staff meetings.
65								**Training**	-			
66								**Total Chargable Hours**	**116.00**			
67								**Vacation/Holiday/Sick**	68.00			
68								**Total Hours:**	184.00			
69												

Master List of Billable Projects

	B	C	D	E	F	G	H	I	J	K	L	M
1	**Contact**	**Project**	**Account Coding**						**Hrs Billed**	**% of Hrs Billed**	**Amount to Charge Project**	**AGENCY NOTES (November 2017)**
2	Williams, S.	Stream Maint Program Management	2017	99	297	6789	00041022	0000	26.50	27%	$ -	Reviewed turbidity exceedance reports. Started reviewing District's SMP mitigation proposal. To help develop possible models for SMP partnerhips with other entities, attended the joint SCVWD-San Jose meeting re. Coyote Creek flooding (11/3/17) w/ Luisa Valiela-EPA, and participated in green insfrastructure tour of VTA projects with w/ Luisa Valiela-EPA(11/17/17).
3	Martin, M.	South SF Bay Shoreline Study	2017	99	297	6789	00044026	1313	5.00	5%	$ -	Researched issues pertaining to fees.
4	Caldon, D.	Environmental Planning and Compliance	2017	99	297	6789	00741042	0698	-	0%	$ -	
5	Codianne, J.	Management of Revegetation Projects	2017	99	297	6789	00761075	0000	-	0%	$ -	
6	Xu. L.	Hydrologic Data Msrmt & Mgmt	2017	99	297	6789	00811043	0000	-	0%	$ -	
7	Heacock, R.	Reconstruction of Bollinger Bridge (Phase 1 and 2)	2017	12	297	6789	20104015	1321	-	0%	$ -	
8	Lueneburger, K	Los Alamitos Creek Geotechnical Borings	2017	26	297	6789	26041024	1309	-	0%	$ -	
9	Blank R.	Almaden Lake	2017	26	297	6789	26044001	1321	-	0%	$ -	
10	Moore M.	Fish Passage Improvements	2017	26	297	6789	26044002	1490	-			
11	Ferranti, S. / Akiyama, K.	Sunnyvale East & West Channel (Sunnyvale East Channel - SF Bay to Inverness Way & Sunnyvale West Channel - SF Bay to Almanor Avenue)	2017	26	297	6789	26074002	1313	-	0%	$ -	
12	Newman, K/Minkler, K.	Guadalupe River - Upper, 280-SPRR (Reach 6)	2017	26	297	6789	26154002	1321	4.50	5%	$ -	Coordinated site visit.
13	Newman, K./Minkler, K.	Guadalupe River - Upper, SPRR - BH, Reaches 7-12	2017	26	297	6789	26154003	1321	-	0%	$ -	
14	Hosseini, S./ Nishijima L.	Hale Creek Enhancement	2017	26	297	6789	26164001	1321	-	0%	$ -	
15	Newman, K./Minkler, K. Valencia, J.	Upper Berryessa Calaveras / Old Piedmont Cor	2017	26	297	6789	26174041	1321	12.75	13%	$ -	Reviewed water quality monitoring data. Solicited periodic project updates for continuing construction activities to upd management. Met with District to discuss Almaden Lake for mitigation of the project.
16	Rouhani, A	Coyote Ck, Montague to I-280	2017	26	297	6789	26174043	1321	-	0%	$ -	
17	Ferranti, S. / Moore, M. /Akiyama, K.	Upper Llagas Creek Flood Protection Project	2017	26	297	6789	26174052	1313	-	0%	$ -	
18	Hosseini, S./ Paramo, C.	Permanente Ck, Bay-Fthill CSC	2017	26	297	6789	26244001	1321	-	0%	$ -	
19	Hosseini, S./ Paramo, C.	SanFrancisquito Ck, BaySer CSC/San Francisquito Implemt	2017	26	297	6789	26284002	1321	-	0%	$ -	
20	Titus, D.	Revitalize Stream, Upland & Wetland Habitat	2017	26	297	6789	26761076	0000	-	0%	$ -	
21	Codianne, J.	Stream Capacity Vegetation Control	2017	26	297	6789	26771067	0602	-	0%	$ -	
22	Titus, D.	Downtown Guadalupe River Mitigation Monitoring Prog	2017	12	297	6789	30151026	0000	-	0%	$ -	
23	Newman, K./Minkler, K.	Alviso Slough Design and Construction	2017	12	297	6789	30154030	1321	-	0%	$ -	
24	Newman, K./Minkler, K.	Lower Berryessa Creek Phase 2, D/S Abel Street to Calaveras Boulevard	2017	12	297	6789	40174005	1321	8.00	8%	$ -	Reviewed and vetted issues with supervisor for District to proceed with work outside of the channel beyond the in-channel work-window. Responded to public records request.
25	Porcella, L.	Coyote Creek Mitigation Monitoring	2017	12	297	6789	40212032	1321	-	0%	$ -	
26	Ferranti, S. / Akiyama, K.	Lower Silver Creek, Reaches 5-6 North Babb-Cunningham	2017	12	297	6789	40264008	1321	1.75	2%	$ -	Coordinated corrections to be made in filing for completion, or keeping active, the Lower Silver Creek projects, under the NPDES General Construction permit. (Coordinated between James Manitakos [District] and Devender Narala [Water Board].)
27	Manitakos, J.	White Road Berm Restoration	2017	12	297	6789	40264011	1321	-	0%	$ -	
28	Newman, K./Minkler, K.	Upper Penitencia Creek, Corps Coordination	2017	12	297	6789	40324003	1321	-	0%	$ -	
29	Blank R.	Lower Penitencia Creek	2017	12	297	6789	40334005	1321	-	0%	$ -	
30		Coyote Watershed Levee Maintenance	2017	12	297	6789	40811011	0000	-	0%	$ -	
31	Ferranti, S. / Akiyama, K.	Lower Llagas Creek Capacity Restoration (Buena Vista Avenue to Parjaro River Confluence)	2017	12	297	6789	50284010	1313	-	0%	$ -	
32	Hernandez, T.	Madrone Channel and Canal Maintenance	2017	12	297	6789	60061007	1321	-	0%	$ -	
33	Rouhani, A	Integrated Water Resources Master Plan	2017	12	297	6789	62041027	1321	-	0%	$ -	
34	Porcella, L.	Small Mitigation Monitoring Programs(Lenihan, Calabazas, Adobe 1-5, Lower Silver Crk)	2017	12	297	6789	62042032	1321	2.50	3%	$ -	Continued reviewing and discussing w/ management and other agencies the District's proposal for revegetation at Adobe 1-4 and Calabazas sites.
35	Porcella, L.	SMP Mitigation Sites Management	2017	12	297	6789	62181005	1321	-	0%	$ -	
36	Porcella, L.	SMP Mitigation - Stream Watershed Land Acquistion	2017	12	297	6789	62184001	1321	-	0%	$ -	
37	Codianne, J.	Emergency Tree Removals	2017	12	297	6789	62761010	0000	-	0%	$ -	
38	Codianne, J.	Non-SMP Veg. Removal for Conveyance	2017	12	297	6789	62761080	0000	-	0%	$ -	
39	Ganjoo, B	Calero Dam & Guadalupe Dam Geotechnical Exploration	2017	61	297	6789	91084020	1213	-	0%	$ -	
40	Ashktorab, H./ Latedjou E.	South County Recyled Water	2017	61	297	6789	91181001	0136	-	0%	$ -	
41	Crowley, J.	Pacheco Conduit Rehabilitation	2017	61	297	6789	91214001	0136	-	0%	$ -	
42	Baker, A./Shaikh,S.	Local Resv Plan & Analysis	2017	61	297	6789	91761001	0000	-	0%	$ -	
43	Caldon, D.	Dam Maintenance Program Permits	2017	61	297	6789	91761099	0388	-	0%	$ -	
44	Hernandez, T./Gutierrez,V.	Almaden Dam Improvement Project - Geo. Investigation	2017	61	297	6789	91854001	1321	-	0%	$ -	
45	Desai, H./ Mooers, M.	Anderson Dam Seismic Retrofit Project	2017	61	297	6789	91864005	1321	-	0%	$ -	
46	Ganjoo, B	Calero Dam Seismic Retrofit Project - Design & Contsr.	2017	61	297	6789	91874004	1321	-	0%	$ -	
47	Ganjoo, B	Guadalupe Dam Seismic Retrofit Project - Design & Constr.	2017	61	297	6789	91894002	1321	-	0%	$ -	
48	Heacock, R.	FAHCE	2017	61	297	6789	92041014	1321	-	0%	$ -	
49	Coleman, M.	South County Pipeline	2017	61	297	6789	92144001	0	-	0%	$ -	
50	Caldon, D.	Upper Penitencia Creek, Vandalism Repair	2017	61	297	6789	92761010	0000	-	0%	$ -	
51	Caldon, D.	Coyote Canal and Madrone Channel Repair	2017	61	297	6789	92761099	0000	-	0%	$ -	
52	Coleman, M.	Rinconada WTP	2017	61	297	6789	93294057	1490	-	0%	$ -	
53	Hernandez, T.	Penitencia Force Main MND	2017	61	297	6789	94384002	1313	-	0%	$ -	
54	Crowley, J.	Ten Year Pipeline Inspection & Rehab	2017	61	297	6789	95081002	1321	-	0%		
55	Crowley, J.	Five Year Program	2017	61	297	6789	95084001	1321	-	0%		
56	***Additional Requested Work*: *Please first notify Tamra Zozaya (408) 630-2836 to validate Project Number***											
57	Heacock, R./Caldon D.	Coyote Percolation Pond Emergency Dam Repa	2017		297	6789			1.50	2%	$ -	Reviewed status update emails from District and other emails from agenci
58	Lueneburger, K	Lake Cunningham Freeboard Project	2017		297	6789			25.75	26%	$ -	Reviewed JARPA application and had Q&A with Mr. Tidwell via email and phone. Discussed project with CDFW. Prepared incomplete application letter (11/16/17).
59	Gabrielsen, E./Nam, J.	Harvey Marsh/Calabazas Creek/San Tomas Aquino Creek	2017		297	6789			-	0%	$ -	
60	Tidwell, T.	Thompson Creek/Lower Silver Creek Pipeline Proje	2017		297	6789			2.75	3%	$ -	Reviewed and authorized District's request for work window extension.
61	Scott Akin/D. Modey (??)	Downtown Guadalupe PL-84-99 bank repair sites	2017		297	6789			8.00	8%	$ -	Continued to coordinate with the Corps and NMFS regarding project design and schedule, and to develop a permitting strategy. (Reviewed submittal of 11/20/17, continued to discuss project with NMFS and to coordinate with the Corps to find an appropriate mtigation strategy comparabl e to the SMP.
62			2017		297	6789				0%	$ -	
63								**Subtotal:**	**99.0**	**100%**		
64								**Administration**	21.00			Finished 2017 SCVWD-ABAG annual report; submitted 11/8/17 (had submitted it previously but needed to revise it p Tamra's request to incorporate previously-submitted data from Oct-Dec. 2016 to return the report cycle to the contract cycle) . Participated in Watershed Division staff meeting and 401 Group staff meeting. Attended Water Board meeting.
65								**Training**	-			
66								**Total Chargable Hours**	**120.00**			
67								**Vacation/Holiday/Sick**	56.00			
68								**Total Hours:**	176.00			
69												

Master List of Billable Projects

	B	C	D	E	F	G	H	I	J	K	L	M
1	**Contact**	**Project**	**Account Coding**						**Hrs Billed**	**% of Hrs Billed**	**Amount to Charge Project**	**AGENCY NOTES (October 2017)**
2	Williams, S.	Stream Maint Program Management	2017	99	297	6789	00041022	0000	5.00	3%	$ -	Reviewed Stevens Creek bank repair plans and discussed with District and other agencies.
3	Martin, M.	South SF Bay Shoreline Study	2017	99	297	6789	00044026	1313	-	0%	$ -	
4	Caldon, D.	Environmental Planning and Compliance	2017	99	297	6789	00741042	0698	-	0%	$ -	
5	Codianne, J.	Management of Revegetation Projects	2017	99	297	6789	00761075	0000	-	0%	$ -	
6	Xu. L.	Hydrologic Data Msrmt & Mgmt	2017	99	297	6789	00811043	0000	-	0%	$ -	
7	Heacock, R.	Reconstruction of Bollinger Bridge (Phase 1 and 2)	2017	12	297	6789	20104015	1321	-	0%	$ -	
8	Lueneburger, K	Los Alamitos Creek Geotechnical Borings	2017	26	297	6789	26041024	1309	-	0%	$ -	
9	Blank R.	Almaden Lake	2017	26	297	6789	26044001	1321	-	0%	$ -	
10	Moore M.	Fish Passage Improvements	2017	26	297	6789	26044002	1490	-			
11	Ferranti, S. / Akiyama, K.	Sunnyvale East & West Channel (Sunnyvale East Channel - SF Bay to Inverness Way & Sunnyvale West Channel - SF Bay to Almanor Avenue)	2017	26	297	6789	26074002	1313	-	0%	$ -	
12	Newman, K/Minkler, K.	Guadalupe River - Upper, 280-SPRR (Reach 6)	2017	26	297	6789	26154002	1321	-	0%	$ -	
13	Newman, K./Minkler, K.	Guadalupe River - Upper, SPRR - BH, Reaches 7-12	2017	26	297	6789	26154003	1321	-	0%	$ -	
14	Hosseini, S./ Nishijima L.	Hale Creek Enhancement	2017	26	297	6789	26164001	1321	-	0%	$ -	
15	Newman, K./Minkler, K. Valencia, J.	Upper Berryessa Calaveras / Old Piedmont Cor	2017	26	297	6789	26174041	1321	99.50	66%	$ -	Finalized Administrative Record and response to Petition to State Board (10/11/17). Met with District staff to discuss and evaluate Alamden Lake project to serve as mitigation for Upper Berryessa project (10/23/17).
16	Rouhani, A	Coyote Ck, Montague to I-280	2017	26	297	6789	26174043	1321	-	0%	$ -	
17	Ferranti, S. / Moore, M. /Akiyama, K.	Upper Llagas Creek Flood Protection Project	2017	26	297	6789	26174052	1313	-	0%	$ -	
18	Hosseini, S./ Paramo, C.	Permanente Ck, Bay-Fthill CSC	2017	26	297	6789	26244001	1321	-	0%	$ -	
19	Hosseini, S./ Paramo, C.	SanFrancisquito Ck, BaySer CSC/San Francisquito Implemt	2017	26	297	6789	26284002	1321	18.50	12%	$ -	Participated in public meetings of 10/4/17 and 10/25/17. Reviewed project plans with Water Board colleagues and managers
20	Titus, D.	Revitalize Stream, Upland & Wetland Habitat	2017	26	297	6789	26761076	0000	-	0%	$ -	
21	Codianne, J.	Stream Capacity Vegetation Control	2017	26	297	6789	26771067	0602	-	0%	$ -	
22	Titus, D.	Downtown Guadalupe River Mitigation Monitoring Prog	2017	12	297	6789	30151026	0000	-	0%	$ -	
23	Newman, K./Minkler, K.	Alviso Slough Design and Construction	2017	12	297	6789	30154030	1321	-	0%	$ -	
24	Newman, K./Minkler, K.	Lower Berryessa Creek Phase 2, D/S Abel Street to Calaveras Boulevard	2017	12	297	6789	40174005	1321	1.75	1%	$ -	Coordinated with District to ensure winterization tasks are on track to meet October 15 due date. Spoke to community member about concrete mattress surface and other project features.
25	Porcella, L.	Coyote Creek Mitigation Monitoring	2017	12	297	6789	40212032	1321	-	0%	$ -	
26	Ferranti, S. / Akiyama, K.	Lower Silver Creek, Reaches 5-6 North Babb-Cunningham	2017	12	297	6789	40264008	1321	0.50	0%	$ -	Coordinated accurate reporting for Notice of Termination under Construction General Permit for reaches 1-4 vs. reaches
27	Manitakos, J.	White Road Berm Restoration	2017	12	297	6789	40264011	1321	-	0%	$ -	
28	Newman, K./Minkler, K.	Upper Penitencia Creek, Corps Coordination	2017	12	297	6789	40324003	1321	-	0%	$ -	
29	Blank R.	Lower Penitencia Creek	2017	12	297	6789	40334005	1321	-	0%	$ -	
30		Coyote Watershed Levee Maintenance	2017	12	297	6789	40811011	0000	-	0%	$ -	
31	Ferranti, S. / Akiyama, K.	Lower Llagas Creek Capacity Restoration (Buena Vista Avenue to Parjaro River Confluence)	2017	12	297	6789	50284010	1313	-	0%	$ -	
32	Hernandez, T.	Madrone Channel and Canal Maintenance	2017	12	297	6789	60061007	1321	-	0%	$ -	
33	Rouhani, A	Integrated Water Resources Master Plan	2017	12	297	6789	62041027	1321	-	0%	$ -	
34	Porcella, L.	Small Mitigation Monitoring Programs(Lenihan, Calabazas, Adobe 1-5, Lower Silver Crk)	2017	12	297	6789	62042032	1321	4.50	3%	$ -	Reviewed District's proposal for deferring replanting. Discussed with other agency staff. Provided comments on the proposal.
35	Porcella, L.	SMP Mitigation Sites Management	2017	12	297	6789	62181005	1321	-	0%	$ -	
36	Porcella, L.	SMP Mitigation - Stream Watershed Land Acquistion	2017	12	297	6789	62184001	1321	-	0%	$ -	
37	Codianne, J.	Emergency Tree Removals	2017	12	297	6789	62761010	0000	-	0%	$ -	
38	Codianne, J.	Non-SMP Veg. Removal for Conveyance	2017	12	297	6789	62761080	0000	-	0%	$ -	
39	Ganjoo, B	Calero Dam & Guadalupe Dam Geotechnical Exploration	2017	61	297	6789	91084020	1213	-	0%	$ -	
40	Ashktorab, H./ Latedjou E.	South County Recyled Water	2017	61	297	6789	91181001	0136	-	0%	$ -	
41	Crowley, J.	Pacheco Conduit Rehabilitation	2017	61	297	6789	91214001	0136	-	0%	$ -	
42	Baker, A./Shaikh,S.	Local Resv Plan & Analysis	2017	61	297	6789	91761001	0000	-	0%	$ -	
43	Caldon, D.	Dam Maintenance Program Permits	2017	61	297	6789	91761099	0388	-	0%	$ -	
44	Hernandez, T./Gutierrez,V.	Almaden Dam Improvement Project - Geo. Investigation	2017	61	297	6789	91854001	1321	-	0%	$ -	
45	Desai, H./ Mooers, M.	Anderson Dam Seismic Retrofit Project	2017	61	297	6789	91864005	1321	-	0%	$ -	
46	Ganjoo, B	Calero Dam Seismic Retrofit Project - Design & Contsr.	2017	61	297	6789	91874004	1321	-	0%	$ -	
47	Ganjoo, B	Guadalupe Dam Seismic Retrofit Project - Design & Constr.	2017	61	297	6789	91894002	1321	-	0%	$ -	
48	Heacock, R.	FAHCE	2017	61	297	6789	92041014	1321	-	0%	$ -	
49	Coleman, M.	South County Pipeline	2017	61	297	6789	92144001	0	-	0%	$ -	
50	Caldon, D.	Upper Penitencia Creek, Vandalism Repair	2017	61	297	6789	92761010	0000	-	0%	$ -	
51	Caldon, D.	Coyote Canal and Madrone Channel Repair	2017	61	297	6789	92761099	0000	-	0%	$ -	
52	Coleman, M.	Rinconada WTP	2017	61	297	6789	93294057	1490	-	0%	$ -	
53	Hernandez, T.	Penitencia Force Main MND	2017	61	297	6789	94384002	1313	-	0%	$ -	
54	Crowley, J.	Ten Year Pipeline Inspection & Rehab	2017	61	297	6789	95081002	1321	-	0%		
55	Crowley, J.	Five Year Program	2017	61	297	6789	95084001	1321	-	0%		
56	***Additional Requested Work*** ***: Please first notify Tamra Zozaya (408) 630-2836 to validate Project Number***											
57	Heacock, R./Caldon D.	Coyote Percolation Pond Emergency Dam Repair	2017		297	6789			-	0%	$ -	
58	Lueneburger, K	Lake Cunningham Freeboard Project	2017		297	6789			-	0%	$ -	
59	Gabrielsen, E./Nam, J.	Harvey Marsh/Calabazas Creek/San Tomas Aquino Creek	2017		297	6789	20444001		-	0%	$ -	
60	Tidwell, T.	Thompson Creek/Lower Silver Creek Pipeline Project	2017		297	6789			-	0%	$ -	
61	Scott Akin/D. Modey (??)	Downtown Guadalupe PL-84-99 bank repair sites	2017		297	6789			20.00	13%	$ -	Reviewed Corps' submittals for coverage under Clean Water Act, section 401. Prepared incomplete application letter (10/27/17).
62			2017		297	6789				0%	$ -	
63								**Subtotal:**	**149.8**	**100%**		
64								**Administration**	22.25			Prepared annual report for SCVWD-ABAG agreement. Participated in Watershed Division staff meeting and 401 Group staff meeting.
65								**Training**	-			
66								**Total Chargable Hours**	**172.00**			
67								**Vacation/Holiday/Sick**	4.00			
68								**Total Hours:**	**176.00**			
69												

Master List of Billable Projects

	B	C	D	E	F	G	H	I	J	K	L	M
1	**Contact**	**Project**	**Account Coding**						**Hrs Billed**	**% of Hrs Billed**	**Amount to Charge Project**	**AGENCY NOTES (SEPTEMBER 2017)**
2	Williams, S.	Stream Maint Program Management	2017	99	297	6789	00041022	0000	8.00	6%	$ -	Continued to track and evaluate proposals and status of 17-SB-002 for bank failure in Stevens Creek. Conferred with other agency staff regarding the proposals and mitigation requirements. Coordinated with District staff to clarify the Coyote Creek vegetation removal work to be able to respond to U.S. EPA staff's inquiry. Conducted initial review of work window extension for projects that would not be completed by October 15.
3	Martin, M.	South SF Bay Shoreline Study	2017	99	297	6789	00044026	1313	-	0%	$ -	
4	Caldon, D.	Environmental Planning and Compliance	2017	99	297	6789	00741042	0698	-	0%	$ -	
5	Codianne, J.	Management of Revegetation Projects	2017	99	297	6789	00761075	0000	-	0%	$ -	
6	Xu, L.	Hydrologic Data Msrmt & Mgmt	2017	99	297	6789	00811043	0000	-	0%	$ -	
7	Heacock, R.	Reconstruction of Bollinger Bridge (Phase 1 and 2)	2017	12	297	6789	20104015	1321	-	0%	$ -	
8	Lueneburger, K	Los Alamitos Creek Geotechnical Borings	2017	26	297	6789	26041024	1309	-	0%	$ -	
9	Blank R.	Almaden Lake	2017	26	297	6789	26044001	1321	-	0%	$ -	
10	Moore M.	Fish Passage Improvements	2017	26	297	6789	26044002	1490	-			
11	Ferranti, S. / Akiyama, K.	Sunnyvale East & West Channel (Sunnyvale East Channel - SF Bay to Inverness Way & Sunnyvale West Channel - SF Bay to Almanor Avenue)	2017	26	297	6789	26074002	1313	-	0%	$ -	
12	Newman, K/Minkler, K.	Guadalupe River - Upper, 280-SPRR (Reach 6)	2017	26	297	6789	26154002	1321	-	0%	$ -	
13	Newman, K./Minkler, K.	Guadalupe River - Upper, SPRR - BH, Reaches 7-12	2017	26	297	6789	26154003	1321	-	0%	$ -	
14	Hosseini, S./ Nishijima L.	Hale Creek Enhancement	2017	26	297	6789	26164001	1321	-	0%	$ -	
15	Newman, K./Minkler, K. Valencia, J.	Upper Berryessa Calaveras / Old Piedmont Cor	2017	26	297	6789	26174041	1321	84.00	62%	$ -	Continued to prepare Administrative Record, and prepared draft response to Petition to State Board. Met with District staff to discuss and evaluate Alamden Lake project to serve as mitigation for Upper Berryessa project. Interviewed Alhambra plant staff. Coordinated with District to ensure winterization tasks are on track to meet October 15 due date. Prepared letter re. 10/2/17 MMP submittal due date to het District avoid filing a motion to stay the deadline requirement.
16	Rouhani, A	Coyote Ck, Montague to I-280	2017	26	297	6789	26174043	1321	-	0%	$ -	
17	Ferranti, S. / Moore, M. /Akiyama, K.	Upper Llagas Creek Flood Protection Project	2017	26	297	6789	26174052	1313	-	0%	$ -	
18	Hosseini, S./ Paramo, C.	Permanente Ck, Bay-Fthill CSC	2017	26	297	6789	26244001	1321	3.00	2%	$ -	Continued to evaluate revised dewatering plan request, and authorized the plan. Discussed issues with CDFW and District staff by phone and emails. Evaluated and authorized District's pruning request.
19	Hosseini, S./ Paramo, C.	SanFrancisquito Ck, BaySer CSC/San Francisquito Implemt	2017	26	297	6789	26284002	1321	9.00	7%	$ -	Walked portions of the Phase 2 creek reach and visited break-out points and flood flow pathways that occurred in the flood of record (1998), and discussed possible alternatives for the draft EIR with community member.
20	Titus, D.	Revitalize Stream, Upland & Wetland Habitat	2017	26	297	6789	26761076	0000	-	0%	$ -	
21	Codianne, J.	Stream Capacity Vegetation Control	2017	26	297	6789	26771067	0602	-	0%	$ -	
22	Titus, D.	Downtown Guadalupe River Mitigation Monitoring Prog	2017	12	297	6789	30151026	0000	4.00	3%	$ -	Revised Water Board's comment letter on Multiple Lines of Evidence report for supervisor's review. Reviewed CDFW's letter. {{NOTE: bank stabilization under Corps' PL-88-94 program is itemized separately in the bottom of this page, but in August, was combined with this line item.}}
23	Newman, K./Minkler, K.	Alviso Slough Design and Construction	2017	12	297	6789	30154030	1321	-	0%	$ -	
24	Newman, K./Minkler, K.	Lower Berryessa Creek Phase 2, D/S Abel Street to Calaveras Boulevard	2017	12	297	6789	40174005	1321	2.50	2%	$ -	Evaluated and authorized District's revised revegetation plan. Spoke to community member about floodwall and other project features. Coordinated with District to ensure winterization tasks are on track to meet October 15 due date.
25	Porcella, L.	Coyote Creek Mitigation Monitoring	2017	12	297	6789	40212032	1321	-	0%	$ -	
26	Ferranti, S. / Akiyama, K.	Lower Silver Creek, Reaches 5-6 North Babb-Cunningham	2017	12	297	6789	40264008	1321	0.25	0%	$ -	Coordinated with District to ensure winterization tasks are on track to meet October 15 due date.
27	Manitakos, J.	White Road Berm Restoration	2017	12	297	6789	40264011	1321	-	0%	$ -	
28	Newman, K./Minkler, K.	Upper Penitencia Creek, Corps Coordination	2017	12	297	6789	40324003	1321	-	0%	$ -	
29	Blank R.	Lower Penitencia Creek	2017	12	297	6789	40334005	1321	-	0%	$ -	
30		Coyote Watershed Levee Maintenance	2017	12	297	6789	40811011	0000	-	0%	$ -	
31	Ferranti, S. / Akiyama, K.	Lower Llagas Creek Capacity Restoration (Buena Vista Avenue to Parjaro River Confluence)	2017	12	297	6789	50284010	1313	-	0%	$ -	
32	Hernandez, T.	Madrone Channel and Canal Maintenance	2017	12	297	6789	60061007	1321	-	0%	$ -	
33	Rouhani, A	Integrated Water Resources Master Plan	2017	12	297	6789	62041027	1321	-	0%	$ -	
34	Porcella, L.	Small Mitigation Monitoring Programs(Lenihan, Calabazas, Adobe 1-5, Lower Silver Crk)	2017	12	297	6789	62042032	1321	-	0%	$ -	
35	Porcella, L.	SMP Mitigation Sites Management	2017	12	297	6789	62181005	1321	-	0%	$ -	
36	Porcella, L.	SMP Mitigation - Stream Watershed Land Acquistion	2017	12	297	6789	62184001	1321	-	0%	$ -	
37	Codianne, J.	Emergency Tree Removals	2017	12	297	6789	62761010	0000	-	0%	$ -	
38	Codianne, J.	Non-SMP Veg. Removal for Conveyance	2017	12	297	6789	62761080	0000	-	0%	$ -	
39	Ganjoo, B	Calero Dam & Guadalupe Dam Geotechnical Exploration	2017	61	297	6789	91084020	1213	-	0%	$ -	
40	Ashktorab, H./ Latedjou E.	South County Recyled Water	2017	61	297	6789	91181001	0136	-	0%	$ -	
41	Crowley, J.	Pacheco Conduit Rehabilitation	2017	61	297	6789	91214001	0136	-	0%	$ -	
42	Baker, A./Shaikh,S.	Local Resv Plan & Analysis	2017	61	297	6789	91761001	0000	-	0%	$ -	
43	Caldon, D.	Dam Maintenance Program Permits	2017	61	297	6789	91761099	0388	-	0%	$ -	
44	Hernandez, T./Gutierrez,V.	Almaden Dam Improvement Project - Geo. Investigation	2017	61	297	6789	91854001	1321	1.00	1%	$ -	Finalized NOA letter under NWP-6 for geotechnical investigations and sent letter to District.
45	Desai, H./ Mooers, M.	Anderson Dam Seismic Retrofit Project	2017	61	297	6789	91864005	1321	-	0%	$ -	
46	Ganjoo, B	Calero Dam Seismic Retrofit Project - Design & Contsr.	2017	61	297	6789	91874004	1321	-	0%	$ -	
47	Ganjoo, B	Guadalupe Dam Seismic Retrofit Project - Design & Constr.	2017	61	297	6789	91894002	1321	-	0%	$ -	
48	Heacock, R.	FAHCE	2017	61	297	6789	92041014	1321	-	0%	$ -	
49	Coleman, M.	South County Pipeline	2017	61	297	6789	92144001	0	-	0%	$ -	
50	Caldon, D.	Upper Penitencia Creek, Vandalism Repair	2017	61	297	6789	92761010	0000	-	0%	$ -	
51	Caldon, D.	Coyote Canal and Madrone Channel Repair	2017	61	297	6789	92761099	0000	-	0%	$ -	
52	Coleman, M.	Rinconada WTP	2017	61	297	6789	93294057	1490	-	0%	$ -	
53	Hernandez, T.	Penitencia Force Main MND	2017	61	297	6789	94384002	1313	-	0%	$ -	
54	Crowley, J.	Ten Year Pipeline Inspection & Rehab	2017	61	297	6789	95081002	1321	-	0%		
55	Crowley, J.	Five Year Program	2017	61	297	6789	95084001	1321	-	0%		
56	***Additional Requested Work*: Please first notify Tamra Zozaya (408) 630-2836 to validate Project Number**											
57	Heacock, R./Caldon D.	Coyote Percolation Pond Emergency Dam Repair	2017		297	6789			16.00	12%	$ -	Particpated in interagency site inspection (9/20/17). Conferred with District and other agenices via numerous emails and phone calls regarding dam apron repair in progress without Water Board's or Corps' authorizations, and to discuss the District's submittal of RGP5 NOI to the Corps and NWP-3 NOI to the Water Board. Responded to the District re. the NWP-3 NOI to indicate we considered it to be supplemental to the NWP-3 NOI submitted previously in August. This was consistent with the Corps' response to the RGP-5 NOI.
58	Lueneburger, K	Lake Cunningham Freeboard Projec	2017		297	6789			-	0%	$ -	
59	Gabrielsen, E./Nam, J.	Harvey Marsh/Calabazas Creek/San Tomas Aquino Creek	2017		297	6789	20444001		-	0%	$ -	
60	Tidwell, T.	Thompson Creek/Lower Silver Creek Pipeline Proje	2017		297	6789			0.50	0%	$ -	Coordinated reimbursement for overage of District's fee.
61	Scott Akin (??)	Downtown Guadalupe PL-84-99 bank repair sites	2017		297	6789			8.25	6%	$ -	Reviewed Corps' submittals. Discussed project with Corps staff and NMFS staff. Met with Corps and NMFS to discuss project plans and urged Corps to revise the design so the project could collectively (with all three bank repair sites) be covered under the Small Habitat Restoration General Certification. Compiled references to send to the Corps upon Corps staff's request.
62			2017		297	6789				0%	$ -	
63								**Subtotal:**	**136.5**	**100%**		
64								**Administration**	12.50			401 group staff meeting, Watershed Division staff meeting, SFEP staff meeting, MTC staff meeting, contract issues.
65								**Training**	-			
66								**Total Chargable Hours**	**149.00**			
67								**Comp time taken**	1.50			
68								**Vacation/Holiday/Sick**	17.50			
69								**Total Hours:**	**168.00**			
70												

DECLARATION OF PETER PROWS

I, Peter Prows, declare as follows:

1. I have personal knowledge of the facts stated in this declaration, and if called as a witness could competently testify to them.

2. I am the managing partner of Briscoe Ivester & Bazel LLP, outside counsel for the Santa Clara Valley Water District ("District"), and the primary billing attorney for this firm in this matter. I am deeply familiar with this matter and with the scope, nature, and content of all of the work each attorney and staff person in this firm has put in to this matter, including relating to monthly invoices.

3. I have been responsible for advising and helping to advise the District, particularly in-house counsel Rita Chan and also other District technical staff, in relation to communications with the San Francisco Bay Regional Quality Control Board ("Regional Board") about the suitability of the Almaden Lake to satisfy the off-site mitigation requirements of Regional Board Order R2-2017-0014 ("Order", Provision B.19 (the "Mandate") ("Almaden-Lake-Related Work"). I have also been responsible for helping the District prepare and submit this test claim ("Test-Claim-Related Work").

4. The District timely petitioned the State Water Resources Control Board for review of the Order and for a partial stay. The State Board found that petition complete, but has not acted on the District's partial stay request.

5. The District has petitioned the Superior Court for a writ of administrative mandamus to invalidate the Order. That action is pending in Contra Costa County Superior Court as Case No. MSN17-1822.

6. Attached as Exhibits 1-10 are accurate copies of redacted monthly invoices this firm has billed the District for services rendered since April 2017, based on time and billing information directly inputted into my firm's accounting system. The time and billing information entered are accurate and accurately reflect the rates, hours, and amounts billed in this matter to the District.

The District has paid all of these invoices in full, except the most recent one (for March 2018 services rendered), which remains outstanding.

7. Generally, for each invoice the following information has been redacted at my specific direction: all descriptions, all information from any entry that is unrelated to Almaden-Lake-Related Work or Test-Claim-Related Work, and any other irrelevant information, unclaimed time or expenses, or privileged information. Remaining unredacted in each invoice are the dates of entries for work related either to Almaden-Lake-Related Work or Test-Claim-Related Work, timekeeper codes, total hours spent for each entry, total amount billed for each entry, and rates per named timekeeper for that month. Months with no entries for Almaden-Lake-Related Work or Test-Claim-Related Work are excluded entirely and not attached to this declaration.

8. I have reviewed each entry for Almaden-Lake-Related Work or Test-Claim-Related Work. Some entries include time spent that day on matters unrelated to Almaden-Lake-Related Work or Test-Claim-Related Work; for those entries, I made appropriate adjustments, as described further below.

9. For the bill for April 2017 services (Exhibit 1), all of the relevant entries were for Test-Claim-Related Work by me. I made the following adjustments so as to exclude time spent on matters unrelated to Test-Claim-Related Work: 4/14 entry adjusted to 0.3 hours ($89.40); 4/17 entry adjusted to 1.0 hours ($298); 4/18 entry adjusted to 0.3 hours ($89.40); 4/25 entry adjusted to 0.6 hours ($178.80); 4/26 entry adjusted to 1.6 hours ($476.80). This yields an adjusted time of 3.8 adjusted hours and $1,132.40 in adjusted fees for Test-Claim-Related Work in April 2017.

10. For the bill for May 2017 services (Exhibit 2), the only relevant entry (for 05/02) was for Test-Claim-Related Work by me. No adjustments to that entry were necessary. This yields 1.4 hours and $385.00 in fees for Test-Claim-Related Work in May 2017.

11. For the bill for August 2017 services (Exhibit 3), the only relevant entry (for 08/23) was for Almaden-Lake-Related Work by me. No adjustments to that entry were necessary. This yields 1.0 hours and $375 in fees for Almaden-Lake-Related Work in August 2017.

12. For the bill for September 2017 services (Exhibit 4), there are relevant entries for both Almaden-Lake-Related Work and Test-Claim-Related Work. The Almaden-Lake-Related Work entries are those for me ("PSP") on: 09/11 (adjusted to 2.7 hours @ $1012.50), 09/13 (4.0 hours @ $1,500.00), 09/14 (3.3 hours @ $1,237.50), and 9/28 (2.0 hours @ $750). Those Almaden-Lake-Related Work entries yield an adjusted total of 12 hours and $4,500 in fees to the District for September 2017 services. The Test-Claim-Related Work entries are those for Ms. Bernadette ("LDB"), a then-associate of the firm, on 09/13 (3.1 hours @ $1,023.00), 09/14 (4.7 hours @ $1,551.00), 09/15 (0.9 hours @ $297), and 09/29 (3.2 hours @ $1,056.00). Those Test-Claim-Related Work entries yield a total of 11.9 hours and $3,927 in fees to the District for September 2017 services.

13. For the bill for October 2017 services (Exhibit 5), there is one relevant entry (the second entry for me for 10/11, for 0.5 hours @ $187.50) for Almaden-Lake-Related Work, for $187.50 in fees to the District for October 2017 services.

14. For the bill for November 2017 services (Exhibit 6), there is one relevant entry (the second of three entries for me on 11/27, for 1.0 hours @ $375) for Almaden-Lake-Related Work, for $375 in fees to the District for November 2017 services.

15. For the bill for December 2017 services (Exhibit 7), there are two relevant entries (for 12/14, for 0.5 hours @ $187.50, and for 12/19, for 1.0 hours @ $375) for Almaden-Lake-Related Work, yielding a total of 1.5 hours and $562.50 in fees to the District for December 2017 services.

16. For the bill for January 2018 services (Exhibit 8), there are relevant entries for both Almaden-Lake-Related Work and Test-Claim-Related Work. The Almaden-Lake-Related Work entries are those for me on: 01/10 (1.3 hours @ $487.50), 01/12 (adjusted to 0.6 hours @ $225), 01/24 (adjusted to 0.4 hours @ $150), and 01/25 (adjusted to 0.4 hours @ $150). Those Almaden-Lake-Related Work entries yield an adjusted total of 2.7 hours and $1,012.50 in fees to the District for January 2018 services. The Test-Claim-Related Work entries are those for Mr. Taboada ("RT"), an associate of the firm, on 01/10 (1.4 hours @ $462), 01/11 (1.5 hours @ $495), his first

entry on 01/16 (0.7 hours @ $231), and his second entry on 01/16 (0.5 hours @ $165). Those Test-Claim-Related Work entries yield a total of 4.1 hours and $1,353 in fees to the District for January 2018 services.

17. For the bill for February 2018 services (Exhibit 9), there are relevant entries for both Almaden-Lake-Related Work and Test-Claim-Related Work. The Almaden-Lake-Related Work entries are those for me on: 02/01 (adjusted to 1.0 hours @ $375), 02/02 (adjusted to 0.3 hours @ $112.50), 02/05 (0.2 hours @ $75), and 02/27 (0.5 hours @ $187.50). Those Almaden-Lake-Related Work entries yield an adjusted total of 2.0 hours and $750 in fees to the District for February 2018 services. The Test-Claim-Related Work entries include one entry for me on 02/28 (0.7 hours @ $262.50) and one entry for Mr. Taboada on 02/28 (1.4 hours @ $462). Those Test-Claim-Related Work entries yield a total of 2.1 hours and $724.50 in fees to the District for February 2018 services.

18. The bill for March 2018 services (Exhibit 10) shows that the District's balance before current charges was $0, meaning that the District has paid all invoices for pre-March 2018 services in full.

19. All of the time billed for March 2018 services was for Test-Claim-Related Work. The total Test-Claim-Related Work for March 2018 was 91.5 hours and $32,242.50 in fees, plus $110 in costs, to the District for March 2018 services.

20. I expect the bill for April's services for Test-Claim-Related Work to at least match March's.

21. The Test-Claim-Related charges for services rendered from April through June 2017 total $1,517.40. The District has paid these charges in full.

22. The Test-Claim-Related charges for services rendered from July 2017 through February 2018 total $6,004.50. The District has paid these charges in full.

23. The Almaden-Lake-Related charges for services rendered from July 2017 through February 2018 total $7,762.50. The District has paid these charges in full.

24. The District has been billed, in total, $47,636.90 for Test-Claim-Related work and Almaden-Lake-Related work including $110 in costs from March 2018, and has paid, in total $15,284, of which $13,767 was paid for services rendered during the District's current fiscal year and $1,517.40 was paid for services rendered during the District's prior fiscal year.

I declare under penalty of perjury under the laws of the State of California that the facts stated in this declaration are true.

Dated: April 12, 2018

Peter Prows

EXHIBIT 1

BRISCOE IVESTER & BAZEL LLP
155 SANSOME STREET
SEVENTH FLOOR
SAN FRANCISCO, CALIFORNIA 94104
(415) 402-2700
FAX (415) 398-5630

May 30, 2017

Stan Yamamoto
District Counsel
Santa Clara Valley Water District
5700 Almaden Expressway
San Jose, CA 95118-3686

INVOICE FOR PROFESSIONAL SERVICES

Subject:	Invoice Number:	10122
	Client:	Santa Clara Valley Water District
	Matter:	Upper Berryessa Project
	For services through:	April 30, 2017

BALANCE BEFORE CURRENT CHARGES

Previous Balance

Less Amount Received Since Last Invoice

TOTAL

CURRENT CHARGES

Fees

Expenses

TOTAL

PLEASE PAY THIS AMOUNT

FEES

Date	Description	Hours	Amount
04/14/2017	PSP	2.00	$596.00

FEES

Date		Description	Hours	Amount
04/17/2017	PSP		3.50	$1,043.00
04/18/2017	PSP		1.00	$298.00
04/25/2017	PSP		2.30	$685.40
04/26/2017	PSP		6.30	$1,877.40

TOTAL FEES

SUMMARY OF HOURS AND RATES

Timekeeper	Rate	Hours	Total
Case Clerk	$0.00		
Case Clerk	$190.00		
David M. Ivester	$489.00		
Peter S. Prows	$298.00		
Max Rollens	$275.00		

EXPENSES

Date	Description	Amount

EXHIBIT 2

BRISCOE IVESTER & BAZEL LLP
155 SANSOME STREET
SEVENTH FLOOR
SAN FRANCISCO, CALIFORNIA 94104
(415) 402-2700
FAX (415) 398-5630

June 30, 2017

Stan Yamamoto
District Counsel
Santa Clara Valley Water District
5700 Almaden Expressway
San Jose, CA 95118-3686

INVOICE FOR PROFESSIONAL SERVICES

Subject:	Invoice Number:	10174
	Client:	Santa Clara Valley Water District
	Matter:	Upper Berryessa Project
	For services through:	May 31, 2017

BALANCE BEFORE CURRENT CHARGES

Previous Balance

TOTAL

CURRENT CHARGES

Fees

Expenses

TOTAL

PLEASE PAY THIS AMOUNT

PREVIOUS BALANCE

FEES

Date		Description	Hours	Amount
05/02/2017	LDB		1.40	$385.00

FEES

Date	Description	Hours	Amount
	TOTAL FEES		

SUMMARY OF HOURS AND RATES

Timekeeper	Rate	Hours	Total
Lauren D. Bernadett	$275.00		
Peter S. Prows	$298.00		

EXPENSES

Date	Description	Amount

EXHIBIT 3

BRISCOE IVESTER & BAZEL LLP
155 SANSOME STREET
SEVENTH FLOOR
SAN FRANCISCO, CALIFORNIA 94104
(415) 402-2700
FAX (415) 398-5630

September 21, 2017

Stan Yamamoto
District Counsel
Santa Clara Valley Water District
5700 Almaden Expressway
San Jose, CA 95118-3686

INVOICE FOR PROFESSIONAL SERVICES

Subject:	Invoice Number:	10322
	Client:	Santa Clara Valley Water District
	Matter:	Upper Berryessa Project
	For services through:	August 31, 2017

BALANCE BEFORE CURRENT CHARGES

Previous Balance

Less Amount Received Since Last Invoice

TOTAL

CURRENT CHARGES

Fees

Expenses

TOTAL

PLEASE PAY THIS AMOUNT

FEES

Date		Description	Hours	Amount
08/23/2017	PSP		1.00	$375.00

TOTAL FEES

SUMMARY OF HOURS AND RATES

Timekeeper	Rate	Hours	Total
Peter S. Prows	$375.00		

EXPENSES

Date	Description	Amount

EXHIBIT 4

BRISCOE IVESTER & BAZEL LLP
155 SANSOME STREET
SEVENTH FLOOR
SAN FRANCISCO, CALIFORNIA 94104
(415) 402-2700
FAX (415) 398-5630

October 18, 2017

Stan Yamamoto
District Counsel
Santa Clara Valley Water District
5700 Almaden Expressway
San Jose, CA 95118-3686

INVOICE FOR PROFESSIONAL SERVICES

Subject:	Invoice Number:	10361
	Client:	Santa Clara Valley Water District
	Matter:	Upper Berryessa Project
	For services through:	September 30, 2017

BALANCE BEFORE CURRENT CHARGES

Previous Balance

TOTAL

CURRENT CHARGES

Fees

Expenses

TOTAL

PLEASE PAY THIS AMOUNT

PREVIOUS BALANCE

FEES

Date	Description	Hours	Amount
09/11/2017	PSP	3.70	$1,387.50
09/13/2017	LDB	3.10	$1,023.00
09/13/2017	PSP	4.00	$1,500.00
09/14/2017	LDB	4.70	$1,551.00
09/14/2017	PSP	3.30	$1,237.50
09/15/2017	LDB	0.90	$297.00

FEES

Date		Description	Hours	Amount
09/28/2017	PSP		2.00	$750.00
09/29/2017	LDB		3.20	$1,056.00
		TOTAL FEES		

SUMMARY OF HOURS AND RATES

Timekeeper	Rate	Hours	Total
Lauren D. Bernadett	$330.00		
Case Clerk	$225.00		
David M. Ivester	$575.00		
Peter S. Prows	$375.00		

EXPENSES

Date	Description	Amount

EXHIBIT 5

BRISCOE IVESTER & BAZEL LLP
155 SANSOME STREET
SEVENTH FLOOR
SAN FRANCISCO, CALIFORNIA 94104
(415) 402-2700
FAX (415) 398-5630

November 17, 2017

Stan Yamamoto
District Counsel
Santa Clara Valley Water District
5700 Almaden Expressway
San Jose, CA 95118-3686

INVOICE FOR PROFESSIONAL SERVICES

Subject:	Invoice Number:	10405
	Client:	Santa Clara Valley Water District
	Matter:	Upper Berryessa Project
	For services through:	October 31, 2017

BALANCE BEFORE CURRENT CHARGES

Previous Balance

Less Amount Received Since Last Invoice

TOTAL

CURRENT CHARGES

Fees

Expenses

Total current charges

Overpayments

TOTAL

PLEASE PAY THIS AMOUNT

FEES

Date		Description	Hours	Amount
10/11/2017	PSP		0.50	$187.50

FEES

Date	Description	Hours	Amount
	TOTAL FEES		

SUMMARY OF HOURS AND RATES

Timekeeper	Rate	Hours	Total
David M. Ivester	$575.00		
Peter S. Prows	$375.00		

EXPENSES

Date	Description	Amount

EXHIBIT 6

BRISCOE IVESTER & BAZEL LLP
155 SANSOME STREET
SEVENTH FLOOR
SAN FRANCISCO, CALIFORNIA 94104
(415) 402-2700
FAX (415) 398-5630

December 12, 2017

Stan Yamamoto
District Counsel
Santa Clara Valley Water District
5700 Almaden Expressway
San Jose, CA 95118-3686

INVOICE FOR PROFESSIONAL SERVICES

Subject:	Invoice Number:	10457
	Client:	Santa Clara Valley Water District
	Matter:	Upper Berryessa Project
	For services through:	November 30, 2017

BALANCE BEFORE CURRENT CHARGES

Previous Balance

TOTAL

CURRENT CHARGES

Fees

Expenses

TOTAL

PLEASE PAY THIS AMOUNT

PREVIOUS BALANCE

FEES

Date	Description	Hours	Amount
11/27/2017	PSP	1.00	$375.00
	TOTAL FEES		

SUMMARY OF HOURS AND RATES

Timekeeper	Rate	Hours	Total
Peter S. Prows	$375.00		
Rob Taboada	$330.00		

EXPENSES

Date	Description	Amount

EXHIBIT 7

BRISCOE IVESTER & BAZEL LLP
155 SANSOME STREET
SEVENTH FLOOR
SAN FRANCISCO, CALIFORNIA 94104
(415) 402-2700
FAX (415) 398-5630

January 31, 2018

Stan Yamamoto
District Counsel
Santa Clara Valley Water District
5700 Almaden Expressway
San Jose, CA 95118-3686

INVOICE FOR PROFESSIONAL SERVICES

Subject:	Invoice Number:	10523
	Client:	Santa Clara Valley Water District
	Matter:	Upper Berryessa Project
	For services through:	December 31, 2017

BALANCE BEFORE CURRENT CHARGES

Previous Balance

Less Amount Received Since Last Invoice

TOTAL

CURRENT CHARGES

Fees

Expenses

TOTAL

PLEASE PAY THIS AMOUNT

PREVIOUS BALANCE

FEES

Date	Description	Hours	Amount
12/14/2017		0.50	$187.50
12/19/2017		1.00	$375.00
	TOTAL FEES		

SUMMARY OF HOURS AND RATES

Timekeeper	Rate	Hours	Total
Peter S. Prows	$375.00		

EXHIBIT 8

BRISCOE IVESTER & BAZEL LLP
155 SANSOME STREET
SEVENTH FLOOR
SAN FRANCISCO, CALIFORNIA 94104
(415) 402-2700
FAX (415) 398-5630

February 14, 2018

Stan Yamamoto
District Counsel
Santa Clara Valley Water District
5700 Almaden Expressway
San Jose, CA 95118-3686

INVOICE FOR PROFESSIONAL SERVICES

Subject:	Invoice Number:	10557
	Client:	Santa Clara Valley Water District
	Matter:	Upper Berryessa Project
	For services through:	January 31, 2018

BALANCE BEFORE CURRENT CHARGES

Previous Balance

TOTAL

CURRENT CHARGES

Fees

Expenses

TOTAL

PLEASE PAY THIS AMOUNT

PREVIOUS BALANCE

Date	Invoice	Invoice	Payments	Adjustments	Remaining

FEES

Date		Description	Hours	Amount
01/10/2018	PSP		1.30	$487.50
01/10/2018	RT		1.40	$462.00
01/11/2018	RT		1.50	$495.00
01/12/2018	PSP		1.20	$450.00
01/16/2018	RT		0.70	$231.00
01/16/2018	RT		0.50	$165.00

FEES

Date		Description	Hours	Amount
01/24/2018	PSP		2.50	$937.50
01/25/2018	PSP		2.50	$937.50

TOTAL FEES

SUMMARY OF HOURS AND RATES

Timekeeper	Rate	Hours	Total
Peter S. Prows	$375.00		
Rob Taboada	$330.00		
Arlene J. Won	$225.00		

EXPENSES

Date	Description	Amount

EXHIBIT 9

BRISCOE IVESTER & BAZEL LLP
155 SANSOME STREET
SEVENTH FLOOR
SAN FRANCISCO, CALIFORNIA 94104
(415) 402-2700
FAX (415) 398-5630

March 7, 2018

Stan Yamamoto
District Counsel
Santa Clara Valley Water District
5700 Almaden Expressway
San Jose, CA 95118-3686

INVOICE FOR PROFESSIONAL SERVICES

Subject:	Invoice Number:	10631
	Client:	Santa Clara Valley Water District
	Matter:	Upper Berryessa Project
	For services through:	February 28, 2018

BALANCE BEFORE CURRENT CHARGES

Previous Balance

Less Amount Received Since Last Invoice

TOTAL

CURRENT CHARGES

Fees

Expenses

TOTAL

PLEASE PAY THIS AMOUNT

PREVIOUS BALANCE

Date	Invoice Number	Invoice Amount	Payments Received	Adjustments Applied	Remaining Balance

FEES

Date		Description	Hours	Amount
02/01/2018	PSP		1.50	$562.50
02/02/2018	PSP		3.20	$1,200.00
02/05/2018	PSP		0.20	$75.00

FEES

Date		Description	Hours	Amount
02/27/2018	PSP		0.50	$187.50
02/28/2018	PSP		0.70	$262.50
02/28/2018	RT		1.40	$462.00
		TOTAL FEES		

SUMMARY OF HOURS AND RATES

Timekeeper	Rate	Hours	Total
Peter S. Prows	$375.00		
Rob Taboada	$330.00		
Arlene J. Won	$225.00		

EXHIBIT 10

BRISCOE IVESTER & BAZEL LLP
155 SANSOME STREET
SEVENTH FLOOR
SAN FRANCISCO, CALIFORNIA 94104
(415) 402-2700
FAX (415) 398-5630

April 9, 2018

Stan Yamamoto
District Counsel
Santa Clara Valley Water District
5700 Almaden Expressway
San Jose, CA 95118-3686

INVOICE FOR PROFESSIONAL SERVICES

Subject:	Invoice Number:	10639
	Client:	Santa Clara Valley Water District
	Matter:	Upper Berryessa Project
	For services through:	March 31, 2018

BALANCE BEFORE CURRENT CHARGES

Previous Balance	
Less Amount Received Since Last Invoice	
TOTAL	$0.00

CURRENT CHARGES

Fees	$32,242.50	
Expenses	110.10	
TOTAL		$32,352.60

PLEASE PAY THIS AMOUNT **$32,352.60**

FEES

Date		Description	Hours	Amount
03/01/2018	PSP		1.20	$450.00
03/01/2018	PSP		1.50	$562.50
03/01/2018	RT		1.40	$462.00
03/02/2018	PSP		2.00	$750.00
03/02/2018	PSP		2.60	$975.00
03/04/2018	RT		2.20	$726.00
03/05/2018	PSP		5.60	$2,100.00
03/05/2018	RT		1.20	$396.00
03/06/2018	PSP		2.50	$937.50
03/09/2018	PSP		3.50	$1,312.50
03/12/2018	PSP		0.50	$187.50
03/13/2018	PSP		6.20	$2,325.00
03/15/2018	RT		3.40	$1,122.00
03/16/2018	PSP		0.50	$187.50

FEES

Date		Description	Hours	Amount
03/16/2018	RT		4.40	$1,452.00
03/19/2018	PSP		2.00	$750.00
03/19/2018	RT		3.80	$1,254.00
03/20/2018	PSP		3.50	$1,312.50
03/20/2018	RT		4.30	$1,419.00
03/21/2018	PSP		3.30	$1,237.50
03/21/2018	RT		8.30	$2,739.00
03/22/2018	RT		1.40	$462.00
03/23/2018	RT		6.70	$2,211.00
03/26/2018	RT		1.50	$495.00
03/27/2018	PSP		2.30	$862.50
03/27/2018	RT		1.90	$627.00
03/28/2018	PSP		1.50	$562.50
03/28/2018	RT		2.80	$924.00
03/29/2018	PSP		4.60	$1,725.00
03/29/2018	RT		1.70	$561.00
03/30/2018	PSP		2.20	$825.00
03/30/2018	RT		1.00	$330.00

TOTAL FEES	$32,242.50

SUMMARY OF HOURS AND RATES

EXPENSES

Date		Description	Amount
03/29/2018	TRVL	Rob Taboada-033118 3/23/18	$110.10
		Travel Charges	
		TOTAL EXPENSES	$110.10

Section 7: Index to Documentation in Support of Claim

DECLARATION OF SERVICE BY EMAIL

I, the undersigned, declare as follows:

I am a resident of the County of Sacramento and I am over the age of 18 years, and not a party to the within action. My place of employment is 980 Ninth Street, Suite 300, Sacramento, California 95814.

On May 2, 2018, I served the:

- **Notice of Complete Test Claim, Schedule for Comments, Request for Administrative Record, and Notice of Tentative Hearing Date issued May 2, 2018**
- **Test Claim filed by the Santa Clara Valley Water District on April 12, 2018**

  Waste Discharge Requirements and Water Quality Certification for: Santa Clara Valley Water District and U.S. Army Corps of Engineers, Upper Berryessa Creek Flood Risk Management Project, 17-TC-04
  San Francisco Bay Regional Water Quality Control Board (SFRWQCB) Order No. R2-2017-0014, Provision B. 19, effective April 12, 2017
  Santa Clara Valley Water District, Claimant

by making it available on the Commission's website and providing notice of how to locate it to the email addresses provided on the attached mailing list.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, and that this declaration was executed on May 2, 2018 at Sacramento, California.

Jill L. Magee
Commission on State Mandates
980 Ninth Street, Suite 300
Sacramento, CA 95814
(916) 323-3562

COMMISSION ON STATE MANDATES

Mailing List

Last Updated: 5/2/18

Claim Number: 17-TC-04

Matter: Waste Discharge Requirements and Water Quality Certification for: Santa Clara Valley Water District and U.S. Army Corps of Engineers, Upper Berryessa Creek Flood Risk Management Project

Claimant: Santa Clara Valley Water District

TO ALL PARTIES, INTERESTED PARTIES, AND INTERESTED PERSONS:

Each commission mailing list is continuously updated as requests are received to include or remove any party or person on the mailing list. A current mailing list is provided with commission correspondence, and a copy of the current mailing list is available upon request at any time. Except as provided otherwise by commission rule, when a party or interested party files any written material with the commission concerning a claim, it shall simultaneously serve a copy of the written material on the parties and interested parties to the claim identified on the mailing list provided by the commission. (Cal. Code Regs., tit. 2, § 1181.3.)

Marni Ajello, Attorney, Office of Chief Counsel, *State Water Resources Control Board*
San Francisco Bay Regional Water Quality Control Board, 1001 I Street, 22nd Floor, Sacramento, CA 95814
Phone: (916) 327-4439
marnie.ajello@waterboards.ca.gov

Socorro Aquino, *State Controller's Office*
Division of Audits, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 322-7522
SAquino@sco.ca.gov

Tamarin Austin, Attorney, Office of Chief Counsel, *State Water Resources Control Board*
San Francisco Bay Regional Water Quality Control Board, 1001 I Street, 22nd Floor, Sacramento, CA 95814
Phone: (916) 341-5171
Tamarin.Austin@waterboards.ca.gov

Harmeet Barkschat, *Mandate Resource Services,LLC*
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Lacey Baysinger, *State Controller's Office*
Division of Accounting and Reporting, 3301 C Street, Suite 700, Sacramento, CA 95816
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Dale Bowyer, Section Leader, *San Francisco Bay Regional Water Quality Control Board*
1515 Clay Street, Suite 1400, Oakland, CA 94612

Phone: (510) 622-2323
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Norma Camacho, Chief Executive Officer, *Santa Clara Valley Water District*
5700 Almaden Expressway, San Jose, CA 95118
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ncamacho@valleywater.org

Gwendolyn Carlos, *State Controller's Office*
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Annette Chinn, *Cost Recovery Systems,Inc.*
705-2 East Bidwell Street, #294, Folsom, CA 95630
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